Dell™ PowerEdge™ 830 Systems User's Guide

Model MVT01

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.

Initial release: 25 Mar 2005

Technical Specifications
Dell™ PowerEdge™ 830 Systems User's Guide

Processor	
Processor type	One Intel® Celeron® processor, minimum clock speed of 2.53 GHz or One Intel Pentium® 4 processor, minimum clock speed of 2.8 GHz
Front-side bus speed	
Intel Celeron	533 MHz minimum
Intel Pentium 4	800 MHz minimum
Internal cache	
Intel Celeron	256 KB
Intel Pentium 4	at least 1 MB

Expansion Bus	
Bus type	PCI-X, PCI Express, PCI
Expansion slots	
PCI-X	Two full-height, full-length 3.3-V, 64-bit, 133-MHz
PCI Express	One 3.3-V, x1 One 3.3-V, x8
PCI	One 5-V, 32-bit, 33-MHz

Memory	
Architecture	72-bit ECC unbuffered DDR2 SDRAM DIMMs, rated for 533-MHz operation, single- or dual-channel
Memory module sockets	Four 240-pin
Memory module capacities	256 MB, 512 MB, 1 GB, or 2 GB
Minimum RAM	256 MB (one 256-MB module)
Maximum RAM	8 GB

Drives	
SATA	Up to four 1-inch-high (3.5-inch form factor) internal drives with the integrated drive controller; up to four with the optional SATA RAID controller card
SCSI	Up to four internal 1-inch-high (3.5-inch form factor) SCSI hard drives (hot-plug or non-hot-plug) with the optional SCSI or SCSI RAID controller card
Diskette drive	One optional 3.5-inch, 1.44-MB
Optical drive	CD, DVD, or combination CD-RW/DVD in a peripheral drive bay **NOTE:** DVD devices are data only.
Tape backup unit	Optional IDE or SCSI in a peripheral drive bay

Connectors	
Externally accessible	
Back	
NIC	One RJ-45 (for integrated 1-Gigabit NIC)
PS/2-style keyboard	6-pin mini-DIN

PS/2-compatible mouse	6-pin mini-DIN
Serial	9-pin, DTE, 16550-compatible
USB	Two 4-pin, USB 2.0 compliant
Video	15-pin VGA
Front	
USB	Two 4-pin, USB 2.0 compliant

Video	
Video type	Integrated XGI XG20 VGA controller
Video memory	16 MB

Power	
AC power supply (per power supply)	
Wattage	420 W
Voltage	100–240 VAC, 50/60 Hz
Heat dissipation	2275 BTU/hr maximum
Output hold up time	20 ms minimum
Maximum inrush current	Under typical line conditions and over the entire system ambient operating range, the inrush current may reach 55 A at 10 ms or less or 25 A at 150 ms or less.
Battery	
System battery	CR 2032 3.0-V lithium ion coin cell

Physical	
Height	43.9 cm (17.3 in.)
Width	19.8 cm (7.8 in.)
Depth	50.0 cm (19.7 in.)
Weight	19.1 kg (42 lb)

Environmental	
NOTE: For additional information about environmental measurements for specific system configurations, see **www.dell.com/environmental_datasheets**.	
Temperature	
Operating	10° to 35°C (50° to 95°F)
Storage	–40° to 65°C (–40° to 149°F)
Relative humidity	
Operating	20% to 80% (noncondensing)
Storage	5% to 95% (noncondensing)
Maximum vibration	
Operating	0.25 G (half-sine wave) at a sweep of 3 to 200 MHz for 15 minutes
Storage	0.5 G at 3–200 Hz for 15 min
Maximum shock	
Operating	Six consecutively executed shock pulses in the positive and negative x, y, and z axes (one pulse on each side of the system) of 36 G for up to 2.6 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 10,668 m (–50 to 35,000 ft)

System Overview
Dell™ PowerEdge™ 830 Systems User's Guide

- Front-Panel Features and Indicators
- Back-Panel Features and Indicators
- System Features
- Supported Operating Systems
- Power Protection Devices
- Other Information You May Need
- Obtaining Technical Assistance

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 and Indicators

Figure 1-1 shows the controls, indicators, and connectors located on the system's front panel.

Figure 1-1. Front-Panel Features and Indicators
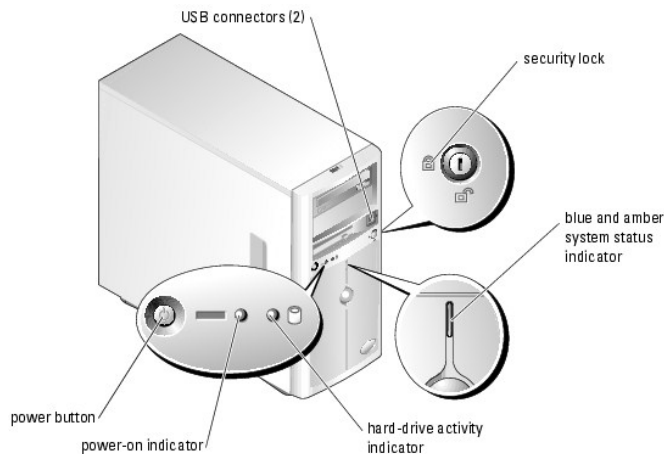

Table 1-1. Front-Panel Indicators, Buttons, and Connectors

Indicator, Button, or Connector	Icon	Description
Blue system status indicator		The blue system status indicator lights during normal system operation.
Amber system status indicator		The amber system status indicator flashes when the system needs attention due to a problem with power supplies, fans, system temperature, or hot-plug hard drives. **NOTE:** If the system is connected to AC power and an error has been detected, the amber system status indicator flashes regardless of whether the system has been powered on.
Power button, Power-on indicator	⏻	The power button turns system power off and on. **NOTICE:** If you turn off the system using the power button and the system is running an ACPI-compliant operating system, 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. If the system is not running an ACPI-compliant operating system, power is turned off immediately after the power button is pressed. The power button is enabled in the System Setup program. When disabled, the button can only turn the system power on. For more information, see "Using the System Setup Program" and the operating system's documentation. The power-on indicator lights or blinks to indicate the status of power to the system. The power-on indicator lights when the system is on. The indicator is off when the system is off and power is disconnected from the system. The indicator blinks when the system is on but in standby state, or when the system is off but is still connected to the power source. To exit from the standby state, briefly press the power button or click or move the mouse.

Hard-drive activity indicator		Flashes when data is being read from or written to the internal SATA hard drives that are connected to the integrated controller.
USB connectors		Connects USB 2.0-compliant devices to the system.

Back-Panel Features and Indicators

Figure 1-2 shows the controls and connectors located on the system's back panel. Figure 1-3 shows the NIC indicators on the back panel.
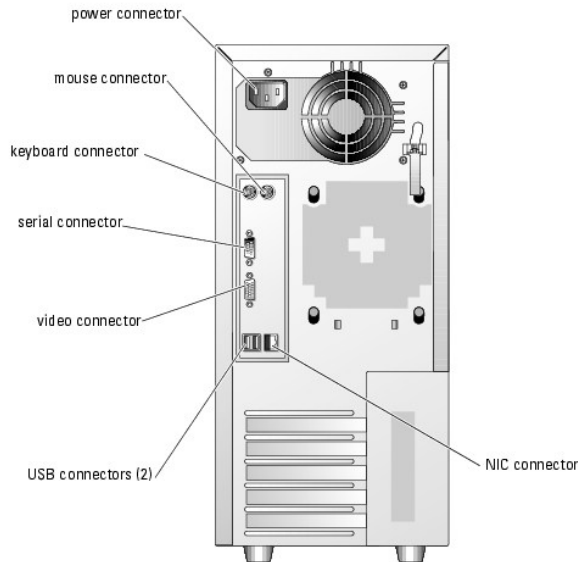
Figure 1-2. Back-Panel Features and Indicators
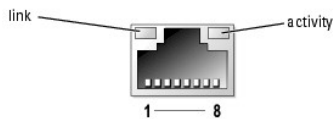

Figure 1-3. NIC Indicators

Table 1-2. NIC Indicators

Indicator	Normal Operation	Error Condition
Activity	Flashing amber indicates that network data is being sent or received.	When off at the same time that the link indicator is off, the NIC is not connected to the network.
Link	Steady green indicates that the NIC is connected to a valid link partner on the network.	When off at the same time that the activity indicator is off, the NIC is not connected to the network.

Connecting External Devices

When connecting external devices to your system, follow these guidelines:

- Most devices must be connected to a specific connector and device drivers must be installed before the device operates properly. (Device drivers are normally included with your operating system software or with the device itself.) See the documentation that accompanied the device for specific installation and configuration instructions.

- Always attach external devices while your system is turned off. Next, turn on any external devices before turning on the system (unless the documentation for the device specifies otherwise).

For information about individual connectors, see your *Installation and Troubleshooting Guide*. For information about enabling, disabling, and configuring I/O ports and connectors, see "Using the System Setup Program."

System Features

- One of the following processors:

    - Intel® Celeron® processor with an internal operating speed of at least 2.53 GHz, internal cache of 256 KB, and a front-side bus speed of at least 533 MHz.

    - Intel Pentium® 4 processor with an internal operating speed of at least 2.8 GHz, internal cache of at least 1 MB, and a front-side bus speed of at least 800 MHz.

    NOTE: Use the System Setup program to view processor information. See "Using the System Setup Program."

- A minimum of 256 MB of 533-MHz DDR 2 SDRAM memory, upgradable to a maximum of 8 GB by installing combinations of 256-MB, 512-MB, 1-GB, or 2-GB unbuffered ECC memory modules in the four memory module sockets on the system board.

- Support for the following internal hard-drive configurations:

    - Up to four internal, 1-inch-high, SATA hard drives with the integrated drive controller, or up to four SATA hard drives with the optional SATA RAID controller card.

        or

    - Up to four internal, 1-inch-high, hot-pluggable (optional) SCSI hard drives with a SCSI controller card or SCSI RAID controller card.

- One 3.5-inch peripheral drive bay for the diskette drive, and two 5.25-inch bays for any combination of the following supported drives: CD, DVD, combination CD-RW/DVD, or tape backup unit.

    NOTE: DVD devices are data only.

- Support for hardware RAID using an optional SATA or SCSI RAID controller card.

- Support for external storage systems using an optional RAID controller card.

- Optional remote access card for remote systems management.

- Chassis intrusion alarm and a bezel lock that prevents access to the hard drives.

The system board includes the following features:

- Single integrated drive controller that supports up to four SATA hard drives and one IDE CD, DVD, or CD-RW/DVD combination drive, and an IDE tape backup unit.

- Five PCI slots: one PCI Express x1 (3.3 V) slot, one PCI Express x8 (3.3 V) slot, two 64-bit, 133-MHz PCI-X (3.3 V) slots, and one 32-bit, 33-MHz PCI (5 V) slot.

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

- Four USB 2.0-compliant connectors (two on the front and two on the back) capable of supporting a diskette drive, a CD-ROM drive, a keyboard, a mouse, or a USB flash drive.

- An integrated XGI XG20 VGA video controller. This video subsystem has 16 MB of VRAM (nonupgradable). True-color graphics are supported in the following resolutions: 640 x 480, 800 x 600, 1024 x 768, 1280 x 1024, and 1600 x 1200.

- Systems management circuitry that monitors critical system voltages and fan speeds. The systems management circuitry works in conjunction with the systems management software.

- Standard baseboard management controller with serial access.

- Back-panel connectors include mouse, keyboard, serial, video, two USB connectors, and a NIC connector.

- Front-panel connectors include two USB connectors.

For more information about specific features, see "Technical Specifications."

The following software is included with your system:

- A System Setup program for quickly viewing and changing system configuration information. For more information on this program, see "Using the System Setup Program."

- Enhanced security features, including a system password and a setup password, available through the System Setup program.

- System diagnostics for evaluating system components and devices. For information about using the system diagnostics, see "Running the System Diagnostics" in your *Installation and Troubleshooting Guide.*

- Video drivers for displaying many popular application programs in high-resolution modes.

- SATA or SCSI device drivers that allow the operating system to communicate with devices attached to the integrated SATA or SCSI subsystem. For more information about these drivers, see "Installing Drives" in your *Installation and Troubleshooting Guide.*

- Systems management software and documentation CDs.

Supported Operating Systems

- Microsoft® Windows® 2000 Server, Standard Edition (Service Pack 4 or later)

- Microsoft Windows Server™ 2003 Standard Edition, and Small Business Server Standard Edition (Service Pack 1 or later)

- Microsoft Windows Server 2003, Standard x64 Edition

- Red Hat® Enterprise Linux ES (version 3)

- Red Hat Enterprise Linux ES (version 4) for Intel x86

- Red Hat Enterprise Linux ES (version 4) for Intel Extended Memory 64 Technology (Intel EM64T)

- Novell® NetWare® 6.5 (Service Pack 3 or later)

Power Protection Devices

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

- PDU — Uses circuit breakers to ensure that the AC current load does not exceed the PDU's rating.

- 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.

- 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.

- 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 shut down the system. Use surge protectors and PDUs with all universal power supplies, and ensure that the UPS is UL-safety approved.

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.

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

- The *Installation and Troubleshooting Guide* describes how to troubleshoot the system and install or replace system components.

- CDs included with your system provide documentation and tools for configuring and managing your system.

- Systems management software documentation describes the features, requirements, installation, and basic operation of the software.

- Operating system documentation describes how to install (if necessary), configure, and use the operating system software.

- Documentation for any components you purchased separately provides information to configure and install these options.

- 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.

- 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.

Using the System Setup Program

Dell™ PowerEdge™ 830 Systems User's Guide

- Entering the System Setup Program
- System Setup Options
- System and Setup Password Features
- Disabling a Forgotten Password
- Baseboard Management Controller Configuration

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:

- Change the system configuration stored in NVRAM after you add, change, or remove hardware
- Set or change user-selectable options—for example, the time or date
- Enable or disable integrated devices
- 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> = 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 or <Shift><Tab>	Moves to the previous field.
Down arrow or <Tab>	Moves to the next field.
Spacebar, <+>, <–>, left and right arrows	Cycles through the settings in a field. In some fields, you can also type the appropriate value.
<Esc>	Exits the System Setup program and restarts the system if any changes were made.
<F1>	Displays the System Setup program's help file.

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

System Setup Options

Main Screen

When you enter the System Setup program, the main System Setup program screen appears (see Figure 2-1).

Figure 2-1. Main System Setup Program Screen

[Table 2-2](#) lists the options and descriptions for the information fields that appear on the main System Setup program screen.

NOTE: The options for the System Setup program change based on the system configuration.

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

Table 2-2. System Setup Program Options

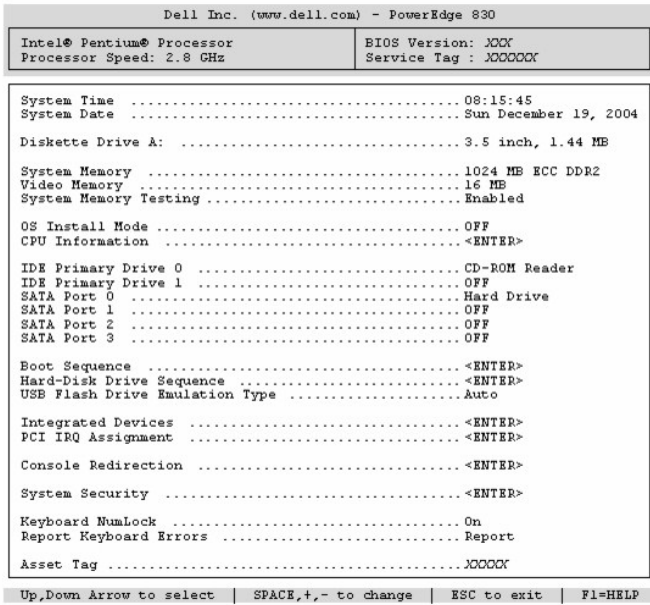| Option	Description
System Time	Resets the time on the system's internal clock.
System Date	Resets the date on the system's internal calendar.
Diskette Drive A:	Displays a screen that allows you to select the type of diskette drive for your system.
System Memory	Displays the amount of system memory. This option does not have user-selectable settings.
Video Memory	Displays the amount of video memory. This option does not have user-selectable settings.
System Memory Testing (**Enabled**)	Determines if memory is being tested during POST.
OS Install Mode (**Off** default)	Determines the maximum amount of memory available to the operating system. **On** sets the maximum memory to 256 MB. **Off** makes all of the system memory available to the operating system. Some operating systems cannot install with more than 2 GB of system memory. Enable this option (**On**) during operating system installation and disable (**Off**) after installation.
CPU Information	See "CPU Information Screen."
IDE Primary Drive 0 (**Auto**)	Enables (**Auto**) or disables (**Off**) the IDE device in **Drive 0** (optical drive).
IDE Primary Drive 1 (**Off**)	Enables (**Auto**) or disables (**Off**) the IDE device in **Drive 1** (tape backup unit).
SATA Port (**0 – 3**) (**Auto**)	Enables (**Auto**) or disables (**Off**) the SATA hard drive in **Port 0.**
Boot Sequence (**Diskette Drive**)	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 network.
Hard-Disk Drive Sequence	Determines the order in which the system searches the hard drives during system startup. The selections depend on the hard drives installed in your system.
USB Flash Drive Emulation Type (**Auto** default)	Determines the emulation type for a USB flash drive. **Hard disk** allows the USB flash drive to act as a hard drive. **Floppy** allows the USB flash drive to act as a removal diskette drive. **Auto** automatically chooses an emulation type.

Integrated Devices	See "Integrated Devices Screen."
PCI IRQ Assignment	Displays a screen to change the IRQ assigned to each of the integrated devices on the PCI bus, and any installed expansion cards that require an IRQ.
Console Redirection	See "Console Redirection Screen."
System Security	Displays a screen to configure the system password and setup password features. See "Using the System Password" and "Using the Setup Password" for more information.
Keyboard NumLock (**On** default)	Determines whether your system starts up with the NumLock mode activated on 101- or 102-key keyboards (does not apply to 84-key keyboards).
Report Keyboard Errors (**Report** default)	Enables or disables reporting of keyboard errors during the POST. Select **Report** for host systems that have keyboards attached. Select **Do Not Report** to suppress all error messages relating to the keyboard or keyboard controller during POST. This setting does not affect the operation of the keyboard itself if a keyboard is attached to the system.
Asset Tag	Displays the customer-programmable asset tag number for the system if an asset tag number has been assigned.

CPU Information Screen

Table 2-3 lists the options and descriptions for the information fields that appear on the **CPU Information** screen.

Table 2-3. CPU Information Screen

Option	Description
Bus Speed	Displays the bus speed of the processors.
Logical Processor (**Enabled** default)	Displays when the processors support Hyper-Threading technology. **Enabled** permits all logical processors to be used by the operating system. Only the first logical processor of each processor installed in the system is used by the operating system if **Disabled** is selected.
Demand-Based Power Management (**Disabled** default)	When set to **Enabled**, the CPU Performance State Tables are reported to the operating system. When set to **Disabled**, the Performance State Tables are not reported to the operating system. If the processor does not support Demand-Based Power Management, this field is read-only.
Processor 1 ID	Displays the family and model number of each processor.
Core Speed	Displays the clock speed of the processor(s).
Level 2 Cache	Displays the amount of cache memory for the processor.
64-bit Technology	Specifies if the installed processor supports Intel® 64-bit extensions.

Integrated Devices Screen

Table 2-4 lists the options and descriptions for the information fields that appear on the **Integrated Devices** screen.

Table 2-4. Integrated Devices Screen Options

Option	Description
Diskette Controller (**Auto** default)	Enables or disables the system's diskette drive controller. When **Auto** is selected, the system turns off the controller when necessary to accommodate a controller card installed in an expansion slot. You can also configure the drive as read-only. When using the read-only setting, the drive cannot be used to write to a disk.
IDE Controller (**Auto** default)	Enables the integrated IDE controller. When set to **Auto**, each channel of the integrated IDE controller is enabled if IDE devices are attached to the channel and the external IDE controller is not detected.
SATA Controller (**ATA** default)	Allows the integrated SATA controller to be set to **Off** or **ATA Mode**. **Off** disables the SATA subsystem. **ATA Mode** sets the SATA subsystem to **Native IDE** mode.
USB Controller (**On with BIOS support** default)	Enables or disables the system's USB ports. Options are **On with BIOS support**, **On without BIOS support**, or **Off**. Disabling the USB ports makes system resources available for other devices.
Embedded Gb NIC (**Enabled with PXE** default)	Enables or disables the system's integrated NIC. Options are **Enabled without PXE**, **Enabled with PXE**, and **Disabled**. PXE support allows the system to boot from the network. Changes take effect after the system reboots.
MAC Address	Displays the MAC address for the integrated 10/100/1000 NIC. This field does not have user-selectable settings.
Serial Port (**COM1** default)	**Serial Port 1** options are **COM1**, **COM3**, **BMC Serial**, **BMC NIC**, and **Off**. If an optional remote access controller (RAC) is installed in the system, **RAC** is an additional option. Serial port 1 shares three usage models. For standard usage, serial port 1 attempts to use COM1 first, and then COM3. For BMC usage, serial port 1 uses the COM1 address and communication can be either via the Serial port or the integrated shared NIC. RAC control uses only the COM1 address. NOTE: **Off** and **COM3** are not available options when Console Redirection is set to use Serial Port 1.
Speaker (**On** default)	Enables or disables the system internal speaker.

System Security Screen

Table 2-5 lists the options and descriptions for the information fields that appear on the **System Security** screen.

Table 2-5. System Security Screen Options

Option	Description
System Password	Displays the current status of your system's password security feature and allows you to assign and verify 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.
Setup Password	Restricts access to the System Setup program in the same way that you restrict access to your system using the system password feature. **NOTE:** See "Using the Setup Password" for instructions on assigning a setup password and using or changing an existing setup password.
Password Status	Setting the **Setup Password** option to **Enabled** prevents the system password from being changed or disabled at system start-up. To *lock* the system password, assign a setup password in the **Setup Password** option and then change the **Password Status** option to **Locked**. In this state, you cannot change the system password using the **System Password** option and cannot be disabled at system start up by pressing <Ctrl><Enter>. To *unlock* the system password, enter the setup password in the **Setup Password** field and then change the **Password Status** option to **Unlocked**. In this state, you can disable the system password at system start up by pressing <Ctrl><Enter> and then change the password using the **System Password** option.
Power Button (**Enabled** default)	Turns system's power off and on. l If you turn off the system using the power button and the system is running an ACPI-compliant operating system, the system can perform an orderly shutdown before power is turned off. l If the system is not running an ACPI-compliant operating system, power is turned off immediately after the power button is pressed. The button is enabled in the System Setup program. When disabled, the button can only turn on system power.
AC Power Recovery (**Last** default)	Determines how the system reacts when power is restored to the system. If system is set to **Last**, the system returns to the last power state. **On** turns on the system after power is restored. When set to **Off**, the system remains off after power is restored.

Console Redirection Screen

Table 2-6 lists the options and descriptions for the information fields that appear on the **Console Redirection** screen.

Table 2-6. Console Redirection Screen Options

Option	Description
Console Redirection (**Off** default)	Sets the console redirection feature to **Serial Port 1** or **Off**.
Failsafe Baud Rate (**11520** default)	Displays if the failsafe baud rate is used for console redirection.
Remote Terminal Type (**VT 100/VT 220** default)	Select either **VT 100/VT 220** or **ANSI**.
Redirection After Boot (**Enabled** default)	Enables or disables console redirection after your system restarts.

Exit Screen

After you press <Esc> to exit the System Setup program, the **Exit** screen displays the following options:

l Save Changes and Exit

l Discard Changes and Exit

l Return to Setup

System and Setup 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 or Changing 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 to **Enabled**, the system prompts you for the system password after the system starts.

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 **Enabled**. If the setting shown for the **Password Status** is **Unlocked**, you can change the system password. If the **Password Status** 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 Enabled** and the **Password Status** field is **Unlocked**. To assign a system password:

1. Verify that the **Password Status** 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 <Enter> to move to another field, or 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>.

   The setting shown for the **System Password** changes to **Enabled**. Exit the System Setup program and begin using your system.

6. Either reboot your system now for your password protection to take effect or continue working.

   NOTE: Password protection does not take effect until you reboot the system.

Using Your System Password to Secure Your System

NOTE: If you have assigned a setup password (see "Using the Setup Password"), the system accepts your setup password as an alternate system password.

When the **Password Status** option is set to **Unlocked**, you have the option to leave the password security enabled or to disable the password security.

To leave the password security enabled:

1. Turn on or reboot your system by pressing <Ctrl><Alt><Del>.

2. Type your password and press <Enter>.

To disable the password security:

1. Turn on or reboot your system by pressing <Ctrl><Alt><Del>.

2. Type your password and press <Ctrl><Enter>.

When the **Password Status** option is set to **Locked** whenever you turn on your system or reboot your system by pressing <Ctrl><Alt><Del>, 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 and will shut down. 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 Status** option in conjunction with the **System Password** and **Setup Password** options to further protect your system from unauthorized changes.

Deleting or Changing an Existing System Password

1. When prompted, press <Ctrl><Enter> to disable the existing system password.

   If you are asked to enter your setup password, contact your network administrator.

2. Enter the System Setup program by pressing <F2> during POST.

3. Select the **System Security** screen field to verify that the **Password Status** option is set to **Unlocked**.

4. When prompted, type the system password.

5. Confirm that **Not Enabled** is displayed for the **System Password** option.

   If **Not Enabled** is displayed for the **System Password** option, the system password has been deleted. If **Enabled** is displayed for the **System Password** option, press the <Alt><b> key combination to restart the system, and then repeat steps 2 through 5.

Using the Setup Password

Assigning a Setup Password

You can assign (or change) a setup password only when the **Setup Password** option is set to **Not Enabled**. To assign a setup password, highlight the **Setup Password** option and press the **<+>** or **<−>** key. The system prompts you to enter and verify the password. If a character is illegal for password use, the system beeps.

NOTE: The setup password can be the same as the system password. If the two passwords are different, the setup password can be used as an alternate system password. However, the system password cannot be used in place of the setup 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.

After you verify the password, the **Setup Password** setting changes to **Enabled**. The next time you enter the System Setup program, the system prompts you for the setup password.

A change to the **Setup Password** option becomes effective immediately (restarting the system is not required).

Operating With a Setup Password Enabled

If **Setup Password** is set to **Enabled**, you must enter the correct setup 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 to **Enabled** and is not locked through the **Password Status** option, you can assign a system password (however, you cannot disable or change an existing system password).

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

Deleting or Changing an Existing Setup Password

1. Enter the System Setup program and select the **System Security** option.

2. Highlight the **Setup Password** option, press <Enter> to access the setup password window, and press <Enter> twice to clear the existing setup password.

   The setting changes to **Not Enabled**.

3. If you want to assign a new setup password, perform the steps in "Assigning a Setup Password."

Disabling a Forgotten Password

See your *Installation and Troubleshooting Guide*.

Baseboard Management Controller Configuration

The Baseboard Managment Controller (BMC) enables configuring, monitoring, and recovery of systems remotely. BMC provides the following features:

l   Uses the system's serial port and integrated NIC

l   Fault logging and SNMP alerting

l   Access to system event log and sensor status

l   Control of system functions including power on and off

l   Support is independent of the system's power or operating state

l   Provides text console redirection for system setup, text-based utilities, and operating system consoles

NOTE: To remotely access the BMC through the integrated NIC, you must connect the network connection to integrated NIC1. See Figure 1-3.

For additional information on using BMC, see the documentation for the BMC and systems management applications.

Entering the BMC Setup Module

1. Turn on or restart your system.

2. Press <Ctrl-E> when prompted after POST.

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

BMC Setup Module Options

For information about the BMC Setup Module options and how to configure the emergency management port (EMP), see the *BMC User's Guide*.

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Glossary
Dell™ PowerEdge™ 830 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:
 	
  l Communications between the processor and peripheral devices
  l 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 *warm boot*) your system by pressing <Ctrl><Alt><Del>. 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.
COM*n* — 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 *processor*.
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 *memory module*.
DIN — *Deutsche Industrie Norm*.
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 *subdirectories*. 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 *mirroring*, *striping*, and *RAID*.

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 *h*.

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 *mirroring*.

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><Del>).

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 *bus*.
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 *guarding*, *integrated mirroring*, *striping*, and *RAID*.
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 *partitions* 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.
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. *CPU* is a synonym for processor.
protected mode — An operating mode that allows operating systems to implement: l A memory address space of 16 MB to 4 GB l Multitasking l 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 *guarding*, *mirroring*, and *striping*.
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.

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.

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 *guarding, mirroring,* and *RAID.*

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 *bootable diskette.*

system memory — See *RAM.*

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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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.**

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