Vostro 5301

Service Manual



Regulatory Model: P121G Regulatory Type: P121G002 October 2020 Rev. A00

Notes, cautions, and warnings

(i) 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.

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

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Contents

Chapter 1: Working on your computer	6
Safety instructions	6
Before working inside your computer	6
Safety precautions	7
Electrostatic discharge—ESD protection	7
ESD field service kit	
After working inside your computer	
hapter 2: Major components of Vostro 5301	10
hapter 3: Disassembly and reassembly	12
Base cover	
Removing the base cover	12
Installing the base cover	
Battery	13
Lithium-ion battery precautions	
Removing the 3-cell battery	13
Installing the 3-cell battery	14
Removing the 4-cell battery	15
Installing the 4-cell battery	
Solid-state drive	
Removing the 2230 solid-state drive	
Installing the 2230 solid-state drive	
Removing the 2280 solid-state drive	
Installing the 2280 solid-state drive	20
Coin-cell battery	21
Removing the coin-cell battery	21
Installing the coin-cell battery	
Fan	
Removing the fan	
Installing the fan	
Speakers	
Removing the speakers	
Installing the speakers	
Display assembly	
Removing the display assembly	
Installing the display assembly	
Touchpad	
Removing the touchpad	
Installing the touchpad	
Heat sink	
Removing the heat sink	
Installing the heat sink	
Power-adapter port	

Removing the power-adapter port	
Installing the power-adapter port	
I/O board	
Removing the I/O board	
Installing the I/O board	
System board	
Removing the system board	
Installing the system board	
Palm-rest and keyboard assembly	
Removing the palm-rest and keyboard assembly	
Installing the palm-rest and keyboard assembly	45
Power button with fingerprint reader	
Removing the power button with fingerprint reader	46
Installing the power button with fingerprint reader	

Chapter 4: Troubleshooting	49
Handling swollen Lithium-ion batteries	49
Dell SupportAssist Pre-boot System Performance Check diagnostics	49
Running the SupportAssist Pre-Boot System Performance Check	50
Validation Tools	50
Enhanced Pre-Boot System Assessment (ePSA) diagnostics	56
Running SupportAssist diagnostics	56
System diagnostic lights	57
Updating the BIOS using the USB drive in Windows	58
Updating the BIOS in Windows	59
Backup media and recovery options	59
WiFi power cycle	59
Drain residual flea power (perform hard reset)	59
Chapter 5: Getting help and contacting Dell	61

Working on your computer

Safety instructions

Prerequisites

Use the following safety guidelines to protect your computer from potential damage and 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.

About this task

NOTE: 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
- 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 at the same time as touching 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.

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

Before working inside your computer

About this task

(i) NOTE: The images in this document may differ from your computer depending on the configuration you ordered.

Steps

- 1. Save and close all open files and exit all open applications.
- 2. Shut down your computer. Click Start > **U** Power > Shut down.

NOTE: If you are using a different operating system, see the documentation of your operating system for shut-down instructions.

- 3. Disconnect your computer and all attached devices from their electrical outlets.
- 4. Disconnect all attached network devices and peripherals, such as keyboard, mouse, and monitor from your computer.

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

5. Remove any media card and optical disc from your computer, if applicable.

Safety precautions

The safety precautions chapter details the primary steps to be taken before performing any disassembly instructions.

Observe the following safety precautions before you perform any installation or break/fix procedures involving disassembly or reassembly:

- Turn off the system and all attached peripherals.
- Disconnect the system and all attached peripherals from AC power.
- Disconnect all network cables, telephone, and telecommunications lines from the system.
- Use an ESD field service kit when working inside any to avoid electrostatic discharge (ESD) damage.
- After removing any system component, carefully place the removed component on an anti-static mat.
- Wear shoes with non-conductive rubber soles to reduce the chance of getting electrocuted.

Standby power

Dell products with standby power must be unplugged before you open the case. Systems that incorporate standby power are essentially powered while turned off. The internal power enables the system to be remotely turned on (wake on LAN) and suspended into a sleep mode and has other advanced power management features.

Unplugging, pressing and holding the power button for 15 seconds should discharge residual power in the system board.

Bonding

Bonding is a method for connecting two or more grounding conductors to the same electrical potential. This is done through the use of a field service electrostatic discharge (ESD) kit. When connecting a bonding wire, ensure that it is connected to bare metal and never to a painted or non-metal surface. The wrist strap should be secure and in full contact with your skin, and ensure that you remove all jewelry such as watches, bracelets, or rings prior to bonding yourself and the equipment.

Electrostatic discharge—ESD protection

ESD is a major concern when you handle electronic components, especially sensitive components such as expansion cards, processors, memory DIMMs, and system boards. Very slight charges can damage circuits in ways that may not be obvious, such as intermittent problems or a shortened product life span. As the industry pushes for lower power requirements and increased density, ESD protection is an increasing concern.

Due to the increased density of semiconductors used in recent Dell products, the sensitivity to static damage is now higher than in previous Dell products. For this reason, some previously approved methods of handling parts are no longer applicable.

Two recognized types of ESD damage are catastrophic and intermittent failures.

- **Catastrophic** Catastrophic failures represent approximately 20 percent of ESD-related failures. The damage causes an immediate and complete loss of device functionality. An example of catastrophic failure is a memory DIMM that has received a static shock and immediately generates a "No POST/No Video" symptom with a beep code emitted for missing or nonfunctional memory.
- Intermittent Intermittent failures represent approximately 80 percent of ESD-related failures. The high rate of
 intermittent failures means that most of the time when damage occurs, it is not immediately recognizable. The DIMM
 receives a static shock, but the tracing is merely weakened and does not immediately produce outward symptoms related to
 the damage. The weakened trace may take weeks or months to melt, and in the meantime may cause degradation of memory
 integrity, intermittent memory errors, etc.

The more difficult type of damage to recognize and troubleshoot is the intermittent (also called latent or "walking wounded") failure.

Perform the following steps to prevent ESD damage:

- Use a wired ESD wrist strap that is properly grounded. The use of wireless anti-static straps is no longer allowed; they do not provide adequate protection. Touching the chassis before handling parts does not ensure adequate ESD protection on parts with increased sensitivity to ESD damage.
- Handle all static-sensitive components in a static-safe area. If possible, use anti-static floor pads and workbench pads.
- When unpacking a static-sensitive component from its shipping carton, do not remove the component from the anti-static packing material until you are ready to install the component. Before unwrapping the anti-static packaging, ensure that you discharge static electricity from your body.
- Before transporting a static-sensitive component, place it in an anti-static container or packaging.

ESD field service kit

The unmonitored Field Service kit is the most commonly used service kit. Each Field Service kit includes three main components: anti-static mat, wrist strap, and bonding wire.

Components of an ESD field service kit

The components of an ESD field service kit are:

- Anti-Static Mat The anti-static mat is dissipative and parts can be placed on it during service procedures. When using an anti-static mat, your wrist strap should be snug and the bonding wire should be connected to the mat and to any bare metal on the system being worked on. Once deployed properly, service parts can be removed from the ESD bag and placed directly on the mat. ESD-sensitive items are safe in your hand, on the ESD mat, in the system, or inside a bag.
- Wrist Strap and Bonding Wire The wrist strap and bonding wire can be either directly connected between your wrist and bare metal on the hardware if the ESD mat is not required, or connected to the anti-static mat to protect hardware that is temporarily placed on the mat. The physical connection of the wrist strap and bonding wire between your skin, the ESD mat, and the hardware is known as bonding. Use only Field Service kits with a wrist strap, mat, and bonding wire. Never use wireless wrist straps. Always be aware that the internal wires of a wrist strap are prone to damage from normal wear and tear, and must be checked regularly with a wrist strap tester in order to avoid accidental ESD hardware damage. It is recommended to test the wrist strap and bonding wire at least once per week.
- ESD Wrist Strap Tester The wires inside of an ESD strap are prone to damage over time. When using an unmonitored kit, it is a best practice to regularly test the strap prior to each service call, and at a minimum, test once per week. A wrist strap tester is the best method for doing this test. If you do not have your own wrist strap tester, check with your regional office to find out if they have one. To perform the test, plug the wrist-strap's bonding-wire into the tester while it is strapped to your wrist and push the button to test. A green LED is lit if the test is successful; a red LED is lit and an alarm sounds if the test fails.
- Insulator Elements It is critical to keep ESD sensitive devices, such as plastic heat sink casings, away from internal parts that are insulators and often highly charged.
- Working Environment Before deploying the ESD Field Service kit, assess the situation at the customer location. For example, deploying the kit for a server environment is different than for a desktop or portable environment. Servers are typically installed in a rack within a data center; desktops or portables are typically placed on office desks or cubicles. Always look for a large open flat work area that is free of clutter and large enough to deploy the ESD kit with additional space to accommodate the type of system that is being repaired. The workspace should also be free of insulators that can cause an ESD event. On the work area, insulators such as Styrofoam and other plastics should always be moved at least 12 inches or 30 centimeters away from sensitive parts before physically handling any hardware components
- ESD Packaging All ESD-sensitive devices must be shipped and received in static-safe packaging. Metal, static-shielded bags are preferred. However, you should always return the damaged part using the same ESD bag and packaging that the new part arrived in. The ESD bag should be folded over and taped shut and all the same foam packing material should be used in the original box that the new part arrived in. ESD-sensitive devices should be removed from packaging only at an ESD-protected work surface, and parts should never be placed on top of the ESD bag because only the inside of the bag is shielded. Always place parts in your hand, on the ESD mat, in the system, or inside an anti-static bag.
- **Transporting Sensitive Components** When transporting ESD sensitive components such as replacement parts or parts to be returned to Dell, it is critical to place these parts in anti-static bags for safe transport.

ESD protection summary

It is recommended that all field service technicians use the traditional wired ESD grounding wrist strap and protective anti-static mat at all times when servicing Dell products. In addition, it is critical that technicians keep sensitive parts separate from all insulator parts while performing service and that they use anti-static bags for transporting sensitive components.

After working inside your computer

About this task

CAUTION: Leaving stray or loose screws inside your computer may severely damage your computer.

Steps

- 1. Replace all screws and ensure that no stray screws remain inside your computer.
- 2. Connect any external devices, peripherals, or cables you removed before working on your computer.
- 3. Replace any media cards, discs, or any other parts that you removed before working on your computer.
- 4. Connect your computer and all attached devices to their electrical outlets.
- 5. Turn on your computer.

2

Major components of Vostro 5301

The following image shows the major components of Vostro 5301.



- 1. Base cover
- 2. Battery
- **3.** Fan
- 4. Wireless-card bracket
- 5. Wireless card
- 6. Coin-cell battery
- 7. Power button with fingerprint reader
- 8. I/O board

- 9. Palm-rest and keyboard assembly
- 10. Display assembly
- 11. Touchpad
- 12. Speakers
- 13. Power-adapter port
- 14. Solid-state drive shield
- 15. Solid-state drive
- 16. Heat sink

() NOTE: Dell provides a list of components and their part numbers for the original system configuration purchased. These parts are available according to warranty coverages purchased by the customer. Contact your Dell sales representative for purchase options.

Disassembly and reassembly

(i) NOTE: The images in this document may differ from your computer depending on the configuration you ordered.

Base cover

Removing the base cover

Prerequisites

1. Follow the procedure in Before working inside your computer.

About this task

The following images indicate the location of the base cover and provide a visual representation of the removal procedure.

Steps

- 1. Loosen the three captive screws that secure the base cover to the palm-rest and keyboard assembly.
- 2. Remove the four screws (M2x4) that secure the base cover to the palm-rest and keyboard assembly.
- **3.** Starting from the top-left corner, use a plastic scribe to pry the base cover in the direction of the arrows to release the base cover from the palm-rest and keyboard assembly.

CAUTION: Do not pull on or pry the base cover from the side where the hinges are; doing so may damage the base cover.

4. Pry the base cover and remove it from the palm-rest and keyboard assembly.

(i) NOTE: The following steps are applicable only if you want to further remove any other component from your computer.

- 5. Using the pull tab, disconnect the battery cable from the battery.
- 6. Turn your computer over and press the power button for 15 seconds to drain the flea power.

Installing the base cover

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the base cover and provide a visual representation of the installation procedure.

Steps

- 1. Connect the battery cable to the battery, if applicable.
- 2. Align the screw holes on the base cover with the screw holes on the palm-rest and keyboard assembly, and then snap the base cover into place.
- 3. Replace the four screws (M2x4) that secure the base cover to the palm-rest and keyboard assembly.
- 4. Tighten the three captive screws that secure the base cover to the palm-rest and keyboard assembly.

Next steps

1. Follow the procedure in After working inside your computer.

Battery

Lithium-ion battery precautions

- Exercise caution when handling Lithium-ion batteries.
- Discharge the battery completely before removing it. Disconnect the AC power adapter from the system and operate the computer solely on battery power—the battery is fully discharged when the computer no longer turns on when the power button is pressed.
- Do not crush, drop, mutilate, or penetrate the battery with foreign objects.
- Do not expose the battery to high temperatures, or disassemble battery packs and cells.
- Do not apply pressure to the surface of the battery.
- Do not bend the battery.
- Do not use tools of any kind to pry on or against the battery.
- Ensure any screws during the servicing of this product are not lost or misplaced, to prevent accidental puncture or damage to the battery and other system components.
- If the battery gets stuck inside your computer as a result of swelling, do not try to release it as puncturing, bending, or crushing a lithium-ion battery can be dangerous. In such an instance, contact Dell technical support for assistance. See www.dell.com/contactdell.
- Always purchase genuine batteries from www.dell.com or authorized Dell partners and resellers.
- Swollen batteries should not be used and should be replaced and disposed properly. For guidelines on how to handle and replace swollen Lithium-ion batteries, see Handling swollen Lithium-ion batteries.

Removing the 3-cell battery

Prerequisites

- 1. Follow the procedure in Before working inside your computer.
- 2. Remove the base cover.

About this task

The following image indicates the location of the battery and provides a visual representation of the removal procedure.



- 1. Remove the four screws (M2x5) that secure the battery to the palm-rest and keyboard assembly.
- 2. Lift the battery off the palm-rest and keyboard assembly.
- 3. Disconnect the battery cable from the system board, if applicable.

Installing the 3-cell battery

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the battery and provides a visual representation of the installation procedure.



- 1. Connect the battery cable to the system board.
- 2. Align the screw holes on the battery with the screw holes on the palm-rest and keyboard assembly.
- 3. Replace the four screws (M2x5) that secure the battery to the palm-rest and keyboard assembly.

Next steps

- 1. Install the base cover.
- 2. Follow the procedure in After working inside your computer.

Removing the 4-cell battery

Prerequisites

- 1. Follow the procedure in Before working inside your computer.
- 2. Remove the base cover.

About this task

The following image indicates the location of the battery and provides a visual representation of the removal procedure.



- 1. Remove the five screws (M2x5) that secure the battery to the palm-rest and keyboard assembly.
- 2. Lift the battery off the palm-rest and keyboard assembly.
- **3.** Disconnect the battery cable from the system board, if applicable.

Installing the 4-cell battery

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the battery and provides a visual representation of the installation procedure.

- 1. Connect the battery cable to the system board.
- 2. Align the screw holes on the battery with the screw holes on the palm-rest and keyboard assembly.
- 3. Replace the five screws (M2x5) that secure the battery to the palm-rest and keyboard assembly.

Next steps

- 1. Install the base cover.
- 2. Follow the procedure in After working inside your computer.

Solid-state drive

Removing the 2230 solid-state drive

Prerequisites

1. Follow the procedure in Before working inside your computer.

CAUTION: To avoid data loss, do not remove the solid-state drive while the computer is in sleep or on state.

2. Remove the base cover.

About this task

The following image indicates the location of the solid-state drive and provides a visual representation of the removal procedure.

Steps

- 1. Lift the protective tape that covers the 2230 solid-state drive slot.
- 2. Peel the Mylar that covers the 2230 solid-state drive.
- **3.** Remove the screw (M2x3) that secures the 2230 solid-state drive bracket to the system board.
- 4. Slide and remove the solid-state drive bracket off the system board.
- 5. Slide and remove the 2230 solid-state drive from the solid-state drive slot.

Installing the 2230 solid-state drive

Prerequisites

About this task

The following image indicates the location of the solid-state drive and provides a visual representation of the installation procedure.

Steps

- 1. Lift the protective tape and peel the Mylar that covers the 2230 solid-state drive.
- 2. Slide the 2230 solid-state drive into the solid-state drive slot.
- **3.** Slide the solid-state drive bracket and align the screw hole on the solid-state drive bracket with the screw hole on the system board.
- 4. Replace the screw (M2x3) that secures the solid-state drive bracket to the system board.

Next steps

- 1. Install the base cover.
- 2. Follow the procedure in After working inside your computer.

Removing the 2280 solid-state drive

Prerequisites

1. Follow the procedure in Before working inside your computer.

CAUTION: To avoid data loss, do not remove the solid-state drive while the computer is in sleep or on state.

2. Remove the base cover.

About this task

The following image indicates the location of the solid-state drive and provides a visual representation of the removal procedure.

Steps

- 1. Lift the protective tape that covers the 2280 solid-state drive slot.
- 2. Peel the Mylar that covers the 2280 solid-state drive.
- **3.** Remove the screw (M2x3) that secures the 2280 solid-state drive to the system board.
- 4. Slide and remove the 2280 solid-state drive from the solid-state drive slot.

Installing the 2280 solid-state drive

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the solid-state drive and provides a visual representation of the installation procedure.

Steps

- 1. Lift the protective tape and the Mylar that covers the solid-state drive slot.
- 2. Slide the 2280 solid-state drive into the solid-state drive slot.
- 3. Replace the screw (M2x3) that secures the 2280 solid-state drive to the system board.
- 4. Affix the Mylar and the protective tape over the solid-state drive.

Next steps

- 1. Install the base cover.
- 2. Follow the procedure in After working inside your computer.

Coin-cell battery

Removing the coin-cell battery

Prerequisites

1. Follow the procedure in Before working inside your computer.

CAUTION: Removing the coin-cenn battery resets the BIOS setup program's settings to default. It is recommended that you note the BIOS setup program's settings before removing the coin-cell battery.

2. Remove the base cover.

About this task

The following image indicates the location of the coin-cell battery and provides a visual representation of the removal procedure.

- 1. Disconnect the coin-cell battery cable from the system board.
- 2. Remove the coin-cell battery cable from the routing guide.
- 3. Peel the coin-cell battery off the palm-rest and keyboard assembly.

Installing the coin-cell battery

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the coin-cell battery and provides a visual representation of the installation procedure.

- 1. Adhere the coin-cell battery to the slot on the palm-rest and keyboard assembly.
- 2. Route the coin-cell battery cable through the routing guide.
- **3.** Connect the coin-cell battery cable to the system board.

Next steps

- 1. Install the 4-cell battery.
- 2. Install the 3-cell battery.
- **3.** Install the base cover.
- **4.** Follow the procedure in After working inside your computer.

Fan

Removing the fan

Prerequisites

- 1. Follow the procedure in Before working inside your computer.
- 2. Remove the base cover.

About this task

The following images indicate the location of the fans and provide a visual representation of the removal procedure.

- 1. Peel off the tape that secures the I/O-board cable to the fan.
- 2. Lift the mylar that covers the fan screw on the system board.
- **3.** Remove the two screws (M2x3) that secure the fan to the system board.
- 4. Disconnect the fan cable from the system board.
- 5. Lift the fan off the system board.

Installing the fan

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the fans and provide a visual representation of the installation procedure.

- 1. Lift the mylar that covers the screw hole on the fan.
- 2. Align the screw holes on the fan with the screw holes on the system board.
- **3.** Replace the two screws (M2x3) that secure the fan to the system board.
- 4. Connect the fan cable from the system board.
- 5. Adhere the tape that secures the I/O-board cable to the fan.

Next steps

- 1. Install the base cover.
- 2. Follow the procedure in After working inside your computer.

Speakers

Removing the speakers

Prerequisites

- 1. Follow the procedure in Before working inside your computer.
- 2. Remove the base cover.

About this task

The following image indicates the location of the speakers and provides a visual representation of the removal procedure.

- 1. Disconnect the speaker cable from the system board.
- 2. Peel the tapes that secure the speaker cable to the battery.
- **3.** Note the routing of the speaker cables, and remove the speaker cables from the respective routing guides on the palm-rest and keyboard assembly.
- 4. Pry the speakers off the palm-rest and keyboard assembly.

Installing the speakers

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of the speakers and provides a visual representation of the installation procedure.

- 1. Slide the left and the right speakers into the respective slots on the palm-rest and keyboard assembly.
- 2. Route the speaker cables through the respective routing guides on the palm-rest and keyboard assembly.
- **3.** Adhere the tapes that secure the speaker cable to the battery.
- 4. Connect the left and the right speaker cables to the respective connectors on the system board.

Next steps

- 1. Install the base cover.
- 2. Follow the procedure in After working inside your computer.

Display assembly

Removing the display assembly

Prerequisites

- 1. Follow the procedure in Before working inside your computer.
- 2. Remove the base cover.

About this task

The following images indicate the location of the display assembly and provide a visual representation of the removal procedure.

- 1. Lift the mylar that covers the display cable on the system board.
- 2. Open the latch and disconnect the display cable from the system board.
- **3.** Remove the two screws (M2x2) that secure the left hinge to the palm-rest and keyboard assembly.
- 4. Remove the screw (M2x2) that secures the right hinge to the system board and the palm-rest and keyboard assembly.
- 5. Open the display assembly at an angle and slide the palm-rest and keyboard assembly from the display assembly.
- 6. After performing all the above steps, you are left with the display assembly.

Installing the display assembly

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following images indicate the location of the display assembly and provide a visual representation of the installation procedure.

- 1. Place the display assembly on a clean surface.
- 2. Align and place the palm-rest and keyboard assembly at an angle with the display assembly.
- 3. Align the screw holes on the display hinges with the screw holes on the palm-rest and keyboard assembly.
- 4. Replace the screw (M2x2) that secures the right hinge to the system board and the palm-rest and keyboard assembly.
- 5. Replace the two screws (M2x2) that secure the left hinge to the palm-rest and keyboard assembly.
- 6. Lift the mylar that covers the display-cable connector on the system board.
- 7. Connect the display cable to the connector on the system board.

Next steps

- **1.** Install the base cover.
- 2. Follow the procedure in After working inside your computer.

Touchpad

Removing the touchpad

Prerequisites

1. Follow the procedure in Before working inside your computer.

- 2. Remove the base cover.
- **3.** Remove the 4-cell battery or the 3-cell battery.

About this task

The following image indicates the location of touchpad and provides a visual representation of the removal procedure.

Steps

- 1. Peel the tape that secures the speaker cables to the touchpad bracket.
- 2. Remove the two (M2x2) screws that secure the touchpad bracket to the palm-rest and keyboard assembly.
- 3. Remove the two (M2x2) screws that secure the touchpad to the palm-rest and keyboard assembly.
- 4. Open the latch and disconnect the touchpad cable from the system board.
- 5. Peel the tapes that secure the touchpad to the palm-rest and keyboard assembly.
- 6. Lift the touchpad, along with the cable, off the palm-rest and keyboard assembly.

Installing the touchpad

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of touchpad and provides a visual representation of the installation procedure.

- 1. Align and place the touchpad into the slot on the palm-rest and keyboard assembly.
- 2. Replace the two (M2x2) screws that secure the touchpad to the palm-rest and keyboard assembly.
- 3. Adhere the tapes that secure the touchpad to the palm-rest and keyboard assembly.
- 4. Connect the touchpad cable and close the latch to secure the cable to the system board.
- 5. Align and place the touchpad bracket into the slot on the palm-rest and keyboard assembly.
- 6. Replace the two (M2x2) screws that secure the touchpad bracket to the palm-rest and keyboard assembly.
- 7. Adhere the tape that secures the speaker cables to the touchpad bracket.

Next steps

- 1. Install the base cover.
- 2. Install the 4-cell battery or the 3-cell battery.
- **3.** Follow the procedure in After working inside your computer.

Heat sink

Removing the heat sink

Prerequisites

- 1. Follow the procedure in Before working inside your computer.
 - CAUTION: For maximum cooling of the processor, do not touch the heat transfer areas on the heat sink. The oils in your skin can reduce the heat transfer capability of the thermal grease.
 - (i) NOTE: The heat sink may become hot during normal operation. Allow sufficient time for the heat sink to cool before you touch it.
- 2. Remove the base cover.

About this task

The following image indicates the location of the heat sink and provides a visual representation of the removal procedure.

- 1. Peel off the Mylar that covers the heat sink on the system board.
- 2. In reverse sequential order (as indicated on the heat sink), loosen the four captive screws that secure the heat sink to the system board.
- **3.** Lift the heat sink off the system board.

Installing the heat sink

Prerequisites

CAUTION: Incorrect alignment of the heat sink can damage the system board and processor.

NOTE: If either the system board or the heat sink is replaced, use the thermal pad/paste provided in the kit to ensure that thermal conductivity is achieved.

About this task

The following image indicates the location of the heat sink and provides a visual representation of the installation procedure.

- 1. Align the screw holes on the heat sink with the screw holes on the system board.
- 2. In sequential order (as indicated on the heat sink), tighten the four captive screws that secure the heat sink to the system board.
- **3.** Adhere the Mylar that covers the heat sink on the system board.

Next steps

- 1. Install the base cover.
- 2. Follow the procedure in After working inside your computer.

Power-adapter port

Removing the power-adapter port

Prerequisites

- 1. Follow the procedure in Before working inside your computer.
- 2. Remove the base cover.

3. Remove the display assembly.

About this task

The following image indicates the location of power-adapter port and provides a visual representation of the removal procedure.

Steps

- 1. Remove the screw (M2x3) that secures the power-adapter port to the system board.
- 2. Disconnect the power-adapter port cable from the system board.
- 3. Lift the power-adapter port, along with its cable, off the palm-rest and keyboard assembly.

Installing the power-adapter port

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of power-adapter port and provides a visual representation of the installation procedure.

- 1. Connect the power-adapter port cable to the system board.
- 2. Replace the screw (M2x3) that secures the power-adapter port to the palm-rest and keyboard assembly.

Next steps

- **1.** Install the base cover.
- 2. Follow the procedure in After working inside your computer.

I/O board

Removing the I/O board

Prerequisites

- 1. Follow the procedure in Before working inside your computer.
- 2. Remove the base cover.
- **3.** Remove the display assembly.

About this task

The following image indicates the location of I/O board and provides a visual representation of the removal procedure.

- 1. Peel the tape that secures the I/O-board cable to the I/O board.
- 2. Open the latch and disconnect the I/O-board cable from the I/O board.
- **3.** Peel the tape that secures the I/O-board cable to the fan.
- 4. Remove the two screws (M2x3) that secure the I/O board to the palm-rest and keyboard assembly.
- 5. Lift the I/O board off the palm-rest and keyboard assembly.

Installing the I/O board

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of I/O board and provides a visual representation of the installation procedure.

- 1. Align and place the I/O board on the palm-rest and keyboard assembly.
- 2. Replace the two screws (M2x3) that secure the I/O board to the palm-rest and keyboard assembly.
- 3. Connect the I/O-board cable and close the latch to secure the cable to the I/O board.
- 4. Adhere the tape that secures the I/O-board cable to the fan.
- 5. Adhere the tape that secures the I/O-board cable to the I/O board.

Next steps

- 1. Install the fan.
- 2. Install the base cover.
- 3. Follow the procedure in After working inside your computer.

System board

Removing the system board

Prerequisites

- 1. Follow the procedure in Before working inside your computer.
 - **NOTE:** Your computer's Service Tag is stored in the system board. You must enter the Service Tag in the BIOS setup program after you replace the system board.
 - **NOTE:** Replacing the system board removes any changes you have made to the BIOS using the BIOS setup program. You must make the appropriate changes again after you replace the system board.
 - **NOTE:** Before disconnecting the cables from the system board, note the location of the connectors so that you can reconnect the cables correctly after you replace the system board.
- 2. Remove the base cover.
- 3. Remove the 4-cell battery or the 2-cell battery.
- 4. Remove the fan.
- 5. Remove the heat sink.

(i) NOTE: The system board can be removed with the heat sink attached.

- 6. Remove the solid state drive.
- 7. Remove the display assembly.

About this task

The following images indicate the location of the system board and provide a visual representation of the removal procedure.

- 1. fan cable
- 3. power-adapter port cable
- 5. keyboard backlight cable
- 7. battery cable
- 9. I/O-board cable
- 11. coin-cell battery cable

- 2. display cable
- 4. speaker cable
- 6. keyboard cable
- 8. touchpad cable
- 10. fingerprint-reader cable

- 1. Remove the single (M2x3) screw that secures the left display hinge to the system board and lift it up.
- 2. Lift the protective tape and remove the single (M2x2.5) screw that secures the wireless-card bracket to the system board.
- **3.** Disconnect the wireless-card antennas from the wireless-card.
- 4. Lift the protective tape and disconnect the EDP cable.
- 5. Disconnect the DC-IN cable.
- 6. Disconnect the coin-cell battery cable, fingerprint-reader cable, I/O-board cable, touchpad cable, keyboard cable and keyboard-backlit cable, speaker cable from the system board.
- 7. Lift the system board off the palm-rest and keyboard assembly.

Installing the system board

Prerequisites

- () NOTE: Your computer's Service Tag is stored in the system board. You must enter the Service Tag in the BIOS setup program after you replace the system board.
- **NOTE:** Replacing the system board removes any changes you have made to the BIOS using the BIOS setup program. You must make the appropriate changes again after you replace the system board.

About this task

The following images indicate the location of the system board and provide a visual representation of the installation procedure.

1. Align the system board on the palm-rest and keyboard assembly.

NOTE: There is a screw hole on the system board that is marked "Inspiron 7300", only install a screw into this location when installing system board for Inspiron 7300.

- 2. Connect the coin-cell battery cable, fingerprint-reader cable, I/O-board cable, touchpad cable, keyboard cable and keyboard-backlit cable, speaker cable from the system board.
- **3.** Connect the DC-IN cable.
- 4. Lift the protective tape and connect the EDP cable.
- 5. Lift the protective tape and Connect the wireless-card antennas from the wireless-card.
- 6. Place the wireless-card bracket on the wireless-card and replace the single (M2x2.5) screw to secure the wireless-card bracket to the system board.
- 7. Push the display hinge down and replace the single (M2x3) screw to secure the left display hinge to the system board.

Next steps

- 1. Install the display assembly.
- 2. Install the solid state drive.
- **3.** Install the heat sink.
- 4. Install the fan.
- 5. Install the 4-cell battery or the 2-cell battery.
- 6. Install the base cover.
- 7. Follow the procedure in After working inside your computer.

Palm-rest and keyboard assembly

Removing the palm-rest and keyboard assembly

Prerequisites

- 1. Follow the procedure in Before working inside your computer.
- 2. Remove the base cover.
- **3.** Remove the 4-cell battery or the 3-cell battery.
- **4.** Remove the speakers.
- **5.** Remove the system board.
 - (i) NOTE: The system board can be removed with the heat sink attached.
- 6. Remove the display assembly.
- 7. Remove the power-adapter port.
- 8. Remove the touchpad.

About this task

The following image indicates the palm-rest and keyboard assembly and provides a visual representation of the removal procedure.

After performing the steps in the pre-requisites, we are left with the palm-rest and keyboard assembly.

(i) NOTE: System board can be removed with heatsink attached.

Installing the palm-rest and keyboard assembly

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the palm-rest and keyboard assembly and provides a visual representation of the installation procedure.

Place the palm-rest and keyboard assembly on a flat surface.

Next steps

- 1. Install the touchpad.
- 2. Install the power-adapter port.
- 3. Install the display assembly.
- 4. Install the system board.
- 5. Install the speakers.
- 6. Install the 4-cell battery or the 3-cell battery.
- 7. Install the base cover.
- 8. Follow the procedure in After working inside your computer.

Power button with fingerprint reader

Removing the power button with fingerprint reader

Prerequisites

- 1. Follow the procedure in Before working inside your computer.
- 2. Remove the base cover.
- **3.** Remove the 4-cell battery or the 3-cell battery.
- 4. Remove the speakers.
- 5. Remove the system board.

(i) NOTE: The system board can be removed with the heat sink attached.

- 6. Remove the display assembly.
- 7. Remove the power-adapter port.

About this task

The following image indicates the location of power-adapter port and provides a visual representation of the removal procedure.

- 1. Peel off the mylar tape that secures the power button with fingerprint reader cable connection.
- 2. Disconnect the power button with fingerprint reader cable from the connector on the palm-rest and keyboard assembly.
- **3.** Lift the power button with fingerprint reader off the palm-rest and keyboard assembly.

Installing the power button with fingerprint reader

Prerequisites

If you are replacing a component, remove the existing component before performing the installation procedure.

About this task

The following image indicates the location of power-adapter port and provides a visual representation of the installation procedure.

- 1. Align the power button with fingerprint reader on the palm-rest and keyboard assembly.
- 2. Connect the power button with fingerprint reader cable to the connector on the palm-rest and keyboard assembly.
- 3. Adhere the mylar tape that secures the power button with fingerprint reader cable connection.

Next steps

- 1. Install the power-adapter port.
- 2. Install the display assembly.
- **3.** Install the system board.
- 4. Install the speakers.
- **5.** Install the 4-cell battery or the 3-cell battery.
- 6. Install the base cover.
- 7. Follow the procedure in After working inside your computer.

Troubleshooting

Handling swollen Lithium-ion batteries

Like most laptops, Dell laptops use lithium-ion batteries. One type of lithium-ion battery is the lithium-ion polymer battery. Lithium-ion polymer batteries have increased in popularity in recent years and have become standard in the electronics industry due to customer preferences for a slim form factor (especially with newer ultra-thin laptops) and long battery life. Inherent to lithium-ion polymer battery technology is the potential for swelling of the battery cells.

Swollen battery may impact the performance of the laptop. To prevent possible further damage to the device enclosure or internal components leading to malfunction, discontinue the use of the laptop and discharge it by disconnecting the AC adapter and letting the battery drain.

Swollen batteries should not be used and should be replaced and disposed of properly. We recommend contacting Dell product support for options to replace a swollen battery under the terms of the applicable warranty or service contract, including options for replacement by a Dell authorized service technician.

The guidelines for handling and replacing Lithium-ion batteries are as follows:

- Exercise caution when handling Lithium-ion batteries.
- Discharge the battery before removing it from the system. To discharge the battery, unplug the AC adapter from the system and operate the system only on battery power. When the system will no longer power on when the power button is pressed, the battery is fully discharged.
- Do not crush, drop, mutilate, or penetrate the battery with foreign objects.
- Do not expose the battery to high temperatures, or disassemble battery packs and cells.
- Do not apply pressure to the surface of the battery.
- Do not bend the battery.
- Do not use tools of any type to pry on or against the battery.
- If a battery gets stuck in a device as a result of swelling, do not try to free it as puncturing, bending, or crushing a battery can be dangerous.
- Do not attempt to reassemble a damaged or swollen battery into a laptop.
- Swollen batteries that are covered under warranty should be returned to Dell in an approved shipping container (provided by Dell)—this is to comply with transportation regulations. Swollen batteries that are not covered under warranty should be disposed of at an approved recycling center. Contact Dell product support at https://www.dell.com/support for assistance and further instructions.
- Using a non-Dell or incompatible battery may increase the risk of fire or explosion. Replace the battery only with a
 compatible battery purchased from Dell that is designed to work with your Dell computer. Do not use a battery from other
 computers with your computer. Always purchase genuine batteries from https://www.dell.com or otherwise directly from
 Dell.

Lithium-ion batteries can swell for various reasons such as age, number of charge cycles, or exposure to high heat. For more information on how to improve the performance and lifespan of the laptop battery and to minimize the possibility of occurrence of the issue, see Dell Laptop Battery - Frequently Asked Questions.

Dell SupportAssist Pre-boot System Performance Check diagnostics

About this task

The SupportAssist diagnostics (also known as system diagnostics) performs a complete check of your hardware. The Dell SupportAssist Pre-boot System Performance Check diagnostics 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

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.

For more information, see Resolve Hardware Issues With Built-in and Online Diagnostics (SupportAssist ePSA, ePSA or PSA Error Codes).

Running the SupportAssist Pre-Boot System Performance Check

Steps

- 1. Turn on your 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.
- **4.** Click the arrow at the bottom left corner. Diagnostics front page is displayed.
- 5. Click the arrow in the lower-right corner to go to the page listing. The items detected are listed.
- 6. To run a diagnostic test on a specific device, press Esc and click Yes to stop the diagnostic test.
- 7. Select the device from the left pane and click **Run Tests**.
- 8. If there are any issues, error codes are displayed. Note the error code and validation number and contact Dell.

Validation Tools

This section contains information on how to validate the SupportAssist ePSA, ePSA or PSA error codes.

Error code verification can be done using below two methods :

- Online Enhanced Preboot System Assessment Validation Tool.
- QR scanning using QR APP on Smart Phone.

Online SupportAssist On-board Diagnostics, ePSA or PSA Error Codes Validation Tool

Usage Guide

Steps

1. User to obtain information from SupportAssist error windows.

	Hard Drive - No Hard Drive detected	
	Continue troubleshooting the system with the information provided below at	
	dell.com/diagnostics or with technical support. Use a mobile device to	164.02
	scan the QR code to continue troubleshooting.	- 探波開設
3	Service Tag BIOS 0.4.1	同時就是
	Error Code : 2000-0141	
	Validation : 125870	
	Continue testing?	

- 2. Navigate to https://www.dell.com/support/diagnose/Pre-boot-Analysis.
- **3.** Enter error code, validation code, and service tag. Part serial number is optional.

Error Code (without 2000-prefix) *	Error Code (without 2000-prefix)
Validation Code *	Validation Code
Service Tag 🚺 *	Service Tag
Part Serial # (optional)	Part Serial # (optional)
	Submit

View System Requirements and Privacy And Legal Information

(i) NOTE: For error code, use only the last 3 or 4 digits of the code. (user can enter 0142 or 142 instead of 2000–0142.)

4. Click on **Submit** once all the necessary information is entered.

Error Code (without 2000-prefix) *	0141
Validation Code *	125870
Service Tag 🚺 *	
Part Serial <mark># (</mark> optional)	Part Serial # (optional)
	Submit

View System Requirements and Privacy And Legal Information

Results

Valid Error Code Example

19.5"	Vostro 20 All-in-One Service Tag: Expr Add to My Products List View a different product	3055 ess Service Code: 3	6410	
Manuals	S Warranty	🕞 Syste	m configuration	
Diagnostics	Your system is	urrently Out of Warranty.	Please contact Dell Technic	al Support for further
Support topics & articles	Result: Issue	s Found.		
Drivers & downloads	Your result requires atte troubleshoot problems o	ntion. Review the affecte or you may be presented w	d hardware below and follow fith a request to replace par	v the instructions to ts.
General maintenance				Clear results
Parts & accessories	A Needs Attent	tion: System maint	enance	-
	Needs Attentic A potential error h issue.	n as been found. Click here	to view a list of steps that;	can help resolve your
	See full scan re	esults.		
	Diagnostics Completed —		—	
	Hardware			
	Diagnostic Name	Error Code	Serial #	Result
	EPSA	141		Failed

After entering the correct information, the online tools will direct the user to the above screen which contains information on :

- Confirmation of the error code and result outcome
- Suggested Part Replacement
- If customer is still covered under Dell Warranty
- Case reference number if there is an open case under the service tag

Invalid Error Code Example

Error Code (without 2000-prefix) *	0141
Validation Code *	123456
Service Tag 🚺 *	16(g.uell)2
Part Serial # (optional)	Dart Cortal # (optional)

QR APP Validation Tool

About this task

Besides using the online tool, customers can also validate the error code by scanning the QR code with a QR APP on a smartphone.

Steps

1. User to obtain the QR code from SupportAssist On-board Diagnostics error screen.

2. User can use any QR code scanner application through the smartphone to scan the QR code.

3. The QR code scanner application will scan the code and automatically generate a link. Click the link to proceed.

Results

The link generated will take the customer to the Dell Support website which contains information on:

- Confirmation of the error code and result outcome
- Suggested Part Replacement
- If customer is still covered under Dell Warranty
- Case reference number if there is an open case under the service tag

Enhanced Pre-Boot System Assessment (ePSA) diagnostics

About this task

The SupportAssist diagnostics (also known as system diagnostics) performs a complete check of your hardware. The SupportAssist diagnostics 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

NOTE: The **SupportAssist** window displays, listing all devices detected in the computer. The diagnostics starts running the tests on all the detected devices.

Running SupportAssist diagnostics

Steps

- 1. Turn on your 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.
- **4.** Click the arrow at the bottom left corner. Diagnostics front page is displayed.
- **5.** Click the arrow in the lower-right corner to go to the page listing. The items detected are listed.
- 6. To run a diagnostic test on a specific device, press Esc and click **Yes** to stop the diagnostic test.
- 7. Select the device from the left pane and click **Run Tests**.
- 8. If there are any issues, error codes are displayed. Note the error code and validation number and contact Dell.

SupportAssist diagnostic User Interface

SupportAssist diagnostic User Interface

About this task

This section contains information on Support Assist Basic and Advanced Screen.

SupportAssist opens the basic screen on start. You can switch to the advanced screen using the icon at the bottom left of the screen. The advanced screen shows detected devices in a tiled format. Specific tests can be included or excluded only in the advanced mode. The Basic Screen has minimal controls which allows easy navigation for the user to start or stop the diagnostics.

System diagnostic lights

Battery-status light

Indicates the power and battery-charge status.

Solid white — Power adapter is connected and the battery has more than 5 percent charge.

Amber — Computer is running on battery and the battery has less than 5 percent charge.

Off

- Power adapter is connected and the battery is fully charged.
- Computer is running on battery and the battery has more than 5 percent charge.
- Computer is in sleep state, hibernation, or turned off.

The power and battery-status light blinks amber along with beep codes indicating failures.

For example, the power and battery-status light blinks amber two times followed by a pause, and then blinks white three times followed by a pause. This 2,3 pattern continues until the computer is turned off indicating no memory or RAM is detected.

The following table shows different power and battery-status light patterns and associated problems.

Table 1. LED codes

Diagnostic light codes	Problem description	Recommended Solution
1,1	TPM Detection Failure.	Replace system board
1,2	Unrecoverable SPI Flash Failure	Replace system board
1,3	Short in hinge cable tripped OCP1	Check if the display cable (EDP) is seated properly or pinched at the hinges. If problem persists, replace either display cable (EDP) or display assembly (LCD)
1,4	Short in hinge cable tripped OCP2	Check if the display cable (EDP) is seated properly or pinched at the hinges. If problem persists, replace either display cable (EDP) or display assembly (LCD)
1,5	EC unable to program i-Fuse	Replace system board
1,6	Generic catch-all for ungraceful EC code flow errors	Disconnect all power source (AC, battery, coin cell) and drain flea power by pressing & holding down power button.

Table 1. LED codes (continued)

Diagnostic light codes	Problem description	Recommended Solution
2,1	Processor failure	Replace the CPU. If CPU is on-board, replace system board
2,2	System board: BIOS or ROM (Read-Only Memory) failure	Replace system board
2,3	No memory or RAM (Random-Access Memory) detected	Reseat and swap memory modules between the slots. If problem persists, replace the memory module
2,4	Memory or RAM (Random-Access Memory) failure	Reseat and swap memory modules between the slots. If problem persists, replace the memory module
2,5	Invalid memory installed	Reseat and swap memory modules between the slots. If problem persists, replace the memory module
2,6	System-board or chipset error	Replace system board
2,7	Display failure	Replace display vable (EDP) if possible, otherwise replace the display assembly (LCD).
2,8	LCD power rail failure. Replace system board	Replace system board
3,1	Coin-cell battery failure	Reset the CMOS battery connection. If problem persists, replace the RTC battery
3,2	PCI, video card/chip failure	Replace system board
3,3	Recovery image not found	Flash latest BIOS version. If problem persists, replace the system board
3,4	Recovery image found but invalid	Flash latest BIOS version. If problem persists, replace the system board
3,5	Power-rail failure	Replace system board
3,6	System BIOS Flash incomplete	Replace system board
3,7	Management Engine (ME) error	Replace system board

Camera status light: Indicates whether the camera is in use.

- Solid white Camera is in use.
- Off Camera is not in use.

Caps Lock status light: Indicates whether Caps Lock is enabled or disabled.

- Solid white Caps Lock enabled.
- Off Caps Lock disabled.

Updating the BIOS using the USB drive in Windows

Steps

- 1. Follow the procedure from step 1 to step 6 in Updating the BIOS in Windows to download the latest BIOS setup program file.
- 2. Create a bootable USB drive. For more information, see the knowledge base article 000145519 at www.dell.com/support.
- 3. Copy the BIOS setup program file to the bootable USB drive.
- 4. Connect the bootable USB drive to the computer that needs the BIOS update.
- 5. Restart the computer and press F12 .
- 6. Select the USB drive from the One Time Boot Menu.
- 7. Type the BIOS setup program filename and press **Enter**. The **BIOS Update Utility** appears.
- 8. Follow the on-screen instructions to complete the BIOS update.

Updating the BIOS in Windows

Steps

- 1. Go to www.dell.com/support.
- 2. Click Product support. In the Search support box, enter the Service Tag of your computer, and then click Search.
- () NOTE: If you do not have the Service Tag, use the SupportAssist feature to automatically identify your computer. You can also use the product ID or manually browse for your computer model.

3. Click Drivers & Downloads. Expand Find drivers.

- 4. Select the operating system installed on your computer.
- 5. In the Category drop-down list, select BIOS.
- 6. Select the latest version of BIOS, and click **Download** to download the BIOS file for your computer.
- 7. After the download is complete, browse the folder where you saved the BIOS update file.
- Double-click the BIOS update file icon and follow the on-screen instructions.
 For more information, see knowledge base article 000124211 at www.dell.com/support.

Backup media and recovery options

It is recommended to create a recovery drive to troubleshoot and fix problems that may occur with Windows. Dell proposes multiple options for recovering Windows operating system on your Dell PC. For more information. see Dell Windows Backup Media and Recovery Options.

WiFi power cycle

About this task

If your computer is unable to access the internet due to WiFi connectivity issues a WiFi power cycle procedure may be performed. The following procedure provides the instructions on how to conduct a WiFi power cycle:

(i) NOTE: Some ISPs (Internet Service Providers) provide a modem/router combo device.

Steps

- 1. Turn off your computer.
- 2. Turn off the modem.
- 3. Turn off the wireless router.
- 4. Wait for 30 seconds.
- 5. Turn on the wireless router.
- 6. Turn on the modem.
- 7. Turn on your computer.

Drain residual flea power (perform hard reset)

About this task

Flea power is the residual static electricity that remains in the computer even after it has been powered off and the battery is removed.

For your safety, and to protect the sensitive electronic components in your computer, you are requested to drain residual flea power before removing or replacing any components in your computer.

Draining residual flea power, also known as a performing a "hard reset", is also a common troubleshooting step if your computer does not power on or boot into the operating system.

To drain residual flea power (perform a hard reset)

- 1. Turn off your computer.
- 2. Disconnect the power adapter from your computer.
- **3.** Remove the base cover.
- 4. Remove the battery.
- 5. Press and hold the power button for 20 seconds to drain the flea power.
- 6. Install the battery.
- 7. Install the base cover.
- 8. Connect the power adapter to your computer.
- 9. Turn on your computer.

(i) **NOTE:** For more information about performing a hard reset, see the knowledge base article 000130881 at www.dell.com/support.

5

Getting help and contacting Dell

Self-help resources

You can get information and help on Dell products and services using these self-help resources:

Table 2. Self-help resources

Self-help resources	Resource location
Information about Dell products and services	www.dell.com
My Dell	Deell
Tips	· · · · · · · · · · · · · · · · · · ·
Contact Support	In Windows search, type Contact Support, and press Enter.
Online help for operating system	www.dell.com/support/windows
	www.dell.com/support/linux
Troubleshooting information, user manuals, setup instructions, product specifications, technical help blogs, drivers, software updates, and so on.	www.dell.com/support
Dell knowledge base articles for a variety of computer concerns.	 Go to https://www.dell.com/support/home/? app=knowledgebase. Type the subject or keyword in the Search box. Click Search to retrieve the related articles.
 Learn and know the following information about your product: Product specifications Operating system Setting up and using your product Data backup Troubleshooting and diagnostics Factory and system restore BIOS information 	 See Me and My Dell at www.dell.com/support/manuals. To locate the Me and My Dell relevant to your product, identify your product through one of the following: Select Detect Product. Locate your product through the drop-down menu under View Products. Enter the Service Tag number or Product ID in the search bar.

Contacting Dell

To contact Dell for sales, technical support, or customer service issues, see www.dell.com/contactdell.

(i) NOTE: Availability varies by country and product, and some services may not be available in your country.

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.