Dell Vostro 3650
Owner's Manual

Notes, cautions, and warnings

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

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.

Contents

1

Working on your computer

Safety instructions

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**

⚠ **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.**

Before working inside your computer

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

1. Ensure that you follow the Safety instructions.
2. Ensure that your work surface is flat and clean to prevent the computer cover from being scratched.
3. 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.**
4. Disconnect all network cables from the computer.
5. Disconnect your computer and all attached devices from their electrical outlets.
6. Press and hold the power button while the computer is unplugged to ground the system board.
7. 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

Turning off your computer — Windows 8

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

1. Turning off your computer:
   - In Windows 8 (using a touch enabled device):
     1. Swipe in from the right edge of the screen, opening the **Charms** menu and select **Settings**.
     2. Tap ⏻ and then tap **Shut down**
   - In Windows 8 (using a mouse):
     1. Point to upper-right corner of the screen and click **Settings**.
     2. Click ⏻ 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.

Turning off your computer — Windows 7

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

1. Click **Start**.
2. Click **Shut Down**.

   📝 **NOTE: 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 that 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 **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 require the following tools:

- Small flat blade screwdriver
- Phillips # 1 screwdriver
- Small plastic scribe
- Hex screwdriver

Removing the cover

1. Follow the procedure in <u>Before Working Inside Your Computer</u>.
2. To remove the cover:
   a. Remove the screws that secure the cover to the computer [1].
   b. Slide the cover toward the back of the computer and lift it away from the computer [2].

Installing the cover

1. Place the cover on the computer and slide the cover forward until it clicks into place.
2. Tighten the screws to secure the cover to the computer.
3. Follow the procedure in <u>After Working Inside Your Computer</u>.

Removing the bezel

1. Follow the procedure in Before Working Inside Your Computer.
2. Remove the cover.
3. To remove the front bezel:
   a. Lift the tabs to release the front bezel from the computer.
   b. Remove the front bezel from the computer.
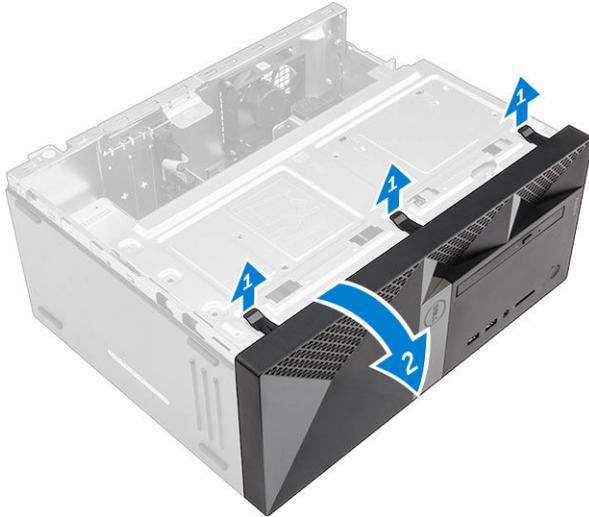
Installing the bezel

1. Insert the tabs on the bezel into the slots on the computer.
2. Press the bezel until the tabs clicks into place.
3. Install the cover.
4. Follow the procedure in After Working Inside Your Computer.

Opening the front bezel door

1. Follow the procedure in Before Working Inside Your Computer.
2. Remove the:
   - cover
   - bezel
3. Pull the front bezel door to open it.
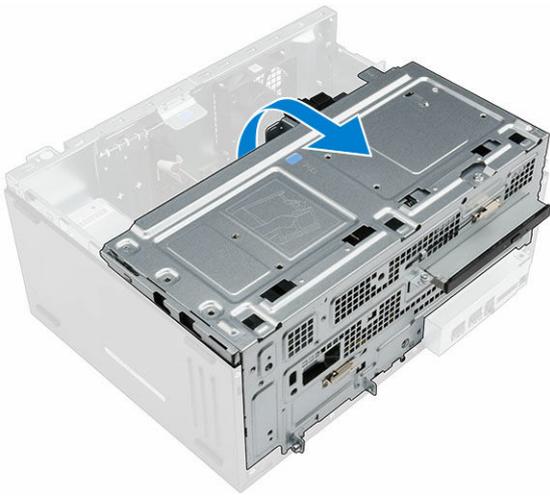
⚠️ **CAUTION: The front bezel door opens only to a limited extent. See the printed label for the maximum permissible level.**

Removing the hard drive assembly

1. Follow the procedure in [Before Working Inside Your Computer](#).
2. Remove the:
   - [cover](#)
   - [bezel](#)
3. To remove the hard drive assembly:
   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 [2, 3].
   c. Open the [front bezel door](#) [4].
   d. Hold the metal tabs on both sides and pull the hard drive assembly out of the computer [6].
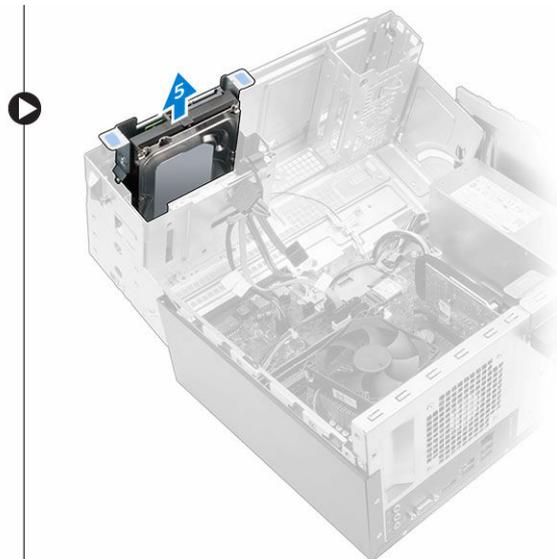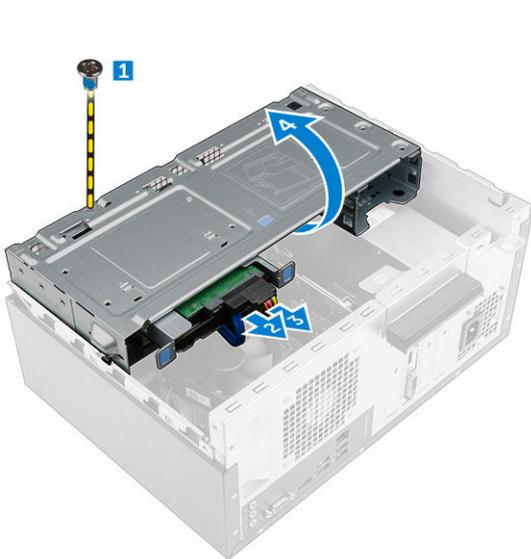
4. To remove the hard drive from the hard drive bracket:
   a. Remove the screws that secure the hard-drive bracket to the hard drive.
   b. Remove the hard drive from the hard drive bracket.

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. Insert the hard drive assembly into the slot on the computer until it clicks into place.
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 connectors on the hard drive.
7. Install the:
   - bezel
   - cover
8. Follow the procedure in After Working Inside Your Computer.

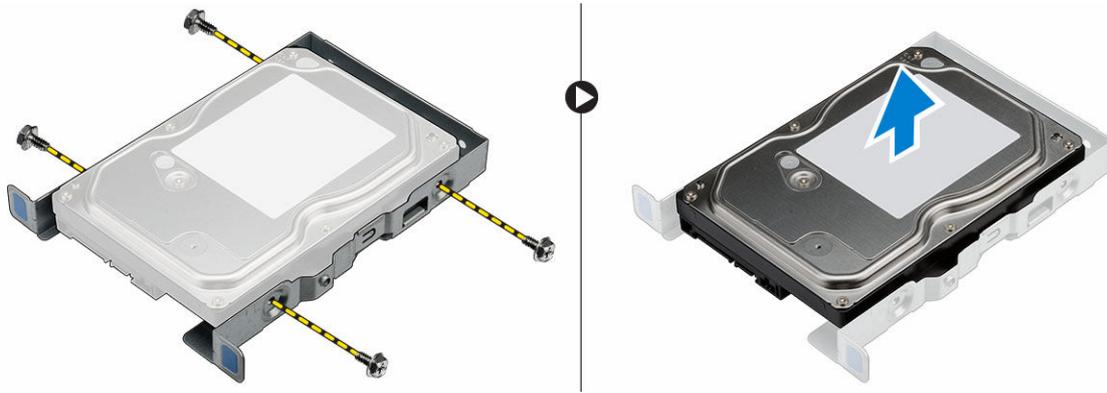# Removing the optical drive assembly

1. Follow the procedure in Before Working Inside Your Computer.
2. Remove the:
   - cover
   - bezel
3. To remove the optical drive assembly:
   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 out of the computer [5].
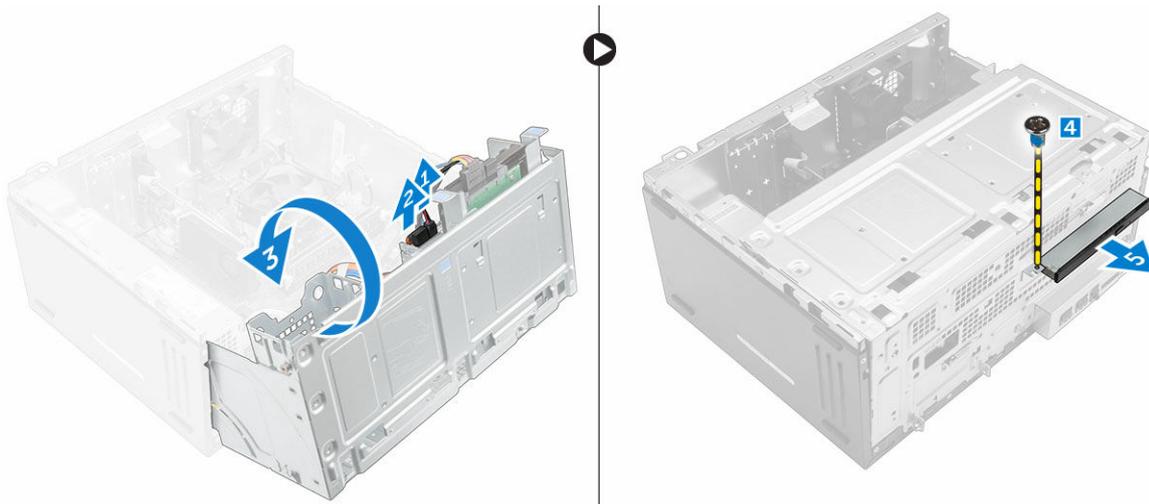
4. To remove the optical drive bracket:
   a. Remove the screws that secure the optical drive bracket to the optical drive.
   b. Remove the optical drive bracket from the optical drive.
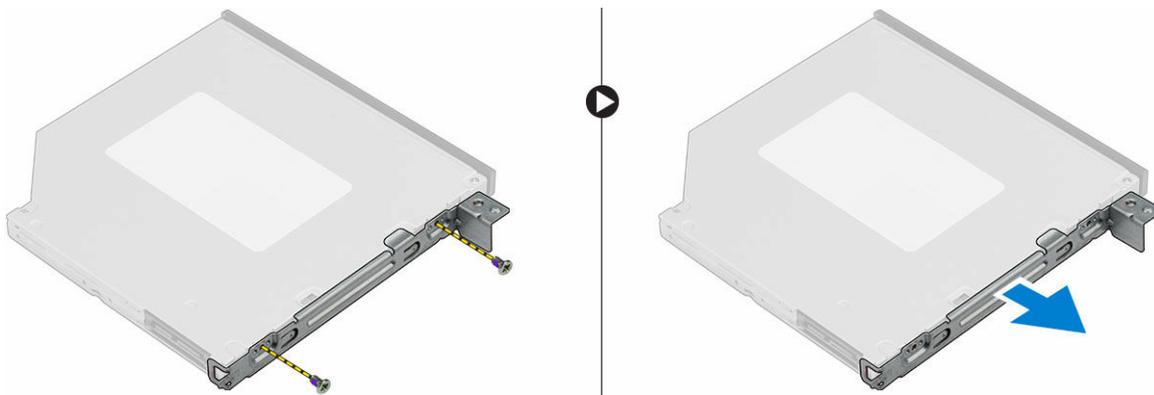
Installing the optical drive assembly

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. Insert the optical drive assembly into the optical drive bay until it clicks into place.
4. Tighten the screw to secure the optical drive assembly to the computer.
5. Open the front bezel door.
6. Connect the data cable and power cable to the connectors on the optical drive assembly .
7. Close the front bezel door.
8. Install the:
   · bezel
   · cover
9. Follow the procedure in After Working Inside Your Computer.

Removing the WLAN card

1. Follow the procedure in Before Working Inside Your Computer.
2. Remove the:
   · cover

- bezel
3. Open the front bezel door.
4. To remove the WLAN card:
   a. Remove the screw to release the plastic tab that secures the WLAN card to the computer [1].
   b. Remove the plastic tab to access the WLAN cables [2].
   c. Disconnect the WLAN cables from the connectors on the WLAN card [3].
   d. Disconnect the WLAN card from the connector on the system board [4].
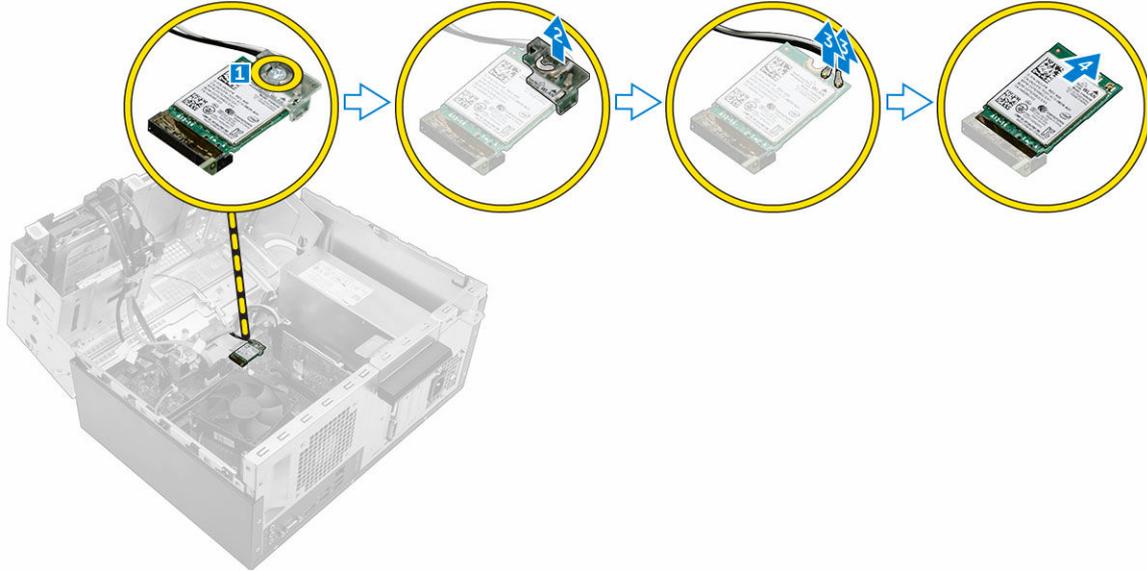
Installing the WLAN Card

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 procedure in After Working Inside Your Computer.

Removing the memory module

1. Follow the procedure in Before Working Inside Your Computer.
2. Remove the:
   - cover
   - bezel
3. Open the front bezel door.
4. To remove the memory module:
   a. Press the memory module retention tabs on both sides of the memory module.
   b. Lift the memory module from the memory module connector on the system board.
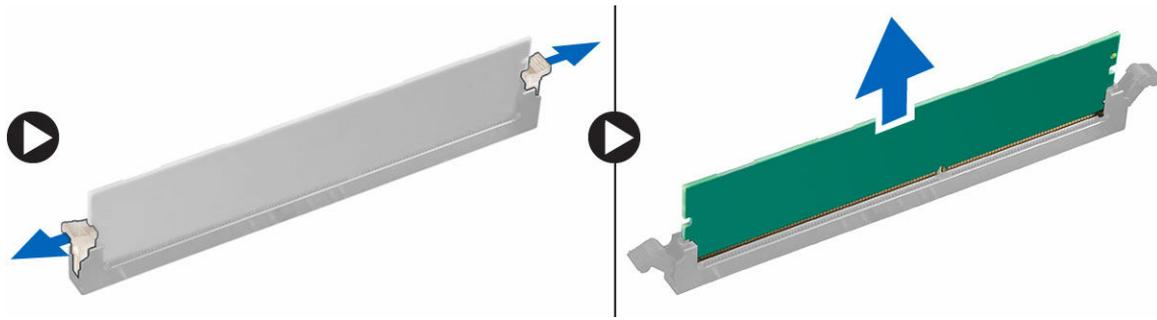
Installing the memory module

1. Align the notch on the memory module with the tab on the memory module connector.
2. Insert the memory module into the memory module socket.
3. Press the memory module until the memory module retention tabs click into place.
4. Close the front bezel door.
5. Install the:
   a. cover
   b. bezel
6. Follow the procedure in After Working Inside Your Computer.

Removing the PCIe expansion card

1. Follow the procedure in Before Working Inside Your Computer.
2. Remove the:
   - cover
   - bezel
3. Open the front bezel door.
4. To remove the PCIe expansion card:
   a. Pull the release latch to unlock the PCIe expansion card [1].
   b. Push the release tab [2] and lift the PCIe expansion card out of the computer [3].
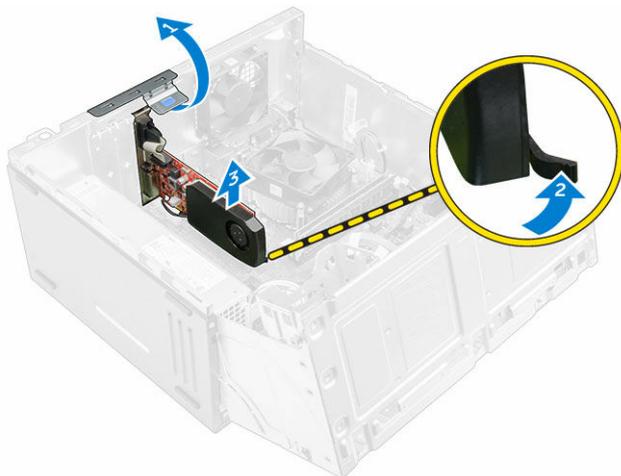
Installing the PCIe expansion card

1. Pull the release latch to open it.
2. Insert the PCIe expansion card to the connector on the system board.
3. Secure the PCIe expansion card by pushing the card retention latch until it clicks into place.
4. Close the release latch.
5. Close the front bezel door.
6. Install the:
    a. bezel
    b. cover
7. Follow the procedure in After Working Inside Your Computer.

Removing the power supply unit (PSU)

1. Follow the procedure in Before Working Inside Your Computer.
2. Remove the:
    - cover
    - bezel
3. Open the front bezel door.
4. To remove the PSU:
    a. Remove the screws that secure the PSU to the computer [1].
    b. Disconnect the PSU cables from the connectors on the system board [2, 3].
    c. Unroute the PSU cables from the retention clips.
    d. Press the metal release tab [4], slide the PSU toward the back and lift it out of the computer [5].
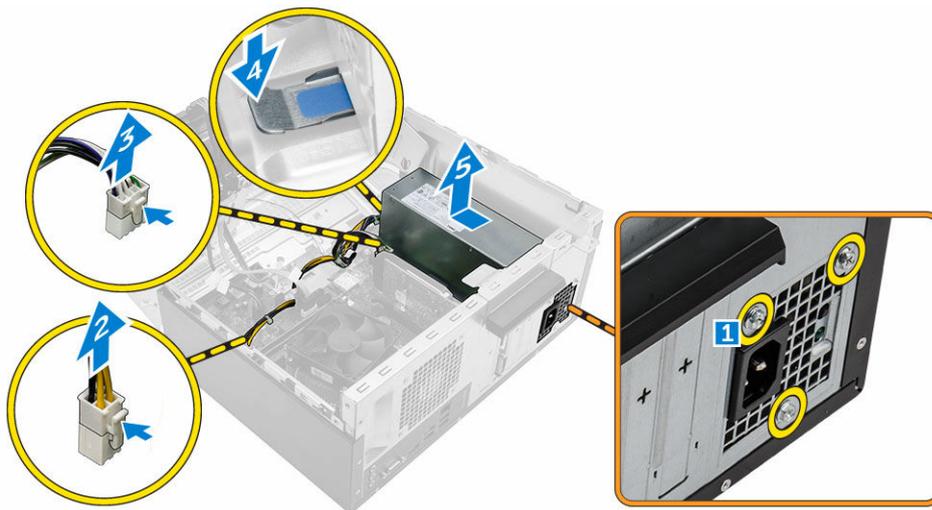
Installing the power supply unit (PSU)

1. Insert the PSU into the PSU slot and slide it toward the back of the computer until it clicks into place.
2. Tighten the screws to secure the PSU to the computer.
3. Route the PSU cables through the retention clips.
4. Connect the PSU cables to the connectors on the system board.
5. Close the front bezel door.
6. Install the:

- bezel
- cover

7. Follow the procedure in After Working Inside Your Computer.

Removing the power switch

1. Follow the procedure in Before Working Inside Your Computer.
2. Remove the:
   - cover
   - bezel
3. Open the front bezel door.
4. To remove the power switch:
   a. Disconnect the power switch cable from the system board [1].
   b. Unroute the power switch cable from the retention clip.
   c. Press the release tab [2] and slide the power switch out of the computer [3].
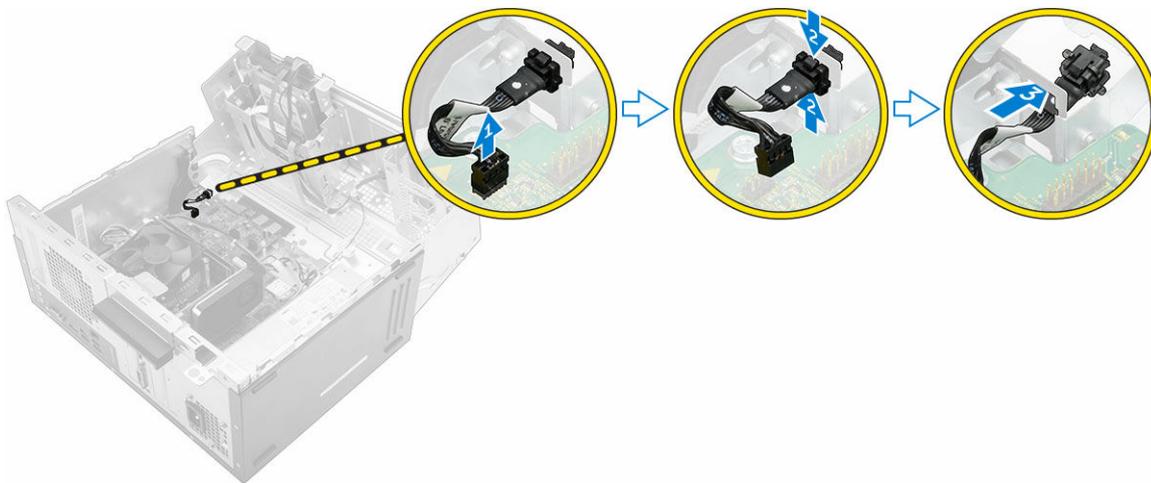
Installing the power switch

1. Insert the power switch into the slot and press it until it clicks into place.
2. Route the power switch cable through the cable retention 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 procedure in After Working Inside Your Computer.

Removing the coin cell battery

1. Follow the procedure in Before Working Inside Your Computer.
2. Remove the:
   - cover
   - bezel
3. Open the front bezel door.
4. To remove the coin cell battery:

a. Press the release latch until the coin cell battery pops out.

b. Remove the coin cell battery from the connector on the system board.

Installing the coin cell battery

1. Hold the coin cell battery with the "+" sign facing up and slide it under the securing tabs at the positive side of the connector.

2. Press the battery into the connector until it locks into place.

3. Close the front bezel door.

4. Install the:

   · bezel

   · cover

5. Follow the procedure in After Working Inside Your Computer.

Removing the heat sink assembly

1. Follow the procedure in Before Working Inside Your Computer.

2. Remove the:

   · cover

   · bezel

3. Open the front bezel door.

4. To remove the heat sink assembly:

   a. Disconnect the heat sink assembly cable from the connector on the system board [1].

   b. Loosen the captive screws that secure the heat sink assembly to the system board [2, 3, 4, 5].

   c. Lift the heat sink assembly away from the computer [6].
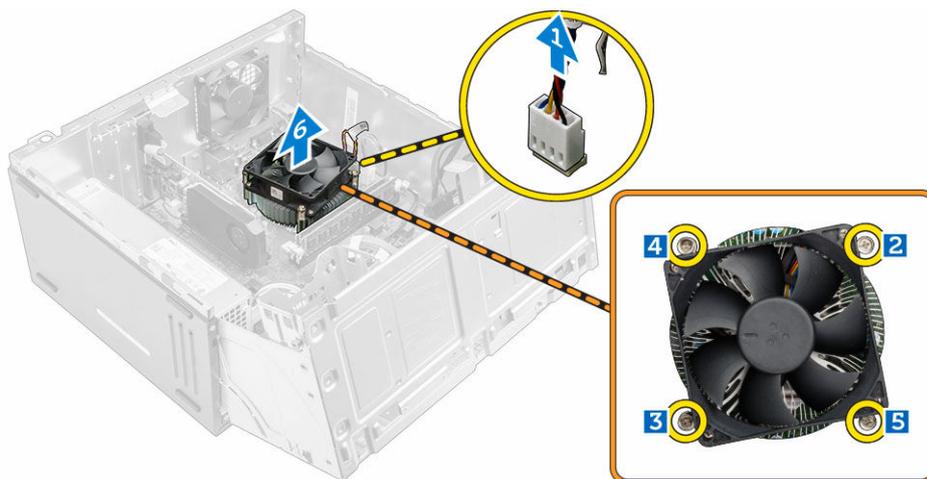
Installing the heat sink assembly

1. Place the heat sink assembly on the processor.
2. Tighten the captive screws to secure the heat sink assembly to the system board.
3. Connect the heat sink assembly cable to the connector on the system board.
4. Close the front bezel door.
5. Install the:
   - bezel
   - cover
6. Follow the procedure in After Working Inside Your Computer.

Removing the processor

1. Follow the procedure in Before Working Inside Your Computer.
2. Remove the:
   - cover
   - bezel
3. Open the front bezel door.
4. Remove the heat sink assembly.
5. To remove the processor:
   a. Release the socket lever by pushing the lever down and out from under the tab on the processor shield [1].
   b. Lift the lever upward and lift the processor shield [2].
   c. Lift the processor out of the socket [3].

   ⚠ CAUTION: The processor socket pins are fragile and can be permanently damaged. Be careful not to bend the pins in the processor socket when removing the processor out of the socket.

Installing the processor

1. Align the processor with the socket keys.

   ⚠ CAUTION: Do not use force to seat the processor. When the processor is positioned correctly, it engages easily into the socket.

2. Align the pin-1 indicator of the processor with the triangle on the socket.
3. Place the processor on the socket such that the slots on the processor align with the socket keys.
4. Close the processor shield by sliding it under the retention screw.
5. Lower the socket lever and push it under the tab to lock it.
6. Install the heat sink assembly.
7. Close the front bezel door.
8. Install the:

a. bezel
b. cover

9. Follow the procedure in After Working Inside Your Computer.

Removing the system fan

1. Follow the procedure in Before Working Inside Your Computer.
2. Remove the:
   - cover
   - bezel
3. Open the front bezel door.
4. To remove the system fan:
   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 out of the computer [3].
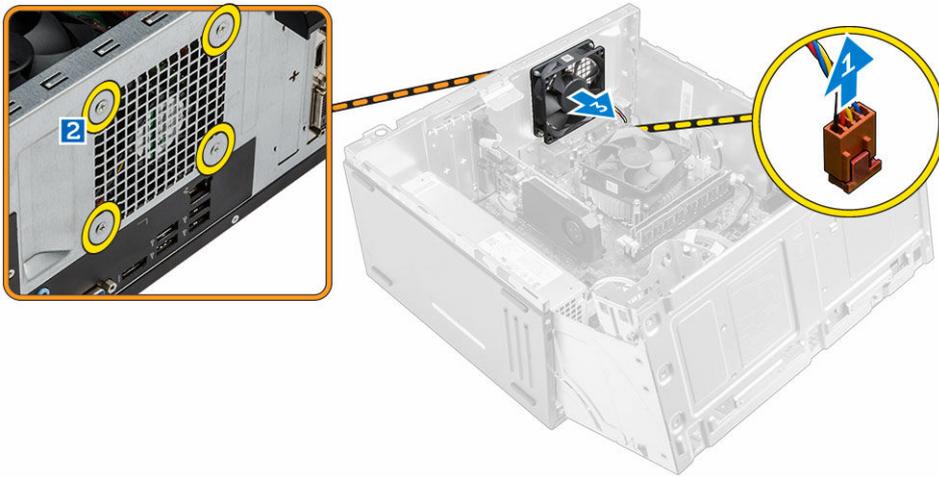
Installing the system fan

1. Hold the system fan by the sides with the cable end facing the bottom of 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 procedure in After Working Inside Your Computer.

Removing the system board

1. Follow the procedure in Before Working Inside Your Computer.
2. Remove the:
   - cover
   - bezel
3. Open the front bezel door.
4. Remove the:

- heat sink assembly
- processor
- PCIe expansion card
- memory module

5. Disconnect all the cables from the connectors on the system board.

6. To remove the system board:
   a. Remove the screws that secure the system board to the computer [1].
   b. Slide the system board toward the front of the computer and lift it away from the computer [2].
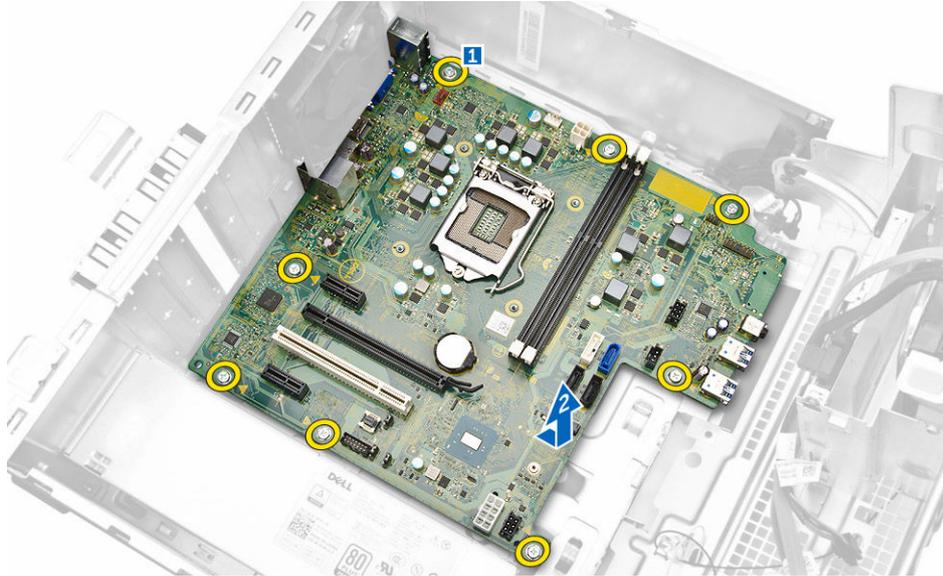
Installing the system board

1. Hold the system board by its edges and angle it toward the back of the computer.

2. Lower the system board into the computer until the connectors at the back of the system board align with the slots on the back wall of the computer, and the screw holes on the system board align with the standoffs on the computer.

3. Tighten the screws to secure the system board to the computer.

4. Route all the cables through the routing channels and connect all the cables to the connectors on the system board.

5. Install the:
   - WLAN card
   - memory module
   - PCIe expansion card
   - processor
   - heat sink assembly

6. Close the front bezel door.

7. Install the:
   - bezel
   - cover

8. Follow the procedure in After Working Inside Your Computer.

System Board Layout
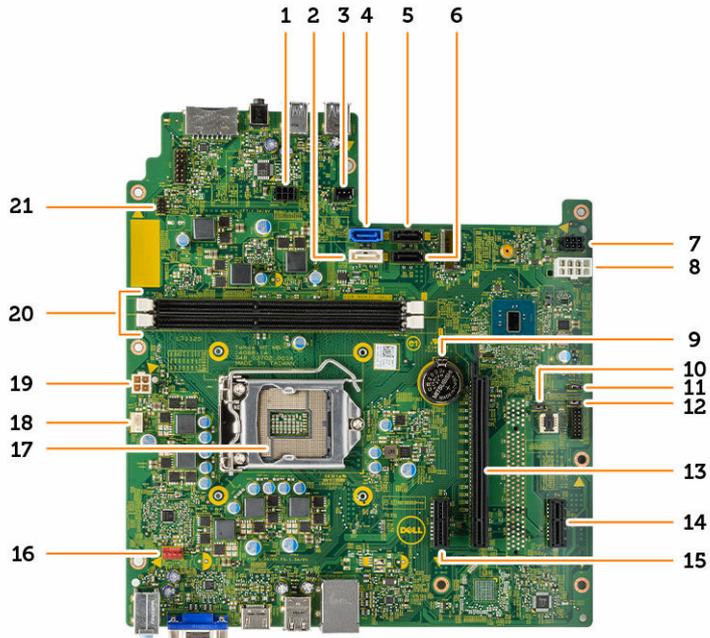
1. SATA power connector	2. SATA1
3. Light bar header	4. SATA0
5. SATA3	6. SATA2
7. SATA power connector	8. PSU connector
9. Coin cell battery	10. Clear CMS jumper
11. ME disable jumper	12. Password clear jumper
13. PCIex16	14. PCIex1
15. PCIex1	16. System fan connector
17. CPU socket	18. CPU fan connector
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.	• Re-seat the power cable in the power connector on the back of the computer and the electrical outlet. • If the computer is plugged into a power strip, ensure that 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 that the computer turns on properly. • Ensure the electrical outlet is working by testing it with another device, such as a lamp.
Steady/blinking amber	Computer fails to complete POST or processor failure.	• Remove and reinstall any cards. • Remove and reinstall the graphics card, if applicable. • Ensure the power cable is connected to the system board and processor.
Blinking white light	Computer is in sleep mode.	• Press the power button to bring the computer out of the sleep mode. • Ensure all power cables are securely connected to the system board. • Ensure the main power cable and front panel cable are connected to the system board.
Steady white	The computer is fully functional and in the On state.	If the computer is not responding, do the following: • Ensure the display is connected and turned on.

Power LED light status	Possible cause	Troubleshooting steps
		• If the display is connected and turned on, listen for a beep code.

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 **Pointing Device** 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 path name.
CACHE DISABLED DUE TO FAILURE	The primary cache internal to the microprocessor has failed. Contact Dell.
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 **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 module installed in the computer. Restart the computer. If the error appears again, Contact Dell
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 module or, if necessary, replace it.
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.`
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

Error messages	Description
	an optical drive. Then, shut down the computer, reinstall the hard drive, and restart the computer. Run the **Hard Disk Drive** tests in **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 **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 **Hard Disk Drive** tests in **Dell Diagnostics**.
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 **Hard Disk Drive** tests in **Dell Diagnostics**.
INSERT BOOTABLE MEDIA	The operating system is trying to boot to non-bootable media, such as an 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 **Keyboard Controller** test in **Dell Diagnostics**.
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 **Keyboard Controller** test in **Dell Diagnostics**.
KEYBOARD DATA LINE FAILURE	For external keyboards, check the cable connection. Run the **Keyboard Controller** test in **Dell Diagnostics**.
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 **Stuck Key** test in **Dell Diagnostics**.
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 module or, if necessary, replace it.
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 for 30 seconds, and then restart it. Run the program again. If the error message still appears, see the software documentation.

Error messages	Description
MEMORY DOUBLE WORD LOGIC FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory module or, if necessary, replace it.
MEMORY ODD/EVEN LOGIC FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory module or, if necessary, replace it.
MEMORY WRITE/READ FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory module or, if necessary, replace it.
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, Contact Dell.
NO TIMER TICK INTERRUPT	A chip on the system board may be malfunctioning. Run the **System Set** tests in **Dell Diagnostics**.
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 operating system. If the problem persists, Contact Dell.
OPTIONAL ROM BAD CHECKSUM	The optional ROM has failed. Contact Dell.
SECTOR NOT FOUND	The operating system cannot locate a sector on the hard drive. You may have a defective sector or corrupted File Allocation Table (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 format 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 **System Set** tests in **Dell Diagnostics**. If the message reappears, Contact Dell.
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, Contact Dell.
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, Contact Dell.
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 **Date and Time** options.
TIMER CHIP COUNTER 2 FAILED	A chip on the system board may be malfunctioning. Run the **System Set** tests in **Dell Diagnostics**.

Error messages	Description
UNEXPECTED INTERRUPT IN PROTECTED MODE	The keyboard controller may be malfunctioning, or a memory module may be loose. Run the **System Memory** tests and the **Keyboard Controller** test in **Dell Diagnostics** or Contact Dell.
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. • 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. • Enter system setup and ensure that the boot sequence information is correct.
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. Default: Not Set
Asset Tag	Allows you to enter your service tag.
Admin Password	Allows you to create an admin password.
HDD Password	Allows you to create an HDD password.
System Password	Allows you to create a system password.
Password Change	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.
	1. Allows you to discard the changes made to the system setup. 2. Allows you to restore the system setup options to default. 3. Allows you to discard the changes made to the system setup. 4. Allows you to save the changes made to the system setup.

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 immediately.
   The System Setup page is displayed.

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

NOTE: After the Dell logo appears, you can also press F12 and then select BIOS setup.

5

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	• Intel Celeron
	• Intel Pentium
	• Intel Dual Core i3 (6th Generation)
	• Intel Dual Core i5 (6th Generation)
	• Intel Dual Core i7 (6th Generation)

Table 10. Memory

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

Table 11. Video

Video type:	
Integrated	Intel HD Graphics
Discrete	PCI Express x16 graphics card
	• Nvidia GT 705
	• AMD R9 360
Integrated video memory	Shared system memory

Table 12. Audio

Integrated	Integrated 5.1 channel High Definition Audio

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

Table 15. Expansion Bus

Bus speed:	
PCI Express	PCIe 2.0 at speeds upto 5.0 GT/s
SATA	• SATA 3 Gbps for optical drive • SATA 6 Gbps for hard drive
USB	• 5 Gbps for USB 3.0 • 480 Mbps for USB 2.0

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
PCI	One full height card

Table 17. Drives

2.5 inch drive bays	Up to two
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	• One 15-hole VGA connector • One 19-pin HDMI connector

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	820 BTU/hr

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

Table 21. Physical

Height	352.90 mm (13.90 inches)
Width	154 mm (6.06 inches)
Depth	294.4 mm (11.59 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.