




Dell™ PowerEdge™ SC430 Systems User's Guide

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Model DCTA

Notes, Notices, and Cautions

-  **NOTE:** A NOTE indicates important information that helps you make better use of your computer.
-  **NOTICE:** A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.
-  **CAUTION:** A CAUTION indicates a potential for property damage, personal injury, or death.

Abbreviations and Acronyms

For a complete list of abbreviations and acronyms, see the Glossary.

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Initial release: 6 June 2005

Technical Specifications

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Processor	
Processor type	Intel® Pentium® D processor with a minimum clock speed of at least 3.0 GHz or Intel Pentium 4 processor with a minimum clock speed of at least 2.8 GHz or Intel Celeron® D processor with a minimum clock speed of at least 2.53 GHz
Internal cache	At least 2x1 MB (Intel Pentium D processor), 1 MB (Intel Pentium 4 processor) and 256 KB (Intel Celeron processor)
Front-side bus speed	Up to 800 MHz (Intel Pentium D and Intel Pentium 4 processors) and 533 MHz (Intel Celeron D processor)

Expansion Bus	
Bus type	PCI and PCIe
Expansion slots	
PCIe	2.5-Gb/sec PCIe x1, 3.3-V, 12-V (slot 1) 2.5-Gb/sec PCIe x8, 3.3-V, 12-V (slot 2) 2.5-Gb/sec PCIe x4, 3.3-V, 12-V (slot 4)
PCI	Two 5-V, half-length, 32-bit, 33-MHz (slots 3 and 5)

Memory	
Architecture	72-bit, ECC, PC-4300, Unbuffered, DDR II SDRAM, DIMMs, rated for 533-MHz operation
Memory module sockets	Four 240-pin
Memory module capacities	256 MB, 512 MB, or 1 GB
Minimum RAM	256 MB (one 256-MB module)
Maximum RAM	4 GB

Drives	
Hard drives	
SATA	Up to two non-hot-plug, 1-inch, internal SATA hard drives with the integrated SATA controller or Up to two non-hot-plug, 1-inch, internal SCSI drives with a SCSI controller card
SCSI	
Diskette drive	One optional 3.5-inch, 1.44-MB
CD drive	One optional IDE CD, DVD, or CD-RW/DVD combination NOTE: DVD devices are data only.
Tape drive	One optional 5.25-inch SCSI or IDE tape device

Connectors	
Externally accessible	

Back	
NIC	RJ-45 (for integrated 1-Gigabit NIC)
Serial	9-pin, DTE, 16550-compatible
USB	Five 4-pin, version 2.0
Video	15-pin VGA
Front	
USB	Two 4-pin, version 2.0
Internally accessible	
IDE channel	40-pin
SATA channels	Four 7-pin

Video	
Video type	Integrated
Video memory	8 MB

Power	
AC power supply (per power supply)	
Wattage	305 W
Voltage	115–230 VAC, 60/50 Hz, 9.0–4.5 A
Heat dissipation	1040 BTU/hr maximum
Maximum inrush current	Under typical line conditions and over the entire system ambient operating range, the inrush current may reach 140 A for 10 ms or less
Batteries	
System battery	CR 2032 3.0-V lithium ion coin cell

Physical	
Height	44.5 cm (17.5 inches)
Width	16.76 cm (6.6 inches)
Depth	45.7 cm (18 inches)
Weight (maximum configuration)	17.24 kg (38 lb)

Environmental	
Temperature	
Operating	10° to 35°C (50° to 95°F)
Storage	–40° to 65°C (–40° to 149°F)
Relative humidity	
Operating	8% to 85% (noncondensing) with a maximum humidity gradation of 10% per hour
Storage	5% to 95% (noncondensing)
Maximum vibration	
Operating	0.25 G at 3–200 Hz for 15 min
Storage	0.5 G at 3–200 Hz for 15 min
Maximum shock	
Operating	One shock pulse in the positive z axis (one pulse on each side of the system) of 41 G for up to 2 ms
Storage	Six consecutively executed shock pulses in the positive and negative x, y, and z axes (one pulse on each side of the system) of 71 G for up to 2 ms
Altitude	
Operating	–16 to 3048 m (–50 to 10,000 ft)
Storage	–16 to 10,600 m (–50 to 35,000 ft)

System Overview

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- [Back-Panel Features](#)
- [System Features](#)
- [Supported Operating Systems](#)
- [Power Protection Devices](#)
- [Other Information You May Need](#)
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This section describes the major hardware and software features of your system and provides information about the indicators on the system's front and back panels. It also provides information about other documents you may need when setting up your system and how to obtain technical assistance.

Front-Panel Features

[Figure 1-1](#) shows the front-panel features and indicators of the system. [Table 1-1](#) describes some of these features and indicators. For more information about indicator codes, see your *Installation and Troubleshooting Guide*.

Figure 1-1. Front-Panel Features and Indicators

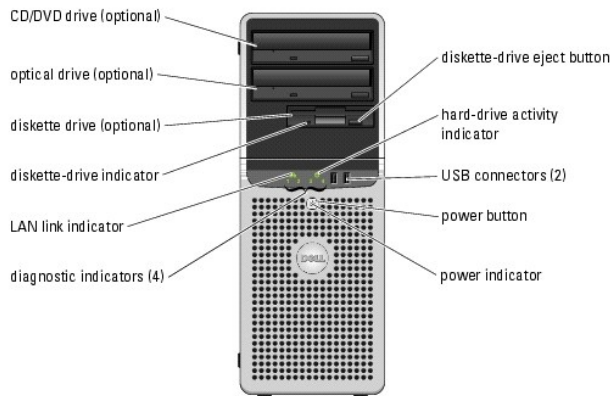


Table 1-1. Front-Panel Buttons and Indicators

Button/Indicator	Description
Power button	Turns system power off and on. If you turn off the system using the power button, the system can perform an orderly shutdown before power is turned off. If the power button is pressed for more than 4 seconds, the system power will turn off regardless of the current operating system state.
Power indicator	Off indicates the system is off. Solid green indicates that the system is in a normal operating state. Blinking green indicates low-power state. Blinking amber indicates a power supply failure. Solid amber indicates a boot failure. To exit from a power-saving state, briefly press the power button or click or move the mouse. For more information, see your <i>Installation and Troubleshooting Guide</i> .
Hard-drive activity indicator	Blinking green indicates data is being read from or written to the internal hard drives that are connected to the hard-drive controller.
Diskette drive indicator	Green light indicates disk-drive activity.
LAN link indicator	Green light indicates LAN link is established.
Diagnostic indicators (4)	Aid in diagnosing and troubleshooting the system. For more information, see your <i>Installation and Troubleshooting Guide</i> .

Back-Panel Features

[Figure 1-2](#) provides information about the back-panel features of the system. [Figure 1-3](#) and [Table 1-2](#) provide information about NIC indicators. For more information about back-panel indicators, see your *Installation and Troubleshooting Guide*.

Figure 1-2. Back-Panel Features

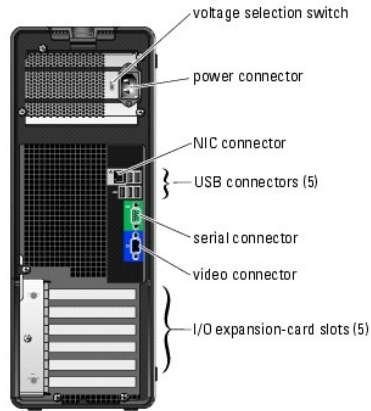


Figure 1-3. NIC Indicators

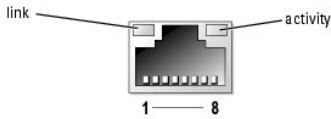


Table 1-2. NIC Indicators


Indicator	Normal Operation	Error Condition
Link	Green indicates that a 10-Mbps network connection exists. Orange indicates that a 100-Mbps network connection exists. Yellow indicates that a 1-Gb/sec (or 1000 Mbps) network connection exists.	Off indicates that the NIC is not detecting a physical connection to the network.
Activity	Flashing or steady yellow indicates that the NIC is transmitting or receiving network data.	When off at the same time that the link indicator is off, the NIC is not connected to the network.
<p>NOTE: If the NIC is disabled in the System Setup program, both the link and activity indicators will be "off" regardless of whether an active network connection is present.</p>		

System Features

Your system offers the following features:

- 1 One of the following processors:
 - o Intel® Pentium® D processor with a minimum clock speed of at least 3.0 GHz, front-side bus speed of at least 800 MHz, and at least 2x1 MB of internal cache.
 - o Intel Pentium 4 processor with a minimum clock speed of at least 2.8 GHz, front-side bus speed of at least 800 MHz, and at least 1 MB of internal cache.
 - o Intel Celeron® D processor with a minimum clock speed of at least 2.53 GHz, front-side bus speed of at least 533 MHz, and at least 256 KB of internal cache.

All processors are EM64T capable.

 **NOTE:** Use the System Setup program to view processor information. See "[Using the System Setup Program.](#)"

- 1 A minimum of 256 MB of 533-MHz DDR II SDRAM memory, upgradable to a maximum of 4 GB DDR II SDRAM memory by installing 256-MB, 512-MB, or 1-GB unbuffered ECC memory modules in the four memory module sockets on the system board; single or dual rank.
- 1 Support for the following internal hard-drive (non-hot-plug) configurations:
 - o Up to two internal 1-inch SATA hard drives with an integrated SATA controller.
 - or
 - o Up to two internal 1-inch SCSI hard drives with a SCSI controller card.
- 1 One 3.5-inch peripheral drive bay for the optional diskette drive, and two 5.25-inch bays for the following supported drives: CD, DVD, combination CD-RW/DVD, or tape backup device.

 **NOTE:** DVD devices are data only.


- 1 Support for the following disk volume types: simple, spanned, striped (RAID 0), and mirrored (RAID 1).
- 1 Support for USB 2.0.
- 1 A chassis intrusion alert.

The system board includes the following integrated features:

- 1 Dual-channel IDE controller that supports up to two supported devices including IDE CD, DVD, CD-RW/DVD combination drive, and an IDE tape backup device.

 **NOTE:** DVD devices are data only.

- 1 SATA controller that supports up to four SATA devices, including a maximum of two cabled SATA hard drives.
- 1 Two 32-bit, 33-MHz I/O expansion card slots, one x1 lane-width PCIe expansion slot, one x4 lane-width PCIe expansion slot, and one x8 lane-width PCIe expansion slot.
- 1 Integrated video with 8 MB of SDRAM video memory (nonupgradable), and a maximum resolution of 1600 x 1280 pixels and 16.7 million colors (noninterlaced).

 **NOTE:** Your computer supports integrated video only.

- 1 An integrated Gigabit Ethernet NIC, capable of supporting 1000-Mbps, 100-Mbps, or 10-Mbps data rates, with support for PXE and Wake-on-LAN.

The following software is included with your system:

- 1 The System Setup program for quickly viewing and changing the system configuration information for your system. For more information on this program, see "[Using the System Setup Program](#)."
- 1 Enhanced security features, including an admin password and a system password, available through the System Setup program.
- 1 Diagnostics for evaluating your system's components and devices. For information on using the system diagnostics, see "Running the System Diagnostics" in your *Installation and Troubleshooting Guide*.

For more information about specific features, see "[Technical Specifications](#)." For a list of documents that provide more information on your system's features, see "[Other Information You May Need](#)."

Supported Operating Systems

Your system supports the following operating systems:


- 1 Microsoft® Windows Server™ 2003, Standard Edition
 - 1 Microsoft Windows Server 2003, Standard x64 Edition
 - 1 Microsoft Windows Small Business Server 2003, Standard and Premium Editions
 - 1 Red Hat® Enterprise Linux ES (Version 4)
 - 1 SUSE Linux (Version 9)
-

Power Protection Devices

Certain devices protect your system from the effects of problems such as power surges and power failures.

- 1 PDU — Uses circuit breakers to ensure that the AC current load does not exceed the PDU's rating.
 - 1 Surge protector — Prevents voltage spikes, such as those that may occur during an electrical storm, from entering the system through the electrical outlet. They do not protect against brownouts, which occur when the voltage drops more than 20 percent below the normal AC line voltage level.
 - 1 Line conditioner — Maintains a system's AC power source voltage at a moderately constant level and provides protection from brownouts, but does not protect against a complete power loss.
 - 1 UPS — Uses battery power to keep the system running when AC power is unavailable. The battery is charged by AC power while it is available so that after AC power is lost, the battery can provide power to the system for a limited amount of time—from 5 minutes to approximately an hour. A UPS that provides only 5 minutes of battery power allows you to save your files and to shutdown the system. Use surge protectors and PDUs with all universal power supplies, and ensure that the UPS is UL-safety approved.
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Other Information You May Need

 The *Product Information Guide* provides important safety and regulatory information. Warranty information may be included within this document or as a separate document.

- 1 The *Getting Started Guide* provides an overview of initially setting up your system.

- 1 The *User's Guide* provides information about system features and technical specifications.
- 1 The *Installation and Troubleshooting Guide* describes how to troubleshoot the system and install or replace system components.
- 1 CDs included with your system provide documentation and tools for configuring and managing your system.
- 1 Systems management software documentation describes the features, requirements, installation, and basic operation of the software.
- 1 Operating system documentation describes how to install (if necessary), configure, and use the operating system software.
- 1 Documentation for any components you purchased separately provides information to configure and install these options.
- 1 Updates are sometimes included with the system to describe changes to the system, software, and/or documentation.

 **NOTE:** Always check for updates on support.dell.com and read the updates first because they often supersede information in other documents.

- 1 Release notes or readme files may be included to provide last-minute updates to the system or documentation or advanced technical reference material intended for experienced users or technicians.

Obtaining Technical Assistance

If you do not understand a procedure in this guide or if the system does not perform as expected, see your *Installation and Troubleshooting Guide*.

Dell Enterprise Training and Certification is available; see www.dell.com/training for more information. This service may not be offered in all locations.

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Using the System Setup Program

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- [Entering the System Setup Program](#)
- [Exiting the System Setup Program](#)
- [System Setup Options](#)
- [Password Features](#)

After you set up your system, run the System Setup program to familiarize yourself with your system configuration and optional settings. Record the information for future reference.

You can use the System Setup program to:


- 1 Change the system configuration stored in NVRAM after you add, change, or remove hardware
- 1 Set or change user-selectable options—for example, the time or date
- 1 Enable or disable integrated devices
- 1 Correct discrepancies between the installed hardware and configuration settings

Entering the System Setup Program

1. Turn on or restart your system.
2. Press <F2> immediately after you see the following message:


<F2> = System Setup

If your operating system begins to load before you press <F2>, allow the system to finish booting, and then restart your system and try again.

 **NOTE:** To ensure an orderly system shutdown, see the documentation that accompanied your operating system.

Responding to Error Messages

You can enter the System Setup program by responding to certain error messages. If an error message appears while the system is booting, make a note of the message. Before entering the System Setup program, see "System Beep Codes" and "System Messages" in your *Installation and Troubleshooting Guide* for an explanation of the message and suggestions for correcting errors.


 **NOTE:** After installing a memory upgrade, it is normal for your system to send a message the first time you start your system.

Using the System Setup Program

[Table 2-1](#) lists the keys that you use to view or change information on the System Setup program screens and to exit the program.

Table 2-1. System Setup Program Navigation Keys

Keys	Action
Up arrow and down arrow	Moves to the previous or next field
Left arrow and right arrow	Moves left or right in a field
<+> and <-> keys	Opens and closes submenus
<Enter>	Allows you to view the details for or modify an option, or allows you to confirm your setting change and moves the cursor back to the option menu
<Esc>	Either moves your cursor back to the option menu without modifying an option, or opens the System Setup Exit screen

 **NOTE:** For most of the options, any changes that you make are recorded but do not take effect until you restart the system.

Exiting the System Setup Program

If you have made no changes in the BIOS, the **Exit** screen displays the following options after you press <Esc> to exit the System Setup program:

- 1 Remain in Setup
- 1 Exit

If you have made changes in the BIOS, the **Exit** screen displays the following options after you press <Esc> to exit the System Setup program:

- 1 Remain in Setup
- 1 Save/Exit
- 1 Discard/Exit

System Setup Options

Main Screen

[Figure 2-1](#) shows an example of the main screen.

Figure 2-1. Main System Setup Program Screen

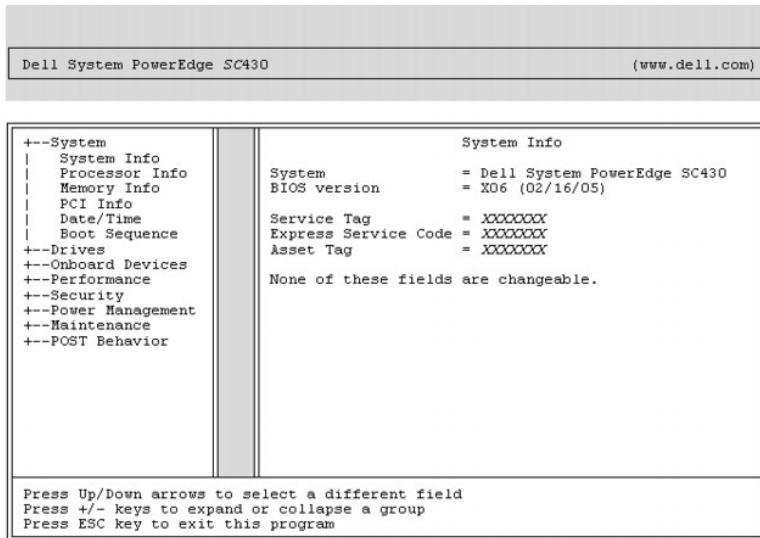


Table 2-2 through Table 2-9 lists the options and descriptions for each group of information fields that appear on the main System Setup program screen.

NOTE: The System Setup program defaults are listed under their respective options, where applicable.

Table 2-2. System Options

Option	Description
System Info	Displays the System name, BIOS Version number, BIOS Date , Service Tag , Express Service Code , and Asset Tag .
Processor Info	Displays the following information for the processor installed in the system: Processor Type , Processor Clock Speed , Processor Bus Speed , Processor Cache Size , Processor ID number, whether the processor is Multiple Core Capable , or Hyperthreading Capable , and if the processor has 64-bit Technology .
Memory Info	Displays the amount of Installed Memory , Memory Speed , Memory Channel Mode , and a description of the Memory Technology . This option also displays a table that describes the memory size, whether the memory module is ECC capable, single or dual rank, type, and organization for each DIMM socket.
PCI Info	Displays the types of cards that are installed in the PCI slots, if applicable.
Date/Time	Resets the system's internal calendar and clock.
Boot Sequence (Diskette drive default)	Determines the order in which the system searches for boot devices during system startup. Available options can include the diskette drive, CD drive, hard drives, and USB devices.

Table 2-3. Drive Options

Option	Description
Diskette Drive	Enables and disables the diskette drives and sets read permission for the internal diskette drive. Off disables all diskette drives. USB disables the internal diskette drive and enables a USB drive if the USB controller is enabled and a USB drive is connected. Internal enables the internal diskette drive. Read Only enables the internal drive controller and allows the internal diskette drive read-only permission.

(Internal default)	NOTE: Diskette drives are optional and may not be part of your system.
Drive (0-5) (On default)	Enables or disables a ATA or SATA device (such as hard-drive, CD drive, or DVD drive). Off disables the interface so that the device cannot be used. On enables the interface so that the device can be used. Displays the Controller type (ATA or SATA), Port number the drive is using, Drive ID number, Capacity , whether the drive is controlled by the BIOS , and Link Speed . NOTE: Drives 0, 1, 2, and 3 are reserved for SATA drives, and drives 4 and 5 are reserved for ATA drives.
SMART Reporting (Off default)	Determines whether hard-drive errors for internal drives are reported during system startup. Off does not report errors. On reports errors.

Table 2-4. Onboard Devices Options

Option	Description
Integrated NIC (On default)	Enables or disables the integrated Network Interface Controller (NIC). Off disables the controller. On enables the controller. On w/PXE enables the controller with PXE. On w/RPL enables the controller with RPL. NOTE: PXE or RPL is required only if you are booting to an operating system on another system, not if you are booting to an operating system on a hard drive in this system.
USB Controller (On default)	Enables or disables the internal USB controller. Off disables the controller. On enables the controller. No Boot enables the controller, but disables the ability to boot from a USB device. NOTE: Operating systems with USB support will recognize USB storage devices regardless of the No Boot setting.
Front USB Ports (On default)	Enables or disables the front USB ports independently of the rear ports. Off disables the controller. On enables the controller. No Boot enables the controller, but disables the ability to boot from a USB device. NOTE: Operating systems with USB support will recognize USB storage devices regardless of the No Boot setting.
Serial Port #1 (Auto default)	Serial Port 1 options are COM1 , COM3 , Auto , and Off . When serial port 1 is set to Auto , the integrated port automatically maps to the next available port. Serial port 1 attempts to use COM1 first and then COM3 . If both addresses are in use for a specific port, the port is disabled. When serial port is set to COM1 , the integrated port is configured at 3F8h with IRQ4 . When the serial port is set to COM3 , the integrated port is configured at 3E8h with IRQ4 . If you set the serial port to Auto and add an expansion card with a port configured to the same designation, the system automatically remaps the integrated port to the next available port designation that shares the same IRQ setting.

Table 2-5. Performance Options

Option	Description
Hyper-Threading (On default)	Determines whether the physical processor appears as one or two logical processors. The performance of some applications improve with additional logical processors installed. On enables hyperthreading. Off disables hyperthreading.
Multiple CPU Core (On default)	If the processor has multiple cores, specifies whether the processor will have one or two cores enabled. The performance of some applications will improve with the additional core. Off disables Multiple CPU Core Technology. On enables Multiple CPU Core Technology.
Speed Step (Off default)	If the processor supports Enhanced Speed Step Technology, specifies whether the option is Off or On . NOTICE: Before enabling the Speed Step option, ensure that the operating system also supports Enhanced Speed Step Technology. Enabling the feature on operating systems that do not support it may cause unpredictable results. See the operating system's documentation for its supported features.
HDD Acoustic Mode (Performance default)	Allows you to optimize IDE-drive performance and noise level based on personal preferences. Bypass is used for older drives. Quiet slows drive performance but reduces drive noise. Suggested adjusts performance to the manufacturers preferred mode. Performance increases drive performance but may increase drive noise.

Table 2-6. Security Options

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Option	Description
Unlock Setup	If the admin password has not been set, this option is not visible. If the admin password has been set, this option displays the current status of your system password. Temporarily unlock setup by entering your admin password.
Admin Password (Not Set default)	Displays the current status of your System Setup program's password security feature and allows you to verify and assign a new admin password. NOTE: See " Using the Admin Password " for instructions on assigning a setup password and using or changing an existing setup password.
System Password (Not Set default)	Displays the current status of your system's password security feature and allows you to verify and assign a new system password. NOTE: See " Using the System Password " for instructions on assigning a system password and using or changing an existing system password.
Password Changes (Unlocked default)	Determines the interaction between the System password and the Admin password. Locked prevents a user with a valid System password from being able to modify the System password. Unlocked allows a user with a valid System password to modify the System password.
Chassis Intrusion (On-Silent default)	Enables or disables the chassis-intrusion detection feature. When set to On-Silent , chassis intrusion is detected but no warning message is reported during start-up. When set to On , this field displays DETECTED when the chassis cover has been opened. Pressing any edit key acknowledges the intrusion and arms the system to look for further security breaches. Off disables the chassis-intrusion detection feature.
Intrusion Alert	Pressing the <Enter> key acknowledges the intrusion and arms the system to look for further security breaches.
Execute Disable (On default)	Specifies whether or not Execute Disable Memory Protection Technology is On or Off .

Table 2-7. Power Management Options

Option	Description
AC Recovery (Last default)	Determines how the system responds when AC power is re-applied after a power loss. Off commands the system to stay off when the power is re-applied. You must press the front-panel power button before the system turns on. On commands the system to turn on when the power is re-applied. Last commands the system to return to the last power state the system was in just before it was turned off.
Auto Power On (Off default)	Determines when to use the Auto Power Time setting to turn on the system. Off commands the system to not use the Auto Power Time feature. Everyday turns on the system every day at the time set in Auto Power Time . Weekdays turns on the system every day from Monday through Friday at the time set in Auto Power Time .
Auto Power Time	Determines the time that you want the system to turn on.
Low Power Mode (Off default)	On conserves more power by removing power from most hardware features. Off conserves less power and removes power from fewer hardware features. NOTE: With this option set to On , the integrated NIC will be disabled when the system is in the Hibernate or Off states. Only add-in NICs will be able to wake the system remotely.
Remote Wake Up (Off default)	Determines how the system is turned on remotely from the Suspend , Hibernate , or Off states. Off disables the NIC from waking up the system. On enables the NIC to wake up the system. On w/ Boot to NIC enables the NIC to wake up the system and boot from the network. If you want the system to perform a Remote Wake Up , you must first set Low Power Mode to Off .

Table 2-8. Maintenance Options



Option	Description
Load Defaults	Allows you to restore all System Setup options to their factory defaults.
Event Log	Allows you to view the Event Log . Entries are marked R for Read and U for Unread . Mark All Entries Read puts an R to the left of all the entries. Clear Log clears the Event Log .

Table 2-9. POST Behavior Options

Option	Description
Fast Boot (On default)	When enabled, this feature reduces system startup time by bypassing some compatibility steps. Off does not skip any steps during system startup. On starts the system more quickly.

Numlock Key (On default)	Determines the functionality of the numeric keys on the right side of your keyboard. Off commands the right keypad keys to function as arrows. On commands the right keypad keys to function as numbers.
POST Hotkeys (Setup and Boot Menu default)	Determines whether the sign-on screen displays a message stating the keystroke sequence that is required to enter the Setup program or the Quickboot feature. Setup & Boot Menu displays both messages (F2=Setup and F12=Boot Menu). Setup displays the setup message only (F2=Setup). Boot Menu displays the Quickboot message only (F12=Boot Menu). None displays no message.
Keyboard Errors (Report default)	<p>When set to Report (enabled) and an error is detected during POST, the BIOS will display the error message and prompt you to press <F1> to continue or press <F2> to enter System Setup.</p> <p>When set to Do Not Report (disabled) and an error is detected during POST, the BIOS will display the error message and continue booting the system.</p> <p>NOTE: When detected, some errors (such as CPU or PCI fan failure) will display an error message and prompt you to press <F1> to continue, or <F2> to enter the Setup Menu.</p>

Password Features

-  **NOTICE:** The password features provide a basic level of security for the data on your system. If your data requires more security, use additional forms of protection, such as data encryption programs.
-  **NOTICE:** Anyone can access the data stored on your system if you leave the system running and unattended without having a system password assigned or if you leave your system unlocked so that someone can disable the password by changing a jumper setting.

Your system is shipped to you without the system password feature enabled. If system security is a concern, operate your system only with system password protection.

To change or delete an existing password, you must know the password (see "[Deleting an Existing System Password](#)"). If you forget your password, you cannot operate your system or change settings in the System Setup program until a trained service technician changes the password jumper setting to disable the passwords, and erases the existing passwords. This procedure is described in the *Installation and Troubleshooting Guide*.

Using the System Password

After a system password is assigned, only those who know the password have full use of the system. When the **System Password** option is **Set**, the system prompts you for the system password after the system starts.

-  **NOTE:** If you have assigned an admin password (see "[Using the Admin Password](#)"), the system accepts your admin password as an alternate system password.

Assigning a System Password

Before you assign a system password, enter the System Setup program and check the **System Password** option.

When a system password is assigned, the setting shown for the **System Password** option is **Set**. If the setting shown for the **Password Changes** is **Unlocked**, you can change the system password. If the **Password Changes** option is **Locked**, you cannot change the system password. When the system password feature is disabled by a jumper setting, the system password is **Disabled**, and you cannot change or enter a new system password.


When a system password is not assigned and the password jumper on the system board is in the enabled (default) position, the setting shown for the **System Password** option is **Not Set** and the **Password Changes** field is **Unlocked**. To assign a system password:

1. Verify that the **Password Changes** option is set to **Unlocked**.
2. Highlight the **System Password** option and press <Enter>.
3. Type your new system password.

You can use up to 32 characters in your password.

As you press each character key (or the spacebar for a blank space), a placeholder appears in the field.

The password assignment is not case-sensitive. However, certain key combinations are not valid. If you enter one of these combinations, the system beeps. To erase a character when entering your password, press <Backspace> or the left-arrow key.

-  **NOTE:** To escape from the field without assigning a system password, press <Esc> at any time prior to completing step 5.

4. Press <Enter>.
5. To confirm your password, type it a second time and press <Enter>.
6. Press <Enter> again to continue.

The setting shown for the **System Password** changes to **Set**.

7. Save and exit the System Setup program and begin using your system.

Using Your System Password to Secure Your System

 **NOTE:** If you have assigned an admin password (see "[Using the Admin Password](#)"), the system accepts your admin password as an alternate system password.

To use the system:


1. Turn on or reboot your system by pressing <Ctrl><Alt>.
2. Type your password and press <Enter>.

When the **Password Changes** option is set to **Locked** whenever you turn on your system or reboot your system by pressing <Ctrl><Alt>, type your password and press <Enter> at the prompt.

After you type the correct system password and press <Enter>, your system operates as usual.

If an incorrect system password is entered, the system displays a message and prompts you to re-enter your password. You have three attempts to enter the correct password. After the third unsuccessful attempt, the system displays an error message showing the number of unsuccessful attempts and that the system has halted. You are prompted to shut down your system. This message can alert you to an unauthorized person attempting to use your system.

Even after you shut down and restart the system, the error message continues to be displayed until the correct password is entered.

 **NOTE:** You can use the **Password Changes** option in conjunction with the **System Password** and **Admin Password** options to further protect your system from unauthorized changes.

Deleting an Existing System Password

1. Enter the System Setup program.
2. Highlight the **System Password** option, and press <Enter> to access the system password window.
3. Enter the old password, and press <Enter>.
4. Press <Enter> twice to enter a new blank password and to confirm the new blank password.
5. Press <Enter> again to continue.
The setting changes to **Not Set**.
6. If you want to assign a new system password, perform the steps in "[Assigning a System Password](#)."

Changing an Existing System Password

1. Enter the System Setup program.
2. Highlight the **System Password** option, and press <Enter> to access the system password window.
3. Enter the old password, and press <Enter>.
4. Enter a new password, and press <Enter>.
5. Enter the new password again to confirm the change, and press <Enter>.
6. Press <Enter> to continue.
The setting remains **Set**.

Using the Admin Password

Assigning an Admin Password


You can assign (or change) an admin password only when the **Admin Password** option selected is **Not Set**. To assign an admin password:

1. Highlight the **Admin Password** option and press <Enter>.
2. Type your new admin password.

You can use up to 32 characters in your password.

As you press each character key (or the spacebar for a blank space), a placeholder appears in the field.

The password assignment is not case-sensitive. However, certain key combinations are not valid. If you enter one of these combinations, the system beeps. To erase a character when entering your password, press <Backspace> or the left-arrow key.

 **NOTE:** To escape from the field without assigning a system password, press <Enter> to move to another field, or press <Esc> at any time prior to completing step 5.

3. Press <Enter>.
4. To confirm your password, type it a second time and press <Enter>.

The setting shown for the **Admin Password** changes to **Set**.

5. Save and exit the System Setup program and begin using your system.

The next time you enter the System Setup program, the system prompts you for the admin password.

A change to the **Admin Password** option becomes effective immediately (restarting the system is not required). By entering the **System Password**, you can scroll through and view all the screens, but you cannot make changes to the settings for which a lock graphic is displayed in the upper right corner of the option window.

Operating With an Admin Password Set

If **Admin Password** is **Set**, you must enter the correct admin password before you can modify most of the System Setup options. When you start the System Setup program, the program prompts you to enter a password.

If you do not enter the correct password in three attempts, the system lets you view, but not modify, the System Setup screens—with the following exception: if **System Password** is not **Set** and is not locked through the **Password Changes** option, you can assign a system password (however, you cannot disable or change an existing system password).

 **NOTE:** You can use the **Password Changes** option in conjunction with the **Admin Password** option to protect the system password from unauthorized changes.

Deleting an Existing Admin Password

1. Enter the System Setup program.
2. Highlight the **Admin Password** option, and press <Enter> to access the admin password window.
3. Enter the old password, and press <Enter>.
4. Press <Enter> twice to enter a new blank password and to confirm the new blank password.
5. Press <Enter> again to continue.

The setting changes to **Not Set**.

6. If you want to assign a new admin password, perform the steps in "[Assigning an Admin Password](#)."

Changing an Existing Admin Password

1. Enter the System Setup program.
2. Highlight the **Admin Password** option, and press <Enter> to access the admin password window.
3. Enter the old password, and press <Enter>.
4. Enter a new password, and press <Enter>.
5. Enter the new password again to confirm the change, and press <Enter>.

6. Press <Enter> to continue.

The setting remains **Set**.

Disabling a Forgotten Password

See your *Installation and Troubleshooting Guide*.

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Glossary

Dell™ PowerEdge™ SC430 Systems User's Guide

This section defines or identifies technical terms, abbreviations, and acronyms used in your system documents.

A — Ampere(s).
AC — Alternating current.
ACPI — Advanced Configuration and Power Interface. A standard interface for enabling the operating system to direct configuration and power management.
ambient temperature — The temperature of the area or room where the system is located.
ANSI — American National Standards Institute. The primary organization for developing technology standards in the U.S.
application — Software designed to help you perform a specific task or series of tasks. Applications run from the operating system.
ASCII — American Standard Code for Information Interchange.
asset tag — An individual code assigned to a system, usually by an administrator, for security or tracking purposes.
backup — A copy of a program or data file. As a precaution, back up your system's hard drive on a regular basis. Before making a change to the configuration of your system, back up important start-up files from your operating system.
backup battery — A battery that maintains system configuration, date, and time information in a special section of memory when the system is turned off.
beep code — A diagnostic message in the form of a pattern of beeps from your system's speaker. For example, one beep, followed by a second beep, and then a burst of three beeps is beep code 1-1-3.
BIOS — Basic input/output system. Your system's BIOS contains programs stored on a flash memory chip. The BIOS controls the following: <ul style="list-style-type: none">1 Communications between the processor and peripheral devices1 Miscellaneous functions, such as system messages
bit — The smallest unit of information interpreted by your system.
blade — A module that contains a processor, memory, and a hard drive. The modules are mounted into a chassis that includes power supplies and fans.
BMC — Baseboard management controller.
boot routine — A program that clears all memory, initializes devices, and loads the operating system when you start your system. Unless the operating system fails to respond, you can reboot (also called <i>warm boot</i>) your system by pressing <Ctrl><Alt>. Otherwise, you must restart the system by pressing the reset button or by turning the system off and then back on.
bootable diskette — A diskette that is used to start your system if the system will not boot from the hard drive.
BTU — British thermal unit.
bus — An information pathway between the components of a system. Your system contains an expansion bus that allows the processor to communicate with controllers for the peripheral devices connected to the system. Your system also contains an address bus and a data bus for communications between the processor and RAM.
C — Celsius.
cache — A fast storage area that keeps a copy of data or instructions for quick data retrieval. When a program makes a request to a disk drive for data that is in the cache, the disk-cache utility can retrieve the data from RAM faster than from the disk drive.
CD — Compact disc. CD drives use optical technology to read data from CDs.
cm — Centimeter(s).
cmos — Complementary metal-oxide semiconductor.
component — As they relate to DMI, components include operating systems, computer systems, expansion cards, and peripherals that are compatible with DMI. Each component is made up of groups and attributes that are defined as relevant to that component.
COMn — The device names for the serial ports on your system.
control panel — The part of the system that contains indicators and controls, such as the power button and power indicator.
controller — A chip that controls the transfer of data between the processor and memory or between the processor and a peripheral.
conventional memory — The first 640 KB of RAM. Conventional memory is found in all systems. Unless they are specially designed, MS-DOS® programs are limited to running in conventional memory.
coprocessor — A chip that relieves the system's processor of specific processing tasks. A math coprocessor, for example, handles numeric processing.
CPU — Central processing unit. See <i>processor</i> .
DC — Direct current.
DDR — Double-data rate. A technology in memory modules that potentially doubles the output.
device driver — A program that allows the operating system or some other program to interface correctly with a peripheral. Some device drivers—such as network drivers—must be loaded from the config.sys file or as memory-resident programs (usually, from the autoexec.bat file). Others must load when you start the program for which they were designed.
DHCP — Dynamic Host Configuration Protocol. A method of automatically assigning an IP address to a client system.
diagnostics — A comprehensive set of tests for your system.
DIMM — Dual in-line memory module. See also <i>memory module</i> .
DIN — <i>Deutsche Industrie Norm</i> .
directory — Directories help keep related files organized on a disk in a hierarchical, "inverted tree" structure. Each disk has a "root" directory. Additional directories that branch off the root directory are called <i>subdirectories</i> . Subdirectories may contain additional directories branching off them.
DMA — Direct memory access. A DMA channel allows certain types of data transfer between RAM and a device to bypass the processor.
DMI — Desktop Management Interface. DMI enables the management of your system's software and hardware by collecting information about the system's components, such as the operating system, memory, peripherals, expansion cards, and asset tag.

DNS — Domain Name System. A method of translating Internet domain names, such as www.dell.com , into IP addresses, such as 143.166.83.200.
DRAM — Dynamic random-access memory. A system's RAM is usually made up entirely of DRAM chips.
DVD — Digital versatile disc.
ECC — Error checking and correction.
EEPROM — Electronically erasable programmable read-only memory.
EMC — Electromagnetic compatibility.
EMI — Electromagnetic interference.
ERA — Embedded remote access. ERA allows you to perform remote, or "out-of-band," server management on your network server using a remote access controller.
ESD — Electrostatic discharge.
ESM — Embedded server management.
expansion bus — Your system contains an expansion bus that allows the processor to communicate with controllers for peripherals, such as NICs.
expansion card — An add-in card, such as a NIC or SCSI adapter, that plugs into an expansion-card connector on the system board. An expansion card adds some specialized function to the system by providing an interface between the expansion bus and a peripheral.
expansion-card connector — A connector on the system board or riser board for plugging in an expansion card.
F — Fahrenheit.
FAT — File allocation table. The file system structure used by MS-DOS to organize and keep track of file storage. The Microsoft® Windows® operating systems can optionally use a FAT file system structure.
flash memory — A type of EEPROM chip that can be reprogrammed from a utility on diskette while still installed in a system; most EEPROM chips can only be rewritten with special programming equipment.
format — To prepare a hard drive or diskette for storing files. An unconditional format deletes all data stored on the disk.
FSB — Front-side bus. The FSB is the data path and physical interface between the processor and the main memory (RAM).
ft — Feet.
FTP — File transfer protocol.
g — Gram(s).
G — Gravities.
Gb — Gigabit(s); 1024 megabits or 1,073,741,824 bits.
GB — Gigabyte(s); 1024 megabytes or 1,073,741,824 bytes. However, when referring to hard-drive capacity, the term is usually rounded to 1,000,000,000 bytes.
graphics mode — A video mode that can be defined as x horizontal by y vertical pixels by z colors.
group — As it relates to DMI, a group is a data structure that defines common information, or attributes, about a manageable component.
guarding — A type of data redundancy in which a set of physical drives stores data and an additional drive stores parity data. See also <i>mirroring</i> , <i>striping</i> , and <i>RAID</i> .
h — Hexadecimal. A base-16 numbering system, often used in programming to identify addresses in the system's RAM and I/O memory addresses for devices. In text, hexadecimal numbers are often followed by <i>h</i> .
headless system — A system or device that functions without having a keyboard, mouse, or monitor attached. Normally, headless systems are managed over a network using an Internet browser.
host adapter — A host adapter implements communication between the system's bus and the controller for a peripheral device. (Hard-drive controller subsystems include integrated host adapter circuitry.) To add a SCSI expansion bus to your system, you must install or connect the appropriate host adapter.
Hz — Hertz.
I/O — Input/output. A keyboard is an input device, and a monitor is an output device. In general, I/O activity can be differentiated from computational activity.
ID — Identification.
IDE — Integrated drive electronics. A standard interface between the system board and storage devices.
integrated mirroring — Provides simultaneous physical mirroring of two drives. Integrated mirroring functionality is provided by the system's hardware. See also <i>mirroring</i> .
internal processor cache — An instruction and data cache built into the processor.
IP — Internet Protocol.
IPX — Internet package exchange.
IRQ — Interrupt request. A signal that data is about to be sent to or received by a peripheral device travels by an IRQ line to the processor. Each peripheral connection must be assigned an IRQ number. Two devices can share the same IRQ assignment, but you cannot operate both devices simultaneously.
jumper — Small blocks on a circuit board with two or more pins emerging from them. Plastic plugs containing a wire fit down over the pins. The wire connects the pins and creates a circuit, providing a simple and reversible method of changing the circuitry in a board.
K — Kilo-; 1000.
Kb — Kilobit(s); 1024 bits.
KB — Kilobyte(s); 1024 bytes.
Kbps — Kilobit(s) per second.
KBps — Kilobyte(s) per second.
key combination — A command requiring you to press multiple keys at the same time (for example, <Ctrl><Alt>).
kg — Kilogram(s); 1000 grams.
kHz — Kilohertz.
KMM — Keyboard/monitor/mouse.
KVM — Keyboard/video/mouse. KVM refers to a switch that allows selection of the system from which the video is displayed and for which the keyboard and mouse are used.

LAN — Local area network. A LAN is usually confined to the same building or a few nearby buildings, with all equipment linked by wiring dedicated specifically to the LAN.
lb — Pound(s).
LCD — Liquid crystal display.
LED — Light-emitting diode. An electronic device that lights up when a current is passed through it.
Linux — A version of the UNIX® operating system that runs on a variety of hardware systems. Linux is open source software, which is freely available; however, the full distribution of Linux along with technical support and training are available for a fee from vendors such as Red Hat Software.
local bus — On a system with local-bus expansion capability, certain peripheral devices (such as the video adapter circuitry) can be designed to run much faster than they would with a traditional expansion bus. See also <i>bus</i> .
LVD — Low voltage differential.
m — Meter(s).
mA — Milliampere(s).
MAC address — Media Access Control address. Your system's unique hardware number on a network.
mAh — Milliampere-hour(s).
Mb — Megabit(s); 1,048,576 bits.
MB — Megabyte(s); 1,048,576 bytes. However, when referring to hard-drive capacity, the term is often rounded to mean 1,000,000 bytes.
Mbps — Megabits per second.
MBps — Megabytes per second.
MBR — Master boot record.
memory address — A specific location, usually expressed as a hexadecimal number, in the system's RAM.
memory module — A small circuit board containing DRAM chips that connects to the system board.
memory — An area in your system that stores basic system data. A system can contain several different forms of memory, such as integrated memory (ROM and RAM) and add-in memory modules (DIMMs).
MHz — Megahertz.
mirroring — A type of data redundancy in which a set of physical drives stores data and one or more sets of additional drives stores duplicate copies of the data. Mirroring functionality is provided by software. See also <i>guarding</i> , <i>integrated mirroring</i> , <i>striping</i> , and <i>RAID</i> .
mm — Millimeter(s).
ms — Millisecond(s).
MS-DOS® — Microsoft Disk Operating System.
NAS — Network Attached Storage. NAS is one of the concepts used for implementing shared storage on a network. NAS systems have their own operating systems, integrated hardware, and software that are optimized to serve specific storage needs.
NIC — Network interface controller. A device that is installed or integrated in a system to allow connection to a network.
NMI — Nonmaskable interrupt. A device sends an NMI to signal the processor about hardware errors.
ns — Nanosecond(s).
NTFS — The NT File System option in the Windows 2000 operating system.
NVRAM — Nonvolatile random-access memory. Memory that does not lose its contents when you turn off your system. NVRAM is used for maintaining the date, time, and system configuration information.
parity — Redundant information that is associated with a block of data.
partition — You can divide a hard drive into multiple physical sections called <i>partitions</i> with the fdisk command. Each partition can contain multiple logical drives. You must format each logical drive with the format command.
PCI — Peripheral Component Interconnect. A standard for local-bus implementation.
PCIe — Peripheral Component Interconnect Express. A standard for local-bus implementation.
PDU — Power distribution unit. A power source with multiple power outlets that provides electrical power to servers and storage systems in a rack.
peripheral — An internal or external device, such as a diskette drive or keyboard, connected to a system.
PGA — Pin grid array. A type of processor socket that allows you to remove the processor chip.
pixel — A single point on a video display. Pixels are arranged in rows and columns to create an image. A video resolution, such as 640 x 480, is expressed as the number of pixels across by the number of pixels up and down.
POST — Power-on self-test. Before the operating system loads when you turn on your system, the POST tests various system components such as RAM and hard drives.
processor — The primary computational chip inside the system that controls the interpretation and execution of arithmetic and logic functions. Software written for one processor must usually be revised to run on another processor. <i>CPU</i> is a synonym for processor.
protected mode — An operating mode that allows operating systems to implement: <ul style="list-style-type: none"> 1 A memory address space of 16 MB to 4 GB 1 Multitasking 1 Virtual memory, a method for increasing addressable memory by using the hard drive
The Windows 2000 and UNIX 32-bit operating systems run in protected mode. MS-DOS cannot run in protected mode.
PS/2 — Personal System/2.
PXE — Preboot eXecution Environment. A way of booting a system via a LAN (without a hard drive or bootable diskette).
RAC — Remote access controller.
RAID — Redundant array of independent disks. A method of providing data redundancy. Some common implementations of RAID include RAID 0, RAID 1, RAID 5, RAID 10, and RAID 50. See also <i>guarding</i> , <i>mirroring</i> , and <i>striping</i> .
RAM — Random-access memory. The system's primary temporary storage area for program instructions and data. Any information stored in RAM is lost when you turn off your system.
RAS — Remote Access Service. This service allows users running the Windows operating system to remotely access a network from their system using a modem.

readme file — A text file, usually shipped with software or hardware, that contains information supplementing or updating the product's documentation.
read-only file — A read-only file is one that you are prohibited from editing or deleting.
ROM — Read-only memory. Your system contains some programs essential to its operation in ROM code. A ROM chip retains its contents even after you turn off your system. Examples of code in ROM include the program that initiates your system's boot routine and the POST.
ROMB — RAID on motherboard.
rpm — Revolutions per minute.
RTC — Real-time clock.
SATA — Serial Advanced Technology Attachment. A standard interface between the system board and storage devices.
SCSI — Small computer system interface. An I/O bus interface with faster data transmission rates than standard ports.
SDRAM — Synchronous dynamic random-access memory.
sec — Second(s).
serial port — An I/O port used most often to connect a modem to your system. You can usually identify a serial port on your system by its 9-pin connector.
service tag — A bar code label on the system used to identify it when you call Dell for technical support.
simple disk volume — The volume of free space on a single dynamic, physical disk.
SMART — Self-Monitoring Analysis and Reporting Technology. Allows hard drives to report errors and failures to the system BIOS and then display an error message on the screen.
SMP — Symmetric multiprocessing. Used to describe a system that has two or more processors connected via a high-bandwidth link and managed by an operating system, where each processor has equal access to I/O devices.
SNMP — Simple Network Management Protocol. A standard interface that allows a network manager to remotely monitor and manage workstations.
spanning — Spanning, or concatenating, disk volumes combines unallocated space from multiple disks into one logical volume, allowing more efficient use of all the space and all drive letters on a multiple-disk system.
striping — Disk striping writes data across three or more disks in an array, but only uses a portion of the space on each disk. The amount of space used by a "stripe" is the same on each disk used. A virtual disk may use several stripes on the same set of disks in an array. See also <i>guarding</i> , <i>mirroring</i> , and <i>RAID</i> .
SVGA — Super video graphics array. VGA and SVGA are video standards for video adapters with greater resolution and color display capabilities than previous standards.
system board — As the main circuit board, the system board usually contains most of your system's integral components, such as the processor, RAM, controllers for peripherals, and various ROM chips.
system configuration information — Data stored in memory that tells a system what hardware is installed and how the system should be configured for operation.
system diskette — See <i>bootable diskette</i> .
system memory — See <i>RAM</i> .
System Setup program — A BIOS-based program that allows you to configure your system's hardware and customize the system's operation by setting features such as password protection. Because the System Setup program is stored in NVRAM, any settings remain in effect until you change them again.
system.ini file — A start-up file for the Windows operating system. When you start Windows, it consults the system.ini file to determine a variety of options for the Windows operating environment. Among other things, the system.ini file records which video, mouse, and keyboard drivers are installed for Windows.
TCP/IP — Transmission Control Protocol/Internet Protocol.
termination — Some devices (such as the last device at each end of a SCSI cable) must be terminated to prevent reflections and spurious signals in the cable. When such devices are connected in a series, you may need to enable or disable the termination on these devices by changing jumper or switch settings on the devices or by changing settings in the configuration software for the devices.
UNIX — Universal Internet Exchange. UNIX, the precursor to Linux, is an operating system written in the C programming language.
uplink port — A port on a network hub or switch used to connect to other hubs or switches without requiring a crossover cable.
UPS — Uninterruptible power supply. A battery-powered unit that automatically supplies power to your system in the event of an electrical failure.
USB — Universal Serial Bus. A USB connector provides a single connection point for multiple USB-compliant devices, such as mice and keyboards. USB devices can be connected and disconnected while the system is running.
utility — A program used to manage system resources—memory, disk drives, or printers, for example.
UTP — Unshielded twisted pair. A type of wiring used to connect systems in a business or home to a telephone line.
V — Volt(s).
VAC — Volt(s) alternating current.
VDC — Volt(s) direct current.
VGA — Video graphics array. VGA and SVGA are video standards for video adapters with greater resolution and color display capabilities than previous standards.
video adapter — The logical circuitry that provides (in combination with the monitor) your system's video capabilities. A video adapter may be integrated into the system board or may be an expansion card that plugs into an expansion slot.
video driver — A program that allows graphics-mode application programs and operating systems to display at a chosen resolution with the desired number of colors. Video drivers may need to match the video adapter installed in the system.
video memory — Most VGA and SVGA video adapters include memory chips in addition to your system's RAM. The amount of video memory installed primarily influences the number of colors that a program can display (with the appropriate video drivers and monitor capabilities).
video resolution — Video resolution (800 x 600, for example) is expressed as the number of pixels across by the number of pixels up and down. To display a program at a specific graphics resolution, you must install the appropriate video drivers and your monitor must support the resolution.
W — Watt(s).
WH — Watt-hour(s).
win.ini file — A start-up file for the Windows operating system. When you start Windows, it consults the win.ini file to determine a variety of options for the Windows operating environment. The win.ini file also usually includes sections that contain optional settings for Windows application programs that are installed on the hard drive.
Windows 2000 — An integrated and complete Microsoft Windows operating system that does not require MS-DOS and that provides advanced operating system performance, improved ease of use, enhanced workgroup functionality, and simplified file management and browsing.
Windows Powered — A Windows operating system designed for use on NAS systems. For NAS systems, the Windows Powered operating system is dedicated to file service for network clients.

Windows Server 2003 — A set of Microsoft software technologies that enable software integration through the use of XML Web services. XML Web services are small reusable applications written in XML that allow data to be communicated between otherwise unconnected sources.

XML — Extensible Markup Language. XML is a way to create common information formats and to share both the format and the data on the World Wide Web, intranets, and elsewhere.

ZIF — Zero insertion force.

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