




# Dell Vostro 3650 Owner's Manual

Regulatory Model: D19M  
Regulatory Type: D19M002



# Notes, cautions, and warnings

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

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# Working on Your Computer

## 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 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:** Disconnect all power sources before opening the computer cover or panels. After you finish working inside the computer, replace all covers, panels, and screws before connecting to the power source.


 **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](http://www.dell.com/regulatory_compliance)

 **CAUTION:** Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.

 **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 computer is unplugged to ground the system board.
6. Remove 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.**

## 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 8.1:
    - Using a touch-enabled device:
      - a. Swipe in from the right edge of the screen, opening the Charms menu and select **Settings**.
      - b. Select the  and then select **Shut down**.
    - Or
      - \* On the Home screen, touch the  and then select **Shut down**.
    - Using a mouse:
      - a. Point to upper-right corner of the screen and click **Settings**.
      - b. Click the  and select **Shut down**.
    - Or
      - \* On the Home screen, click  and then select **Shut down**.
  - In Windows 7:
    1. Click **Start** .
    2. Click **Shut Down**.
  - or
    1. Click **Start** .

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




#### Shut Down

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.

 **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. If required, verify that the computer works correctly by running the Dell Diagnostics.

# Removing and Installing Components

This section provides detailed information on how to remove or install the components from your computer.

## Recommended Tools

The procedures in this document may require the following tools:

- Small flat-blade screwdriver
- Phillips screwdriver
- Small plastic scribe

## Removing the Cover

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Perform the following steps to remove the cover from the computer:
  - a. Remove the screws that secure the cover to the computer.
  - b. Slide and lift the cover to remove from the computer.



## Installing the Cover

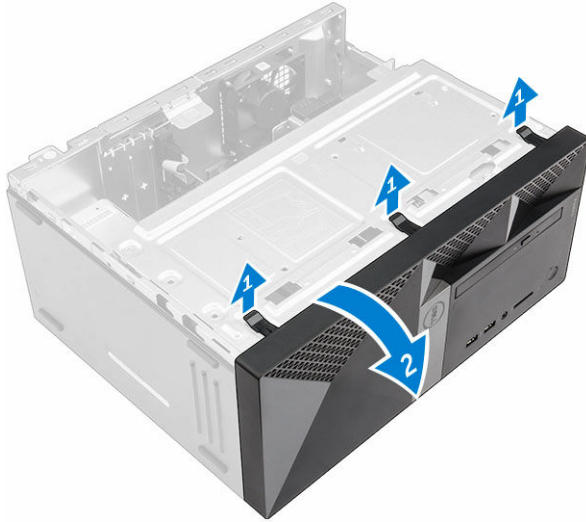
1. Place the cover on the computer and slide to install the cover.
2. Tighten the screws to secure the cover to the computer.



3. Follow the procedures in [After Working Inside Your Computer](#).

## Removing the Bezel

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove the [cover](#).
3. Perform the following steps to remove the front bezel from the computer:
  - a. Pry the tabs to release the front bezel from the computer.
  - b. Remove the front bezel from the computer.

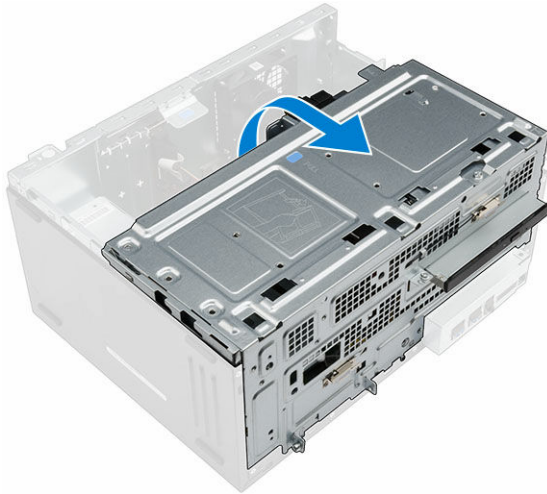



## Installing the Bezel

1. Insert the bezel on the computer aligning it to the placeholders.
2. Press the bezel until the hooks snap in to place.
3. Install the [cover](#).
4. Follow the procedures in [After Working Inside Your Computer](#).

## Opening the Front-Bezel Door

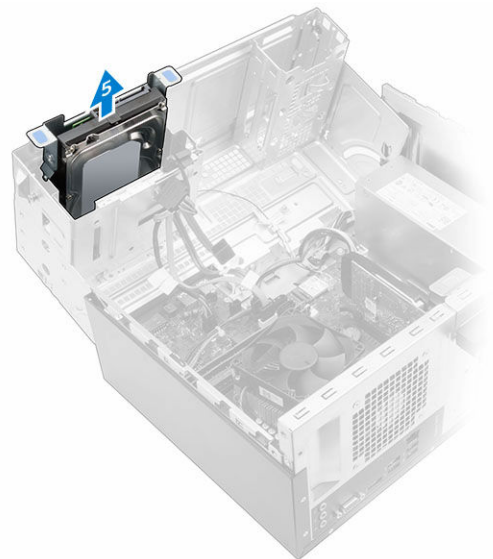
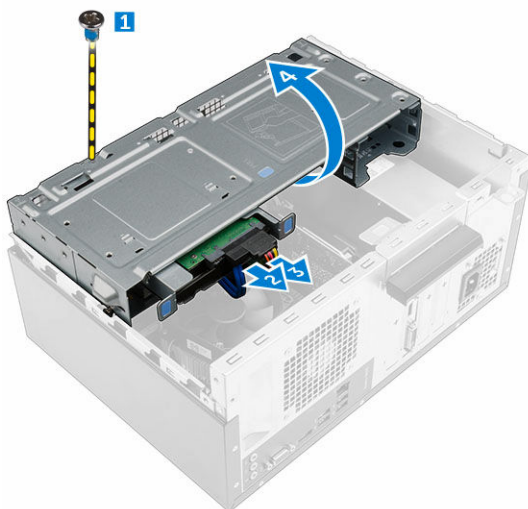
1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove the:
  - [cover](#)
  - [bezel](#)
3. Pull to open the front-bezel door.



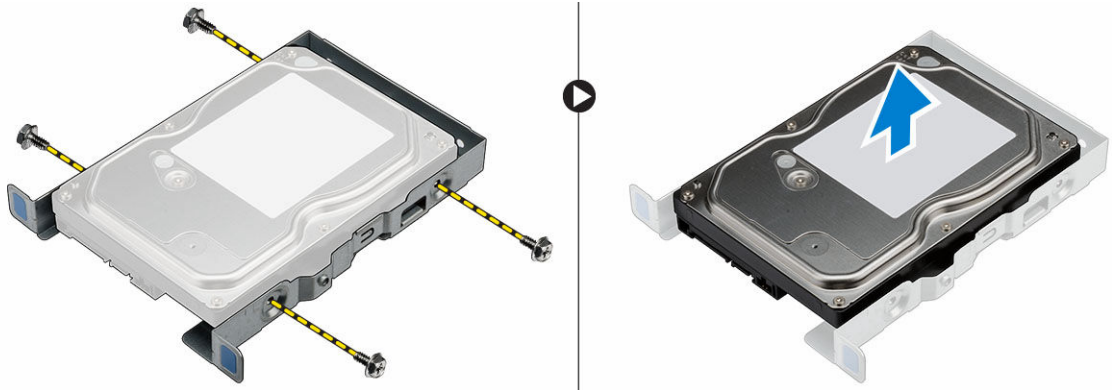
 **CAUTION:** The front-bezel door opens only to a limited extent. See the printed label for the maximum permissible level.

## Removing the Hard-Drive Assembly

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove the:
  - [cover](#)
  - [bezel](#)
3. Perform the following steps to remove the hard-drive assembly from the computer:
  - a. Remove the screw that secures the hard-drive assembly to the front-bezel door [1].
  - b. Disconnect the hard-drive assembly cables from the connectors on the hard-drive assembly [2, 3].
  - c. Open the [front-bezel door](#) [4].
  - d. Hold the metal tab on both the sides and pull the hard-drive assembly to remove it from the computer.



4. Perform the following steps to remove the hard drive from the hard-drive bracket:
  - a. Remove the screws that secure the hard-drive bracket to the hard drive.
  - b. Remove the hard drive from the hard-drive bracket.

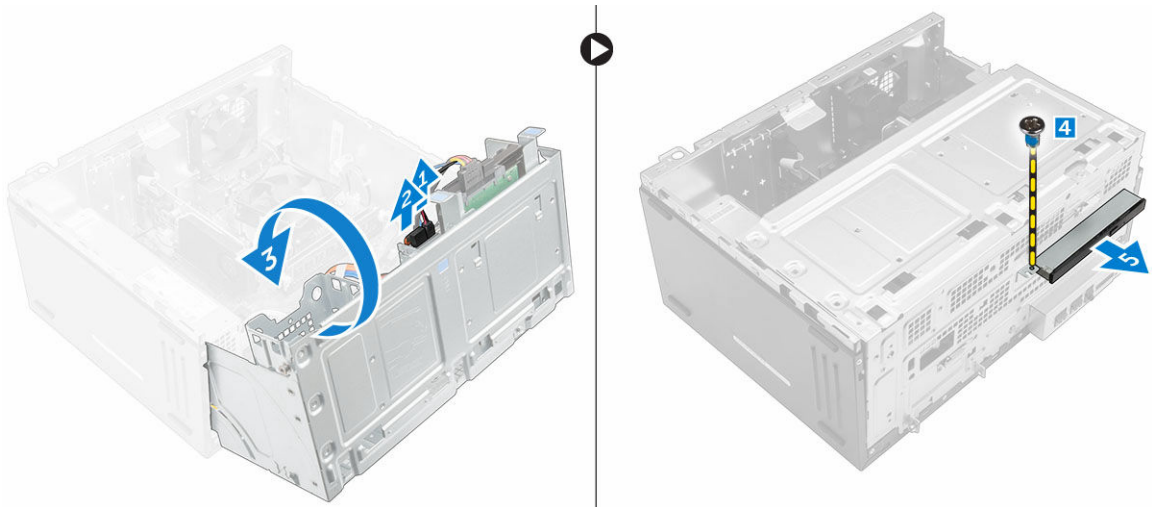


## Installing the Hard-Drive Assembly

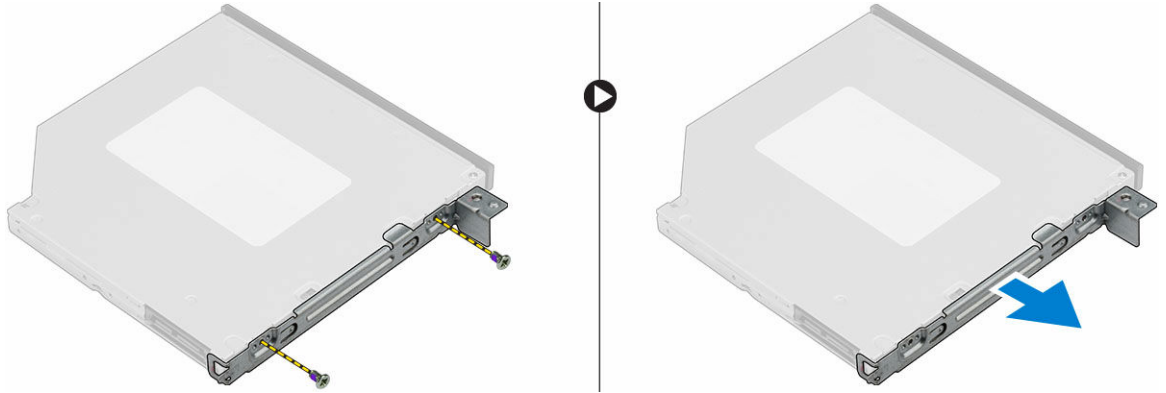
1. Replace the hard drive into the hard-drive bracket.
2. Install the screws that secure the hard-drive bracket.
3. Install the hard-drive assembly into its slot on the computer.
4. Close the front-bezel door.
5. Install the screw that secures the hard-drive assembly to the front-bezel door.
6. Connect the SATA cable and the power cable to the hard-drive assembly.
7. Install the:
  - [bezel](#)
  - [cover](#)
8. Follow the procedures in [After Working Inside Your Computer](#).

## Removing the Optical-Drive Assembly

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove the:
  - [cover](#)
  - [bezel](#)
3. Perform the following steps to remove the optical-drive assembly from the computer:
  - a. Open the [front-bezel door](#).
  - b. Disconnect the data cable and power cable from the connectors on the optical-drive assembly [1, 2].
  - c. Close the front-bezel door [3].
  - d. Remove the screw that secures the optical-drive assembly to the computer [4].
  - e. Slide the optical-drive assembly to remove it from the computer [5].



4. Perform the following steps to remove the optical-drive bracket:
  - a. Remove the screws that secure the optical-drive bracket to the optical drive.
  - b. Remove the optical-drive bracket from the optical drive.

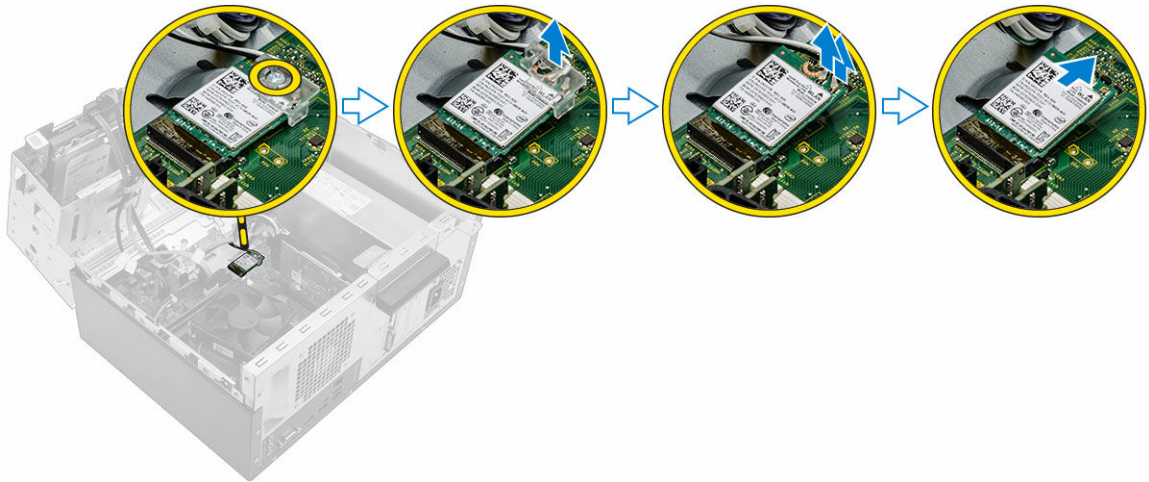


## Installing the Optical-Drive Assembly

1. Place the optical-drive bracket on the optical drive.
2. Tighten the screws to secure the optical-drive bracket to the optical drive.
3. Push the optical-drive assembly into the optical-drive bay until it snaps into place.
4. Tighten the screw to secure the optical drive to the computer.
5. Open the [front-bezel door](#).
6. Connect the data cable and power cable to their connectors on the optical-drive assembly.
7. Close the front-bezel door.
8. Install the:
  - [bezel](#)
  - [cover](#)
9. Follow the procedures in [After Working Inside Your Computer](#).

## Removing the WLAN Card

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove the:
  - [cover](#)
  - [bezel](#)
3. Open the [front-bezel door](#).
4. Perform the following steps to remove the WLAN card from the computer:
  - a. Remove the screw to release the plastic tab that secures the WLAN card to the computer.
  - b. Disconnect the WLAN cables from the connectors on the WLAN card.
  - c. Remove the WLAN card from its connector on the system board.



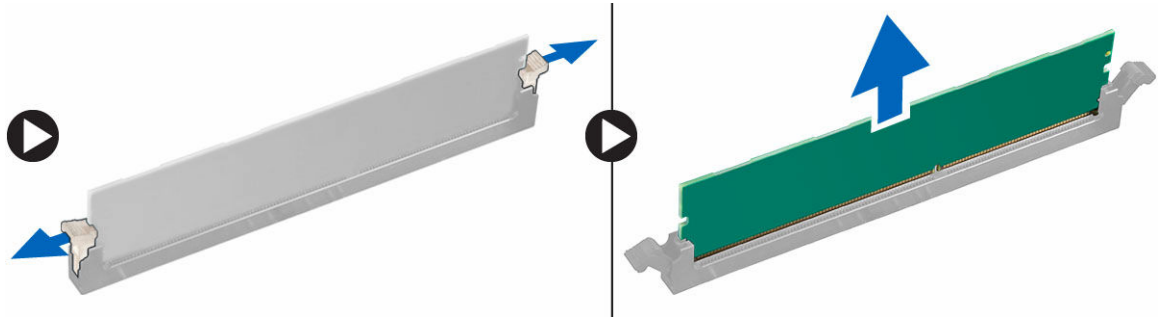
## Installing the WLAN Card

1. Insert the WLAN card to the connector on the system board.
2. Connect the WLAN cables to the connectors on the WLAN card.
3. Place the plastic tab and tighten the screw to secure the WLAN card to the system board.
4. Close the front-bezel door.
5. Install the:
  - a. [bezel](#)
  - b. [cover](#)
6. Follow the procedures in [After Working Inside Your Computer](#).

## Removing the Memory

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove the:
  - [cover](#)
  - [bezel](#)
3. Open the [front-bezel door](#).

4. Perform the following steps to remove the memory from the system board:
  - a. Press down the memory-retention tabs on both sides of the memory module.
  - b. Remove the memory from the memory-module connector on the system board.

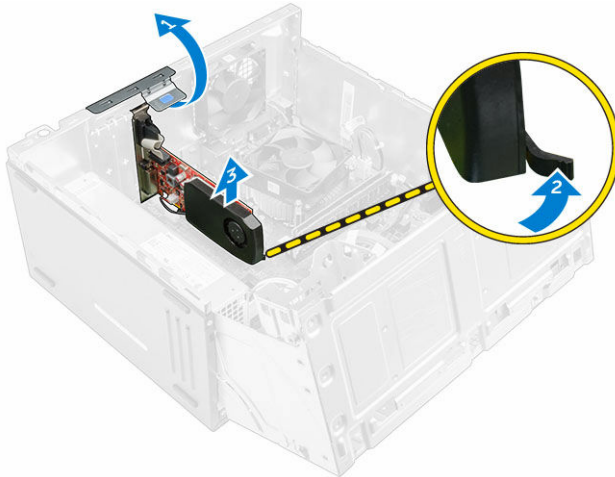


## Installing the Memory

1. Align the notch on the memory card with the tab in the memory connector.
2. Insert the memory module into the memory socket.
3. Press down on the memory module until the memory-retention tabs secure the memory in place.
4. Close the front-bezel door.
5. Install the:
  - a. [cover](#)
  - b. [bezel](#)
6. Follow the procedures in [After Working Inside Your Computer](#).

## Removing the Expansion Card

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove the:
  - [cover](#)
  - [bezel](#)
3. Open the [front-bezel door](#).
4. Perform the following steps to remove the expansion card from the computer:
  - a. Pull the metal tab to release the expansion card.
  - b. Slide the tab [2] and remove the expansion card from the connector on the computer [3].



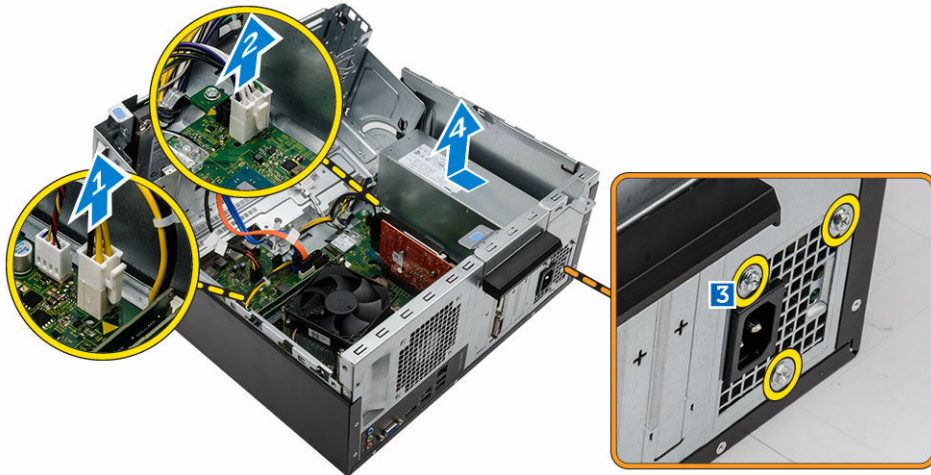
## Installing the Expansion Card

1. Insert the expansion card to its connector on the system board.
2. Secure the expansion card by pushing the card-retention latch until it snaps into place.
3. Push the metal tab until it snaps in place to secure the expansion card.
4. Close the front-bezel door.
5. Install the:
  - a. [bezel](#)
  - b. [cover](#)
6. Follow the procedures in [After Working Inside Your Computer](#).

## Removing the Power Supply Unit (PSU)

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove the:
  - [cover](#)
  - [bezel](#)
3. Open the [front-bezel door](#).
4. Perform the following steps to remove the PSU from the computer:
  - a. Disconnect the PSU cables from the connectors on the system board [1, 2].
  - b. Unroute the PSU cables from the holder.
  - c. Remove the screws that secure the PSU to the computer [3].
  - d. Slide and lift the PSU to remove it from the computer [4].





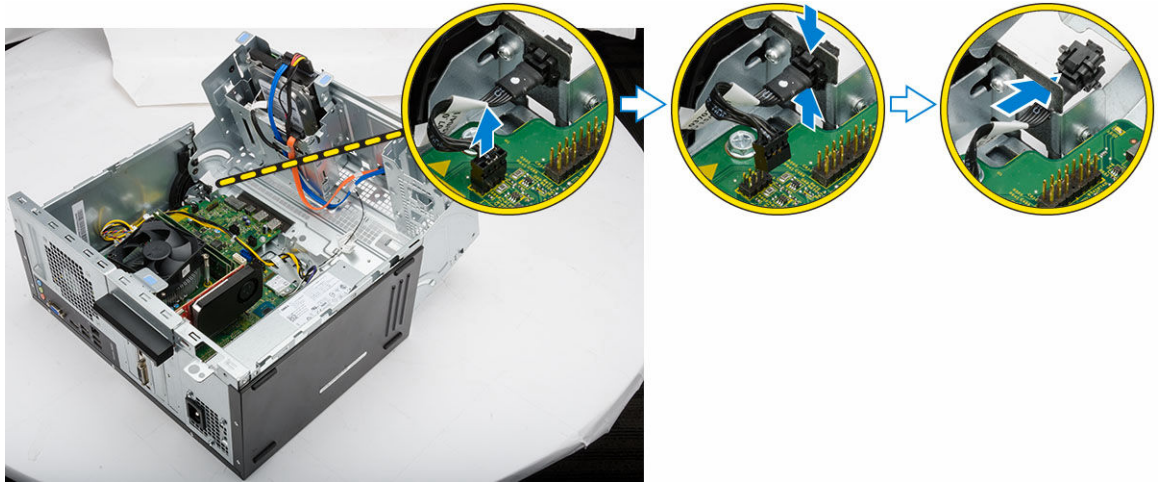
## Installing the Power Supply Unit (PSU)

1. Slide the PSU towards the back of the computer until it snaps into place.
2. Replace the screws to secure the power supply unit to the computer.
3. Route the PSU cables through the placeholder.
4. Connect the PSU cables to their connectors on the system board.
5. Close the front-bezel door.
6. Install the:
  - [bezel](#)
  - [cover](#)
7. Follow the procedures in [After Working Inside Your Computer](#).

## Removing the Power Switch

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove the:
  - [cover](#)
  - [bezel](#)
3. Open the [front-bezel door](#).
4. Follow the steps to remove the power switch from the computer:
  - a. Disconnect the power-switch cable from the system board.
  - b. Press the tab to release the power switch from the computer.
  - c. Remove the power switch from the computer.



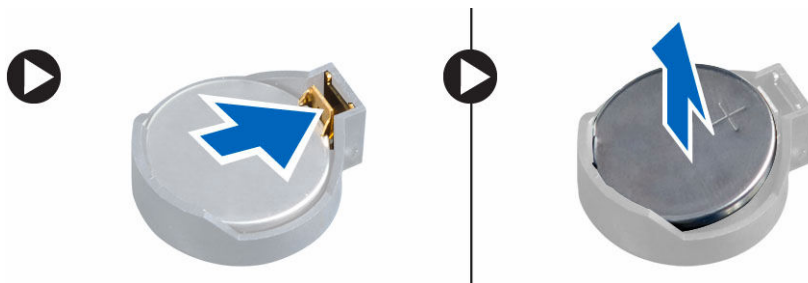


## Installing the Power Switch

1. Push the power switch into its slot and press it in, until it snaps into place.
2. Route the power-switch cable through the metal clip.
3. Connect the power-switch cable to the connector on the system board.
4. Close the front-bezel door.
5. Install the:
  - [bezel](#)
  - [cover](#)
6. Follow the procedures in [After Working Inside Your Computer](#).

## Removing the Coin-cell Battery

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove the:
  - [cover](#)
  - [bezel](#)
3. Open the [front-bezel door](#).
4. Perform the following steps to remove the coin-cell battery from the system board:
  - a. Press the release latch until the coin-cell battery pops-out.
  - b. Remove the coin-cell battery from the system board.

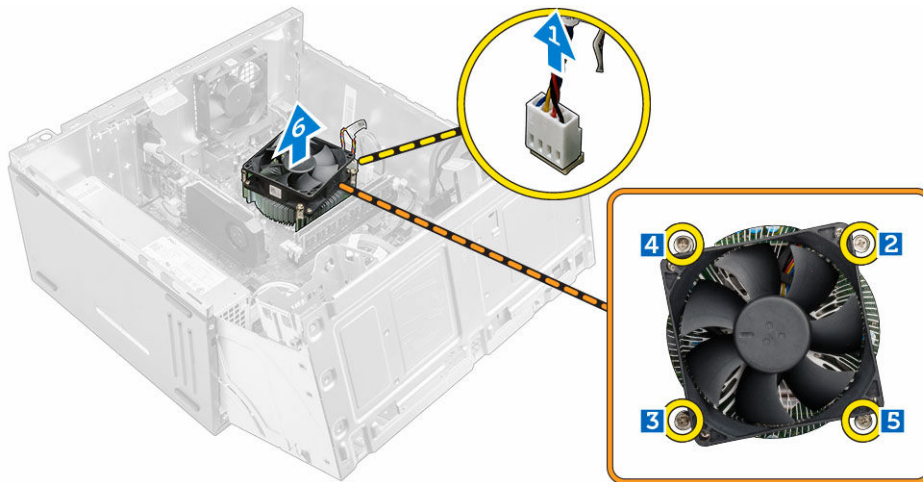


## Installing the Coin-Cell Battery

1. Place the coin-cell battery on the system board until it snaps in place.
2. Install the:
  - [bezel](#)
  - [cover](#)
3. Follow the procedures in [After Working Inside Your Computer](#).

## Removing the Heatsink Module

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove the:
  - [cover](#)
  - [bezel](#)
3. Open the [front-bezel door](#).
4. Perform the following steps to remove the heatsink module from the computer:
  - a. Disconnect the heatsink-module cable from the connector on the system board [1].
  - b. Remove the captive screws that secure the heatsink module to the system board [2, 3, 4, 5].
  - c. Lift to remove the heatsink module from the computer [6].



## Installing the Heatsink Module

1. Place the heatsink module on the processor.
2. Tighten the captive screws to secure the heatsink module to the system board.
3. Connect the heatsink-module cable to the connector on the system board.
4. Close the front-bezel door.
5. Install the:
  - [bezel](#)
  - [cover](#)
6. Follow the procedures in [After Working Inside Your Computer](#).

## Removing the Processor

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove the:
  - [cover](#)
  - [bezel](#)
3. Open the [front-bezel door](#).
4. Remove the [heatsink module](#).
5. Perform the following steps to remove the processor from the system board:
  - a. Push the processor release-lever [1] and then press it outward to release it from the retention hook that secures it [2].
  - b. Remove the processor from the system board [3].



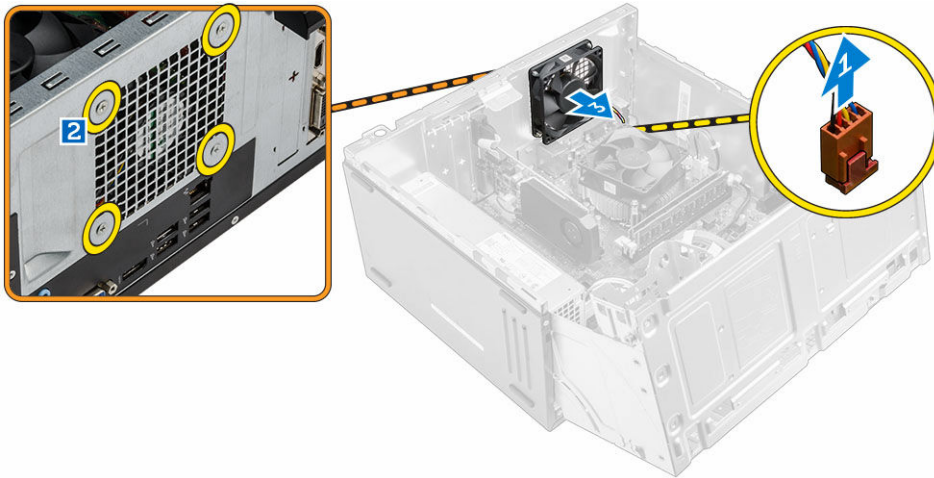
## Installing the Processor

1. Install the processor into the socket.
2. Press down the processor to secure it inside the socket.
3. Push the release lever down and then press it inward to hold the retention hook that secures it.
4. Install the [heatsink module](#).
5. Close the front-bezel door.
6. Install the:
  - a. [bezel](#)
  - b. [cover](#)
7. Follow the procedures in [After Working Inside Your Computer](#).

## Removing the System Fan

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove the:
  - [cover](#)
  - [bezel](#)
3. Open the [front-bezel door](#).
4. Perform the following steps to remove the system fan from the computer:
  - a. Disconnect the system-fan cable from the connector on the system board [1].
  - b. Remove the screws that secure the system fan to the computer [2].

- c. Slide the system fan to remove it from the computer [3].

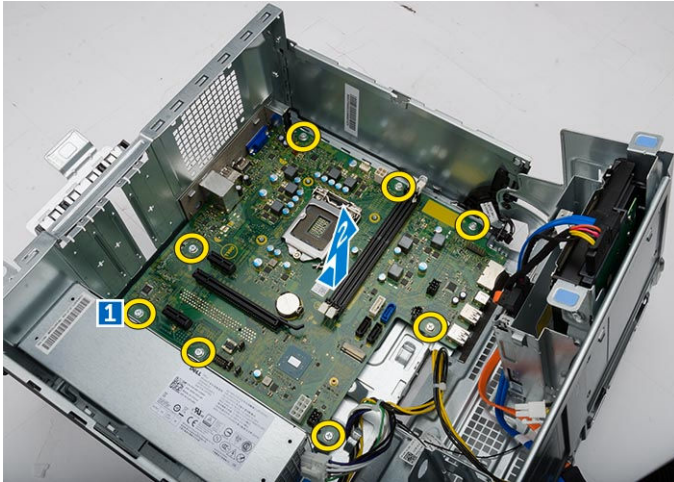


## Installing the System Fan

1. Place the system fan on the computer.
2. Tighten the screws to secure the system fan to the computer.
3. Connect the system-fan cable to the connector on the system board.
4. Close the front-bezel door.
5. Install the:
  - a. [bezel](#)
  - b. [cover](#)
6. Follow the procedures in [After Working Inside Your Computer](#).

## Removing the System Board

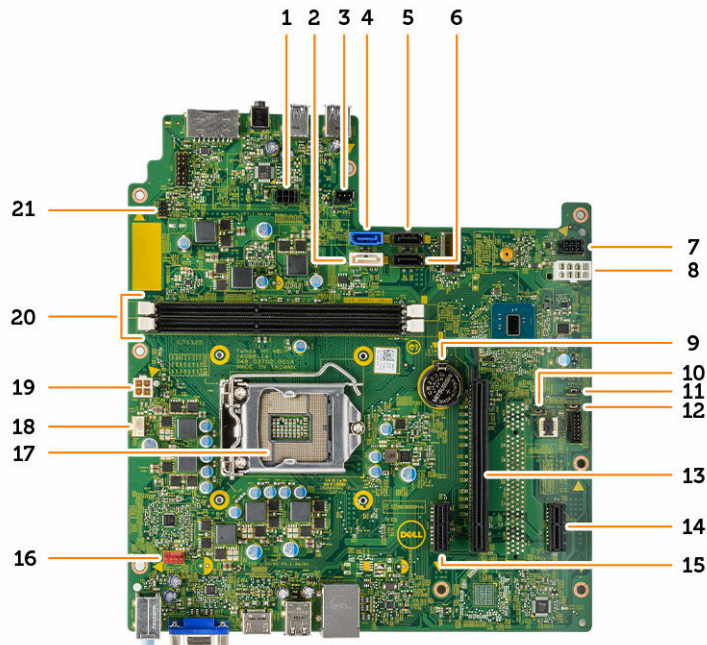
1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove the:
  - [cover](#)
  - [bezel](#)
3. Open the [front-bezel door](#).
4. Remove the:
  - [heatsink module](#)
  - [processor](#)
  - [expansion card](#)
  - [memory](#)
  - [WLAN card](#)
5. Disconnect all the cables from the connectors on the system board.
6. Perform the following steps to remove the system board from the computer:
  - a. Remove the screws that secure the system board to the computer [1].
  - b. Slide and lift the system board to remove it from the computer [2].



## Installing the System Board

1. Place the system board into the computer securely until it snaps in place.
2. Tighten the screws to secure the system board to the computer.
3. Thread and connect all the cables to the system board.
4. Install the:
  - [WLAN card](#)
  - [memory](#)
  - [expansion cards](#)
  - [processor](#)
  - [heatsink module](#)
5. Close the front-bezel door.
6. Install the:
  - [bezel](#)
  - [cover](#)
7. Follow the procedures in [After Working Inside Your Computer](#).

# System Board Layout



- |                            |                              |
|----------------------------|------------------------------|
| 1. SATA power connector    | 2. SATA1                     |
| 3. Light bar header        | 4. SATA0                     |
| 5. SATA3                   | 6. SATA2                     |
| 7. SATA power connector    | 8. PSU connector             |
| 9. Coin-cell battery       | 10. Clear CMS jumper         |
| 11. ME disable jumper      | 12. Password clear jumper    |
| 13. PCIe16                 | 14. PCIe1                    |
| 15. PCIe1                  | 16. System-fan connector     |
| 17. CPU socket             | 18. CPU fan connector        |
| 19. PSU connector          | 20. Memory-module connectors |
| 21. Power-switch connector |                              |

# Troubleshooting Your Computer

You can troubleshoot your computer using indicators like Diagnostic Lights, Beep Codes, and Error Messages during the operation of the computer.

## Diagnostic Power LED Codes

Table 1. Diagnostic power LED codes

Power LED Light Status	Possible Cause	Troubleshooting Steps
Off	The computer is either turned off or is not receiving power or in Hibernation mode.	<ul style="list-style-type: none"> <li>• Re-seat the power cable in the power connector on the back of the computer and the electrical outlet.</li> <li>• If the computer is plugged into a power strip, ensure the power strip is plugged into an electrical outlet and is turned on. Also, bypass power protection devices, power strips, and power extension cables to verify the computer turns on properly.</li> <li>• Ensure the electrical outlet is working by testing it with another device, such as a lamp.</li> </ul>
Steady / Blinking / Amber	Computer fails to complete POST or processor failure.	<ul style="list-style-type: none"> <li>• Remove and then reinstall any cards.</li> <li>• Remove and then reinstall the graphics card, if applicable.</li> <li>• Ensure the power cable is connected to the motherboard and processor.</li> </ul>
Blinking White Light	Computer is in sleep mode.	<ul style="list-style-type: none"> <li>• Press the power button to bring the computer out of the sleep mode.</li> <li>• Ensure all power cables are securely connected to the system board.</li> <li>• Ensure the main power cable and front panel cable are securely connected to the system board.</li> </ul>
Steady White	The computer is fully functional and in the On state.	<p>If the computer is not responding, do the following:</p> <ul style="list-style-type: none"> <li>• Ensure the display is connected and turned on.</li> <li>• If the display is connected and turned on, listen for a beep code.</li> </ul>

# Diagnostic Error Messages

Table 2. Diagnostic error messages

Error Messages	Description
AUXILIARY DEVICE FAILURE	The touchpad or external mouse may be faulty. For an external mouse, check the cable connection. Enable the <b>Pointing Device</b> option in the system setup program.
BAD COMMAND OR FILE NAME	Ensure that you have spelled the command correctly, put spaces in the proper place, and used the correct pathname.
CACHE DISABLED DUE TO FAILURE	The primary cache internal to the microprocessor has failed. <a href="#">Contact Dell</a> .
CD DRIVE CONTROLLER FAILURE	The optical drive does not respond to commands from the computer.
DATA ERROR	The hard drive cannot read the data.
DECREASING AVAILABLE MEMORY	One or more memory modules may be faulty or improperly seated. Reinstall the memory modules or, if necessary, replace them.
DISK C: FAILED INITIALIZATION	The hard drive failed initialization. Run the hard drive tests in the Dell Diagnostics.
DRIVE NOT READY	The operation requires a hard drive in the bay before it can continue. Install a hard drive in the hard drive bay.
ERROR READING PCMCIA CARD	The computer cannot identify the ExpressCard. Reinsert the card or try another card.
EXTENDED MEMORY SIZE HAS CHANGED	The amount of memory recorded in non-volatile memory (NVRAM) does not match the memory installed in the computer. Restart the computer. If the error appears again, <a href="#">Contact Dell</a>
THE FILE BEING COPIED IS TOO LARGE FOR THE DESTINATION DRIVE	The file that you are trying to copy is too large to fit on the disk, or the disk is full. Try copying the file to a different disk or use a larger capacity disk.
A FILENAME CANNOT CONTAIN ANY OF THE FOLLOWING CHARACTERS: \ / : * ? " < >   -	Do not use these characters in filenames.
GATE A20 FAILURE	A memory module may be loose. Reinstall the memory modules or, if necessary, replace them.
GENERAL FAILURE	The operating system is unable to carry out the command. The message is usually followed by specific information. For example, Printer out of paper. Take the appropriate action.



Error Messages	Description
HARD-DISK DRIVE CONFIGURATION ERROR	The computer cannot identify the drive type. Shut down the computer, remove the hard drive, and boot the computer from an optical drive. Then, shut down the computer, reinstall the hard drive, and restart the computer. Run the Hard Disk Drive tests in the Dell Diagnostics.
HARD-DISK DRIVE CONTROLLER FAILURE 0	The hard drive does not respond to commands from the computer. Shut down the computer, remove the hard drive, and boot the computer from an optical drive. Then, shut down the computer, reinstall the hard drive, and restart the computer. If the problem persists, try another drive. Run the Hard Disk Drive tests in the Dell Diagnostics.
HARD-DISK DRIVE FAILURE	The hard drive does not respond to commands from the computer. Shut down the computer, remove the hard drive, and boot the computer from an optical drive. Then, shut down the computer, reinstall the hard drive, and restart the computer. If the problem persists, try another drive. Run the <b>Hard Disk Drive</b> tests in the <b>Dell Diagnostics</b> .
HARD-DISK DRIVE READ FAILURE	The hard drive may be defective. Shut down the computer, remove the hard drive, and boot the computer from an optical. Then, shut down the computer, reinstall the hard drive, and restart the computer. If the problem persists, try another drive. Run the <b>Hard Disk Drive</b> tests in the Dell Diagnostics.
INSERT BOOTABLE MEDIA	The operating system is trying to boot to non-bootable media, such as a floppy disk or optical drive. Insert bootable media.
INVALID CONFIGURATION INFORMATION-PLEASE RUN SYSTEM SETUP PROGRAM	The system configuration information does not match the hardware configuration. The message is most likely to occur after a memory module is installed. Correct the appropriate options in the system setup program.
KEYBOARD CLOCK LINE FAILURE	For external keyboards, check the cable connection. Run the <b>Keyboard Controller</b> test in the <b>Dell Diagnostics</b> .
KEYBOARD CONTROLLER FAILURE	For external keyboards, check the cable connection. Restart the computer, and avoid touching the keyboard or the mouse during the boot routine. Run the <b>Keyboard Controller</b> test in the <b>Dell Diagnostics</b> .

Error Messages	Description
KEYBOARD DATA LINE FAILURE	For external keyboards, check the cable connection. Run the <b>Keyboard Controller</b> test in the <b>Dell Diagnostics</b> .
KEYBOARD STUCK KEY FAILURE	For external keyboards or keypads, check the cable connection. Restart the computer, and avoid touching the keyboard or keys during the boot routine. Run the <b>Stuck Key</b> test in the <b>Dell Diagnostics</b> .
LICENSED CONTENT IS NOT ACCESSIBLE IN MEDIADIRECT	Dell MediaDirect cannot verify the Digital Rights Management (DRM) restrictions on the file, so the file cannot be played.
MEMORY ADDRESS LINE FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory modules or, if necessary, replace them.
MEMORY ALLOCATION ERROR	The software you are attempting to run is conflicting with the operating system, another program, or a utility. Shut down the computer, wait 30 seconds, and then restart it. Try to run the program again. If the error message still appears, see the software documentation.
MEMORY DOUBLE WORD LOGIC FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory modules or, if necessary, replace them.
MEMORY ODD/EVEN LOGIC FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory modules or, if necessary, replace them.
MEMORY WRITE/READ FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory modules or, if necessary, replace them.
NO BOOT DEVICE AVAILABLE	The computer cannot find the hard drive. If the hard drive is your boot device, ensure that the drive is installed, properly seated, and partitioned as a boot device.
NO BOOT SECTOR ON HARD DRIVE	The operating system may be corrupted, <a href="#">Contact Dell</a> .
NO TIMER TICK INTERRUPT	A chip on the system board may be malfunctioning. Run the <b>System Set</b> tests in the <b>Dell Diagnostics</b> .
NOT ENOUGH MEMORY OR RESOURCES. EXIT SOME PROGRAMS AND TRY AGAIN	You have too many programs open. Close all windows and open the program that you want to use.
OPERATING SYSTEM NOT FOUND	Reinstall the hard drive. If the problem persists, <a href="#">Contact Dell</a> .

Error Messages	Description
OPTIONAL ROM BAD CHECKSUM	The optional ROM has failed. <a href="#">Contact Dell</a> .
SECTOR NOT FOUND	The operating system cannot locate a sector on the hard drive. You may have a defective sector or corrupted FAT on the hard drive. Run the Windows error-checking utility to check the file structure on the hard drive. See Windows Help and Support for instructions (click Start > Help and Support). If a large number of sectors are defective, back up the data (if possible), and then reformat the hard drive.
SEEK ERROR	The operating system cannot find a specific track on the hard drive.
SHUTDOWN FAILURE	A chip on the system board may be malfunctioning. Run the <b>System Set</b> tests in the <a href="#">Contact Dell</a> .
TIME-OF-DAY CLOCK LOST POWER	System configuration settings are corrupted. Connect your computer to an electrical outlet to charge the battery. If the problem persists, try to restore the data by entering the system setup program, then immediately exit the program. If the message reappears, <a href="#">Contact Dell</a> .
TIME-OF-DAY CLOCK STOPPED	The reserve battery that supports the system configuration settings may require recharging. Connect your computer to an electrical outlet to charge the battery. If the problem persists, <a href="#">Contact Dell</a> .
TIME-OF-DAY NOT SET-PLEASE RUN THE SYSTEM SETUP PROGRAM	The time or date stored in the system setup program does not match the system clock. Correct the settings for the <b>Date and Time</b> options.
TIMER CHIP COUNTER 2 FAILED	A chip on the system board may be malfunctioning. Run the <b>System Set tests</b> in the <b>Dell Diagnostics</b> .
UNEXPECTED INTERRUPT IN PROTECTED MODE	The keyboard controller may be malfunctioning, or a memory module may be loose. Run the <b>System Memory</b> tests and the <b>Keyboard Controller</b> test in the <a href="#">System Setup</a> or <a href="#">Contact Dell</a> .
X:\ IS NOT ACCESSIBLE. THE DEVICE IS NOT READY	Insert a disk into the drive and try again.

# System Error Messages

Table 3. System error messages

System Message	Description
Alert! Previous attempts at booting this system have failed at checkpoint [nnnn]. For help in resolving this problem, please note this checkpoint and contact Dell Technical Support	The computer failed to complete the boot routine three consecutive times for the same error.
CMOS checksum error	RTC is reset, BIOS Setup default has been loaded.
CPU fan failure	CPU fan has failed
System fan failure	System fan has failed
Hard-disk drive failure	Possible hard disk drive failure during POST
Keyboard failure	Keyboard failure or loose cable. If reseating the cable does not solve the problem, replace the keyboard.
No boot device available	No bootable partition on hard disk drive, the hard disk drive cable is loose, or no bootable device exists. <ul style="list-style-type: none"><li>• If the hard drive is your boot device, ensure that the cables are connected and that the drive is installed properly and partitioned as a boot device.</li><li>• Enter system setup and ensure that the boot sequence information is correct.</li></ul>
No timer tick interrupt	A chip on the system board might be malfunctioning or motherboard failure.
NOTICE - Hard Drive SELF MONITORING SYSTEM has reported that a parameter has exceeded its normal operating range. Dell recommends that you back up your data regularly. A parameter out of range may or may not indicate a potential hard drive problem	S.M.A.R.T error, possible hard disk drive failure.

# System Setup Options

**Table 4. — Main**

System Time	Displays the system time. Allows you to reset the time on the computer's internal clock.
System Date	Displays the system date. Allows you to reset the date on the computer's internal calendar.
BIOS Version	Displays the BIOS revision.
Product Name	Displays the computer model number.
Service Tag	Displays the service tag of your computer.
Asset Tag	Displays the asset tag of your computer (if available).
CPU Type	Displays the type of processor.
CPU Speed	Displays the speed of the processor
CPU ID	Displays the processor ID
CPU Cache	Displays the L1, L2, and L3 cache size of the processor.
HDD0	Displays the HDD0 size of the computer.
HDD1	Displays the HDD1 size of the computer.
HDD2	Displays the HDD2 size of the computer.
HDD3	Displays the HDD3 size of the computer.
System Memory	Displays the size of the memory installed.
Memory Speed	Displays the speed of the memory installed.

**Table 5. — Advanced**

Intel (R) SpeedStep (TM)	Allows you to enable or disable the Intel SpeedStep technology. Default: Enabled
Virtualization	Allows you to enable or disable the virtualization feature. Default: Enabled
VT for Direct I/O	Allows you to enable or disable the VT for direct I/O. Default: Enabled
Trusted Execution	Allows you to enable or disable the trusted execution. Default: Disabled
Integrated NIC	Allows you to enable to disable the integrated network

	Default: Enabled
SATA Operation	Allows you to change the SATA mode Default: AHCI
Intel Multi-Display	Allows you to enable or disable the multi-display feature. Default: disabled
USB Emulation	Allows you to enable or disable the USB emulation. Default: Enabled
SW Guard Extensions (SGX)	Allows you to enable or disable the SW guard extensions (SGX). Default: Disabled
USB Configuration	Allows you to enable or disable the USB ports. Front USB Ports: Enabled  Rear USB Ports: Enabled
Power Options	Allows you to modify the power options. Wake up by Integrated LAN/WLAN: Disabled  AC Recovery: Power Off  Deep Sleep Control: Enabled in S4 and S5 modes  Auto Power On: Disabled  Auto Power On Mode: Allows you to select the day (Default: disabled)  Auto Power On Date: Allows you to select the date  Auto Power On Time: Allows you to select the time
SMART Settings	Allows you to enable to enable or disable the SMART feature. Default: Disabled

**Table 6. — Security**

Unlock Setup Status	Allows you to lock or unlock the system setup. Default: Unlocked
Admin Password Status	Displays the status indicating if the Administrator password is set. Default: Not Set
System Password Status	Displays the status indicating if the System password is set. Default: Not Set
HDD Password Status	Displays the status indicating if the System password is set.

Asset Tag	Default: Not Set
Admin Password	Allows you to enter your service tag.
HDD Password	Allows you to create an admin password.
System Password	Allows you to create an HDD password.
Password Change	Allows you to create a system password.
	Allows you to set the option to change password.
	Default: Permitted
Firmware TPM	Allows you to enable or disable the Firmware TPM.
	Default: Disabled
HDD Protection	Allows to modify the HDD protection feature.
	Default: Disabled

**Table 7. — Boot**

Boot List Option	Displays the boot modes
	Default: UEFI
	File Browser Add Boot Option and File Browser Del Boot Option are actiavted
Secure Boot	Allows you to enable or disable the Secure Boot control.
	Default: Enabled
Legacy Option ROMs	Allows you to load the legacy option ROMs.
	Default: Disabled
Boot Option Priorities	Enables you to change the boot option priorities.

**Table 8. — Exit**


Save Changes and Reset	Allows to save or rest the changes made to the system setup.
	<ol style="list-style-type: none"> <li>1. Allows you to discard the changes made to the system setup.</li> <li>2. Allows you to restore the system setup options to default.</li> <li>3. Allows you to discard the changes made to the system setup.</li> <li>4. Allows you to save the changes made to the system setup.</li> </ol>

## System Setup Overview

System Setup allows you to:

- change the system configuration information after you add, change, or remove any hardware in your computer.
- set or change a user-selectable option such as the user password.
- 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 cause your computer to work incorrectly.**

## Accessing System Setup


1. Turn on (or restart) your computer.
2. After the white Dell logo appears, press <F2> or <F12> immediately.

The System Setup page displays.

 **NOTE:** If you wait too long and the operating system logo appears, continue to wait until you see the desktop. Then, shut down or restart your computer and try again.





# Specifications

 **NOTE:** Offerings may vary by region. The following specifications are only those required by law to ship with your computer. For more information about the configuration of your computer, go to **Help and Support** in your Windows operating system and select the option to view information about your computer.

**Table 9. Processor**

Type	<ul style="list-style-type: none"> <li>• Intel Celeron</li> <li>• Intel Pentium</li> <li>• Intel Dual Core i3 (6th Generation)</li> <li>• Intel Dual Core i5 (6th Generation)</li> <li>• Intel Dual Core i7 (6th Generation)</li> </ul>
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**Table 10. Memory**

Memory-module connector	two UDIMM slots
Memory-module capacity	2 GB, 4 GB, 6 GB, and 8 GB
Type	1600 MHz DDR3L (Non-ECC)
Minimum memory	2 GB
	 <b>NOTE:</b> Depending on the operating system installed, the requirement of the minimum memory might vary.
Maximum memory	16 GB
	 <b>NOTE:</b> Each UDIMM slot supports maximum of 8 GB memory.

**Table 11. Video**

Video Type:	
Integrated	Intel HD Graphics
Discrete	PCI Express x16 graphics card <ul style="list-style-type: none"> <li>• Nvidia GT 705</li> <li>• AMD R9 360</li> </ul>
Integrated video memory	Shared system memory

**Table 12. Audio**

Integrated	Integrated 5.1 channel High Definition Audio
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**Table 13. Communication**

Ethernet 10/100/1000 Mbps	Ethernet controller integrated on system board
Wireless	Up to Wi-Fi 802.11ac
Bluetooth	4.0

**Table 14. System Information**

Chipset	Intel H110
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**Table 15. Expansion Bus**

Bus speed:	
PCI Express	PCIe 2.0 at speeds upto 5.0 GT/s
SATA	<ul style="list-style-type: none"> <li>• SATA 3 Gbps for optical drive</li> <li>• SATA 6 Gbps for hard drive</li> </ul>
USB	<ul style="list-style-type: none"> <li>• 5 Gbps for USB 3.0</li> <li>• 480 Mbps for USB 2.0</li> </ul>

**Table 16. Cards**

PCIe x16	One full height card
PCIe x1	Up to two full height cards
M2 Slot	One M.2 card slot for Wi-Fi and Bluetooth combo card

**Table 17. Drives**

2.5 inch drive bays	One
3.5 inch drive bays	One
5.25 inch optical-drive bays	One

**Table 18. External Connectors**

Audio:	
Back panel	Three connectors
Front Panel	One headset port
Network	One RJ-45 connector
USB:	


Front panel	Two USB 3.0 connectors
Back panel	Four USB 2.0 connectors
Video	<ul style="list-style-type: none"> <li>• one 15-hole VGA connector</li> <li>• one 19-pin HDMI connector</li> </ul>
Memory-card reader	one

**Table 19. Control Lights And Diagnostic Lights**

power button light	white light — solid white light indicates power-on state ; blinking white light indicates sleep/stand-by state of the computer.
	amber light — solid amber light indicates boot failure - System Power Error; blinking amber light indicates boot failure - System Power OK
drive activity light	white light — blinking white light indicates that the computer is reading data from, or writing data to the hard drive.

**Table 20. Power**

Coin-cell battery	3 V CR2032 lithium coin cell
Input voltage	200-240 VAC / 100-127/200-240 VAC / 100-240 VAC
Input frequency	50 Hz to 60 Hz
Wattage	240 W
Input current	2 A / 7/3.5A / 4 A
Maximum heat dissipation	1024 BTU/hr

 **NOTE:** Heat dissipation is calculated by using the power supply wattage rating.

**Table 21. Physical**


Height	380 mm (14.96 inches)
Width	175 mm (6.88 inches)
Depth	436.3 mm (17.17 inches)
Weight (Minimum)	8.5 kg (18.73 lb)

**Table 22. 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	20 % to 80 % (non-condensing)
Altitude:	
Operating	-15.20 m to 3048 m (-50 ft to 10,000 ft)
Storage	-15.20 m to 10,668 m (-50 ft to 35,000 ft)
Airborne contaminant level	G1 as defined by ISA-S71.04-1985

## Contacting Dell

 **NOTE:** If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1. Go to **dell.com/support**.
2. Select your support category.
3. Verify your country or region in the **Choose a Country/Region** drop-down list at the bottom of the page.
4. Select the appropriate service or support link based on your need.