Dell™ Vostro™ 430 Service Manual

Notes, Cautions, and Warnings

NOTE: A NOTE indicates important information that helps you make better use of your computer.

CAUTION: A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

If you purchased a Dell™ n Series computer, any references in this document to Microsoft® Windows® operating systems are not applicable.

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System Setup

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Overview

Use System Setup as follows:

- To change the system configuration information after you add, change, or remove any hardware in your computer
- To set or change a user-selectable option such as the user password
- To read the current amount of memory or set the type of hard drive installed

Before you use System Setup, it is recommended that you write down the System Setup screen information for future reference.

CAUTION: Unless you are an expert computer user, do not change the settings for this program. Certain changes can make your computer work incorrectly.

Entering System Setup

1. Turn on (or restart) your computer.
2. When the blue DELL™ logo is displayed, you must watch for the F2 prompt to appear.
3. Once this F2 prompt appears, press <F2> immediately.

NOTE: The F2 prompt indicates that the keyboard has initialized. This prompt can appear very quickly, so you must watch for it to display, and then press <F2>. If you press <F2> before you are prompted, this keystroke will be lost.

4. If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft® Windows® desktop. Then, shut down your computer and try again.

System Setup Options

NOTE: Depending on your computer and installed devices, the items listed in this section may not be present or may not appear exactly as listed.

System Information	
System Info	Displays the computer model name.
BIOS Info	Display the BIOS revision.
Service Tag	Displays the computer service tag.
Asset Tag	Displays the asset tag.
Processor Type	Displays the type of processor.
Processor Speed	Displays the speed of the processor.
Processor L2 cache	Displays the processor L2 cache size.
Memory Installed	Displays the total memory size.
Memory Available	Displays the memory available in the system.
Memory Speed	Displays the memory speed.
Memory Channel Mode	Displays the memory channel modes. ○ Single ○ Dual
Memory Technology	Displays the type of memory used in the computer.

Standard CMOS Features	
System Time	Sets the time on your computer.
System Date	Sets the date on your computer.

SATA-0–SATA-3	Displays the auto-detection status of SATA devices.
SATA Mode (Default: **AHCI**)	Determines the integrated SATA controller's operating mode. - **AHCI** - **ATA** - **RAID**
Halt On (Default: **All, But Keyboard**)	Selects the power-on-self-test (POST) errors at which the computer must stop. - **All Errors** - **All, But Keyboard**

Advanced BIOS Configuration	
CPU Information	Enables or disables the following features: - Intel® Virtualization Technology (VT) - Intel Hyper-threading - Intel SpeedStep™ - Execute Disable Bit - Intel Turbo Mode - Intel C-State tech The default setting is **Enabled**.
Quick Boot (Default: **Enabled**)	Enables or disables the normal POST messages.
Boot Up Num-Lock (Default: **Enabled**)	When **Enabled**, the <Num Lock> key automatically turns on when the computer boots.
Hard Disk Protection (Default: **Enabled**)	Enables or disables hard drive protection.

Boot Device Configuration	
Hard Disk Boot Priority	Sets the hard drive boot priority. The items displayed are dynamically updated according to the hard drives detected.
CD/DVD Drives	Sets the boot priority among the attached removable devices.
1st Boot Device through 3rd Boot Device	Sets the boot device sequence. Only the bootable devices that are connected to the computer are listed as options.
Boot Menu Security (Default: **Enabled**)	Password protects the Boot Menu if a supervisor password is set.

Advanced Chipset Features	
Initiate Graphics Adapter (Default: **PCIE/PCI**)	Sets the primary video controller when there are more than one video controllers in the computer. - **PCI/PCIE** - **PCIE/PCI**

Integrated Peripherals	
USB Controller (Default: **Enabled**)	Enables or disables the internal USB controller. No Boot enables the controller but disables the ability to boot from a USB device.
USB Storage Function (Default: **Enabled**)	Enables or disables support for USB mass storage devices.
Onboard Audio Controller (Default: **Enabled**)	Enables or disables the onboard audio controller.
Onboard LAN Controller (Default: **Enabled**)	Enables or disables the integrated network controller.
Onboard LAN Boot ROM	Enables or disables the boot ROM of the onboard network controller.

(Default: **Disabled**)	
Onboard Serial Port (Default: **Auto**)	Determines how the serial port operates. **Off** disables the port**. Auto**, the default setting, automatically configures a connector to a particular designation (**COM1** or **COM3**).

Power Management	
ACPI Suspend Type (Default: **S3**)	Sets the computer's suspend mode. The options are **S1**, a suspend state in which the computer is running in a low-power mode, and **S3**, a suspend state in which the power is reduced or turned off for many components, however, system memory remains active.
AC Recovery (Default: **Off**)	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.
Low Power Mode (Default: **Enabled**)	When **Low Power Mode** is **Enabled**, remote wakeup events will no longer power up the computer from **Hibernate** or **Off** via the onboard network controller.
Resume LAN (Default: **Enabled**)	Allows the computer to power up when a Network Interface Controller (NIC) or Remote Wakeup-capable modem receives a wake up signal.
Resume PS2 (Default: **Enabled**)	Allows the computer to wake up from an activity on a PS2 device.
Resume RTC (Default: **Disabled**)	Sets the auto power-on states to: - Auto Power On Date — Sets the start-up date. - Auto Power On Time — Sets the start-up time.

Boot Menu

The boot menu allows you to set a one-time boot sequence without entering the system setup. You can also use this procedure to run the diagnostics on your computer.

To enter system setup using the Boot Menu:

1. Turn on (or restart) your computer.
2. When the Dell™ logo appears, press <F12> immediately.
3. Highlight the option to enter the System Setup and then press <Enter>

NOTE: Making changes in the boot menu does not make any changes to the boot order stored in the System Setup program.

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Diagnostics

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Dell Diagnostics

When to Use the Dell Diagnostics

It is recommended that you print these procedures before you begin.

NOTE: The Dell Diagnostics software works only on Dell™ computers.

NOTE: The *Drivers and Utilities* media is optional and may not ship with your computer.

Enter System Setup (see Entering System Setup), review your computer's configuration information, and ensure that the device you want to test displays in System Setup and is active.

Start the Dell Diagnostics from either your hard drive or from the *Drivers and Utilities* media.

Starting the Dell Diagnostics From Your Hard Drive

1. Turn on (or restart) your computer.
2. When the DELL logo appears, press <F12> immediately.

NOTE: If you see a message stating that no diagnostics utility partition has been found, run the Dell Diagnostics from your *Drivers and Utilities* media.

If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft® Windows® desktop. Then shut down your computer and try again.

3. When the boot device list appears, highlight **Boot to Utility Partition** and press <Enter>.
4. When the Dell Diagnostics **Main Menu** appears, select the test that you want to run.

Starting the Dell Diagnostics From the Drivers and Utilities Media

1. Insert the *Drivers and Utilities* media.
2. Shut down and restart the computer.

   When the DELL logo appears, press <F12> immediately.

   If you wait too long and the Windows logo appears, continue to wait until you see the Windows desktop. Then shut down your computer and try again.

NOTE: The next steps change the boot sequence for one time only. On the next startup, the computer boots according to the devices specified in the system setup program.

3. When the boot device list appears, highlight **Onboard or USB CD-ROM Drive** and press <Enter>.
4. Select the **Boot from CD-ROM** option from the menu that appears and press <Enter>.
5. Type 1 to start the menu and press <Enter> to proceed.
6. Select **Run the 32 Bit Dell Diagnostics** from the numbered list. If multiple versions are listed, select the version appropriate for your computer.
7. When the Dell Diagnostics **Main Menu** appears, select the test you want to run.

Dell Diagnostics Main Menu

1. After the Dell Diagnostics loads and the **Main Menu** screen appears, click the button for the option you want.

Option	Function
Express Test	Performs a quick test of devices. This test typically takes 10 to 20 minutes and requires no interaction on your part. Run **Express Test** first to increase the possibility of tracing the problem quickly.
Extended Test	Performs a thorough check of devices. This test typically takes 1 hour or more and requires you to answer questions periodically.
Custom Test	Tests a specific device. You can customize the tests you want to run.
Symptom Tree	Lists the most common symptoms encountered and allows you to select a test based on the symptom of the problem you are having.

2. If a problem is encountered during a test, a message appears with an error code and a description of the problem. Write down the error code and problem description and follow the instructions on the screen.

3. If you run a test from the **Custom Test** or **Symptom Tree** option, click the applicable tab described in the following table for more information.

Tab	Function
Results	Displays the results of the test and any error conditions encountered.
Errors	Displays error conditions encountered, error codes, and the problem description.
Help	Describes the test and may indicate requirements for running the test.
Configuration	Displays your hardware configuration for the selected device. The Dell Diagnostics obtains configuration information for all devices from system setup, memory, and various internal tests, and it displays the information in the device list in the left pane of the screen. The device list may not display the names of all the components installed on your computer or all devices attached to your computer.
Parameters	Allows you to customize the test by changing the test settings.

4. When the tests are completed, if you are running the Dell Diagnostics from the *Drivers and Utilities* disc, remove the disc.

5. Close the test screen to return to the **Main Menu** screen. To exit the Dell Diagnostics and restart the computer, close the **Main Menu** screen.

Power Button Light Codes

The diagnostic lights give much more information about the system state, but legacy power light states are also supported in your computer. The power light states are shown in following table.

Power Light State	Description
Off 	Power is off, light is blank.
Blinking Amber 	Initial state of light at power up. Indicates system has power, but the POWER_GOOD signal is not yet active. If the **Hard Drive light is off**, it is probable that the power supply needs to be replaced. If the **Hard Drive light on**, it is probable that an onboard regulator or VRM has failed. Look at the diagnostic lights for further information.
Solid Amber 	Second state of the light at power up. Indicates the POWER_GOOD signal is active and it is probable that the power supply is fine. Look at the diagnostic lights for further information.
Blinking Green 	System is in a low power state, either S1 or S3. Look at the diagnostic lights to determine which state the system is in.
Solid Green 	System is in S0 state, the normal power state of a functioning machine. The BIOS will turn the light to this state to indicate it has started fetching opcodes.

Beep Codes

If the monitor cannot display error messages during the POST, the computer may emit a series of beeps that identifies the problem or that can help you identify a faulty component or assembly. The following table lists the beep codes that may be generated during the POST. Most beep codes indicate a fatal error that prevents the computer from completing the boot routine until the indicated condition is corrected.

Beep Code	Description	Possible Solution
1	BIOS checksum failure.	Possible system board failure. Contact Dell.
2	No memory modules are detected	1. If you have two or more memory modules installed, remove the modules, reinstall one module, and then restart the computer. If the computer starts normally, reinstall an additional module. Continue until you have identified a faulty module or reinstalled all modules without error. 2. If available, install good memory of the same type into your computer. 3. If the problem persists, contact Dell.
3	Possible system board failure	Contact Dell.
4	RAM Read/Write failure	1. Ensure that no special memory module/memory connector placement requirements exist. 2. Verify that the memory modules that you are installing are compatible with your computer. 3. If the problem persists, contact Dell.
5	Real-time clock failure. Possible battery failure or system board failure.	1. Replace the battery. 2. If the problem persists, contact Dell.
6	Video BIOS Test Failure	Contact Dell.
7	CPU-cache test failure	Contact Dell.

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Removing and Replacing Parts

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Passwords

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WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

Your computer provides the following password features in System Setup to help secure your computer:

- Supervisor Password
- User Password

Supervisor Password

The supervisor password is a systems level password that controls access to the system setup program.

NOTE: If you assign and forget the supervisor password the password can only be removed using the PSWD jumper on the system board. For more information see, Clearing Forgotten Passwords.

Assigning a Supervisor Password

1. Enter System Setup.
2. Select **Set Supervisor Password** and press <Enter>.
3. Enter a password and press <Enter>.
4. To confirm the password, enter the password again and press <Enter>.

User Password

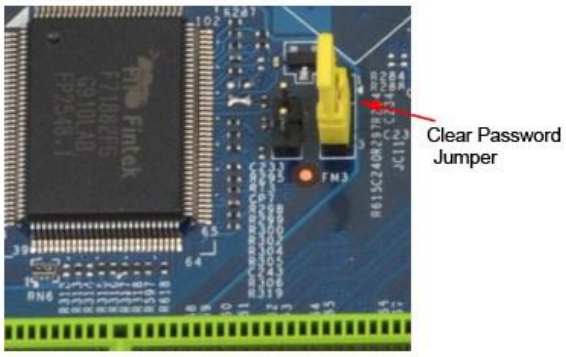
The user password is for users who only need to boot to an operating system on the computer. After you assign a user password, the computer prompts you for the user password during the boot process. If security is a concern, you should operate your computer with user password protection.

Assigning a User Password

NOTE: The user password is visible or accessible in System Setup only if a supervisor password has been set.

1. Enter System Setup.
2. Assign a Supervisor Password.
3. Select **Set User Password** and press <Enter>.
4. Enter a password at the prompt and press <Enter>.
5. To confirm the password, enter the password again and press <Enter>.

Clearing Forgotten Passwords



1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the Cover.
3. Locate the 3-pin password connector (PSWD) on the system board.
4. Remove the 2-pin jumper plug from pins 2 and 3 and place it on pins 1 and 2.
5. Wait for approximately five seconds to clear the password.
6. Remove the 2-pin jumper plug from pins 1 and 2 and replace it on pins 2 and 3 to enable the password feature.
7. Replace the Cover.

Clearing CMOS Settings

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the Cover.
3. Locate the 3-pin CMOS jumper (CLEAR CMOS) on the system board.
4. Remove the jumper plug from the CMOS jumper (CLEAR CMOS) pins 2 and 3.
5. Place the jumper plug on the CMOS jumper (CLEAR CMOS) pins 1 and 2 and wait approximately five seconds.
6. Remove the jumper plug and replace it on the CMOS jumper (CLEAR CMOS) pins 2 and 3.
7. Replace the Cover.

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Technical Specifications

NOTE: Offerings may vary by region. For more information regarding the configuration of your computer, click Start→ Help and Support and select the option to view information about your computer.

Processor	
Type	Intel® Core™ i3/i5/i7 series
Level 3 (L3) cache	8 MB

Memory	
Type	DDR3 SDRAM (non-ECC memory only)
Speed	1066 MHz, 1333 MHz
Connectors	four
Capacity	1 GB, 2 GB, or 4 GB
Minimum memory	1 GB
Maximum memory	16 GB

Video	
Discrete	PCI Express x16 graphics card: • ATI Radeon™ HD 4350 — 512 MB DDR2 • NVIDIA GT310 — 512 MB DDR2 • NVIDIA GT 220 — 1024 MB DDR3 • NVIDIA GTS 240 — 1024MB DDR3
Integrated	integrated on Intel Core i3/i5 series processors (Intel H57 Express Chipset only) **NOTE:** Intel Core i5-750/750S, Intel Core i7 860/860S/870/880/920/940/950/965/975 processor types do NOT support integrated video.
Memory	512 MB, 1024 MB

Audio	
Integrated	5.1 channel High Definition audio
Discrete	Creative PCI Express Sound Blaster X-Fi Xtreme

Network	
Integrated	Broadcom integrated network interface card capable of 10/100/1000 mb/s communication

System Information	
Chipset	Intel P55 Express Chipset
DMA channels	eight
Interrupt levels	24
BIOS chip (NVRAM)	16 Mb (2 MB)

Expansion Bus	
Bus type	PCI 2.3 PCI Express 2.0 SATA 1.0A and 2.0

	USB 2.0
Bus speed	PCI: 133 MB/s PCI Express: • x1-slot bidirectional speed — 500 MB/s • x16-slot bidirectional speed — 8 GB/s SATA: 1.5 Gb/s and 3.0 Gb/s USB: 480 Mb/s

Cards	
PCI	two full height cards
PCI Express x1	one full height card
PCI Express x16	one full height card

Drives	
Externally accessible:	
5.25-inch drive bays	two bays for SATA DVD-ROM / DVD+/−RW / CDRW / Blu-Ray Disc™ drive
3.5-inch drive bay	19-in-1 Media Card reader
Internally accessible:	
3.5-inch drive bays	two bays for hard drives

External Connectors	
Audio:	
back panel	three connectors for line-in, line-out, and microphone
front panel	two connectors for microphone and headphone
Network adapter	one RJ45 connector
Serial	one 9-pin connector; 16550C compatible
USB:	
front panel	four
back panel	six
Video	15-pin VGA connector 28-pin DVI-I connector 19-pin HDMI connector 4-pin S-Video connector **NOTE:** Available video connectors may vary based on the graphics card selected.

Systemboard Connectors	
PCI 2.3:	
connectors	two 120-pin connectors
data width (maximum)	32 bits
PCI Express x1:	
connectors	one 36-pin connector
data width (maximum)	one PCI-Express lane
PCI Express x16:	
connectors	one 164-pin connector
data width (maximum)	16 PCI-Express lanes
Serial ATA	four 7-pin connectors
Memory	four 240-pin connectors
Internal USB device	one 10-pin connector (supports two USB ports)
Processor fan	one 4-pin connector
System fan	one 3-pin connector
Front panel control	one 9-pin connector
Front panel audio	one 10-pin connector
SPDIF audio	one 6-pin connector
Processor	one LGA1156 connector
Power 12V	one 4-pin connector
Power	one 24-pin connector

Controls and Lights	
Front of the computer:	
Power button	push button
Power light	off — system is either turned off or is not receiving power blue — system is fully functional and in the On state. Blinking blue indicates sleep state of the computer. amber — solid amber light when the computer does not start indicates a problem with the system board or power supply. Blinking amber light indicates a problem with one of the devices in the system.
Drive access light	displays the SATA hard drive or CD/DVD activity. blue light — blinking blue light indicates that the computer is reading data from or writing data to the drive(s).
Back of the computer:	
Link integrity light on integrated network adapter	off — system is off or is not detecting a physical connection to the network. green — A 10 or 100 mb/s connection exists between the network and the computer. orange — A 1000 mb/s connection exists between the network and the computer.
Network activity light on integrated network adapter	yellow light — A blinking yellow light indicates that network activity is present.
Power supply diagnostic light	green — A green light indicates that the 5 V standby power is OK.

Power	
DC power supply:	
Wattage	350 W non-EPA
Maximum heat dissipation (MHD)	1837 BTU/hr
Voltage	100–127 V/200–240 V, 50–60 Hz, 10/5 A
Coin-cell battery	3 V CR2032 lithium coin cell
NOTE: Heat dissipation is calculated by using the power supply wattage rating. **NOTE:** See the safety information that shipped with your computer for important voltage setting information.	

Physical	
Height	370.40 mm (14.58 inches)
Width	170.00 mm (6.69 inches)
Depth	442.75 mm (17.43 inches)
Weight	8.1 kg–10.65 kg (17.86 lb–23.48 lb)

Environmental	
Temperature:	
Operating	10 °C to 35 °C (50 °F to 95 °F)
Storage	–40 °C to 65 °C (–40 °F to 149 °F)
Relative humidity (noncondensing)	operating: 20% to 80% (maximum wet bulb temperature: 29 °C) storage: 5% to 95% (maximum wet bulb temperature: 38 °C)
Maximum vibration:	
Operating	5 Hz–350 Hz at 0.0002 G2/Hz
Storage	5 Hz–500 Hz at 0.001 to 0.01 G2/Hz
Maximum shock:	
Operating	40 G +/– 5% with pulse duration of 2 msec +/– 10% (equivalent to 20 in/sec [51 cm/sec])
Storage	105 G +/– 5% with pulse duration of 2 msec +/– 10% (equivalent to 50 in/sec [127 cm/sec])
Altitude:	

Operating	−15.2 m to 3048 m (−50 ft to 10,000 ft)
Storage	−15.2 m to 10,668 m (−50 ft to 35,000 ft)
Airborne contaminant level	G2 or lower as defined by ISA-S71.04-1985

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Chassis Fan

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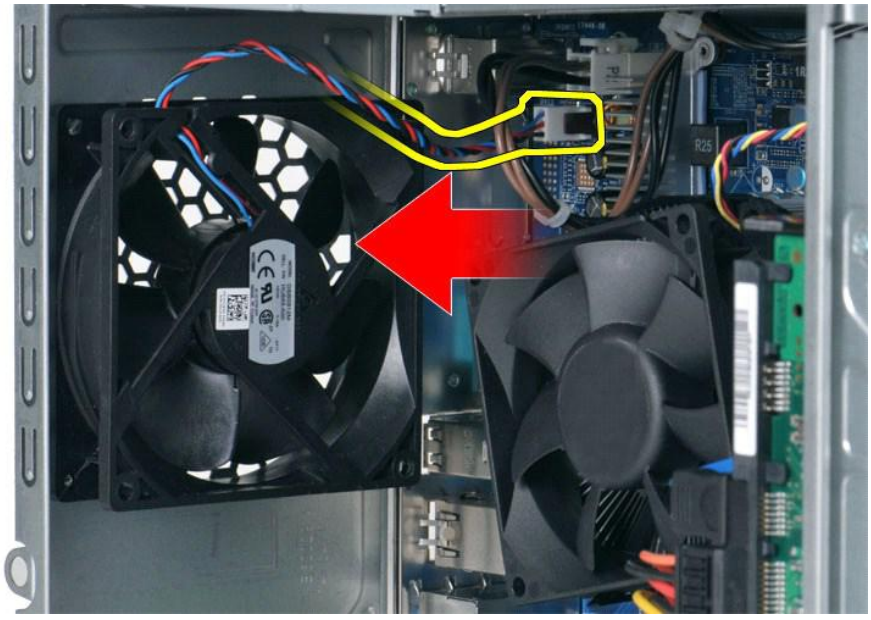
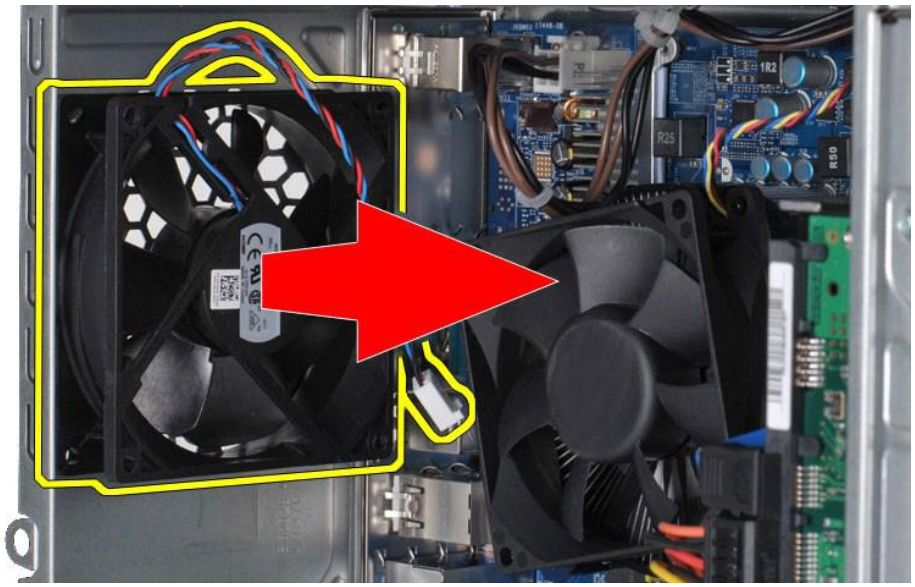
Removing the Chassis Fan

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the Cover.
3. Disconnect the fan cable from the system board.



4. While holding the chassis fan in place, remove the two screws that secure the fan to the chassis.

5. Ease the fan towards the center of the computer, and lift the fan out of the chassis.



Replacing the Chassis Fan

To replace the chassis fan, perform the above step in reverse order.

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Coin-Cell Battery

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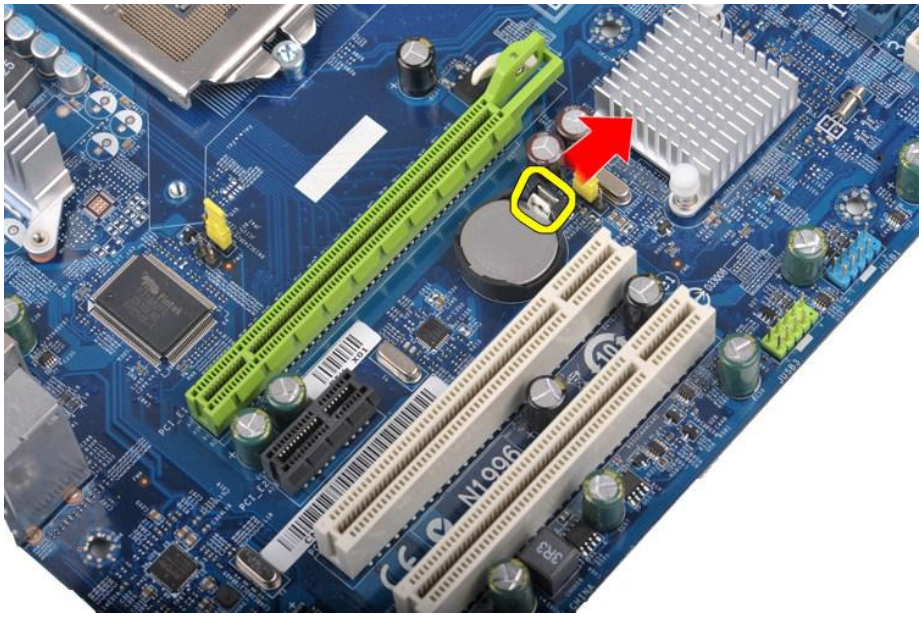
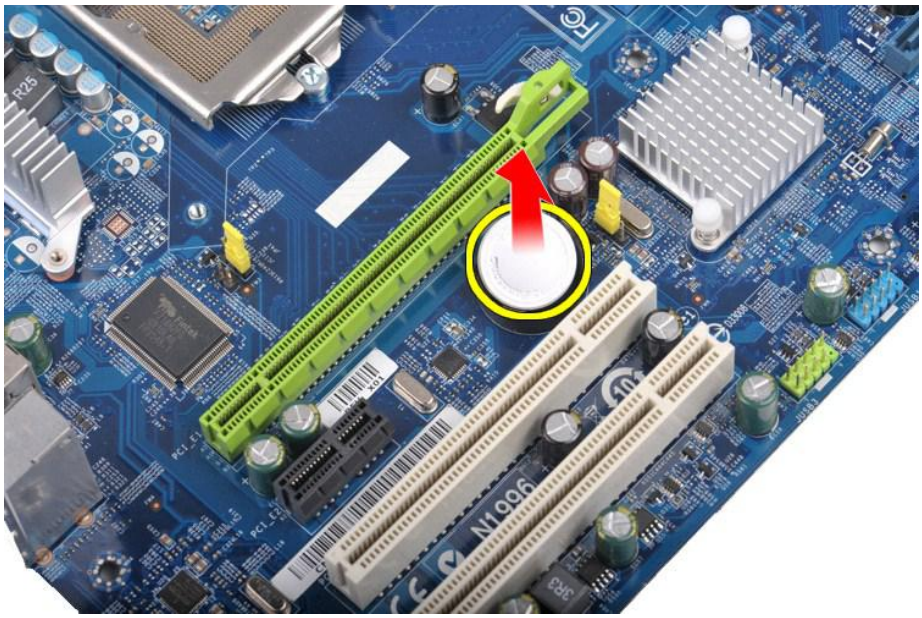
Removing the Coin-Cell Battery

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the Cover.
3. Gently press the release latch away from the battery.



4. Lift the coin-cell battery out of the computer.



Replacing the Coin-Cell Battery

To replace the coin-cell battery, perform the above steps in reverse order.

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Front Panel

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Removing the Front Panel

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the Cover.
3. Gently lift the clips that secure the front panel to the chassis.

4. Rotate the front panel away from the computer.

Replacing the Front Panel

To replace the front panel, perform the above steps in reverse order.

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Front I/O Panel

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Removing the Front I/O Panel

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the Cover.
3. Remove the Front Panel.
4. Disconnect the three front I/O cables from the system board.

5. Remove the cables from the guides along the inside of the chassis.
6. Using a Phillips head screwdriver, remove the screw that secures the front I/O panel to the chassis.

CAUTION: Remove the cables carefully from the cable guides and cable routing clip(s) to prevent damaging the cables and cable routing clip(s).

7. Move the front I/O panel away from the computer as you guide the cables through the cable guides on the chassis.

Replacing the Front I/O Panel

To replace the front I/O panel, perform the above steps in reverse order.

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Hard Drive

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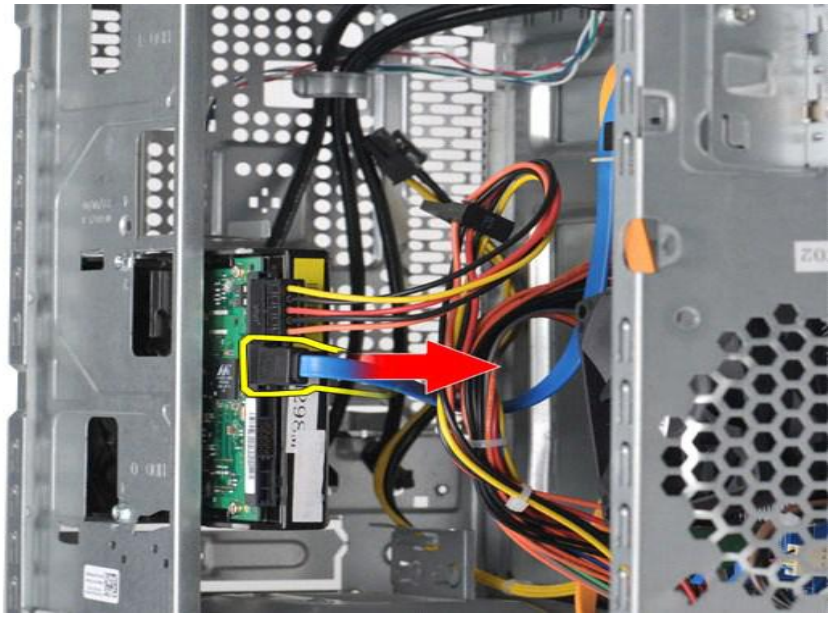
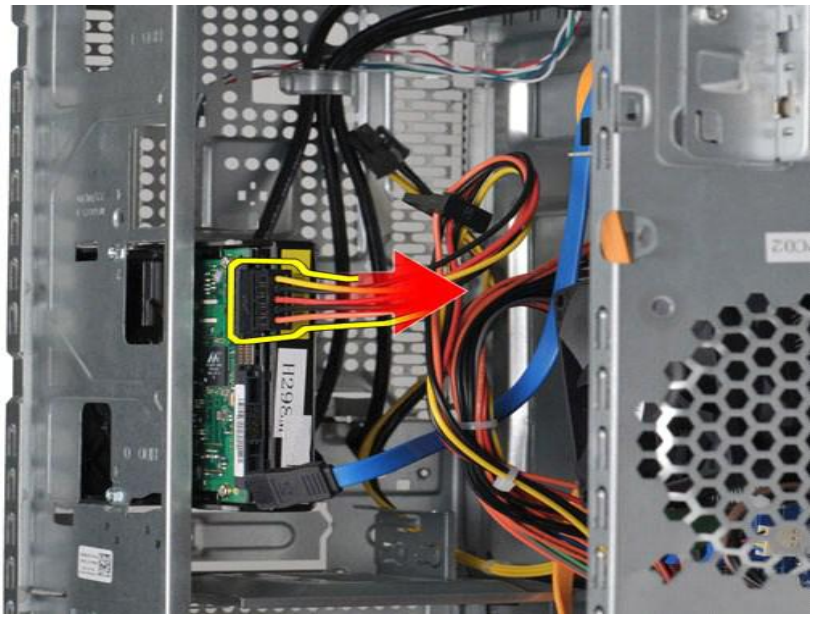
Removing the Hard Drive

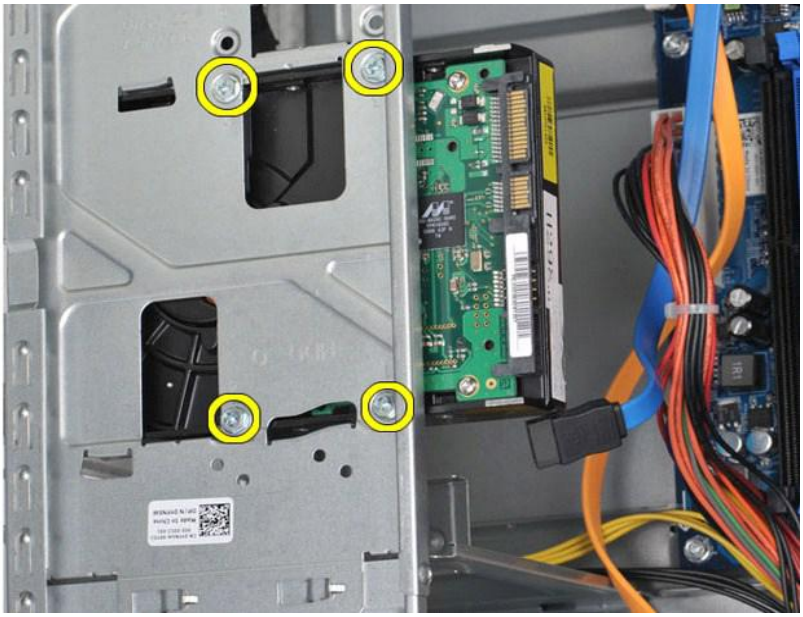
1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the Cover.
3. Disconnect the data cable from the back of the hard drive.



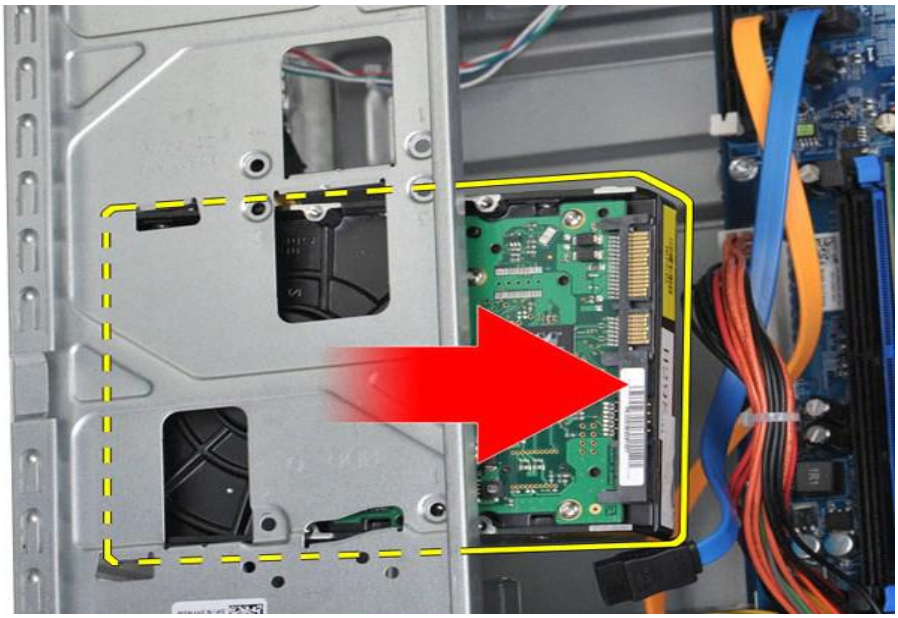
4. Disconnect the power cable from the back of the hard drive.



5. Using a Phillips head screwdriver, remove the four screws that secure the hard drive to the drive cage.



6. Slide the hard drive towards the back of the computer to remove the hard drive from the hard-drive bay.



Replacing the Hard Drive

To replace the hard drive, perform the above steps in reverse order.

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Processor Heat Sink and Fan Assembly

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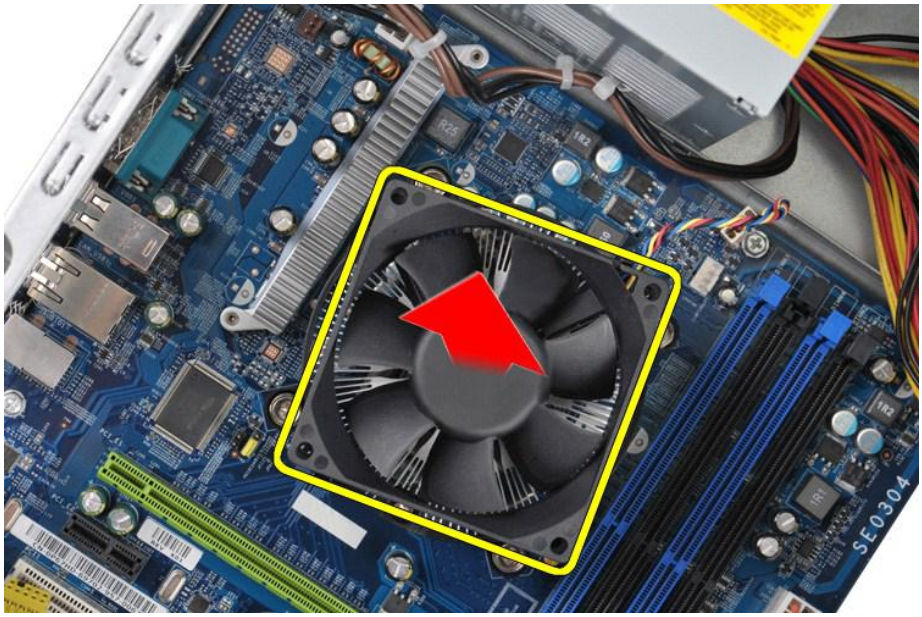
WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

Removing the Processor Heat Sink and Fan Assembly

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the Cover.
3. Disconnect the processor heat sink and fan assembly cable from the system board.

4. Using a Phillips head screwdriver, loosen the four captive screws that secure the processor heat sink and fan assembly to the system board.

5. Lift the heat-sink and fan assembly from the computer, then place the assembly aside with the thermal grease facing upward.



Replacing the Processor Heat Sink and Fan Assembly

To replace the processor heat sink and fan assembly, perform the above steps in reverse order.

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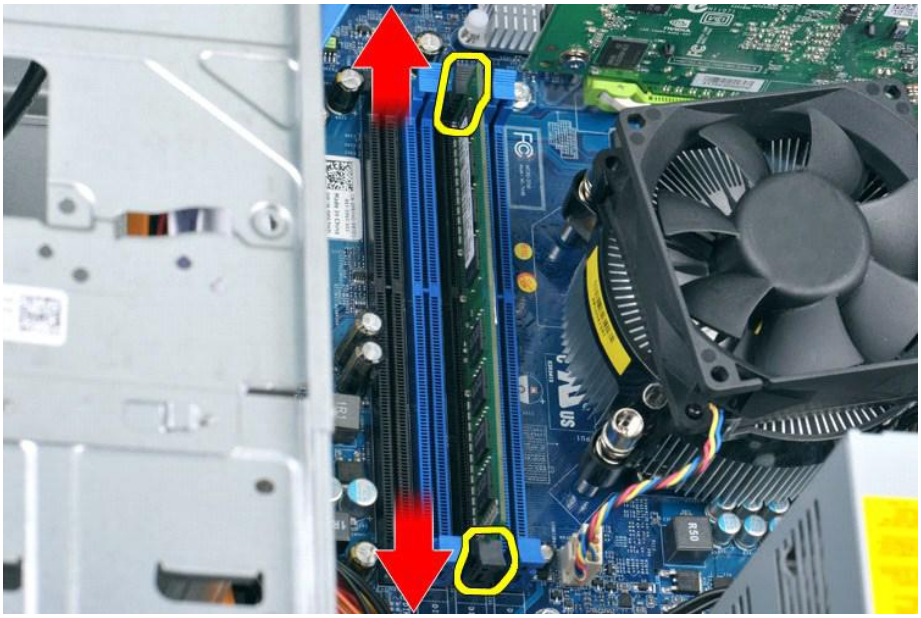
Memory

Dell™ Vostro™ 430 Service Manual

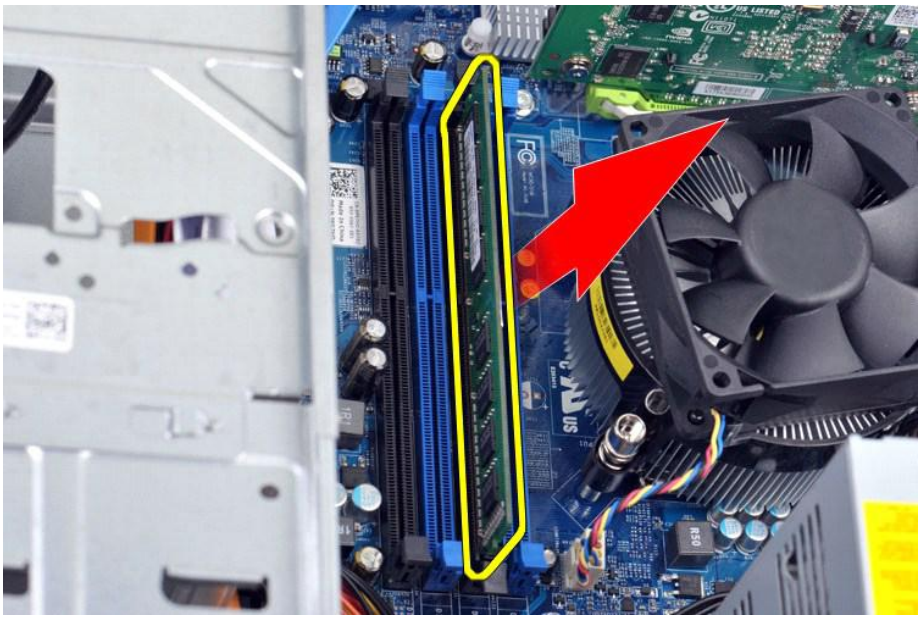
WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

Removing Memory

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the Cover.
3. Press the securing clips at each end of the memory module connector.



4. Grasp the module and pull it upwards.



Replacing Memory

CAUTION: To avoid electrostatic discharge and damage to internal components, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer chassis before you install the memory module.

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the Cover.
3. Press out the securing clip on each end of the memory module connector.
4. Align the notch at the bottom of the module with the crossbar in the connector.
5. Insert the module in the connector until the module snaps into place.
6. Replace the Cover.

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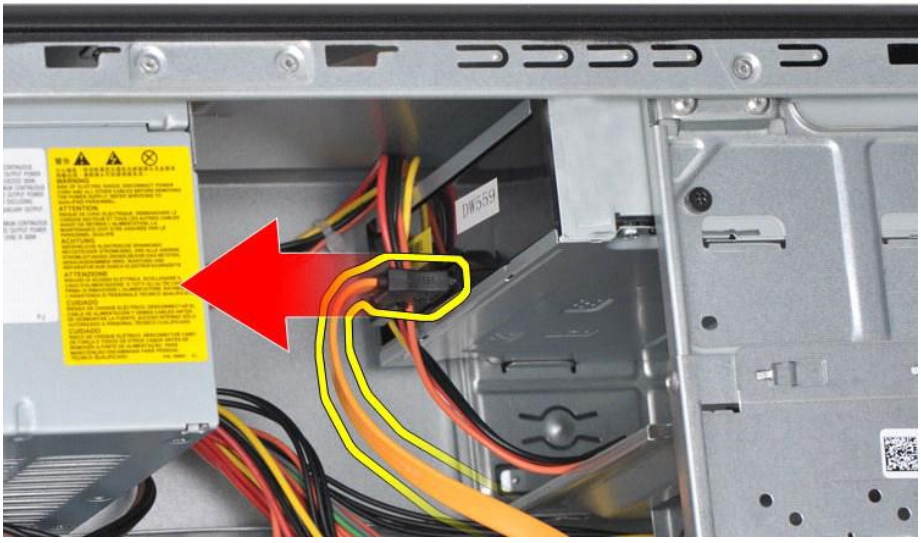
Optical Drive

Dell™ Vostro™ 430 Service Manual

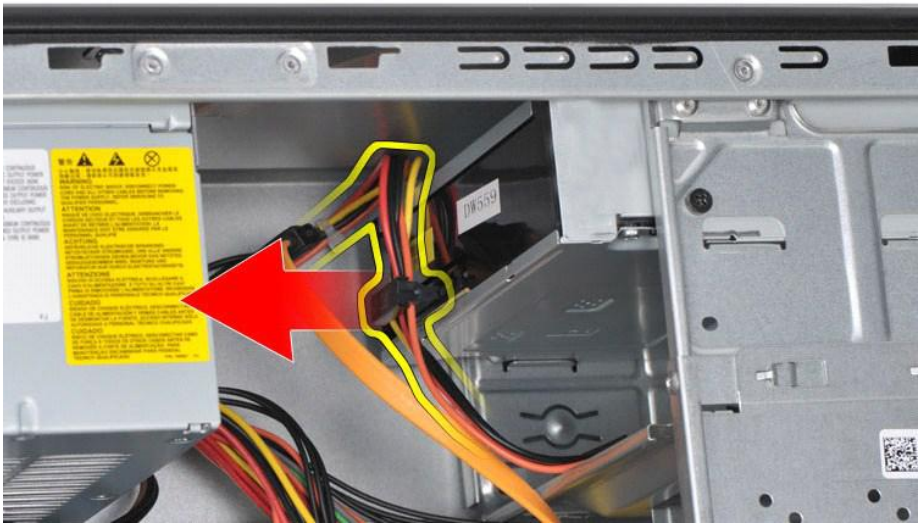
WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

Removing the Optical Drive

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the Cover.
3. Remove the Front Panel.
4. Disconnect the data cable from the back of the optical drive.

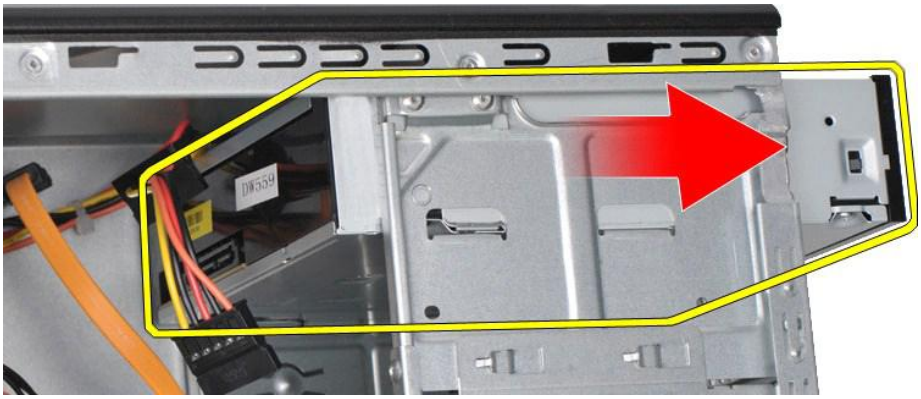


5. Disconnect the power cable from the back of the optical drive.



6. Using a Phillips head screwdriver, remove the two screws that secure the optical drive to the drive cage.

7. Slide the optical drive out from the front of the computer.



Replacing the Optical Drive

To replace the optical drive, perform the above steps in reverse order.

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Power-Button Assembly

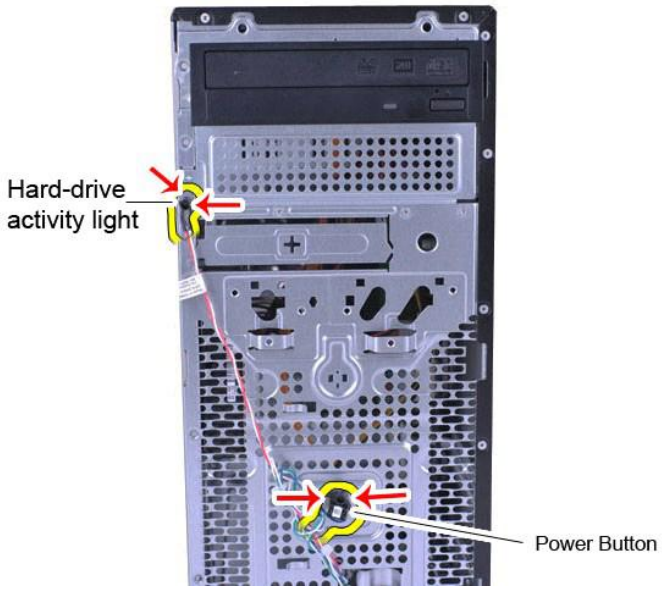
Dell™ Vostro™ 430 Service Manual

WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

Removing the Power-Button Assembly

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the Cover.
3. Remove the Front Panel.
4. Disconnect the power-button cable from the system board.

5. Press down on the clips that secure the hard-drive activity light and power-button assembly to the front panel.



6. Pull the hard-drive activity light and power-button assembly away from the computer.

Replacing the Power-Button Assembly

To replace the power-button assembly, perform the above steps in reverse order.

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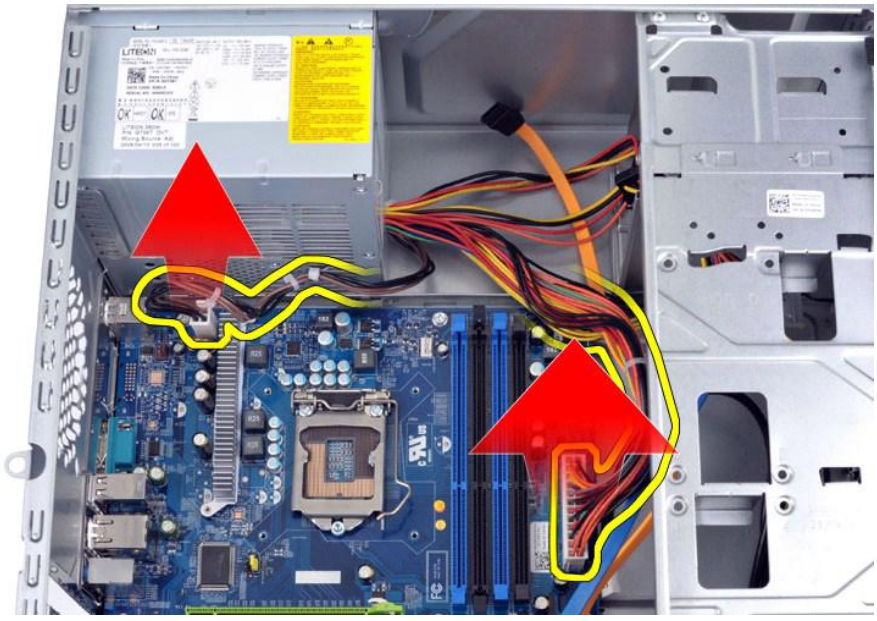
Power Supply

Dell™ Vostro™ 430 Service Manual

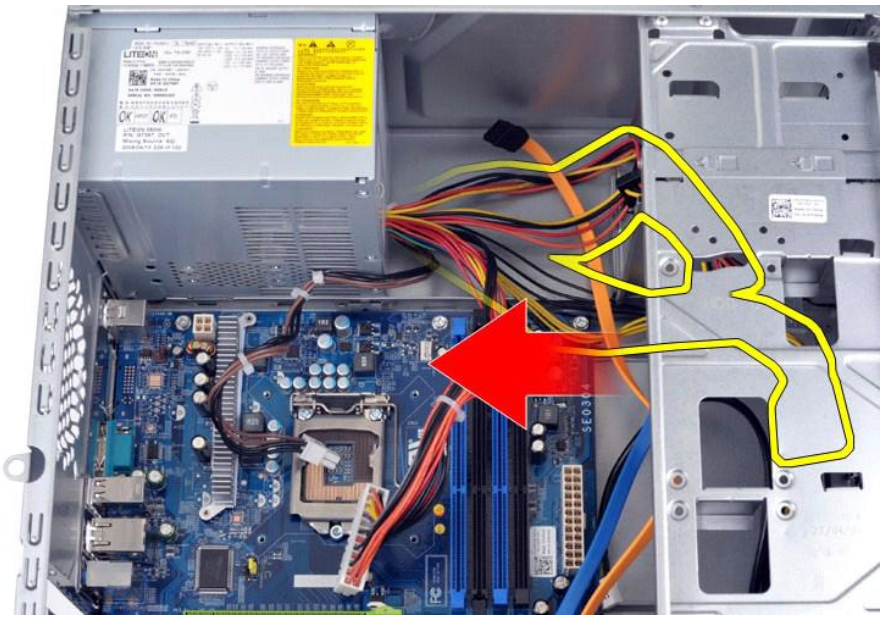
WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

Removing the Power Supply

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the Cover.
3. Disconnect power cables from all the internal devices including the system board, hard drives, and optical drives.

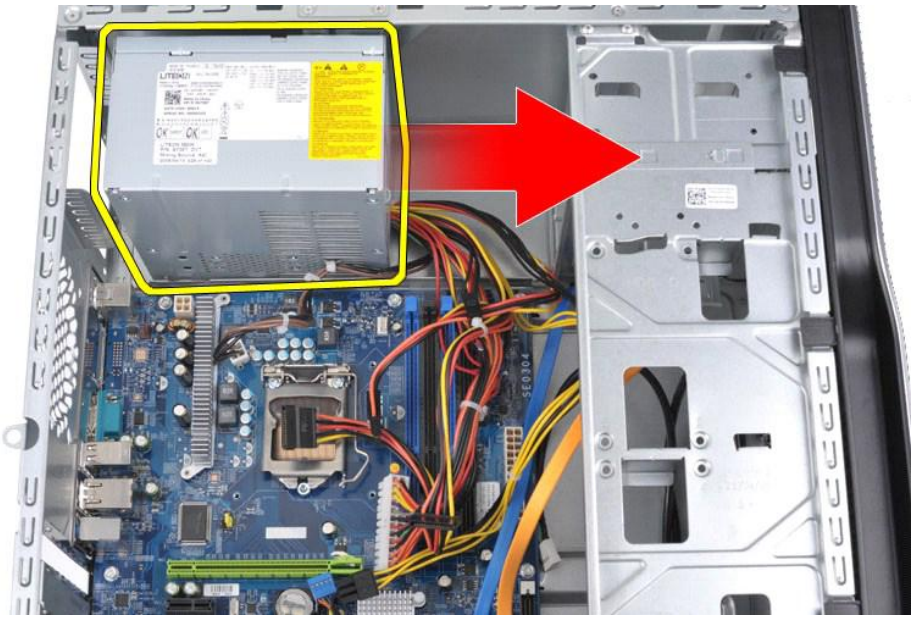


4. Remove the cables from the routing clips (if any) on the chassis.

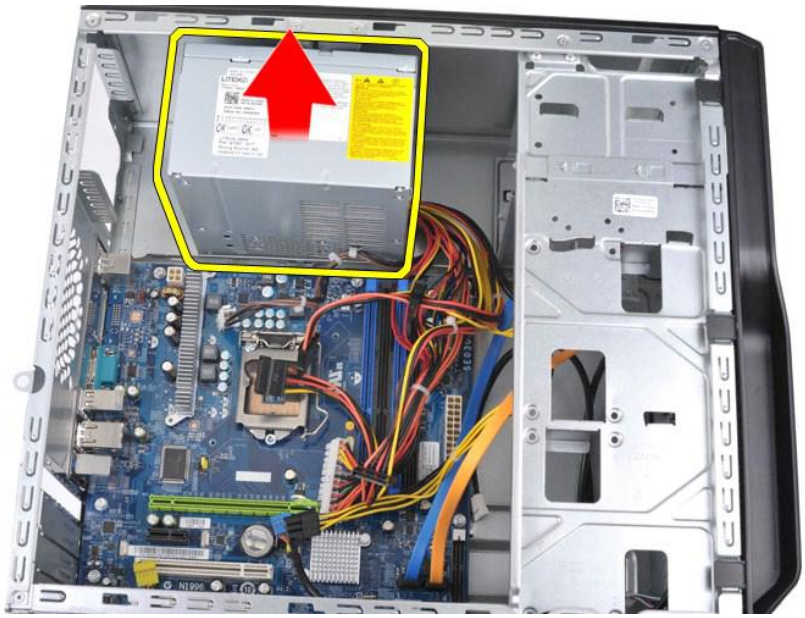


5. Remove the four screws that secure the power supply to the back of the chassis.

6. Push the release tab beside the power supply and slide the power supply towards the front of the computer.



7. Lift the power supply out of the computer.



Replacing the Power Supply

To replace the power supply, perform the above steps in reverse order.

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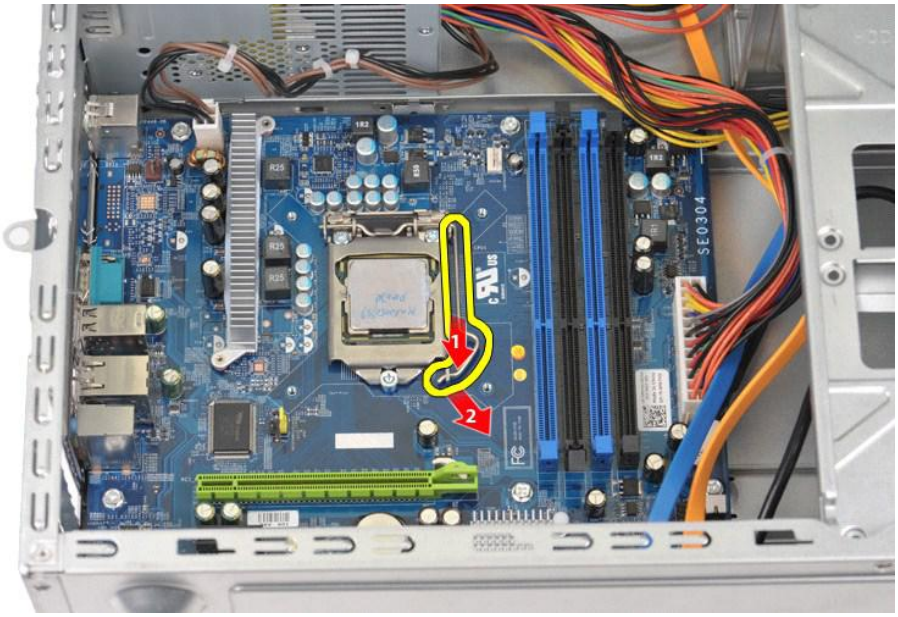
Processor

Dell™ Vostro™ 430 Service Manual

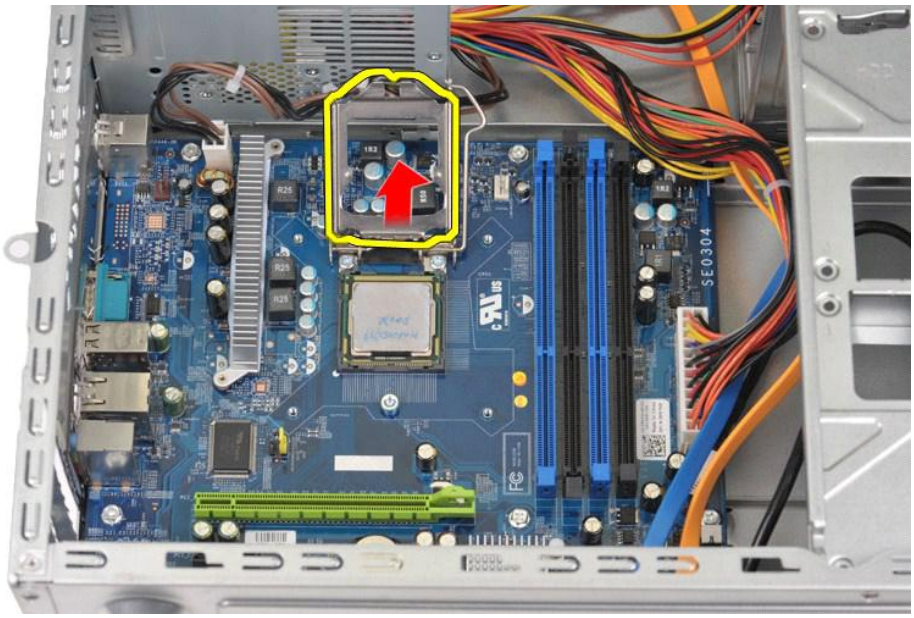
WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

Removing the Processor

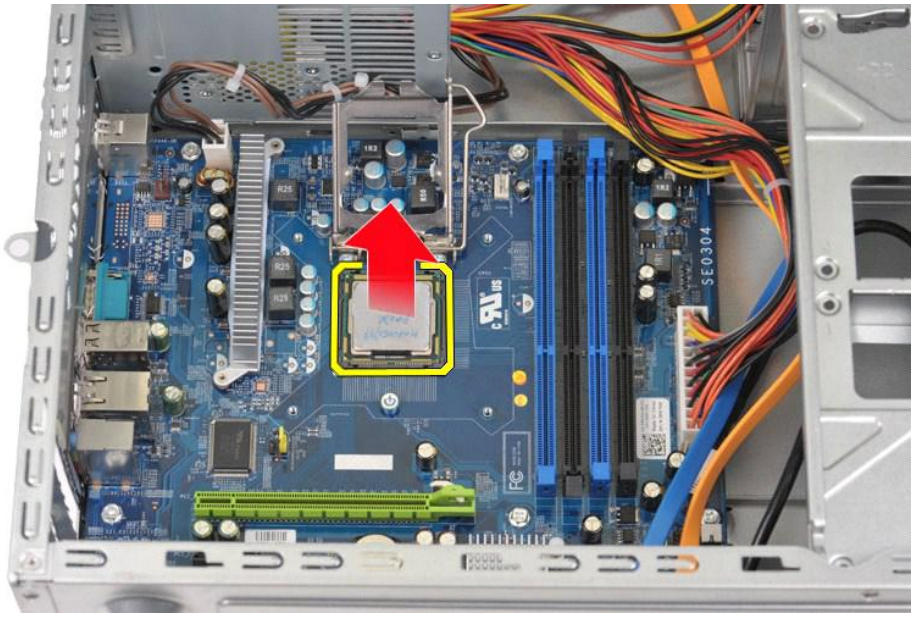
1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the Cover.
3. Remove the Processor Heat-Sink and Fan Assembly.
4. Push the release lever down and out of its retention hook.



5. Lift the release lever and open the processor cover.



6. Remove the processor from the socket.

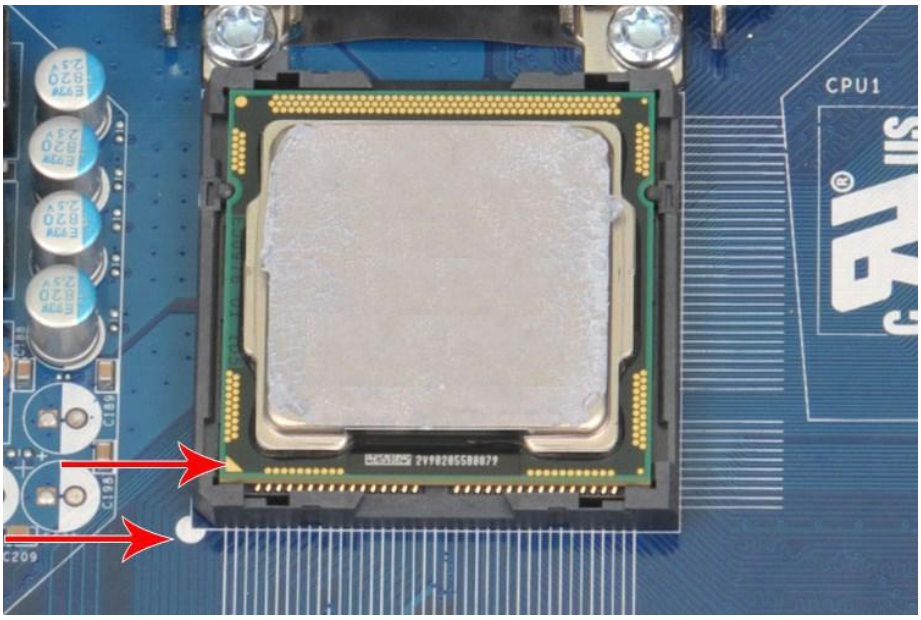


Leave the release lever extended in the release position so that the socket is ready for the processor to be replaced.

Replacing the Processor

△ **CAUTION: To avoid electrostatic discharge and damage to internal components, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer chassis before you install the processor.**

1. Align the pin-1 corner of the processor and socket.



2. Set the processor lightly in the socket and ensure that the processor is aligned in the socket. When the processor is positioned correctly, apply minimal pressure to seat it.
3. When the processor is fully seated in the socket, close the processor cover.
4. Pivot the socket release lever back toward the socket and snap it into place to secure the processor.
5. Replace the processor Heat-Sink and Fan Assembly.
6. Replace the Cover.

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System Board

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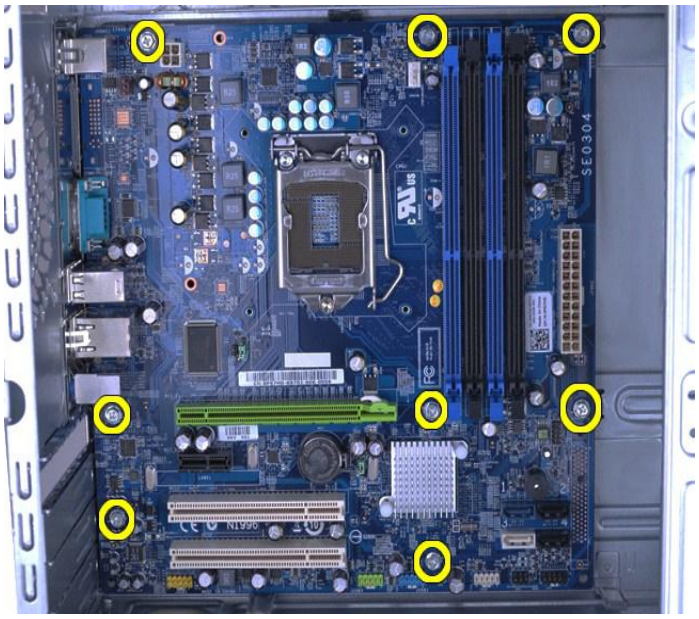
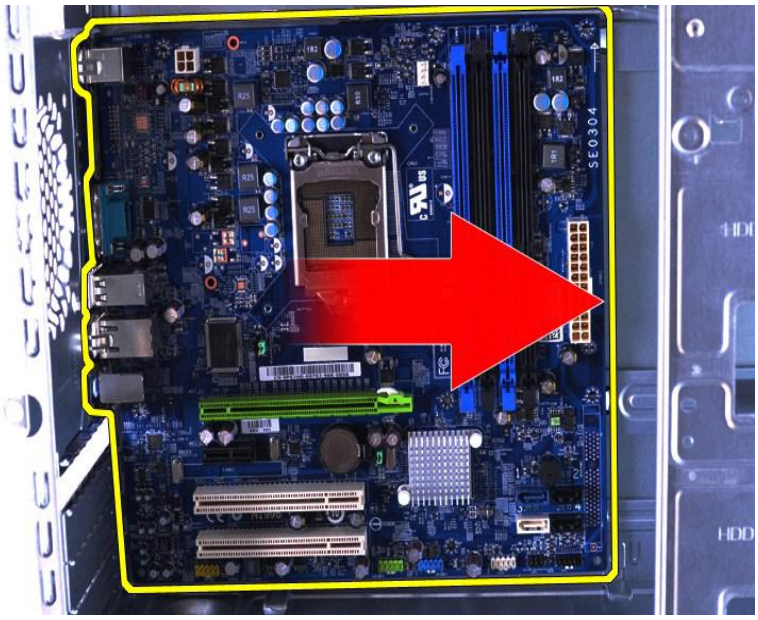
WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

Removing the System Board

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the Cover.
3. Remove the Memory.
4. Remove the Processor Heat-Sink and Fan Assembly.
5. Remove the Processor.
6. Remove the Expansion Cards.
7. Disconnect the cables from all the internal devices including the system board, hard-drive(s), optical-drive(s), and expansion cards.
8. Using a Phillips head screwdriver, remove the nine screws that secure the system board to the computer chassis.



9. Slide the system board towards the front of the computer.



10. Tilt and lift the system board out of the computer chassis.

WARNING: When replacing the system board, slide the system board below the metal tabs. Pressing down on the system board (when placed above the metal tabs) can damage the system board.

11. Place the system board into antistatic packaging.

Replacing the System Board

To replace the system board, perform the above steps in reverse order.

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Cover

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WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

Removing the Cover

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the two thumbscrews that secure the cover to the computer.

3. Slide the cover towards the back of the computer.

4. Lift the cover away from the computer.

Replacing the Cover

To replace the computer cover, perform the above steps in reverse order.

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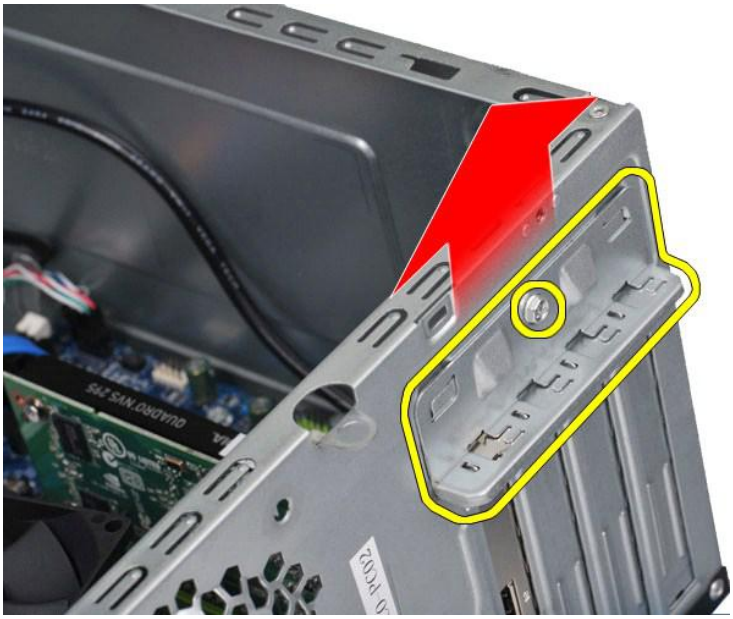
Expansion Cards

Dell™ Vostro™ 430 Service Manual

WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

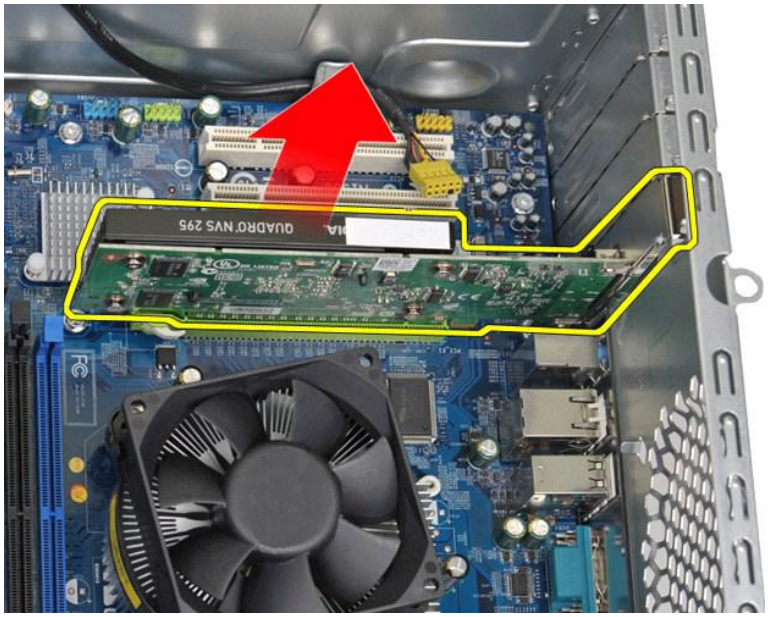
Removing an Expansion Card

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the Cover.
3. Disconnect any cables that may be connected to the card.
4. Using a Phillips head screwdriver, remove the screw and metal tab that secure the expansion card to the chassis.



5. To remove a *PCI-Express x16 video card*, press the securing tab on the system board connector as you grasp the card by its top corners, and then ease the card out of the connector.

6. To remove a *PCI-Express X1 or PCI card*, grasp the card by its top corners, and then ease the card out of the connector.



Replacing an Expansion Card

To replace an expansion card, perform the above steps in reverse order.

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System-Board Layout

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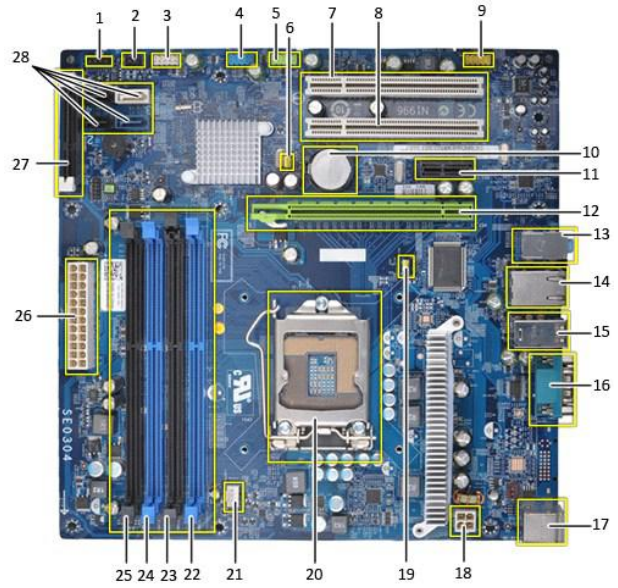

1	front I/O panel connector	**2**	SPDIF out connector
3	USB2 connector (from front I/O panel)	**4**	USB1 connector (from front I/O panel)
5	USB3 system-board connector	**6**	Clear CMOS jumper
7	PCI connector (PCI1)	**8**	PCI connector (PCI2)
9	front audio connector	**10**	CMOS battery
11	PCI Express x1 connector (PCIE_x1)	**12**	PCI Express x16 connector (PCIE_x16)
13	audio connector	**14**	network connector and USB connectors (2)
15	USB connectors (4)	**16**	serial connector
17	PS/2 mouse and keyboard connectors	**18**	power connector (PWR2)
19	Clear Password jumper	**20**	processor socket
21	processor-fan power connector	**22**	memory slot (DIMM1)
23	memory slot (DIMM2)	**24**	memory slot (DIMM3)
25	memory slot (DIMM4)	**26**	main power connector (PWR1)
27	NVRAM slot	**28**	serial ATA hard drive connector (SATA1,SATA2,SATA3, and SATA4)

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Working on Your Computer

Dell™ Vostro™ 430 Service Manual

Before Working Inside Your Computer

Use the following safety guidelines to help protect your computer from potential damage and to help to ensure your personal safety. Unless otherwise noted, each procedure included in this document assumes that the following conditions exist:

- You have performed the steps in Working on Your Computer.
- You have read the safety information that shipped with your computer.
- A component can be replaced or--if purchased separately--installed by performing the removal procedure in reverse order.

WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

CAUTION: Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.

CAUTION: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface, such as a connector on the back of the computer.

CAUTION: Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a processor by its edges, not by its pins.

CAUTION: When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

NOTE: The color of your computer and certain components may appear differently than shown in this document.

To avoid damaging your computer, perform the following steps before you begin working inside the computer.

1. Ensure that your work surface is flat and clean to prevent the computer cover from being scratched.
2. Turn off your computer (see Turning Off Your Computer).

CAUTION: To disconnect a network cable, first unplug the cable from your computer and then unplug the cable from the network device.

3. Disconnect all network cables from the computer.
4. Disconnect your computer and all attached devices from their electrical outlets.
5. Press and hold the power button while the system is unplugged to ground the system board.
6. Remove the computer cover (see Removing and Replacing the Cover).

CAUTION: Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate static electricity, which could harm internal components.

Recommended Tools

The procedures in this document may require the following tools:

- Small flat-blade screwdriver
- Phillips screwdriver
- Small plastic scribe
- Flash BIOS update program media

Turning Off Your Computer

CAUTION: To avoid losing data, save and close all open files and exit all open programs before you turn off your computer.

1. Shut down the operating system:
   - **In Windows Vista®:**

     Click **Start** , then click the arrow in the lower-right corner of the **Start** menu as shown below, and then click **Shut Down**.

     

   - **In Windows® XP:**

Click **Start→ Turn Off Computer→ Turn Off**.

The computer turns off after the operating system shutdown process is complete.

2. Ensure that the computer and all attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your operating system, press and hold the power button for about 6 seconds to turn them off.

After Working Inside Your Computer

After you complete any replacement procedure, ensure you connect any external devices, cards, and cables before turning on your computer.

1. Replace the cover (see Removing and Replacing the Cover).

CAUTION: To connect a network cable, first plug the cable into the network device and then plug it into the computer.

2. Connect any telephone or network cables to your computer.
3. Connect your computer and all attached devices to their electrical outlets.
4. Turn on your computer.
5. Verify that the computer works correctly by running the Dell Diagnostics. See Dell Diagnostics.

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