

# Dell Vostro 15–3559 Owner's Manual

Regulatory Model: P52F  
Regulatory Type: P52F003



# 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).


3. If the computer is connected to a docking device (docked), undock it.


 **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. Close the display and turn the computer upside-down on a flat work surface.

 **NOTE: To avoid damaging the system board, you must remove the main battery before you service the computer.**

7. Remove the main battery.
8. Turn the computer top-side up.
9. Open the display.
10. Press the power button to ground the system board.

 **CAUTION: To guard against electrical shock, always unplug your computer from the electrical outlet before opening the display.**

 **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.**


11. Remove any installed ExpressCards or Smart Cards from the appropriate slots.


## Recommended Tools

The procedures in this document may require the following tools:

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


## 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:
    - 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**
    - Using a mouse:
      - a. Point to upper-right corner of the screen and click **Settings**.

- b. Click the  and 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 4 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.

 **CAUTION: To avoid damage to the computer, use only the battery designed for this particular Dell computer. Do not use batteries designed for other Dell computers.**

1. Connect any external devices, such as a port replicator or media base, and replace any cards, such as an ExpressCard.
2. Connect any telephone or network cables to your computer.

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

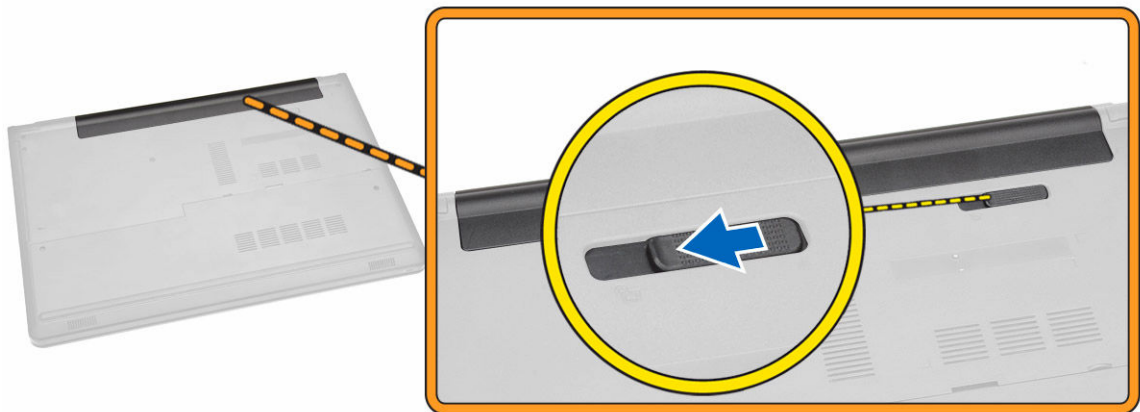
3. Replace the battery.
4. Connect your computer and all attached devices to their electrical outlets.
5. Turn on your computer.

## Removing and Installing Components

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

### Removing the Battery

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Slide the release latch outwards to unlock the battery.



3. Remove the battery from the computer.



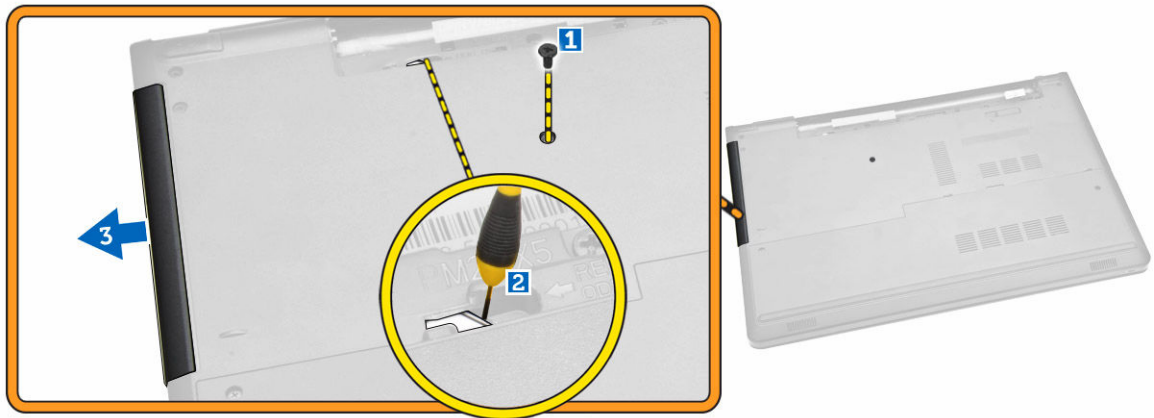


## Installing the Battery

1. Insert the battery into its slot until it clicks into place.
2. Follow the procedures in [After Working Inside Your computer](#).

## Removing the Optical-disk Drive

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove the [battery](#).
3. Perform the following steps as shown in the illustration:
  - a. Remove the screw that secures the optical-disk drive (ODD) to the computer [1].
  - b. Press on the tab indicated using a scribe [2].
  - c. Slide the ODD out of the computer [3].

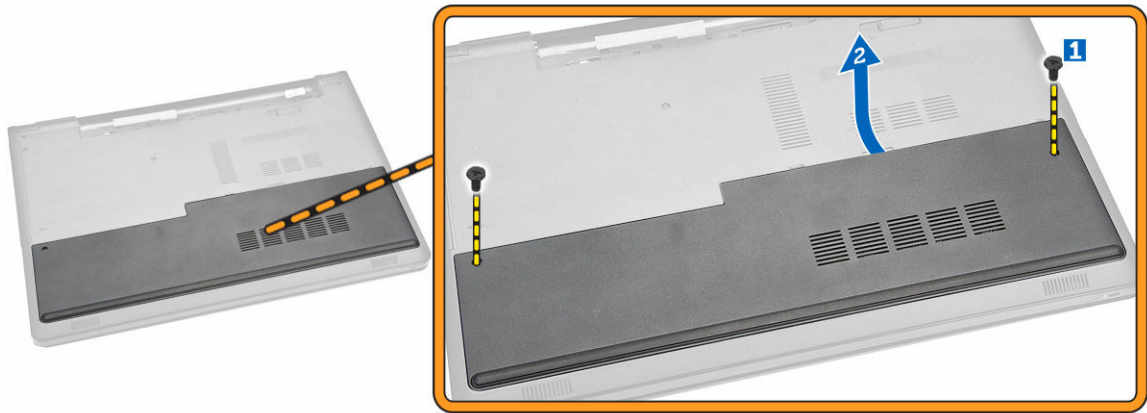


## Installing the Optical-disk Drive

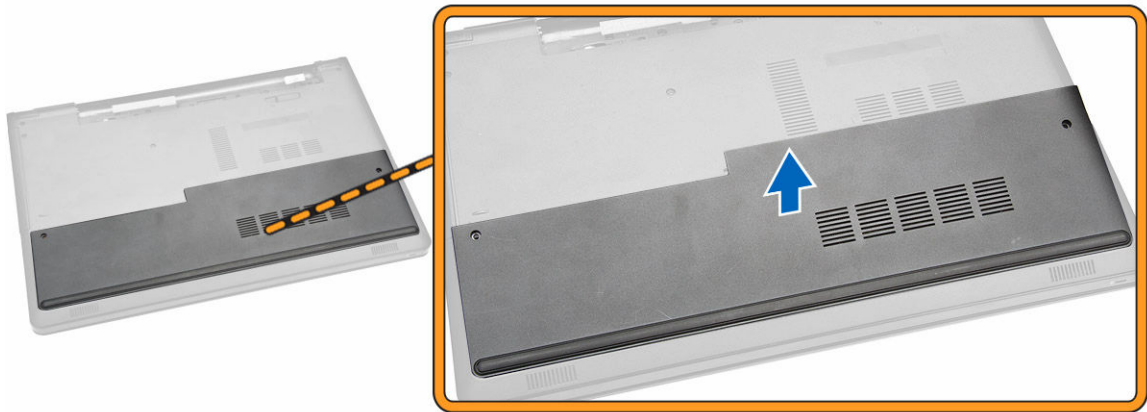
1. Insert the ODD into its slot until it clicks into place.
2. Tighten the screw to secure the ODD.
3. Install the [battery](#).
4. Follow the procedures in [After Working Inside Your computer](#).

## Removing the Access Panel

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove [battery](#).
3. Perform the following steps as shown in the illustration:
  - a. Remove the screws that secure the access panel to the computer [1].
  - b. Lift the access panel partially at a 45-degree angle [2].



4. Remove the access panel from the computer.



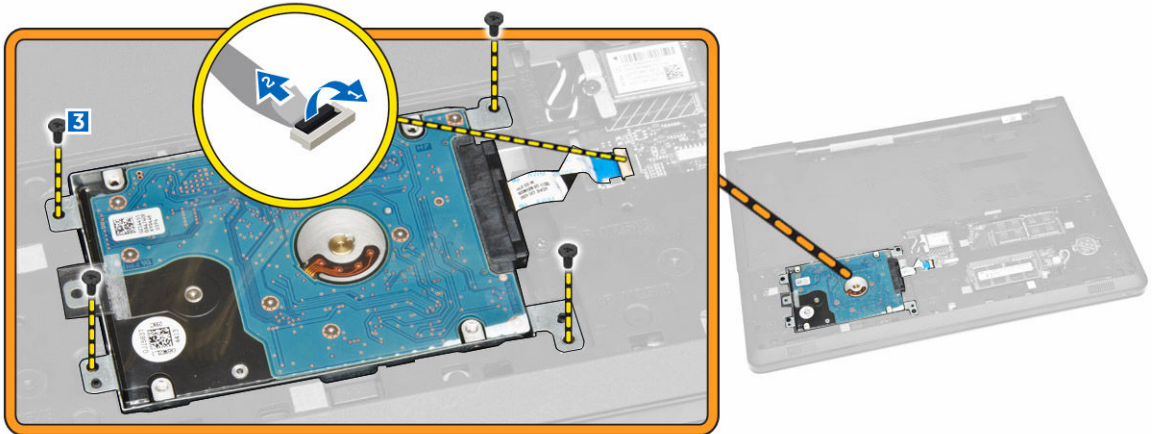
## Installing the Access Panel

1. Place the access panel to align with the screw holes at the back of the computer.
2. Tighten the screws to secure the access panel to the computer.
3. Install the [battery](#).
4. Follow the procedures in [After Working Inside Your computer](#).

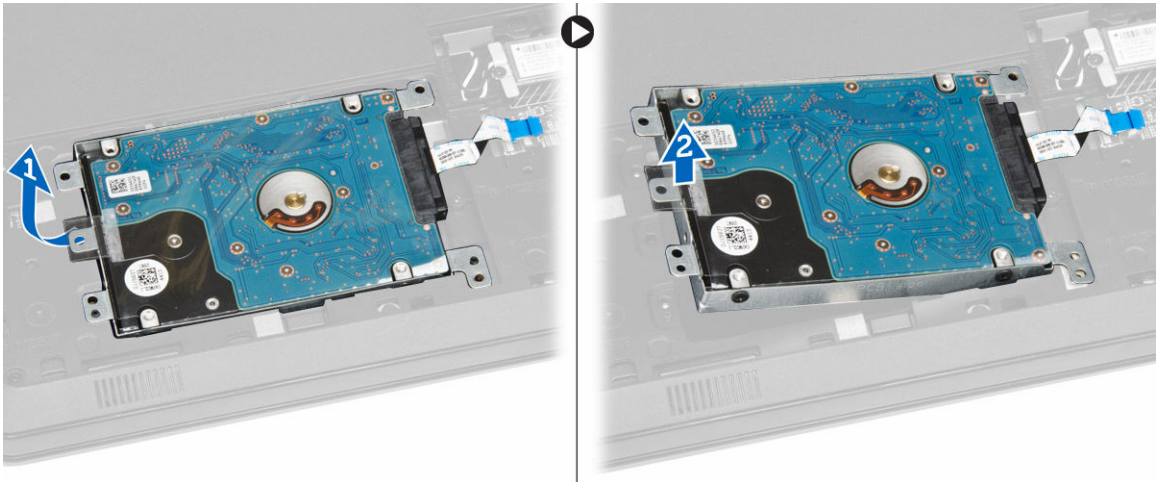
## Removing the Hard Drive

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove:
  - a. [battery](#)
  - b. [access panel](#)
3. Perform the following steps as shown in the illustration:
  - a. Disconnect the hard drive cable from the system board and lift it up to remove it from the computer [1,2].

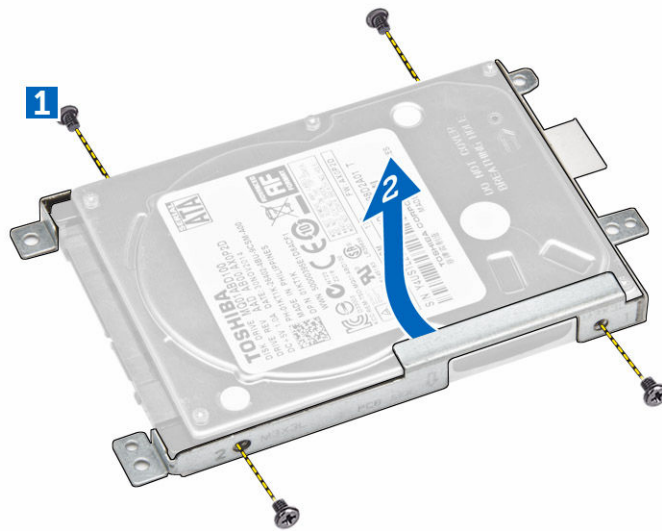
- b. Remove the screws that secure the hard drive to the computer [3].



4. Perform the following steps as shown in the illustration:  
a. Lift the hard drive to remove it from the computer [1,2].



5. Perform the following steps as shown in the illustration:  
a. Remove the screws that secure the hard drive to the bracket [1].  
b. Lift the hard drive from the bracket [2].

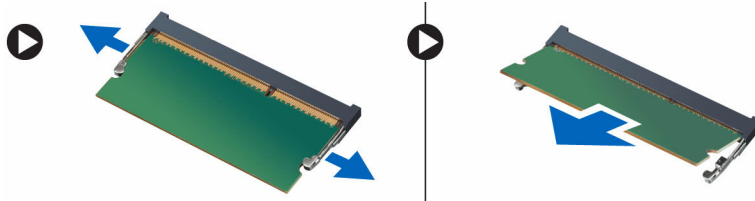


## Installing the Hard Drive

1. Place the hard drive in the bracket.
2. Tighten the screws that secure the hard drive to the bracket.
3. Slide the hard drive into the connector.
4. Tighten the screw to secure it to the chassis.
5. Install:
  - a. [access panel](#)
  - b. [battery](#)
6. Follow the procedures in [After Working Inside Your computer](#).

## Removing the Memory Module

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove:
  - a. [battery](#)
  - b. [access panel](#)
3. Pry the securing clips away from the memory module until it pops up.
4. Remove the memory module from its socket on the system board.

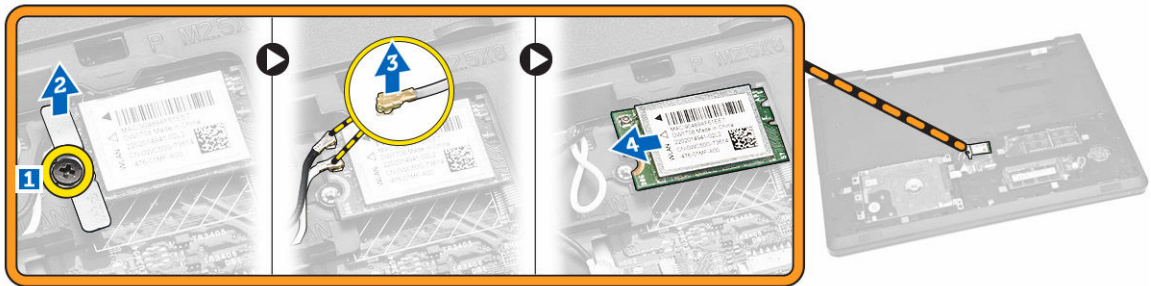


## Installing the Memory Module

1. Insert the memory module into the socket and press to lock the securing clips.
2. Install:
  - a. [access panel](#)
  - b. [battery](#)
3. 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:
  - a. [battery](#)
  - b. [access panel](#)
3. Perform the following steps as shown in the illustration:
  - a. Remove the screw that secures the WLAN card to the system board [1,2].
  - b. Remove the two connectors that secure the WLAN card to the system board [3].
  - c. Remove the WLAN card from its socket [4].



## Installing the WLAN Card

1. Insert the WLAN card into its slot and tighten the screw to secure it to the system board.
2. Connect the two connectors (black cable to the black triangle and white cable to the white triangle).
3. Install:
  - a. [access panel](#)
  - b. [battery](#)
4. 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:
  - a. [battery](#)
  - b. [access panel](#)
3. Push the coin-cell release latch using a scribe and then pull the coin-cell battery to remove it from the computer.

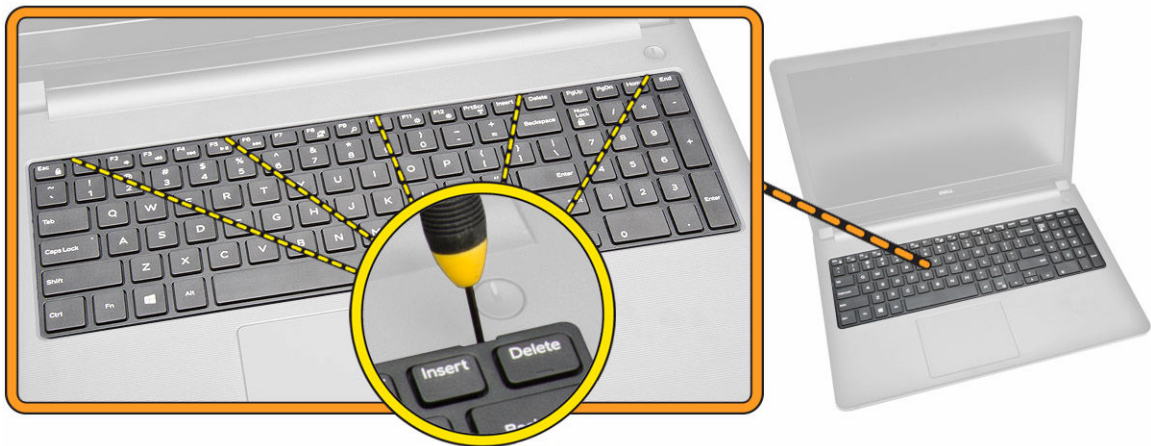


## Installing the Coin-cell battery

1. Insert the coin-cell battery and press to lock it.
2. Install:
  - a. [access panel](#)
  - b. [battery](#)
3. Follow the procedures in [After Working Inside Your computer](#).

## Removing the Keyboard

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove the [battery](#).
3. Release the keyboard by prying on the keyboard release tabs using a scribe.



4. Perform the following steps as shown in the illustration:
  - a. Slide and lift the keyboard to access the keyboard connector cable underneath [1,2].



5. Perform the following steps as shown in the illustration:
  - a. Disconnect the keyboard cable from the system board [1].
  - b. Lift the keyboard cable to remove it from the computer [2].



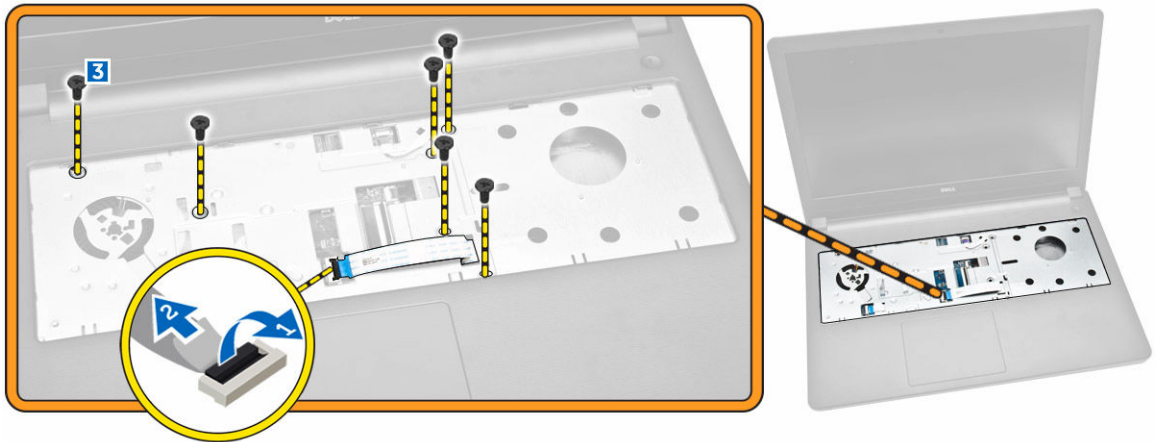
## Installing the Keyboard

1. Connect the keyboard cable to the connector on the system board.
2. Slide the keyboard into the retention slots.
3. Press along the top edges to lock the keyboard in place.
4. Install the [battery](#).
5. Follow the procedures in [After Working Inside Your computer](#).

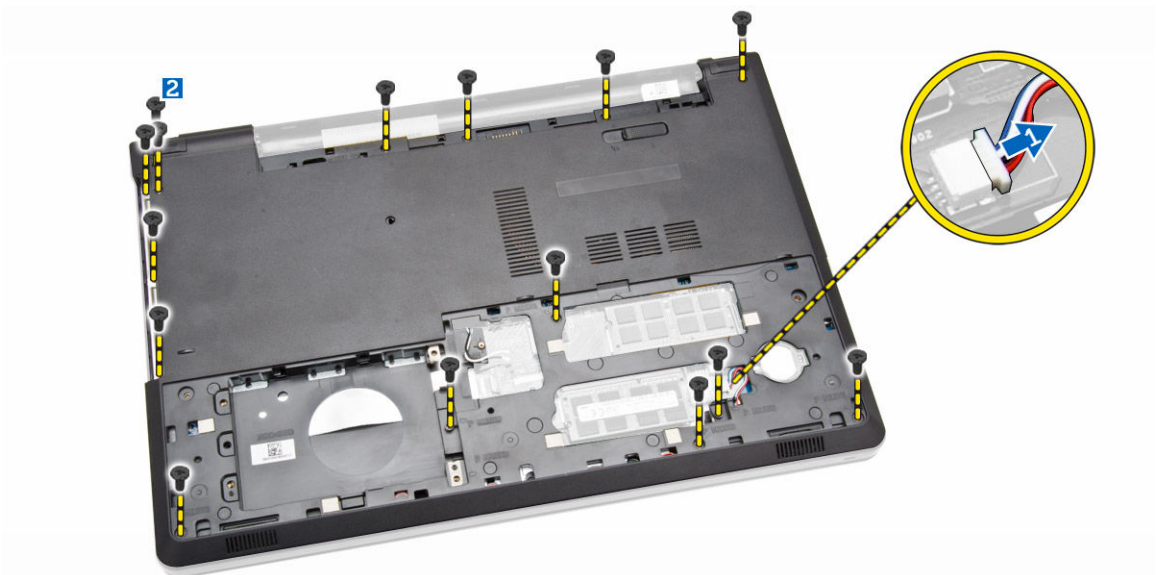
## Removing the Base Cover

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove:
  - a. [battery](#)

- b. [hard drive](#)
  - c. [access panel](#)
  - d. [optical-disk drive](#)
  - e. [WLAN card](#)
  - f. [memory module](#)
  - g. [keyboard](#)
3. Perform the following steps as shown in the illustration:
- a. Disconnect the ODD connector and lift it to remove it from the system board [1,2].
  - b. Remove the screws from inside the palmrest [3].



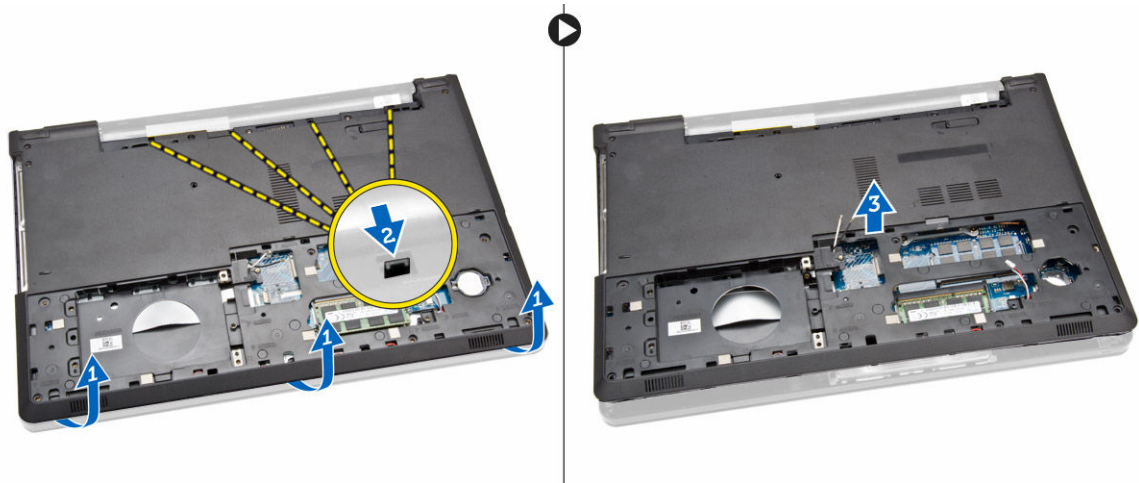
4. Perform the following steps as shown in the illustration:
- a. Disconnect the speaker cable that secures the back cover to the computer [1].
  - b. Remove the screws that secure the base cover to the computer [2].



5. Perform the following steps as shown in the illustration:
- a. Turn the computer over and remove the screws at the base of the computer [1].
  - b. Release the tabs that secure the base cover [2].



- c. Pry up the base cover and slide it away from the computer [3].

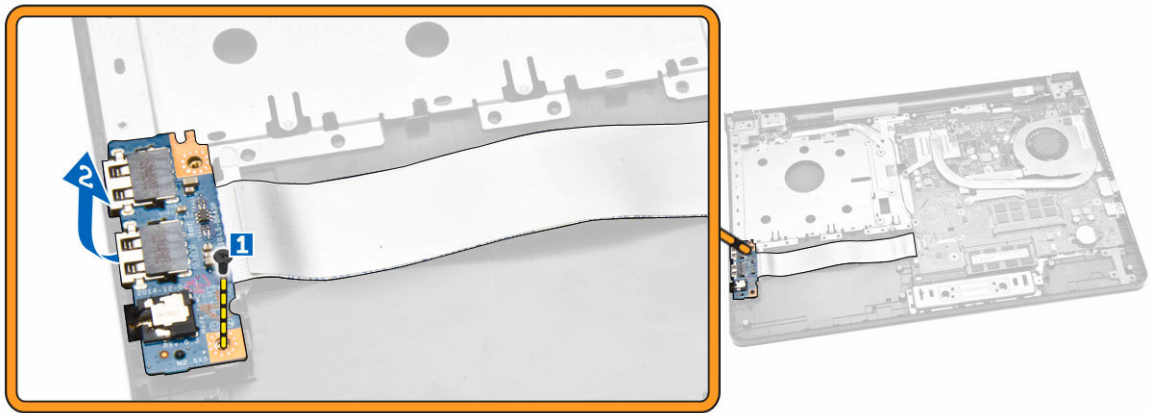


## Installing the Base Cover

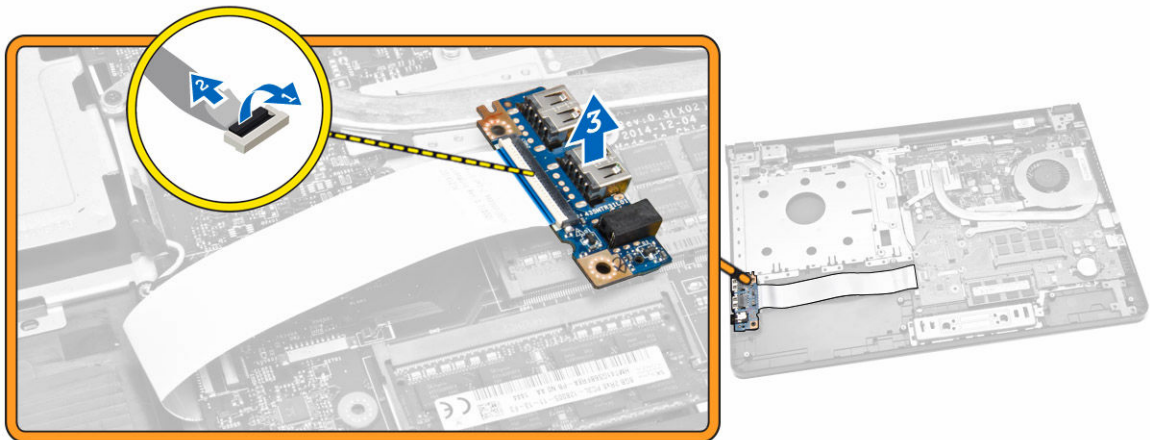
1. Place the base cover on the chassis and press the notches until they lock in place.
2. Connect the ODD connector to the system board.
3. Tighten the screws to secure the base cover to the palmrest.
4. Turn the computer over and tighten the screws at the base of the computer.
5. Install:
  - a. [keyboard](#)
  - b. [memory module](#)
  - c. [hard drive](#)
  - d. [WLAN card](#)
  - e. [access panel](#)
  - f. [optical-disk drive](#)
  - g. [battery](#)
6. Follow the procedures in [After Working Inside Your computer](#).

## Removing the Input/Output (I/O) Board

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove:
  - a. [battery](#)
  - b. [optical-disk drive](#)
  - c. [access panel](#)
  - d. [hard drive](#)
  - e. [memory module](#)
  - f. [keyboard](#)
  - g. [base cover](#)
3. Perform the following steps as shown in the illustration:
  - a. Remove the screw that secures the I/O board [1].
  - b. Lift the I/O board away from the computer [2].



4. Perform the following steps as shown in the illustration:
  - a. Disconnect the I/O board cable and lift it away from the computer [1,2].

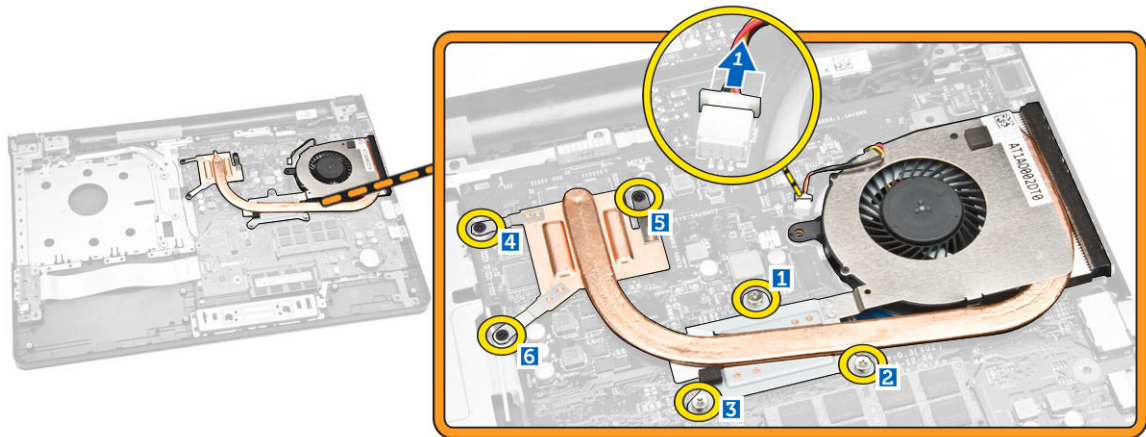


## Installing the Input/Output (I/O) Board

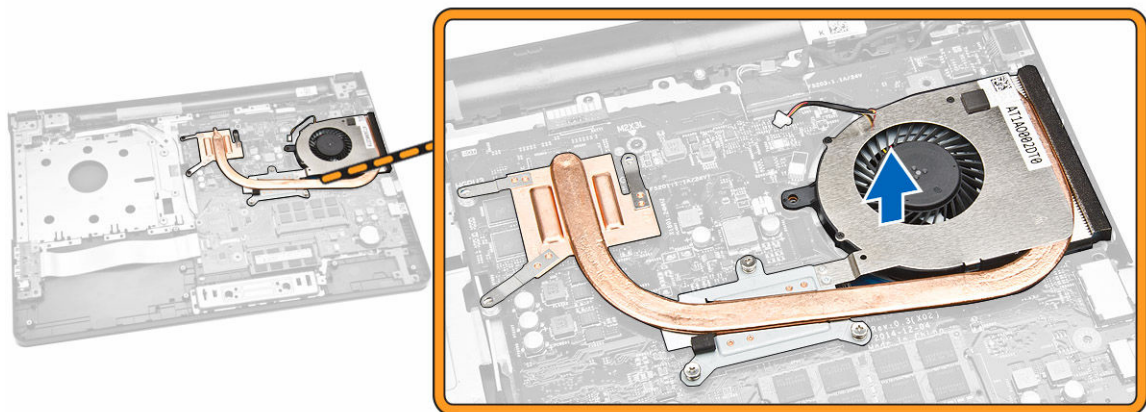
1. Connect the I/O board cable to the system board.
2. Install the I/O board into the chassis.
3. Install:
  - a. [base cover](#)
  - b. [keyboard](#)
  - c. [memory module](#)
  - d. [hard drive](#)
  - e. [WLAN card](#)
  - f. [access panel](#)
  - g. [optical-disk drive](#)
  - h. [battery](#)
4. Follow the procedures in [After Working Inside Your computer](#).

## Removing the Heatsink Assembly

1. Follow the procedures in [Before Working Inside Your Computer.](#)
2. Remove:
  - a. [battery](#)
  - b. [optical-disk drive](#)
  - c. [access panel](#)
  - d. [hard drive](#)
  - e. [memory module](#)
  - f. [keyboard](#)
  - g. [base cover](#)
3. Perform the following steps as shown in the illustration:
  - a. Disconnect the system fan cable from the system board [1].
  - b. Remove the screws that secure the heatsink assembly to the system board.



4. Remove the heatsink assembly from the system board.

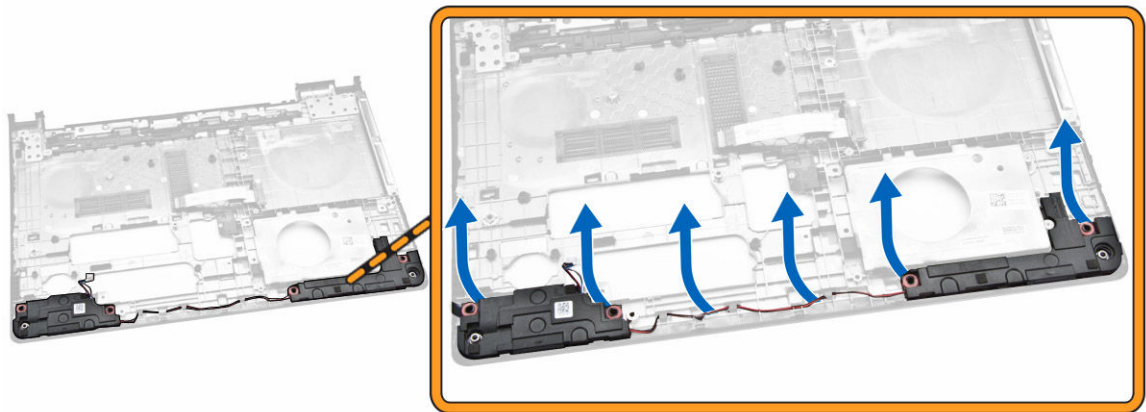


## Installing the Heatsink Assembly

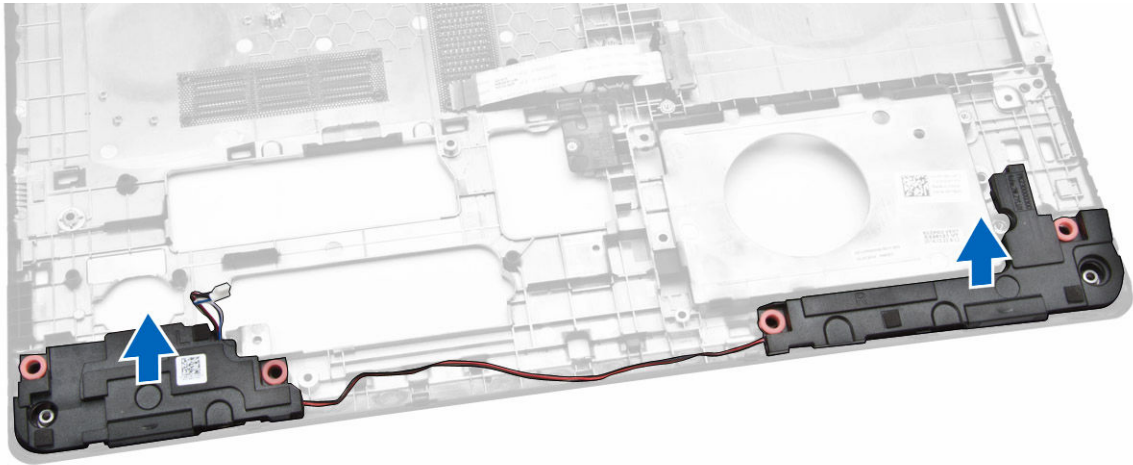
1. Install the heatsink assembly and tighten the screws to secure it to the system board.
2. Connect the system fan cable to the system board.
3. Install:
  - a. [base cover](#)
  - b. [keyboard](#)
  - c. [memory module](#)
  - d. [hard drive](#)
  - e. [WLAN card](#)
  - f. [access panel](#)
  - g. [optical-disk drive](#)
  - h. [battery](#)
4. Follow the procedures in [After Working Inside Your computer](#) .

## Removing the Speakers

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove:
  - a. [battery](#)
  - b. [optical-disk drive](#)
  - c. [access panel](#)
  - d. [hard drive](#)
  - e. [memory module](#)
  - f. [keyboard](#)
  - g. [base cover](#)
3. Release the speaker cables from the retention tabs.



4. Lift and remove the speakers from the chassis.

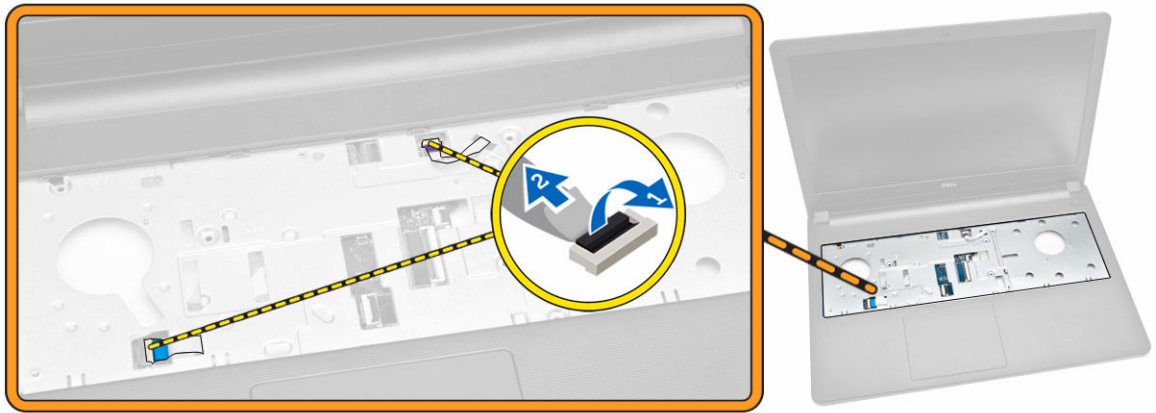


## Installing the Speakers

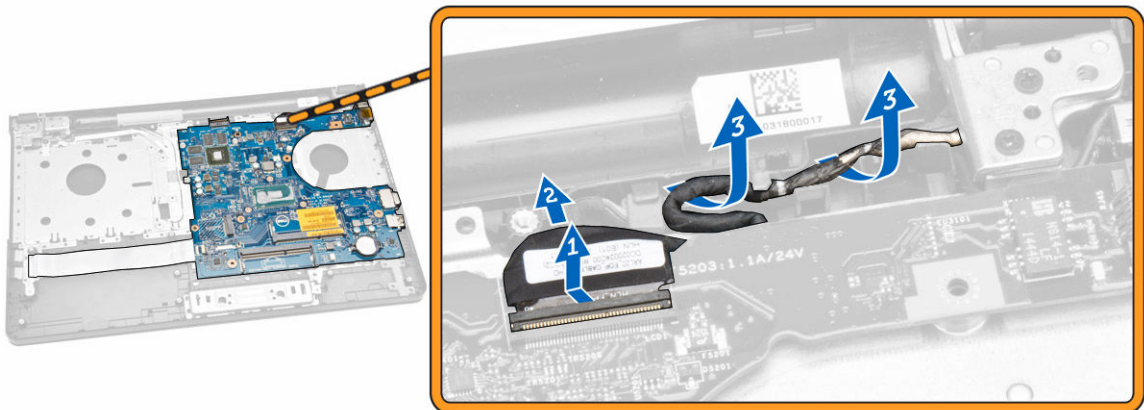
1. Insert the speakers into the chassis and press along the retention clips to lock in place.
2. Install:
  - a. [base cover](#)
  - b. [keyboard](#)
  - c. [memory module](#)
  - d. [hard drive](#)
  - e. [WLAN card](#)
  - f. [access panel](#)
  - g. [optical-disk drive](#)
  - h. [battery](#)
3. Follow the procedures in [After Working Inside Your computer](#).

## Removing the System Board

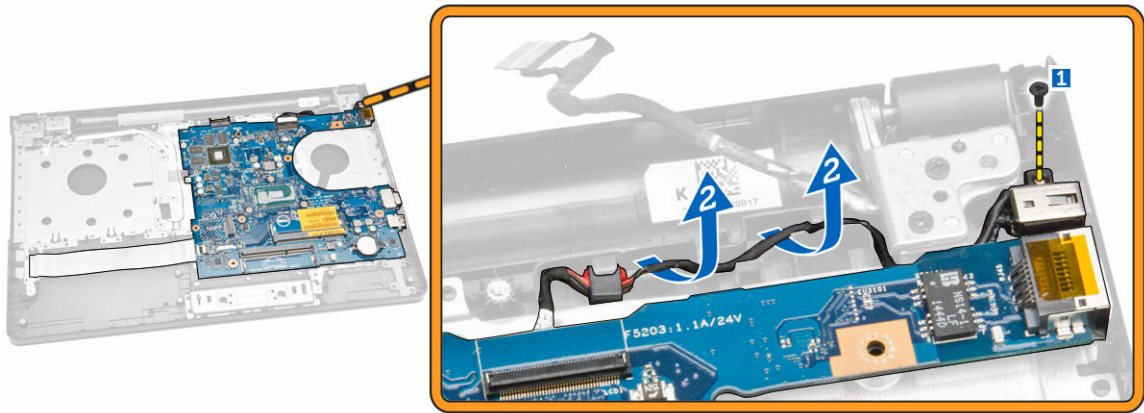
1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove:
  - a. [battery](#)
  - b. [optical-disk drive](#)
  - c. [access panel](#)
  - d. [hard drive](#)
  - e. [WLAN card](#)
  - f. [memory module](#)
  - g. [keyboard](#)
  - h. [base cover](#)
3. Perform the following steps as shown in the illustration:
  - a. Lift to release the locking tab [1].
  - b. Disconnect the touchpad and power button cable [2].



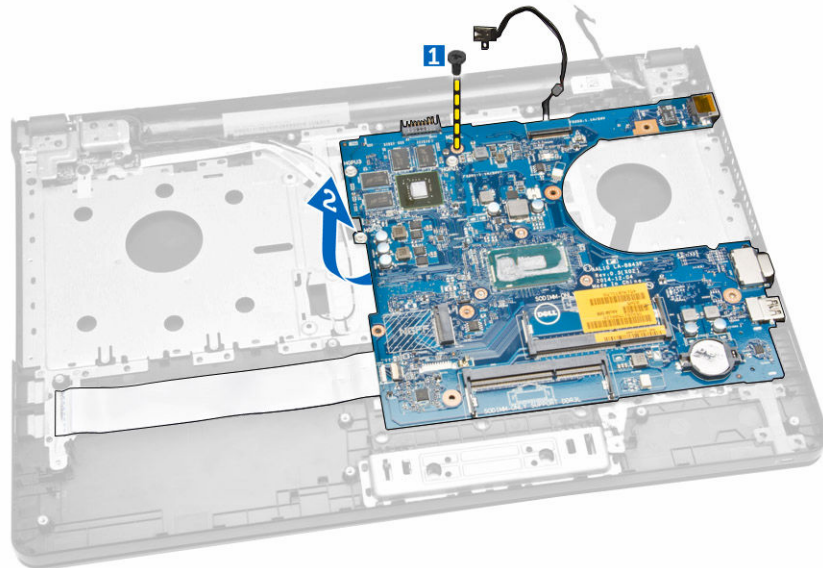
4. Perform the following steps as shown in the illustration:
  - a. Lift the locking tab [1].
  - b. Disconnect the display assembly cable [2].
  - c. Unroute the display assembly cable [3].



5. Perform the following steps as shown in the illustration:
  - a. Remove the screw that secures the power connector to the computer [1].
  - b. Unroute the power connector cable [2].



6. Perform the following steps as shown in the illustration:
  - a. Remove the screw that secures the system board to the chassis [1].
  - b. Lift and remove the system board from the chassis [2].



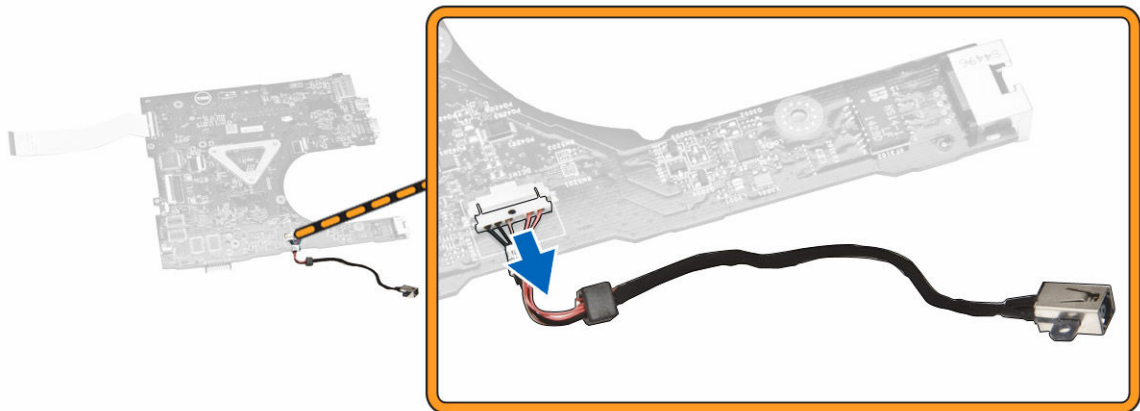
## Installing the System Board

1. Install the system board into the chassis.
2. Tighten the screws to secure the system board to the computer.
3. Connect the power connector to the system board.
4. Connect the display assembly cable to the system board.
5. Install:
  - a. [base cover](#)
  - b. [keyboard](#)
  - c. [memory module](#)
  - d. [hard drive](#)

- e. [WLAN card](#)
  - f. [access panel](#)
  - g. [optical-disk drive](#)
  - h. [battery](#)
6. Follow the procedures in [After Working Inside Your computer.](#)

## Removing the Power Connector

1. Follow the procedures in [Before Working Inside Your Computer.](#)
2. Remove:
  - a. [battery](#)
  - b. [optical-disk drive](#)
  - c. [access panel](#)
  - d. [hard drive](#)
  - e. [memory module](#)
  - f. [keyboard](#)
  - g. [base cover](#)
  - h. [system board](#)
3. Disconnect the power connector from the system board and lift it away from the system board.



## Installing the Power Connector

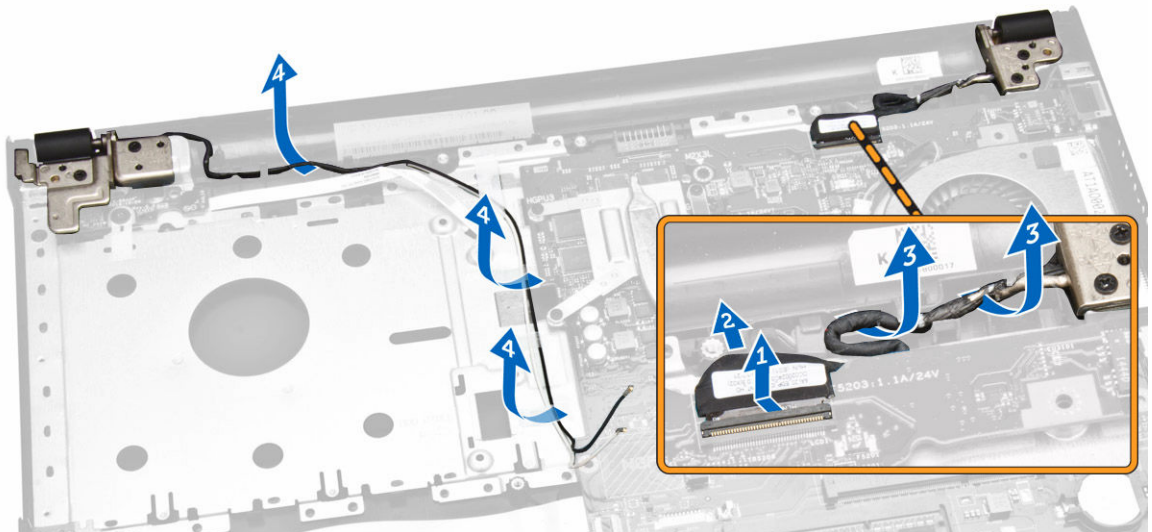
1. Insert the power connector into its slot on the chassis and guide the cable into the retention tabs.
2. Connect the power connector cable to the system board.
3. Install:
  - a. [system board](#)
  - b. [base cover](#)
  - c. [keyboard](#)
  - d. [memory module](#)
  - e. [hard drive](#)
  - f. [access panel](#)
  - g. [optical-disk drive](#)
  - h. [battery](#)



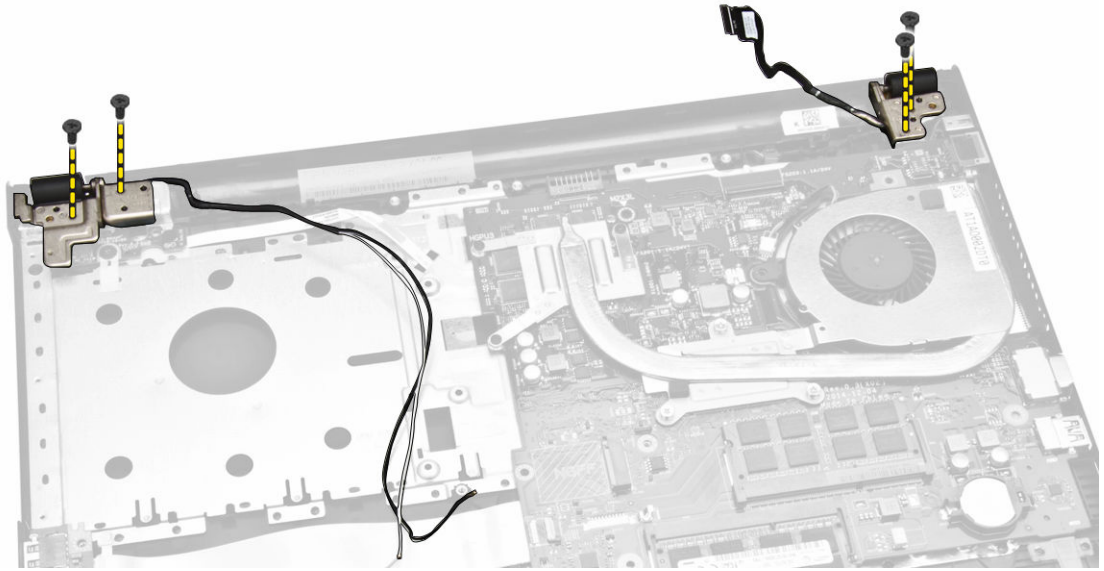
4. Follow the procedures in [After Working Inside Your computer](#).

## Removing the Display Assembly

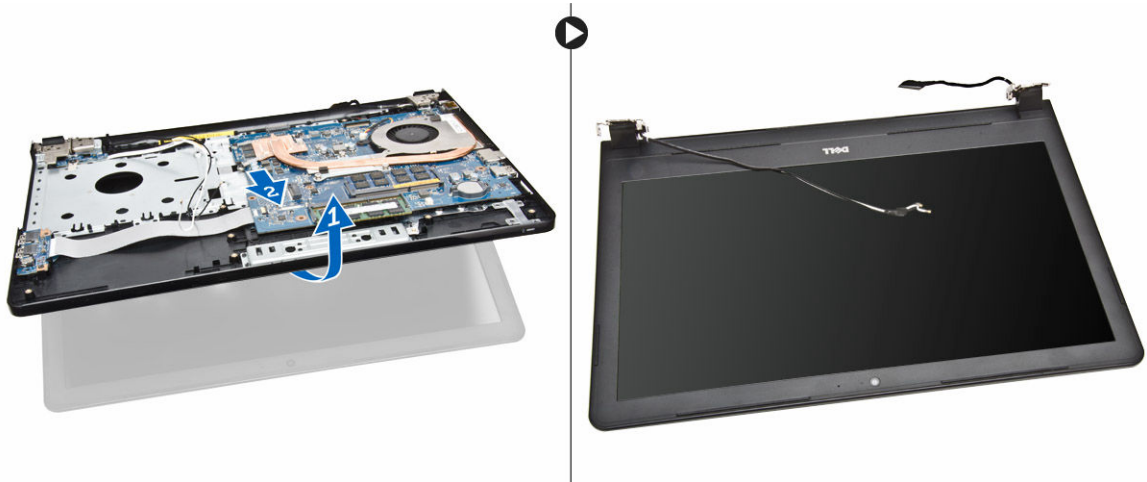
1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove:
  - a. [battery](#)
  - b. [optical-disk drive](#)
  - c. [access panel](#)
  - d. [hard drive](#)
  - e. [memory module](#)
  - f. [keyboard](#)
3. Perform the following steps as shown in the illustration:
  - a. Lift the tab and disconnect the display assembly cable [1] [2].
  - b. Unroute the display assembly cable [3].
  - c. Unroute the WLAN cable [4].



4. Remove the hinge screws that secure the display assembly to the computer.



5. Perform the following steps as shown in the illustration:
  - a. Lift the display assembly [1].
  - b. Slide the display assembly in the direction indicated to remove it from the chassis [2].



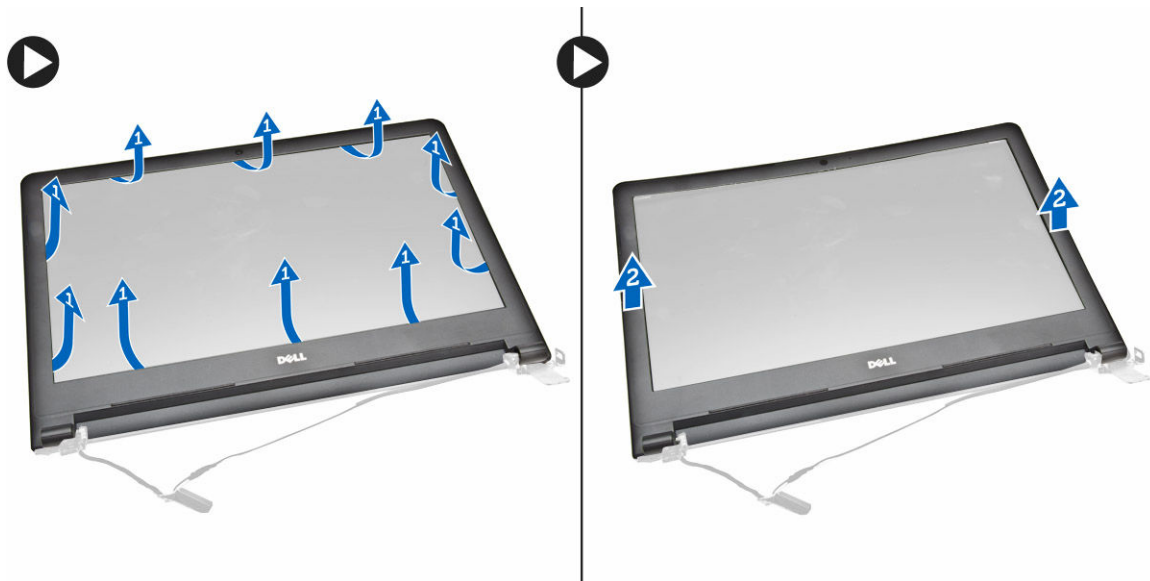
## Installing the Display Assembly

1. Align the display assembly to the chassis.
2. Route the WLAN and display assembly cables through their tabs and then tighten the display hinges screws to secure the display assembly.
3. Install:
  - a. [keyboard](#)
  - b. [memory module](#)
  - c. [hard drive](#)
  - d. [access panel](#)
  - e. [optical-disk drive](#)

- f. [battery](#)
- 4. Follow the procedures in [After Working Inside Your computer.](#)

## Removing the Display Bezel

1. Follow the procedures in [Before Working Inside Your Computer.](#)
2. Remove:
  - a. [battery](#)
  - b. [optical-disk drive](#)
  - c. [access panel](#)
  - d. [hard drive](#)
  - e. [memory module](#)
  - f. [keyboard](#)
  - g. [system board](#)
  - h. [display assembly](#)
3. Perform the following steps as shown in the illustration:
  - a. Place the display panel on a stable surface and pry along the edges of the display panel [1].
  - b. Remove the display bezel from the computer [2].



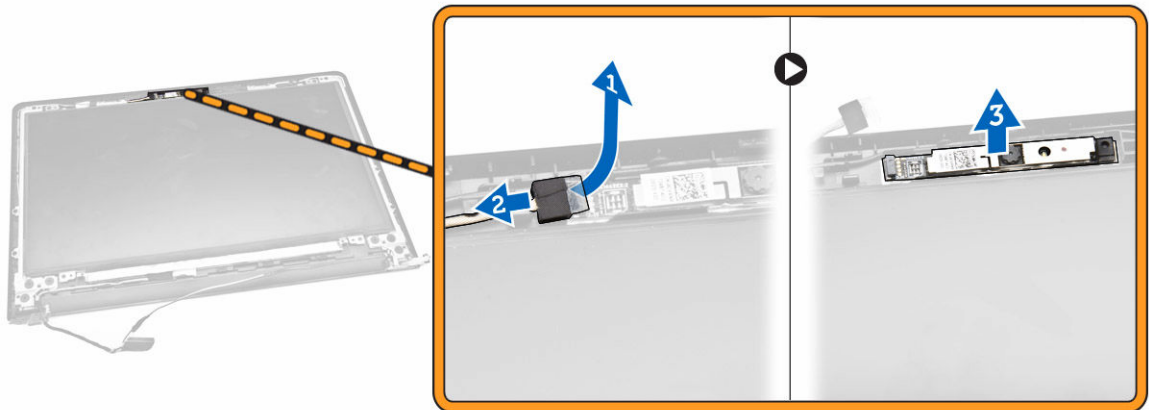
## Installing the Display Bezel

1. Align and press the display bezel to fasten it to the display assembly.
2. Install:
  - a. [display assembly](#)
  - b. [system board](#)
  - c. [keyboard](#)
  - d. [memory module](#)
  - e. [hard drive](#)
  - f. [access panel](#)
  - g. [optical-disk drive](#)

- h. [battery](#)
- 3. Follow the procedures in [After Working Inside Your computer](#).

## Removing the Camera

1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove:
  - a. [battery](#)
  - b. [optical-disk drive](#)
  - c. [access panel](#)
  - d. [hard drive](#)
  - e. [memory module](#)
  - f. [keyboard](#)
  - g. [base cover](#)
  - h. [system board](#)
  - i. [display assembly](#)
3. Perform the following steps as shown in the illustration:
  - a. Remove the tape that secures the camera cable [1].
  - b. Disconnect the camera cable from the camera [2].
  - c. Remove the camera from the display assembly [3].



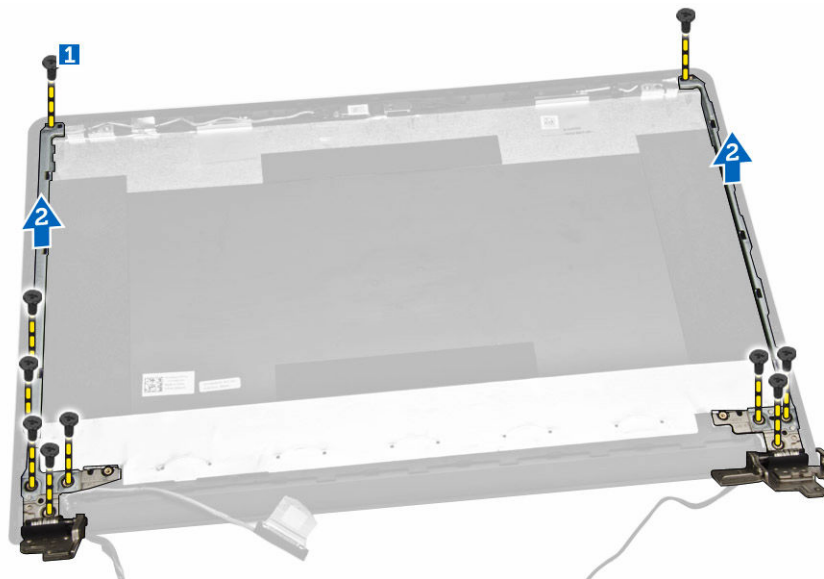
## Installing the Camera

1. Install the camera onto the display assembly.
2. Install:
  - a. [display assembly](#)
  - b. [base cover](#)
  - c. [keyboard](#)
  - d. [memory module](#)
  - e. [WLAN card](#)
  - f. [hard drive](#)
  - g. [access panel](#)
  - h. [optical-disk drive](#)

- i. [battery](#)
3. Follow the procedures in [After Working Inside Your computer.](#)

## Removing the Display Hinges

1. Follow the procedures in [Before Working Inside Your Computer.](#)
2. Remove:
  - a. [battery](#)
  - b. [optical-disk drive](#)
  - c. [access panel](#)
  - d. [hard drive](#)
  - e. [memory module](#)
  - f. [keyboard](#)
  - g. [system board](#)
  - h. [display assembly](#)
  - i. [display bezel](#)
3. Perform the following steps as shown in the illustration:
  - a. Remove the screws that secure the display hinges to the display assembly [1].
  - b. Remove the display hinges [2].



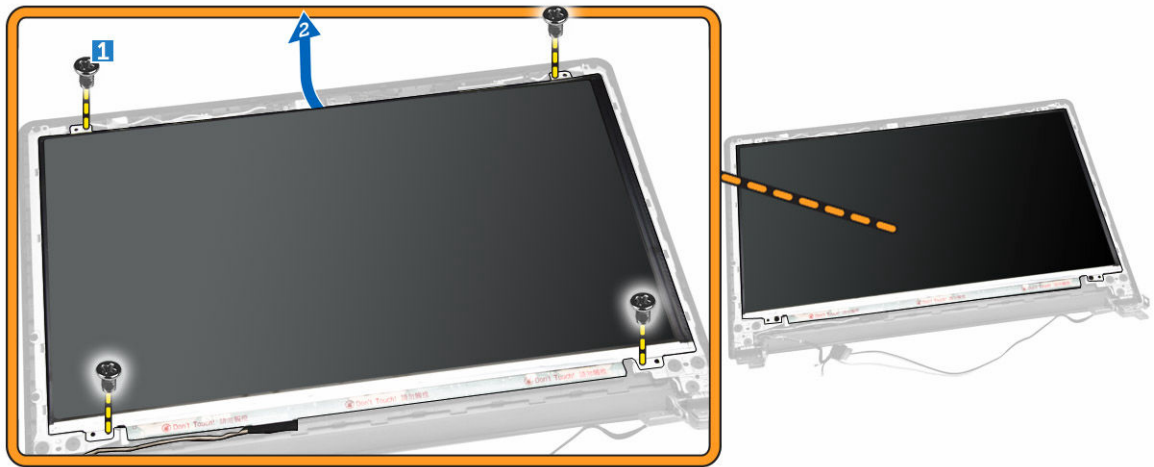
## Installing the Display Hinges

1. Tighten the screws to secure the display hinges to the display assembly.
2. Install:
  - a. [display bezel](#)
  - b. [display assembly](#)
  - c. [system board](#)
  - d. [keyboard](#)
  - e. [memory module](#)
  - f. [hard drive](#)

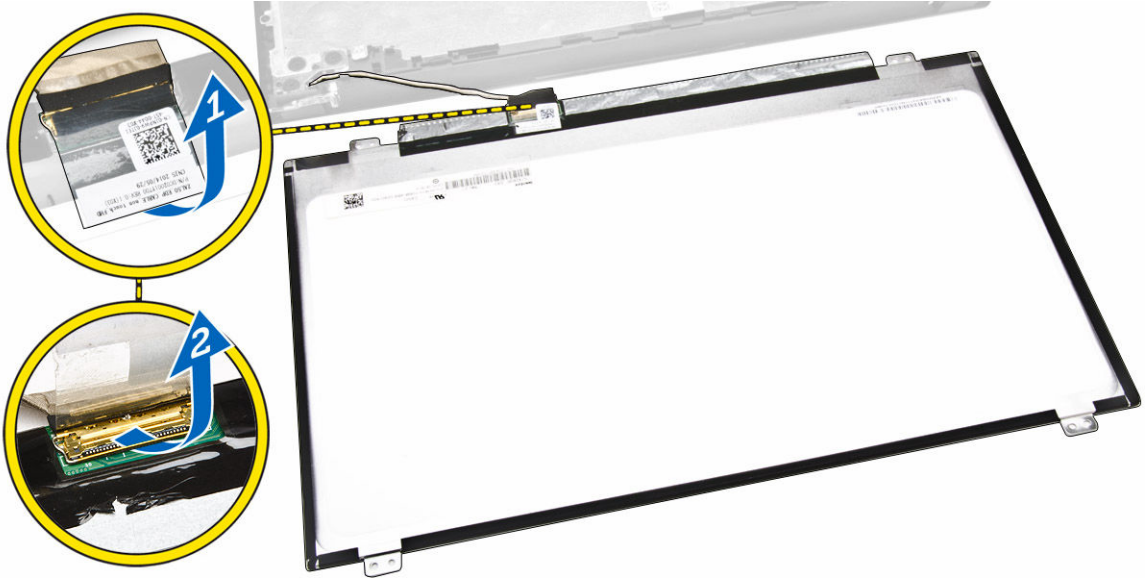
- g. [access panel](#)
  - h. [optical-disk drive](#)
  - i. [battery](#)
3. Follow the procedures in [After Working Inside Your computer](#).

## Removing the Display Panel

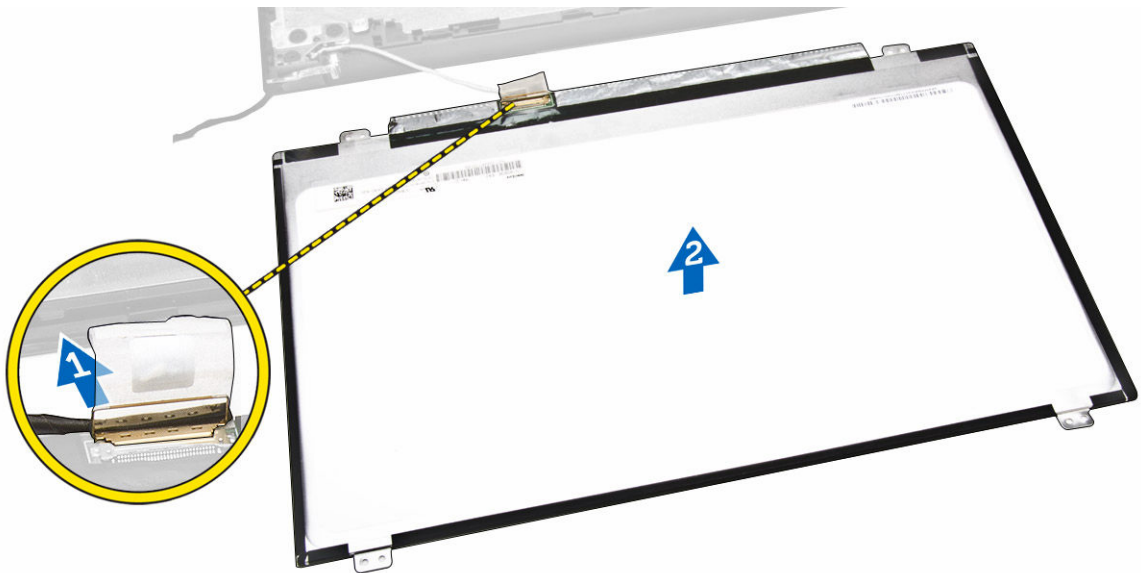
1. Follow the procedures in [Before Working Inside Your Computer](#).
2. Remove:
  - a. [battery](#)
  - b. [optical-disk drive](#)
  - c. [access panel](#)
  - d. [hard drive](#)
  - e. [memory module](#)
  - f. [keyboard](#)
  - g. [system board](#)
  - h. [display assembly](#)
  - i. [display bezel](#)
  - j. [display hinges](#)
3. Perform the following steps as shown in the illustration:
  - a. Remove the screws that secure the display panel to the display assembly [1].
  - b. Lift the display panel to access the cables underneath [2].



4. Perform the following steps as shown in the illustration:
  - a. Remove the tape that secures the eDP cable to the computer [1].
  - b. Lift and remove the eDP cable [2].



5. Perform the following steps as shown in the illustration:
  - a. Disconnect the eDP cable from the computer [1].
  - b. Remove the display panel from the computer [2].



## Installing the Display Panel

1. Connect the display cable to the display panel.
2. Affix the tape to secure the display cable.
3. Place the display panel on the display assembly.
4. Tighten the screws to secure the display panel to the display assembly.
5. Install:
  - a. [display hinges](#)

- b. [display bezel](#)
  - c. [display assembly](#)
  - d. [system board](#)
  - e. [keyboard](#)
  - f. [memory module](#)
  - g. [hard drive](#)
  - h. [access panel](#)
  - i. [optical-disk drive](#)
  - j. [battery](#)
6. Follow the procedures in [After Working Inside Your computer](#) .



# System Setup

System Setup enables you to manage your computer hardware and specify BIOS-level options. From the System Setup, you can:

- Change the NVRAM settings after you add or remove hardware
- View the system hardware configuration
- Enable or disable integrated devices
- Set performance and power management thresholds
- Manage your computer security


## Boot Sequence

Boot Sequence allows you to bypass the System Setup-defined boot device order and boot directly to a specific device (for example: optical drive or hard drive). During the Power-on Self Test (POST), when the Dell logo appears, you can:


- Access System Setup by pressing <F2> key
- Bring up the one-time boot menu by pressing <F12> key

The one-time boot menu displays the devices that you can boot from including the diagnostic option. The boot-menu options are:

- Removable Drive (if available)
- STXXXX Drive

 **NOTE:** XXX denotes the SATA drive number.


- Optical Drive
- Diagnostics

 **NOTE:** Choosing Diagnostics, will display the **ePSA diagnostics** screen.


The boot sequence screen also displays the option to access the System Setup screen.

## Navigation Keys


The following table displays the system setup navigation keys.

 **NOTE:** For most of the system setup options, changes that you make are recorded but do not take effect until you re-start the system.

**Table 1. Navigation Keys**

Keys	Navigation
Up arrow	Moves to the previous field.
Down arrow	Moves to the next field.
<Enter>	Allows you to select a value in the selected field (if applicable) or follow the link in the field.
Spacebar	Expands or collapses a drop-down list, if applicable.
<Tab>	Moves to the next focus area.
	 <b>NOTE:</b> For the standard graphics browser only.
<Esc>	Moves to the previous page till you view the main screen. Pressing <Esc> in the main screen displays a message that prompts you to save any unsaved changes and restarts the system.
<F1>	Displays the System Setup help file.

## System Setup Options

 **NOTE:** Depending on the computer and its installed devices, the items listed in this section may or may not appear.



**Table 2. General**

Option	Description
System Information	<p>This section lists the primary hardware features of your computer.</p> <ul style="list-style-type: none"> <li>• System Information: Displays BIOS Version, Service Tag, Asset Tag, Ownership Tag, Ownership Date, Manufacture Date, and the Express Service Code.</li> <li>• Memory Information: Displays Memory Installed, Memory Available, Memory Speed, Memory Channels Mode, Memory Technology, DIMM A Size, DIMM B Size,</li> <li>• Processor Information: Displays Processor Type, Core Count, Processor ID, Current Clock Speed, Minimum Clock Speed, Maximum Clock Speed, Processor L2 Cache, Processor L3 Cache, HT Capable, and 64-Bit Technology.</li> <li>• Device Information: Displays Primary Hard Drive, ODD Device, LOM MAC Address, Video Controller, Video BIOS Version, Video Memory, Panel Type, Native Resolution, Audio Controller, Wi-Fi Device, Bluetooth Device.</li> </ul>
Battery Information	Displays the battery status and the type of AC adapter connected to the computer.
Boot Sequence	<p>Boot Sequence</p> <p>Allows you to change the order in which the computer attempts to find an operating system. The options are:</p> <ul style="list-style-type: none"> <li>• Windows Boot Manager</li> <li>• UEFI</li> </ul> <p>By default, all the options are checked. You can also deselect any option or change the boot order.</p>



Option	Description
	<p>Boot List Option</p> <p>Allows you to change the boot list option.</p> <ul style="list-style-type: none"> <li>• Legacy</li> <li>• UEFI</li> </ul>
Advanced Boot Options	This option allows you the legacy option ROMs to load. By default, the <b>Enable Legacy Option ROMs</b> is disabled.
Date/Time	Allows you to change the date and time.

**Table 3. System Configuration**




Option	Description
Integrated NIC	<p>Allows you to configure the integrated network controller. The options are:</p> <ul style="list-style-type: none"> <li>• Disabled</li> <li>• Enabled</li> <li>• Enabled w/PXE: This option is enabled by default.</li> </ul>
SATA Operation	<p>Allows you to configure the internal SATA hard-drive controller. The options are:</p> <ul style="list-style-type: none"> <li>• Disabled</li> <li>• AHCI: This option is enabled by default.</li> </ul>
Drives	<p>Allows you to configure the SATA drives on board. All drives are enabled by default. The options are:</p> <ul style="list-style-type: none"> <li>• SATA-0: This option is selected by default.</li> <li>• SATA-1: This option is selected by default.</li> </ul>
SMART Reporting	<p>This field controls whether hard drive errors for integrated drives are reported during system startup. This technology is part of the SMART (Self Monitoring Analysis and Reporting Technology) specification. This option is disabled by default.</p> <ul style="list-style-type: none"> <li>• Enable SMART Reporting</li> </ul>
USB Configuration	<p>This field configures the integrated USB controller. If Boot Support is enabled, the system is allowed to boot any type of USB Mass Storage Devices (HDD, memory key, floppy).</p> <p>If USB port is enabled, device attached to this port is enabled and available for OS.</p> <p>If USB port is disabled, the OS cannot see any device attached to this port.</p> <ul style="list-style-type: none"> <li>• Enable Boot Support</li> <li>• Enable External USB Port</li> <li>• Enable USB3.0 Controller</li> </ul>



Option	Description
	 <b>NOTE:</b> USB keyboard and mouse always work in the BIOS setup irrespective of these settings.
Audio	This field enables or disables the integrated audio controller. By default, the <b>Enable Audio</b> option is selected.
Miscellaneous Devices	<p>Allows you to enable or disable the following devices:</p> <ul style="list-style-type: none"> <li>• Enable Microphone</li> <li>• Enable Camera</li> <li>• Enable Media Card</li> <li>• Disable Media Card</li> </ul> <p> <b>NOTE:</b> All devices are enabled by default.</p> <p>You can also enable or disable Media Card.</p>

**Table 4. Video**

Option	Description
LCD Brightness	<p>Allows you to set the display brightness depending up on the power source (On Battery and On AC).</p> <p> <b>NOTE:</b> The Video setting will only be visible when a video card is installed into the system.</p>
Switchable Graphics	<p>This option enables or disables switchable graphics technologies. Allows you to set the display brightness depending up on the power source (On Battery and On AC).</p> <p> <b>NOTE:</b> It should only be enabled for Windows 7 and later version of Windows or the Ubuntu OS.</p>


**Table 5. Security**

Option	Description
Admin Password	<p>Allows you to set, change, or delete the administrator (admin) password.</p> <p> <b>NOTE:</b> You must set the admin password before you set the system or hard drive password. Deleting the admin password automatically deletes the system password and the hard drive password.</p> <p> <b>NOTE:</b> Successful password changes take effect immediately.</p> <p>Default Setting: Not set</p>
System Password	<p>Allows you to set, change or delete the system password.</p> <p> <b>NOTE:</b> Successful password changes take effect immediately.</p> <p>Default Setting: Not set</p>

Option	Description
Internal HDD-0 Password	<p>Allows you to set, change or delete the password on the system's internal hard-disk drive.</p> <p> <b>NOTE:</b> Successful password changes take effect immediately.</p> <p>Default Setting: Not set</p>
Strong Password	<p>Allows you to enforce the option to always set strong passwords.</p> <p>Default Setting: Enable Strong Password is not selected.</p> <p> <b>NOTE:</b> If Strong Password is enabled, Admin and System passwords must contain at least one uppercase character, one lowercase character and be at least 8 characters long.</p>
Password Configuration	<p>Allows you to determine the minimum and maximum length of Administrator and System passwords.</p>
Password Bypass	<p>Allows you to enable or disable the permission to bypass the System and the Internal HDD password, when they are set. The options are:</p> <ul style="list-style-type: none"> <li>• Disabled</li> <li>• Reboot bypass</li> </ul> <p>Default Setting: Disabled</p>
Password Change	<p>Allows you to enable the disable permission to the System and Hard Drive passwords when the admin password is set.</p> <p>Default Setting: Allow Non-Admin Password Changes is selected.</p>
Non-Admin Setup Changes	<p>Allows you to determine whether changes to the setup options are allowed when an Administrator Password is set. If disabled the setup options are locked by the admin password.</p>
CPU XD Support	<p>Allows you to enable the Execute Disable mode of the processor.</p> <p>Enable CPU XD Support (default)</p>
Admin Setup Lockout	<p>Allows you to prevent users from entering Setup when an Administrator password is set.</p> <p>Default Setting: Enable Admin Setup Lockout is not selected.</p>

**Table 6. Secure Boot**

Option	Description
Secure Boot Enable	<p>This option enables or disables the Secure Boot Feature.</p> <ul style="list-style-type: none"> <li>• Disabled</li> <li>• Enabled</li> </ul>


Option	Description
	Default Setting: The option is disabled.
Expert Key Management	<p>Allows you to manipulate the security key databases only if the system is in Custom Mode. The <b>Enable Custom Mode</b> option is disabled by default. The options are:</p> <ul style="list-style-type: none"> <li>• PK</li> <li>• KEK</li> <li>• db</li> <li>• dbx</li> </ul> <p>If you enable the <b>Custom Mode</b>, the relevant options for <b>PK, KEK, db, and dbx</b> appear. The options are:</p> <ul style="list-style-type: none"> <li>• <b>Save to File</b>- Saves the key to a user-selected file</li> <li>• <b>Replace from File</b>- Replaces the current key with a key from a user-selected file</li> <li>• <b>Append from File</b>- Adds a key to the current database from a user-selected file</li> <li>• <b>Delete</b>- Deletes the selected key</li> <li>• <b>Reset All Keys</b>- Resets to default setting</li> <li>• <b>Delete All Keys</b>- Deletes all the keys</li> </ul> <p> <b>NOTE:</b> If you disable the Custom Mode, all the changes made will be erased and the keys will restore to default settings.</p>


**Table 7. Performance**

Option	Description
Multi Core Support	<p>This field specifies whether the process will have one or all cores enabled. The performance of some applications will improve with the additional cores. This option is enabled by default. Allows you to enable or disable multi-core support for the processor. The installed processor supports two cores. If you enable Multi Core Support, two cores will be enabled. If you disable Multi Core Support, one core will be enabled.</p> <ul style="list-style-type: none"> <li>• Enable Multi Core Support</li> </ul> <p>Default Setting: The option is enabled.</p>
Intel SpeedStep	<p>Allows you to enable or disable the Intel SpeedStep feature.</p> <ul style="list-style-type: none"> <li>• Enable Intel SpeedStep</li> </ul> <p>Default Setting: The option is enabled.</p>
C States Control	<p>Allows you to enable or disable the additional processor sleep states.</p> <ul style="list-style-type: none"> <li>• C states</li> </ul> <p>Default Setting: The option is enabled.</p>

Option	Description
Intel TurboBoost	<p>Allows you to enable or disable the Intel TurboBoost mode of the processor.</p> <ul style="list-style-type: none"> <li>• Enable Intel TurboBoost</li> </ul> <p>Default Setting: The option is enabled.</p>
Hyper-Thread Control	<p>Allows you to enable or disable the HyperThreading in the processor.</p> <ul style="list-style-type: none"> <li>• Disabled</li> <li>• Enabled</li> </ul> <p>Default Setting: The option is enabled.</p>

**Table 8. Power Management**

Option	Description
AC Behavior	<p>Allows you to enable or disable the computer from turning on automatically when an AC adapter is connected.</p> <p>Default Setting: Wake on AC is not selected.</p>
Auto On Time	<p>Allows you to set the time at which the computer must turn on automatically. The options are:</p> <ul style="list-style-type: none"> <li>• Disabled (default)</li> <li>• Every Day</li> <li>• Weekdays</li> <li>• Select Days</li> </ul>
USB Wake Support	<p>Allows you to enable USB devices to wake the system from Standby.</p> <p> <b>NOTE:</b> This feature is only functional when the AC power adapter is connected. If the AC power adapter is removed during Standby, the system setup will remove power from all of the USB ports to conserve battery power.</p> <ul style="list-style-type: none"> <li>• Enable USB Wake Support</li> </ul> <p>Default Setting: The option is disabled.</p>
Wake on LAN/WLAN	<p>Allows you to enable or disable the feature that powers on the computer from the Off state when triggered by a LAN signal.</p> <ul style="list-style-type: none"> <li>• Disabled: This option is enabled by default</li> <li>• LAN Only</li> </ul>
Advanced Battery Charge Configuration	<p>This option enables you to maximize the battery health. By enabling this option, your system uses the standard charging algorithm and other techniques, during the non-work hours to improve the battery health.</p> <p>Disabled (default)</p>

Option	Description
Primary Battery Charge Configuration	<p>Allows you to select the charging mode for the battery. The options are:</p> <ul style="list-style-type: none"> <li>• Adaptive</li> <li>• Standard - Fully charges your battery at a standard rate.</li> <li>• Primarily AC use</li> <li>• Custom</li> </ul> <p>If Custom Charge is selected, you can also configure Custom Charge Start and Custom Charge Stop.</p> <p> <b>NOTE:</b> All charging mode may not be available for all the batteries. To enable this option, disable the <b>Advanced Battery Charge Configuration</b> option.</p>

**Table 9. POST Behavior**

Option	Description
Adapter Warnings	<p>Allows you to enable or disable the system setup (BIOS) warning messages when you use certain power adapters.</p> <p>Default Setting: Enable Adapter Warnings</p>
Fn Lock Option	<p>Allows the hot key combination &lt;Fn&gt; +&lt;Esc&gt; toggle the primary behavior of F1–F12, between the standard and secondary functions.</p> <ul style="list-style-type: none"> <li>• Lock Mode Disable/Standard. This option is enabled by default.</li> <li>• Lock Mode Enable/Secondary</li> </ul>
Fastboot	<p>Allows you to speed up the boot process by bypassing some of the compatibility steps. The options are:</p> <ul style="list-style-type: none"> <li>• Minimal</li> <li>• Thorough (default)</li> <li>• Auto</li> </ul>

**Table 10. Virtualization Support**

Option	Description
Virtualization	<p>Allows you to enable or disable the Intel Virtualization Technology.</p> <ul style="list-style-type: none"> <li>• <b>Enable Intel Virtualization Technology</b> (default)</li> </ul>
VT for Direct I/O	<p>Enables or disables the Virtual Machine Monitor (VMM) from utilizing the additional hardware capabilities provided by Intel® Virtualization technology for direct I/O.</p> <p><b>Enable VT for Direct I/O</b> — enabled by default.</p>



**Table 11. Wireless**

Option	Description
Wireless Switch	Allows to set the wireless devices that can be controlled by the wireless switch. The options are: <ul style="list-style-type: none"><li>• WLAN/WiGig</li><li>• Bluetooth</li></ul> All the options are enabled by default.
Wireless Device Enable	Allows you to enable or disable the internal wireless devices. <ul style="list-style-type: none"><li>• WLAN/WiGig</li><li>• Bluetooth</li></ul> All the options are enabled by default.

**Table 12. Maintenance**



Option	Description
Service Tag	Displays the Service Tag of your computer.
Asset Tag	Allows you to create a system asset tag if an asset tag is not already set. This option is not set by default.
BIOS Downgrade	This field controls flashing of the system firmware to previous revisions. Allows BIOS Downgrade (Enabled by default)

**Table 13. System Logs**

Option	Description
BIOS Events	Allows you to view and clear the System Setup (BIOS) POST events.

## Updating the BIOS

It is recommended to update your BIOS (system setup), on replacing the system board or if an update is available. For laptops, ensure that your computer battery is fully charged and connected to a power outlet

1. Re-start the computer.
2. Go to **dell.com/support**.
3. Enter the **Service Tag** or **Express Service Code** and click **Submit**.
  -  **NOTE:** To locate the Service Tag, click **Where is my Service Tag?**
  -  **NOTE:** If you cannot find your Service Tag, click **Detect My Product**. Proceed with the instructions on screen.
4. If you are unable to locate or find the Service Tag, click the Product Category of your computer.
5. Choose the **Product Type** from the list.
6. Select your computer model and the **Product Support** page of your computer appears.
7. Click **Get drivers** and click **View All Drivers**.

The Drivers and Downloads page opens.

8. On the Drivers and Downloads screen, under the **Operating System** drop-down list, select **BIOS**.
9. Identify the latest BIOS file and click **Download File**.  
You can also analyze which drivers need an update. To do this for your product, click **Analyze System for Updates** and follow the instructions on the screen.
10. Select your preferred download method in the **Please select your download method below** window, click **Download File**.  
The **File Download** window appears.
11. Click **Save** to save the file on your computer.
12. Click **Run** to install the updated BIOS settings on your computer.  
Follow the instructions on the screen.


## System and Setup Password

You can create a system password and a setup password to secure your computer.

Password Type	Description
System password	Password that you must enter to log on to your system.
Setup password	Password that you must enter to access and make changes to the BIOS settings of your computer.


 **CAUTION:** The password features provide a basic level of security for the data on your computer.

 **CAUTION:** Anyone can access the data stored on your computer if it is not locked and left unattended.

 **NOTE:** Your computer is shipped with the system and setup password feature disabled.

### Assigning a System Password and Setup Password

You can assign a new **System Password** and/or **Setup Password** or change an existing **System Password** and/or **Setup Password** only when **Password Status** is **Unlocked**. If the Password Status is **Locked**, you cannot change the System Password.

 **NOTE:** If the password jumper is disabled, the existing System Password and Setup Password are deleted and you need not provide the system password to log on to the computer.

To enter a system setup, press <F2> immediately after a power-on or re-boot.

1. In the **System BIOS** or **System Setup** screen, select **System Security** and press <Enter>. The **System Security** screen appears.
2. In the **System Security** screen, verify that **Password Status** is **Unlocked**.
3. Select **System Password**, enter your system password, and press <Enter> or <Tab>. Use the following guidelines to assign the system password:
  - A password can have up to 32 characters.
  - The password can contain the numbers 0 through 9.
  - Only lower case letters are valid, upper case letters are not allowed.
  - Only the following special characters are allowed: space, ("), (+), (.), (-), (,), (/), (:), (|), (\), (|), (').


Re-enter the system password when prompted.

4. Type the system password that you entered earlier and click **OK**.
5. Select **Setup Password**, type your system password and press <Enter> or <Tab>. A message prompts you to re-type the setup password.
6. Type the setup password that you entered earlier and click **OK**.
7. Press <Esc> and a message prompts you to save the changes.
8. Press <Y> to save the changes. The computer reboots.

## Deleting or Changing an Existing System and/or Setup Password

Ensure that the **Password Status** is Unlocked (in the System Setup) before attempting to delete or change the existing System and/or Setup password. You cannot delete or change an existing System or Setup password, if the **Password Status** is Locked.

To enter the System Setup, press <F2> immediately after a power-on or reboot.


1. In the **System BIOS** or **System Setup** screen, select **System Security** and press <Enter>. The **System Security** screen is displayed.
2. In the **System Security** screen, verify that **Password Status** is **Unlocked**.
3. Select **System Password**, alter or delete the existing system password and press <Enter> or <Tab>.
4. Select **Setup Password**, alter or delete the existing setup password and press <Enter> or <Tab>.
  -  **NOTE:** If you change the System and/or Setup password, re-enter the new password when promoted. If you delete the System and/or Setup password, confirm the deletion when promoted.
5. Press <Esc> and a message prompts you to save the changes.
6. Press <Y> to save the changes and exit from the System Setup. The computer reboots.


# Diagnostics

## Enhanced Pre-Boot System Assessment (ePSA) Diagnostics

The ePSA diagnostics (also known as system diagnostics) performs a complete check of your hardware. The ePSA is embedded with the BIOS and is launched by the BIOS internally. The embedded system diagnostics provides a set of options for particular devices or device groups allowing you to:

- Run tests automatically or in an interactive mode
- Repeat tests
- Display or save test results
- Run thorough tests to introduce additional test options to provide extra information about the failed device(s)
- View status messages that inform you if tests are completed successfully
- View error messages that inform you of problems encountered during testing



 **CAUTION:** Use the system diagnostics to test only your computer. Using this program with other computers may cause invalid results or error messages.

 **NOTE:** Some tests for specific devices require user interaction. Always ensure that you are present at the computer terminal when the diagnostic tests are performed.

1. Power-on the computer.
2. As the computer boots, press the <F12> key as the Dell logo appears.
3. On the boot menu screen, select the **Diagnostics** option.  
The **Enhanced Pre-boot System Assessment** window is displayed, listing all devices detected in the computer. The diagnostics starts running the tests on all the detected devices.
4. If you wish to run a diagnostic test on a specific device, press <Esc> and click **Yes** to stop the diagnostic test.
5. Select the device from the left pane and click **Run Tests**.
6. If there are any issues, error codes are displayed.  
Note the error code and contact Dell.

# Specifications

## Specifications

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

**Table 14. System Information**

Feature	Description
Chipset	integrated in processor
DRAM bus width	64 bits
Flash EPROM	16MB

**Table 15. Processor**

Feature	Description
Processor Type	<ul style="list-style-type: none"> <li>6th Generation Intel core i3/i5/i7</li> <li>Intel Celeron Dual Core</li> <li>Intel Pentium Quad Core</li> </ul>
L1 cache	128 KB
L2 cache	512 KB
L3 cache	Up to 4 MB

**Table 16. Memory**

Feature	Description
Memory connector	two internally accessible DDR3L connector
Memory capacity	2 GB, 4 GB, and 8 GB
Memory speed	1600 MHz
Minimum memory	2 GB
Maximum memory	16 GB

**Table 17. Audio**

<b>Feature</b>	<b>Description</b>
Type	2 channel high-definition audio
Controller	Realtek ALC3234 with Waves Maxx Audio
Stereo conversion	24-bit (analog-to-digital and digital-to-analog)
Interface	Intel HDA bus
Speakers	2 x 2 W
Volume controls	program menu and keyboard media-control keys

**Table 18. Video**

<b>Feature</b>	<b>Description</b>
Video type	eDP
Video Controller:	
UMA	Intel HD Graphics (shared memory)
Discrete	AMD Radeom R5 M315 (up to 2GB DDR3)
Data bus:	64 bits
External display support	VGA

**Table 19. Camera**


<b>Feature</b>	<b>Description</b>
Camera Resolution	HD resolution
Video Resolution (maximum)	1280 x 720 (HD) at 30 fps (maximum)
Diagonal viewing angle	74°

**Table 20. Communication**

<b>Feature</b>	<b>Description</b>
Network adapter	10/100/1000 Mbps Ethernet LAN on Motherboard (LOM)
Wireless	<ul style="list-style-type: none"> <li>• Wi-Fi 802.11 b/g/n</li> <li>• Bluetooth 4.0</li> </ul>

**Table 21. Ports and Connectors**

<b>Feature</b>	<b>Description</b>
Audio	one headphone/microphone combo port (headset)
Video	VGA
Network adapter	one RJ-45 port
USB:	<ul style="list-style-type: none"> <li>• one USB 3.0 port</li> </ul>

Feature	Description
	<ul style="list-style-type: none"> <li>two USB 2.0 ports</li> </ul>
 <b>NOTE:</b>	The powered USB 3.0 connector also supports Microsoft Kernel Debugging. The ports are identified in the documentation shipped with your computer.
Media card reader	one SD slot

**Table 22. Display**

Feature	Vostro 15–3559	
Type	<ul style="list-style-type: none"> <li>15.6 inches HD WLED</li> <li>15.6 inches FHD Non-touch</li> </ul>	
Dimensions:		
	<b>HD Non-touch</b>	<b>FHD Non-touch</b>
Height	224.30 mm (8.83 inches)	223.80 mm (8.81 inches)
Diagonal	396.24 mm (15.60 inches)	396.24 mm (15.60 inches)
Width	360.00 mm (14.17 inches)	359.50 mm (14.15 inches)
Maximum resolution	1366 x 768 pixels	1920 x 1080 pixels
Active area (X/Y)	344.20 mm x 193.50 mm (13.55 inches x 7.62 inches)	
Maximum Brightness	200 nits	
Operating angle	0° (closed) to 135°	
Refresh rate	60 Hz	
Minimum Viewing angles:		
Horizontal	40° / 40°	
Vertical	10° / 30°	
Pixel pitch	0.2265 mm	

**Table 23. Keyboard**

Feature	Description
Number of keys:	US 101, Brazil 104, UK 102, and Japan 105

**Table 24. Touchpad**

Feature	Description
Active Area:	
X-axis	105.00 mm (4.13 inches)

Feature	Description
Y-axis	80.00 mm (3.14 inches)

**Table 25. Battery**

Feature	Description
Type	<ul style="list-style-type: none"> <li>4-cell "smart" lithium ion (47 WHr)</li> </ul>
Dimensions:	
Height	20.00 mm (0.78 inch)
Width	270.00 mm (10.63 inches)
Depth	37.50 mm (1.47 inches)
Weight	0.26 kg (0.56 lb)
Life span	300 discharge/charge cycles
Voltage	14.80 VDC
Temperature range:	
Operating	0 °C to 35 °C (32 °F to 95 °F)
Non-Operating	-40 °C to 65 °C (-40 °F to 149 °F)
Coin-cell battery	3 V CR2032 lithium ion

**Table 26. AC Adapter**

Feature	Description
Type	45 W 65 W
Input voltage	100 VAC to 240 VAC
Input frequency	50 Hz-60 Hz
Input current (maximum)	
45 W	1.30 A
65 W	1.70 A
Output current	
45 W	2.31 A
65 W	3.34 A
Rated output voltage	19.50 VDC
Temperature range:	
Operating	0 °C to 40 °C (32 °F to 104 °F)
Non-Operating	-40 °C to 70 °C (-40 °F to 158 °F)



**Table 27. Physical**


<b>Feature</b>	<b>Description</b>
Height:	23.75 mm (0.93 inch)
Width:	380.00 mm (14.96 inches)
Depth:	260.40 mm (10.25 inches)
Weight:	2.24 kg (4.94 lb)

**Table 28. Environmental**

<b>Feature</b>	<b>Description</b>
Temperature:	
Operating	0 °C to 35 °C (32 °F to 95 °F)
Storage	-40 °C to 65 °C (-40 °F to 149 °F)
Relative humidity (maximum):	
Operating	10 % to 90 % (non-condensing)
Storage	0 % to 95 % (non-condensing)
Altitude (maximum):	
Operating	-15.2 m to 3048 m (-50 to 10,000 ft) 0° to 35°C
Non-Operating	-15.2 m to 10,668 m (-50 ft to 35,000 ft)
Airborne contaminant level	G1 as defined by ISA-S71.04-1985

# Contacting Dell

## 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 **support.dell.com**.
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.