Dell Inspiron One 2020

Owner's Manual

Notes, Cautions, and Warnings

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

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

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

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Technical Overview

⚠️ **WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.**

Inside View of Your Computer
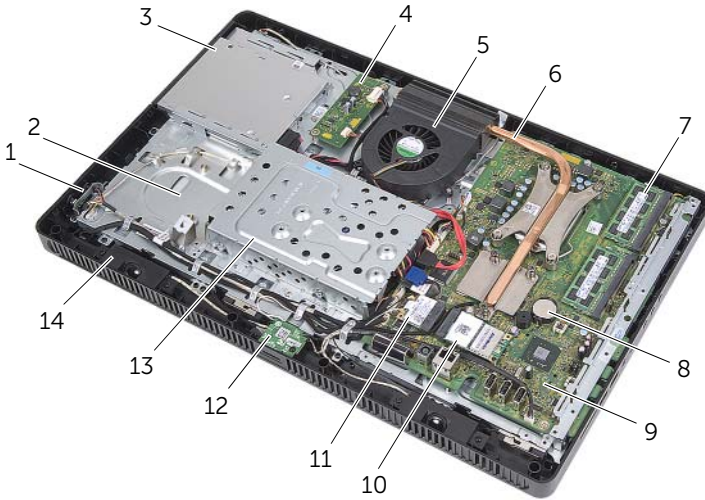
1	power-button board	2	chassis
3	optical-drive assembly	4	converter board
5	fan	6	processor heat-sink
7	memory module(s)	8	coin-cell battery
9	system board	10	TV-tuner card (optional)
11	wireless Mini-Card	12	B-CAS card (Japan only)
13	hard-drive assembly	14	speakers (2)

System Board Components
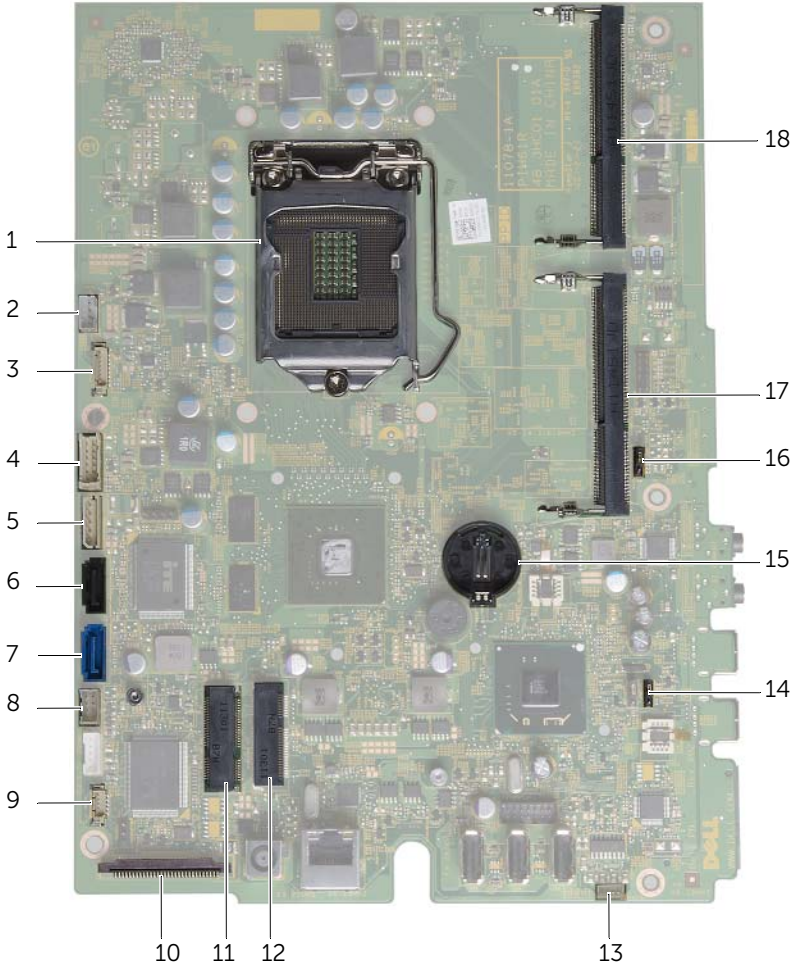
1	processor socket	2	fan cable connector (FANC1)
3	camera cable connector (WEBCAM)	4	converter-board cable connector (CONVERTER)
5	hard-drive and optical-drive power cable connector (SATAP1)	6	optical-drive cable connector (SATA_ODD)
7	hard-drive cable connector (SATA_HDD)	8	power-button and hard-drive activity light cable connector (PWRCN1)
9	IR-cable connector (IR_IN)	10	display-cable connector
11	wireless Mini-Card connector (MINICARD WIFI)	12	TV-tuner card connector (MINICARD TV)
13	speakers cable connector (SPEAKER)	14	password jumper (PWCLR1)
15	battery socket (BT1)	16	CMOS jumper (CMOCL1)
17	memory-module connector (DIMMB1)	18	memory-module connector (DIMMA1)

2 Before You Begin

Turn Off Your Computer and Connected Devices

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

1 Save and close all open files and exit all open programs.

2 Click **Start** 🏁 and click **Shut down**.

   Microsoft Windows shuts down and then the computer turns off.

   ✎ **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 telephone cables, network cables, and attached devices from your computer.

5 After the computer is unplugged, press and hold the power button for about 5 seconds to ground the system board.

Safety Instructions

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

⚠ **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 dell.com/regulatory_compliance.**

⚠ **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.**

⚠ **CAUTION: To avoid damaging the computer, ensure that the work surface is flat and clean.**

⚠ **CAUTION: To avoid damaging the components and cards, handle them by their edges and avoid touching pins and contacts.**

⚠ **CAUTION: Only a certified service technician is authorized to remove the computer cover and access any of the components inside the computer. See the safety instructions for complete information about safety precautions, working inside your computer, and protecting against electrostatic discharge.**

⚠ **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.**

△ **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 or thumb-screws that you must disengage before disconnecting the cable. When disconnecting cables, keep them evenly aligned to avoid bending any connector pins. When connecting cables, ensure that the connectors and ports are correctly oriented and aligned.**

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

Recommended Tools

The procedures in this document may require the following tools:

- Phillips screwdriver
- Hex nut driver
- Plastic scribe

3 After Working Inside Your Computer

After you complete replacement procedures, ensure the following:

- Replace all screws and ensure that no stray screws remain inside your computer
- Place the computer in an upright position
- Connect any external devices, cables, cards, and any other part(s) you removed before working on your computer
- Connect your computer and all attached devices to their electrical outlets

⚠ **CAUTION: Before turning on your computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may damage your computer.**

4 Stand Cover

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Removing the Stand Cover

Procedure

⚠️ **CAUTION: Before opening your computer, ensure that you place the computer on a soft cloth or clean surface to avoid any scratches on the display.**

1 Place the computer face down on a flat surface.
2 Press the tab on the stand cover and lift the stand cover.
3 Slide and remove the stand cover away from the computer.

1	tab	2	stand cover
3	back cover		

Replacing the Stand Cover

Procedure

1 Slide the tabs on the stand cover into the slots on the back cover.

2 Snap the stand cover until it clicks into place.

3 Follow the instructions in "After Working Inside Your Computer" on page 13.

5 Stand

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Removing the Stand

Prerequisites

Remove the stand cover. See "Removing the Stand Cover" on page 15.

Procedure

1 Remove the screws that secure the stand to the chassis.
2 Pivot the stand upward and slide it away from the computer.

1	stand	2	screws (4)

Replacing the Stand

Procedure

1 Slide the tabs on the stand into the slots on the back cover.
2 Replace the screws that secure the stand to the chassis.

Postrequisites

1 Replace the stand cover. See "Replacing the Stand Cover" on page 16.
2 Follow the instructions in "After Working Inside Your Computer" on page 13.

6   Back Cover

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Removing the Back Cover

Prerequisites

1   Remove the stand cover. See "Removing the Stand Cover" on page 15.
2   Remove the stand. See "Removing the Stand" on page 17.

Procedure

1   Starting from above the optical drive, pry the back cover from the middle frame.
2   Lift the back cover off the computer.

1 middle frame	2 back cover

Replacing the Back Cover

Procedure

Align the tabs on the back cover with the tabs on the middle frame and snap the back cover into place.

Postrequisites

1 Replace the stand. See "Replacing the Stand" on page 18.
2 Replace the stand cover. See "Replacing the Stand Cover" on page 16.
3 Follow the instructions in "After Working Inside Your Computer" on page 13.
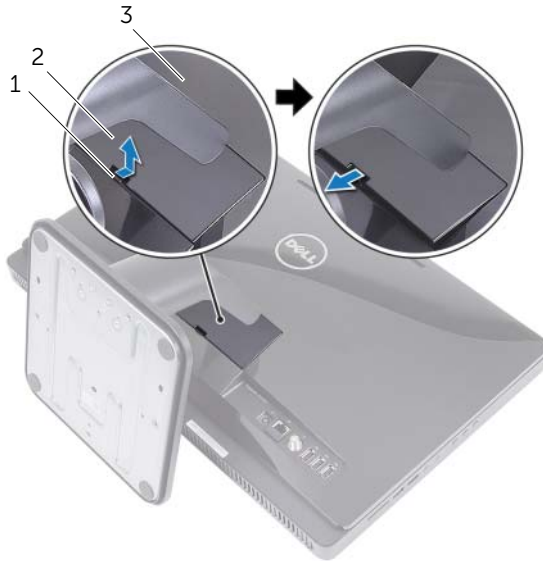
7   Hard Drive

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⚠️ **CAUTION: To avoid data loss, do not remove the hard drive while the computer is On or in Sleep state.**

⚠️ **CAUTION: Hard drives are extremely fragile. Exercise care when handling the hard drive.**

Removing the Hard Drive

Prerequisites

1   Remove the stand cover. See "Removing the Stand Cover" on page 15.

2   Remove the stand. See "Removing the Stand" on page 17.

3   Remove the back cover. See "Removing the Back Cover" on page 19.

Procedure

1 Remove the screws that secure the hard-drive assembly to the chassis.
2 Slide and lift the hard-drive assembly and then disconnect the power and data cable from the connector on the hard drive.
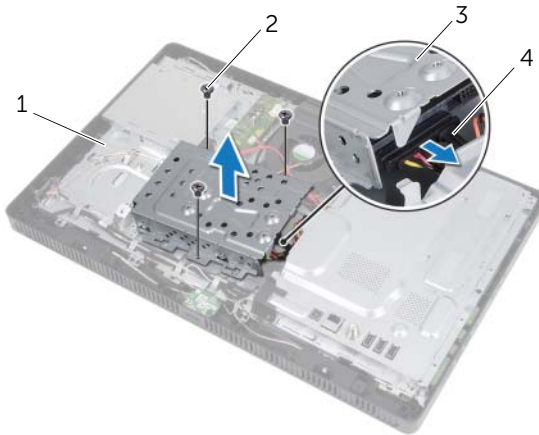
| 1 | chassis | 2 | screw (3) |
| 3 | hard-drive assembly | 4 | power and data cable |

3 Remove the screws that secure the hard-drive cage to the hard drive.
4 Lift the hard-drive cage off the hard drive.
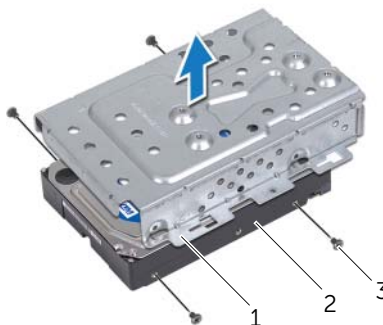
| 1 | hard-drive cage | 2 | hard drive |
| 3 | screws (4) | | |

Replacing the Hard Drive

Procedure

1 Align the screw holes on the hard-drive cage with the screw holes on the hard drive.

2 Replace the screws that secure the hard-drive cage to the hard drive.

3 Connect the power and data cable to the connector on the hard-drive assembly.

4 Place the hard-drive assembly on the chassis and slide the hard-drive assembly into place. Ensure that the slots on the hard-drive cage are secured under the tabs on the chassis.

5 Replace the screws that secure the hard-drive assembly to the chassis.

Postrequisites

1 Replace the back cover. See "Replacing the Back Cover" on page 20.

2 Replace the stand. See "Replacing the Stand" on page 18.

3 Replace the stand cover. See "Replacing the Stand Cover" on page 16.

4 Follow the instructions in "After Working Inside Your Computer" on page 13.

8 Optical Drive

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Removing the Optical Drive

Prerequisites

1 Remove the stand cover. See "Removing the Stand Cover" on page 15.
2 Remove the stand. See "Removing the Stand" on page 17.
3 Remove the back cover. See "Removing the Back Cover" on page 19.

Procedure

1 Disconnect the power and data cable from the connector on the optical-drive assembly.
2 Remove the screw that secures the optical-drive assembly to the chassis.
3 Slide the optical-drive assembly out of the optical-drive bay.
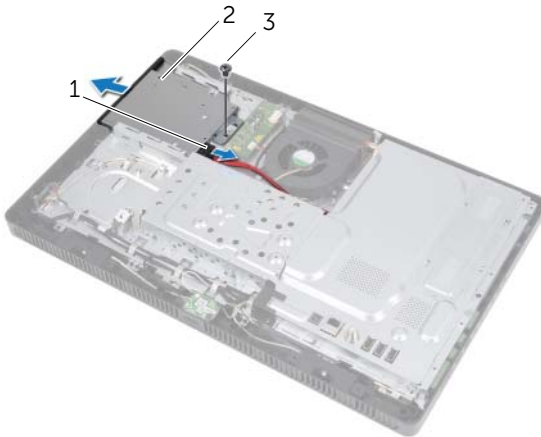
1	power and data cable	2	optical-drive assembly
3	screw		

4 Carefully pry the optical-drive bezel and remove it from the optical-drive assembly.

5 Remove the screws that secure the optical-drive bracket to the optical drive.

6 Remove the optical-drive bracket.
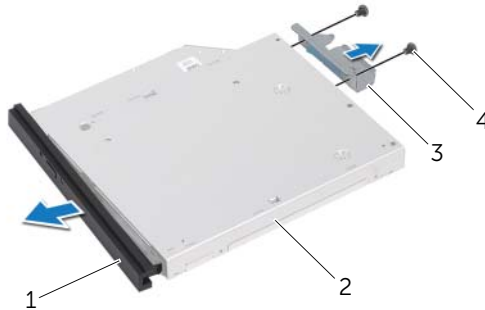
1	optical-drive bezel	2	optical drive
3	optical-drive bracket	4	screws (2)

Replacing the Optical Drive

Procedure

1 Align the screw holes on the optical-drive bracket with the screw holes on the optical drive.

2 Replace the screws that secure the optical-drive bracket to the optical drive.

3 Align the tabs on the optical-drive bezel with the slots on the optical-drive assembly and snap the optical-drive bezel into place.

4 Slide the optical-drive assembly into the optical-drive bay until it is fully seated.

5 Replace the screw that secures the optical-drive assembly to the chassis.

6 Connect the power and data cable to the connector on the optical-drive assembly.

Postrequisites

1 Replace the back cover. See "Replacing the Back Cover" on page 20.

2 Replace the stand. See "Replacing The Stand" on page 18.

3 Replace the stand cover. See "Replacing the Stand Cover" on page 16.

4 Follow the instructions in "After Working Inside Your Computer" on page 13.

9   B-CAS Card (Japan Only)

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Removing the B-CAS Card

Prerequisites

1 Remove the stand cover. See "Removing the Stand Cover" on page 15.
2 Remove the stand. See "Removing the Stand" on page 17.
3 Remove the back cover. See "Removing the Back Cover" on page 19.

Procedure

1 Remove the screw that secures the B-CAS card to the middle frame.
2 Turn the B-CAS card over.
3 Disconnect the B-CAS-card cable from the connector on the B-CAS card.
4 Lift the B-CAS card away from the computer.
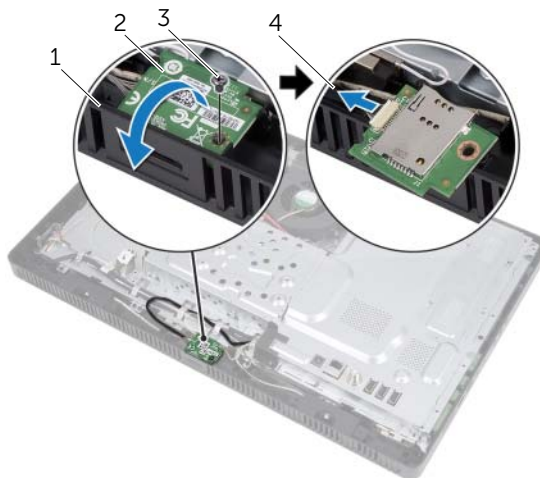
1	middle frame	2	B-CAS card
3	screw	4	B-CAS-card cable

Replacing the B-CAS Card

Procedure

1 Connect the B-CAS-card cable to the connector on the B-CAS card.
2 Turn the B-CAS card over.
3 Align the screw hole on the B-CAS card with the screw hole on the middle frame.
4 Replace the screw that secures the B-CAS card to the middle frame.

Postrequisites

1 Replace the back cover. See "Replacing the Back Cover" on page 20.
2 Replace the stand. See "Replacing the Stand" on page 18.
3 Replace the stand cover. See "Replacing the Stand Cover" on page 16.
4 Follow the instructions in "After Working Inside Your Computer" on page 13.

10 Converter Board

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Removing the Converter Board

Prerequisites

1 Remove the stand cover. See "Removing the Stand Cover" on page 15.
2 Remove the stand. See "Removing the Stand" on page 17.
3 Remove the back cover. See "Removing the Back Cover" on page 19.

Procedure

1 Disconnect the cables from the connectors on the converter board.
2 Remove the screws that secure the converter board to the chassis.
3 Lift the converter board away from the chassis.
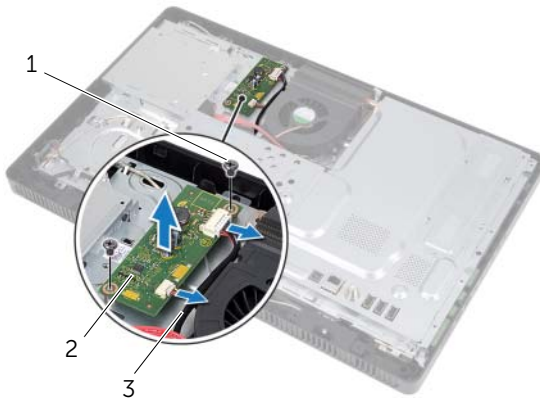
1	screws (2)	2	converter board
3	cables (2)		

Replacing the Converter Board

Procedure

1   Align the screw holes on the converter board with the screw holes on the chassis.
2   Replace the screws that secure the converter board to the chassis.
3   Connect the cables to the connectors on the converter board.

Postrequisites

1   Replace the back cover. See "Replacing the Back Cover" on page 20.
2   Replace the stand. See "Replacing the Stand" on page 18.
3   Replace the stand cover. See "Replacing the Stand Cover" on page 16.
4   Follow the instructions in "After Working Inside Your Computer" on page 13.

11 Memory Module(s)

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Removing the Memory Module(s)

Prerequisites

1 Remove the stand cover. See "Removing the Stand Cover" on page 15.
2 Remove the stand. See "Removing the Stand" on page 17.
3 Remove the back cover. See "Removing the Back Cover" on page 19.

Procedure

1 Remove the screw that secures the memory-module shield to the system-board shield.
2 Slide the memory-module shield toward the top of the computer, and lift it off the system-board shield.
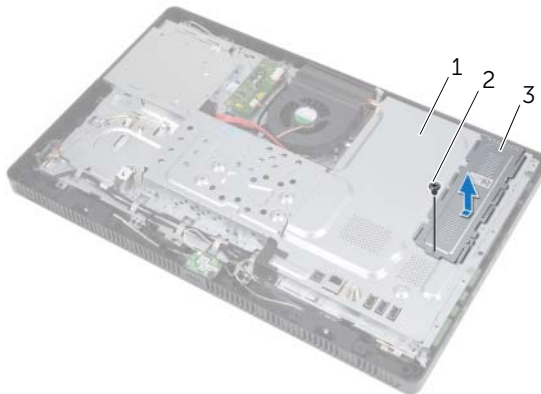
1	system-board shield	2	screw
3	memory-module shield		

3 Use your fingertips to carefully spread apart the securing clips on each end of the memory-module connector until the memory module pops up.

4 Remove the memory module from the memory-module connector.
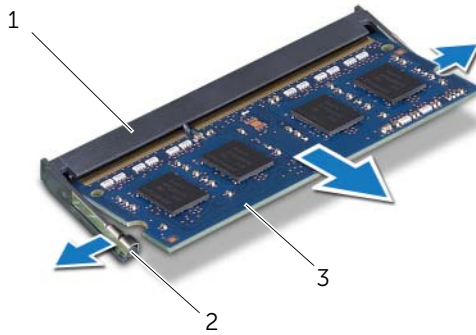
1	memory-module connector	2	securing clips (2)
3	memory module		

Replacing the Memory Module(s)

Procedure

1 Align the notch on the memory module with the tab on the memory-module connector.

2 Slide the memory module firmly into the connector at a 45-degree angle, and press the memory module down until it clicks into place. If you do not hear the click, remove the memory module and reinstall it.

> **NOTE:** If the memory module is not installed properly, the computer may not boot.
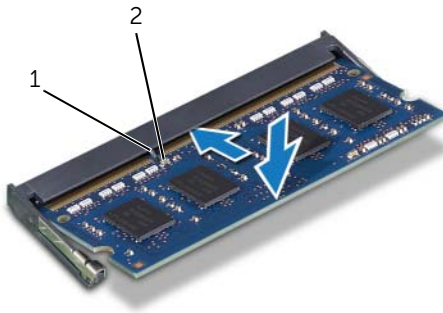
1	tab	2	notch

3 Insert the tabs on the memory-module shield into the slots on the system-board shield and then slide the memory-module shield toward the bottom of the computer. Ensure that the screw hole on the memory-module shield aligns with the screw hole on the system-board shield.

4 Replace the screw that secures the memory-module shield to the system-board shield.

Postrequisites

1 Replace the back cover. See "Replacing the Back Cover" on page 20.

2 Replace the stand. See "Replacing the Stand" on page 18.

3 Replace the stand cover. See "Replacing the Stand Cover" on page 16.

4 Follow the instructions in "After Working Inside Your Computer" on page 13.

As the computer boots, it detects the memory module(s) and automatically updates the system configuration information.

To confirm the amount of memory installed on your computer:

Click **Start** → **Control Panel**→ **System and Security**→ **System**.

12 System-Board Shield

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Removing the System-Board Shield

Prerequisites

1   Remove the stand cover. See "Removing the Stand Cover" on page 15.
2   Remove the stand. See "Removing the Stand" on page 17.
3   Remove the back cover. See "Removing the Back Cover" on page 19.

Procedure

1   Remove the screws that secure the system-board shield to the chassis.
2   Carefully lift the system-board shield and turn it over.

1	screws (5)	2	system-board shield

3 Disconnect the antenna-in connector cable from the connector on the TV-tuner card.

4 Remove the antenna-in connector. See "Removing the Antenna-In Connector" on page 37.
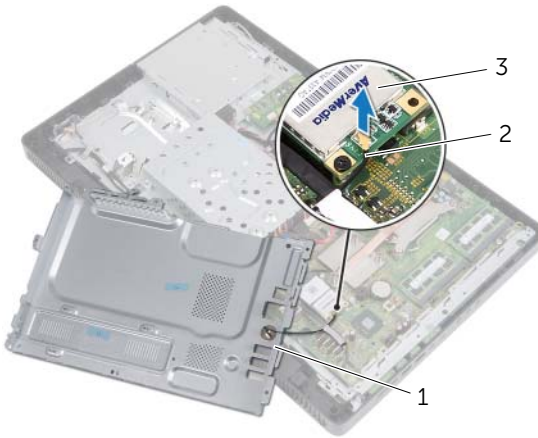
1	system-board shield	2	antenna-in connector cable
3	TV-tuner card		

Replacing the System-Board Shield

Procedure

1 Replace the antenna-in connector. See "Replacing the Antenna-In Connector" on page 38.

2 Connect the antenna-in connector cable to the connector on the TV-tuner card.

3 Turn the system-board shield over and align the screw holes on the system-board shield with the screw holes on the chassis.

4 Replace the screws that secure the system-board shield to the chassis.

Postrequisites

1 Replace the back cover. See "Replacing the Back Cover" on page 20.

2 Replace the stand. See "Replacing the Stand" on page 18.

3 Replace the stand cover. See "Replacing the Stand Cover" on page 16.

4 Follow the instructions in "After Working Inside Your Computer" on page 13.

13 Antenna-In Connector

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Removing the Antenna-In Connector

Prerequisites

1 Remove the stand cover. See "Removing the Stand Cover" on page 15.
2 Remove the stand. See "Removing the Stand" on page 17.
3 Remove the back cover. See "Removing the Back Cover" on page 19.
4 Remove the system-board shield. See "Removing the System-Board Shield" on page 35.

Procedure

1 Remove the hex nut that secures the antenna-in connector to the system-board shield.
2 Slide the antenna-in connector through the slot on the system-board shield.
3 Remove the antenna-in connector along with its cable away from the system-board shield.
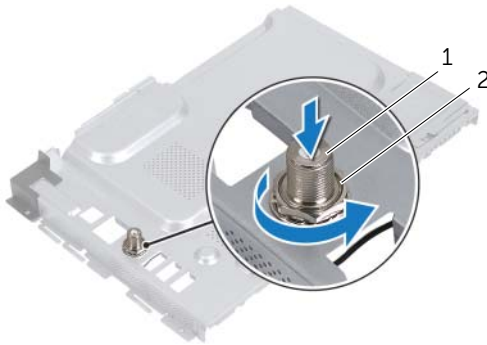
1	antenna-in connector	2	hex nut

Replacing the Antenna-In Connector

Procedure

1   Slide the antenna-in connector into the slot on the system-board shield.
2   Replace the hex nut that secures the antenna-in connector to the system-board shield.

Postrequisites

1   Replace the system-board shield. See "Replacing the System-Board Shield" on page 36.
2   Replace the back cover. See "Replacing the Back Cover" on page 20.
3   Replace the stand. See "Replacing the Stand" on page 18.
4   Replace the stand cover. See "Replacing the Stand Cover" on page 16.
5   Follow the instructions in "After Working Inside Your Computer" on page 13.

14 Antenna Modules

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Removing the Antenna Modules

Prerequisites

1   Remove the stand cover. See "Removing the Stand Cover" on page 15.
2   Remove the stand. See "Removing the Stand" on page 17.
3   Remove the back cover. See "Removing the Back Cover" on page 19.
4   Remove the system-board shield. See "Removing the System-Board Shield" on page 35.

Procedure

1   Disconnect the antenna cables from the connectors on the wireless Mini-Card.
2   Make a note of the antenna cables routing and remove them from the routing guides.
3   Peel the antenna modules from the chassis.
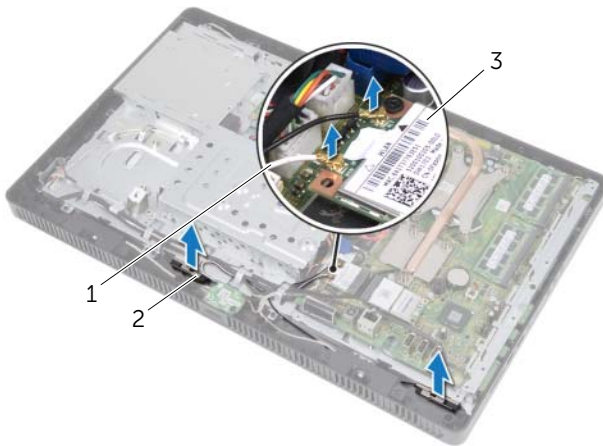
1	antenna cables (2)	2	antenna modules (2)
3	wireless Mini-Card		

Replacing the Antenna Modules

Procedure

1   Adhere the antenna modules to the chassis.
2   Route the antenna cables through the routing guides.
3   Connect the antenna cables to the connectors on the wireless Mini-Card.

Postrequisites

1   Replace the system-board shield. See "Replacing the System-Board Shield" on page 36.
2   Replace the back cover. See "Replacing the Back Cover" on page 20.
3   Replace the stand. See "Replacing the Stand" on page 18.
4   Replace the stand cover. See "Replacing the Stand Cover" on page 16.
5   Follow the instructions in "After Working Inside Your Computer" on page 13.

15 TV-Tuner Card (Optional)

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📝 **NOTE:** Dell does not guarantee compatibility or provide support for TV-tuner cards from sources other than Dell.

If you ordered a TV-tuner card with your computer, the card is already installed. Your computer supports one full-size Mini-Card slot for a TV-tuner card.

Removing the TV-Tuner Card

Prerequisites

1 Remove the stand cover. See "Removing the Stand Cover" on page 15.
2 Remove the stand. See "Removing the Stand" on page 17.
3 Remove the back cover. See "Removing the Back Cover" on page 19.
4 Remove the system-board shield. See "Removing the System-Board Shield" on page 35.

Procedure

1 Disconnect the TV-tuner-card cable from the connector on the TV-tuner card.

2 Remove the screw that secures the TV-tuner card to the system-board connector.

3 Lift the TV-tuner card away from the system-board connector.
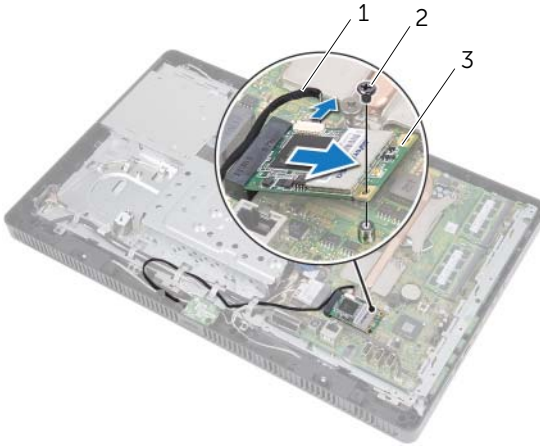
1	TV-tuner-card cable	2	screw
3	TV tuner card		

⚠ CAUTION: When the TV-tuner card is not in the computer, store it in protective antistatic packaging. See "Protecting Against Electrostatic Discharge" in the safety instructions that shipped with your computer.

Replacing the TV-Tuner Card

Procedure

⚠ **CAUTION: To avoid damage to the TV-tuner card, ensure that there are no cables under the TV-tuner card.**

1 Align the notch on the TV-tuner card with the tab on the system-board connector.

2 Insert the TV-tuner card at a 45-degree angle into the system-board connector.

3 Press the other end of the TV-tuner card down and replace the screw that secures the TV-tuner card to the system-board connector.

4 Connect the TV-tuner-card cable to the connector on the TV-tuner card.

Postrequisites

1 Replace the system-board shield. See "Replacing the System-Board Shield" on page 36.

2 Replace the back cover. See "Replacing the Back Cover" on page 20.

3 Replace the stand. See "Replacing the Stand" on page 18.

4 Replace the stand cover. See "Replacing the Stand Cover" on page 16.

5 Follow the instructions in "After Working Inside Your Computer" on page 13.

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Wireless Mini-Card (Optional)

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📝 **NOTE:** Dell does not guarantee compatibility or provide support for Mini-Cards from sources other than Dell.

If you ordered a wireless Mini-Card with your computer, the card is already installed.

Your computer supports one half-size Mini-Card slot for Wireless Local Area Network (WLAN) + Bluetooth combo card and Wi-Fi.

Removing the Wireless Mini-Card

Prerequisites

1 Remove the stand cover. See "Removing the Stand Cover" on page 15.

2 Remove the stand. See "Removing the Stand" on page 17.

3 Remove the back cover. See "Removing the Back Cover" on page 19.

4 Remove the system-board shield. See "Removing the System-Board Shield" on page 35.

Procedure

1 Disconnect the antenna cable(s) from the Mini-Card.

2 Remove the screw that secures the Mini-Card to the system-board connector.
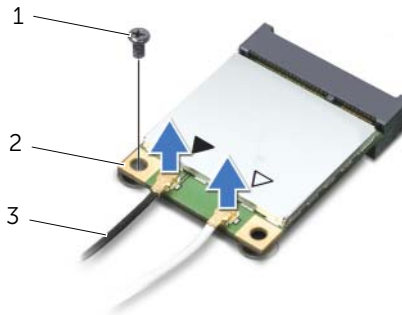
1	screw	2	Mini-Card
3	antenna cables (2)		

3 Lift the Mini-Card away from the system-board connector.
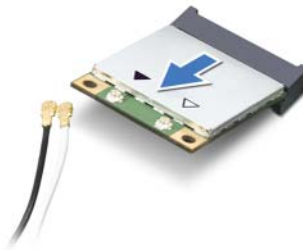
⚠ CAUTION: When the Mini-Card is not in the computer, store it in protective antistatic packaging. See "Protecting Against Electrostatic Discharge" in the safety instructions that shipped with your computer.

Replacing the Wireless Mini-Card

Procedure

⚠ **CAUTION: The connectors are keyed to ensure correct insertion. Use of excessive force may damage the connectors.**

⚠ **CAUTION: To avoid damage to the Mini-Card, ensure that there are no cables under the Mini-Card.**

1 Align the notch on the Mini-Card with the tab on the system-board connector.
2 Insert the Mini-Card at a 45-degree angle into the system-board connector.
3 Press the other end of the Mini-Card down and replace the screw that secures the Mini-Card to the system-board connector.
4 Connect the appropriate antenna cables to the Mini-Card you are installing. The Mini-Card has two triangles (black and white) marked on the label:
   • Connect the black cable to the connector marked with a black triangle.
   • Connect the white cable to the connector marked with a white triangle.

Postrequisites

1 Replace the system-board shield. See "Replacing the System-Board Shield" on page 36.
2 Replace the back cover. See "Replacing the Back Cover" on page 20.
3 Replace the stand. See "Replacing the Stand" on page 18.
4 Replace the stand cover. See "Replacing the Stand Cover" on page 16.
5 Follow the instructions in "After Working Inside Your Computer" on page 13.

17 Coin-Cell Battery

⚠️ **WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.**

⚠️ **WARNING: A new battery can explode if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.**

Removing the Coin-Cell Battery

Prerequisites

1 Remove the stand cover. See "Removing the Stand Cover" on page 15.

2 Remove the stand. See "Removing the Stand" on page 17.

3 Remove the back cover. See "Removing the Back Cover" on page 19.

4 Remove the system-board shield. See "Removing the System-Board Shield" on page 35.

Procedure

1 Locate the battery socket on the system board. See "System Board Components" on page 8.

2 Press the battery-release lever away from the battery until the battery pops up.

3 Lift the battery away from the battery socket.
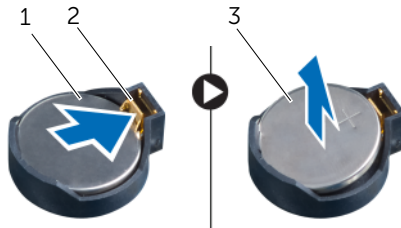
1	coin-cell battery	2	battery-release lever
3	+ side of the coin-cell battery		

Replacing the Coin-Cell Battery

Procedure

Insert the new battery (CR2032) into the battery socket with the side labeled **+** facing up, and press the battery into place.

Postrequisites

1 Replace the system-board shield. See "Replacing the System-Board Shield" on page 36.
2 Replace the back cover. See "Replacing the Back Cover" on page 20.
3 Replace the stand. See "Replacing the Stand" on page 18.
4 Replace the stand cover. See "Replacing the Stand Cover" on page 16.
5 Follow the instructions in "After Working Inside Your Computer" on page 13.

18 Speakers

⚠️ **WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.**

Removing the Speakers

Prerequisites

1   Remove the stand cover. See "Removing the Stand Cover" on page 15.
2   Remove the stand. See "Removing the Stand" on page 17.
3   Remove the back cover. See "Removing the Back Cover" on page 19.
4   Remove the B-CAS card. See "Removing the B-CAS Card" on page 27.
5   Remove the system-board shield. See "Removing the System-Board Shield" on page 35.

Procedure

1 Disconnect the speakers cable from the connector (SPEAKER) on the system board.

2 Make note of the speakers cable routing and remove the cable from the routing guides.

3 Remove the screws that secure the speakers to the middle frame.

4 Lift the speakers along with the cable off the middle frame.
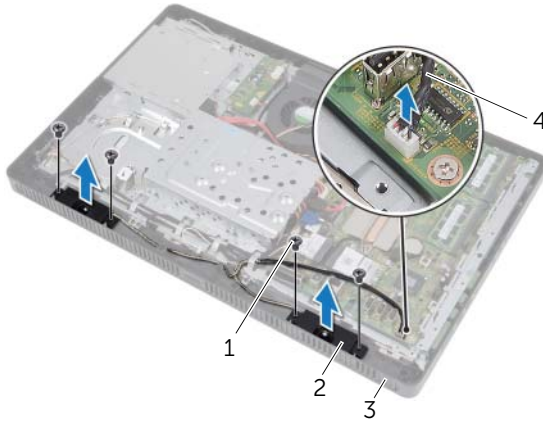
1	screws (4)	2	speakers (2)
3	middle frame	4	speakers cable

Replacing the Speakers

Procedure

1 Align the screw holes on the speakers with the screw holes on the middle frame.
2 Replace the screws that secure the speakers to the middle frame.
3 Route the speakers cable through the routing guides.
4 Connect the speakers cable to the connector (SPEAKER) on the system board.

Postrequisites

1 Replace the system-board shield. See "Replacing the System-Board Shield" on page 36.
2 Replace the B-CAS card. See "Replacing the B-CAS Card" on page 28.
3 Replace the back cover. See "Replacing the Back Cover" on page 20.
4 Replace the stand. See "Replacing the Stand" on page 18.
5 Replace the stand cover. See "Replacing the Stand Cover" on page 16.
6 Follow the instructions in "After Working Inside Your Computer" on page 13.

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Fan

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.**

Removing the Fan

Prerequisites

1 Remove the stand cover. See "Removing the Stand Cover" on page 15.
2 Remove the stand. See "Removing the Stand" on page 17.
3 Remove the back cover. See "Removing the Back Cover" on page 19.
4 Remove the system-board shield. See "Removing the System-Board Shield" on page 35.

Procedure

1 Disconnect the fan cable from the connector (FANC1) on the system board.

2 Remove the fan cable from the routing guide on the fan.

3 Remove the screws that secure the fan to the chassis.

4 Lift the fan along with its cable away from the chassis.
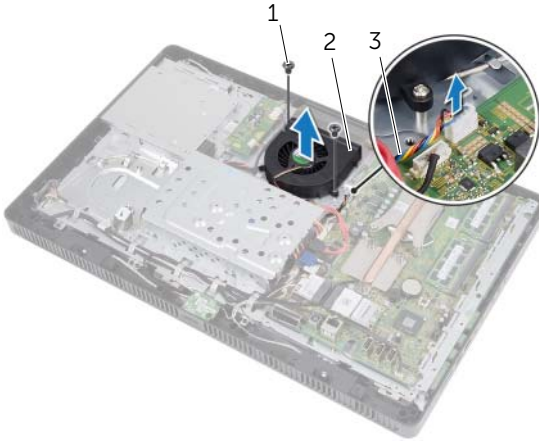
1	screws (2)	2	fan
3	fan cable		

Replacing the Fan

Procedure

1 Align the screw holes on the fan with the screw holes on the chassis.

2 Replace the screws that secure the fan to the chassis.

3 Route the fan cable through the routing guide on the fan.

4 Connect the fan cable to the connector (FANC1) on the system board.

Postrequisites

1 Replace the system-board shield. See "Replacing the System-Board Shield" on page 36.

2 Replace the back cover. See "Replacing the Back Cover" on page 20.

3 Replace the stand. See "Replacing the Stand" on page 18.

4 Replace the stand cover. See "Replacing the Stand Cover" on page 16.

5 Follow the instructions in "After Working Inside Your Computer" on page 13.

20 Power-Button Assembly

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.**

Removing the Power-Button Assembly

Prerequisites

1 Remove the stand cover. See "Removing the Stand Cover" on page 15.
2 Remove the stand. See "Removing the Stand" on page 17.
3 Remove the back cover. See "Removing the Back Cover" on page 19.
4 Remove the system-board shield. See "Removing the System-Board Shield" on page 35.

Procedure

1 Disconnect the power-button and hard-drive activity light cable from the connector (PWRCN1) on the system board.

2 Make a note of the power-button and hard-drive activity light cable routing and remove it from the routing guides.

3 Remove the screw that secures the power-button assembly to the middle frame.

4 Slide the power-button assembly toward the top of the computer and then lift it away from the middle frame.
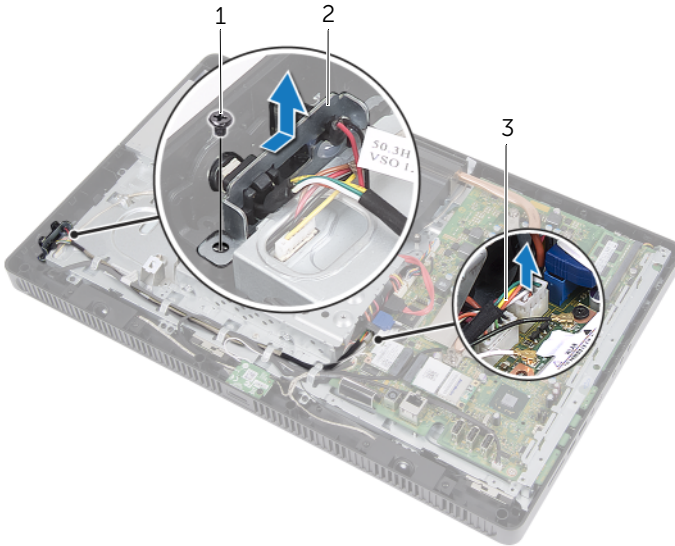
1	screw	2	power-button assembly
3	power-button and hard-drive activity light cable		

Replacing the Power-Button Assembly

Procedure

1 Place the power-button assembly on the middle frame and then slide it toward the bottom of the computer. Ensure that the slot on the power-button assembly is secured under the tab on the middle frame.

2 Align the screw hole on the power-button assembly with the screw hole on the middle frame.

3 Replace the screw that secures the power-button assembly to the middle frame.

4 Route the power-button and hard-drive activity light cable through the routing guides.

5 Connect the power-button and hard-drive activity light cable to the connector (PWRCN1) on the system board.

Postrequisites

1 Replace the system-board shield. See "Replacing the System-Board Shield" on page 36.

2 Replace the back cover. See "Replacing the Back Cover" on page 20.

3 Replace the stand. See "Replacing the Stand" on page 18.

4 Replace the stand cover. See "Replacing the Stand Cover" on page 16.

5 Follow the instructions in "After Working Inside Your Computer" on page 13.

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Processor Heat-Sink

⚠️ **WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.**

⚠️ **WARNING: The heat sink may be very hot during normal operation. Ensure that it has had sufficient time to cool before you touch it.**

Removing the Processor Heat-Sink

⚠️ **CAUTION: To ensure maximum cooling for the processor, do not touch the heat transfer areas on the processor heat-sink. The oils in your skin can reduce the heat transfer capability of the thermal grease.**

Prerequisites

1 Remove the stand cover. See "Removing the Stand Cover" on page 15.
2 Remove the stand. See "Removing the Stand" on page 17.
3 Remove the back cover. See "Removing the Back Cover" on page 19.
4 Remove the system-board shield. See "Removing the System-Board Shield" on page 35.

Procedure

1 In sequential order (indicated on the processor heat-sink), loosen the captive screws that secure the processor heat-sink to the system board.

2 Carefully lift the processor heat-sink away from the system board.

> **NOTE:** The appearance of the processor heat-sink may vary based on your computer model.

1	processor heat-sink	2	captive screws (7)

Replacing the Processor Heat-Sink

⚠ **CAUTION: Incorrect alignment of the processor heat-sink can cause damage to the system board and processor.**

Procedure

1 Clean the thermal grease from the bottom of the processor heat-sink and reapply it.

    📝 **NOTE:** The original thermal grease can be reused if the original processor and processor heat-sink are reinstalled together. If either the processor or the processor heat-sink is replaced, use the thermal grease provided in the kit to ensure that thermal conductivity is achieved.

2 Align the captive screws on the processor heat-sink with the screw holes on the system board.

3 In sequential order (indicated on the processor heat-sink), tighten the captive screws that secure the processor heat-sink to the system board.

Postrequisites

1 Replace the system-board shield. See "Replacing the System-Board Shield" on page 36.

2 Replace the back cover. See "Replacing the Back Cover" on page 20.

3 Replace the stand. See "Replacing the Stand" on page 18.

4 Replace the stand cover. See "Replacing the Stand Cover" on page 16.

5 Follow the instructions in "After Working Inside Your Computer" on page 13.

22 Processor

⚠️ **WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.**

Removing the Processor

Prerequisites

1 Remove the stand cover. See "Removing the Stand Cover" on page 15.
2 Remove the stand. See "Removing the Stand" on page 17.
3 Remove the back cover. See "Removing the Back Cover" on page 19.
4 Remove the system-board shield. See "Removing the System-Board Shield" on page 35.
5 Remove the processor heat-sink. See "Removing the Processor Heat-Sink" on page 61.
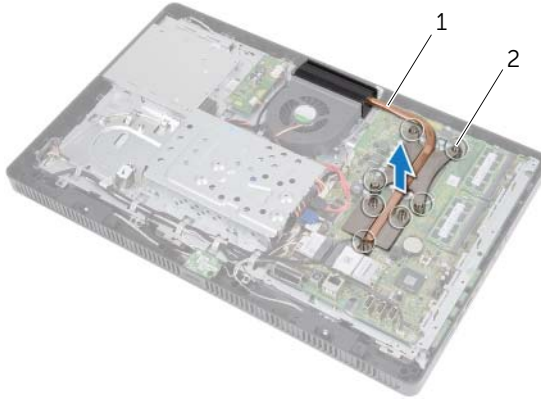
Procedure

1 Press the release lever down on the processor cover and then pull it outward to release it from the tab that secures it.

2 Extend the release lever completely to open the processor cover.
Leave the release lever extended in the release position so that the socket is ready for the new processor.

3 Gently lift the processor to remove it from the socket.
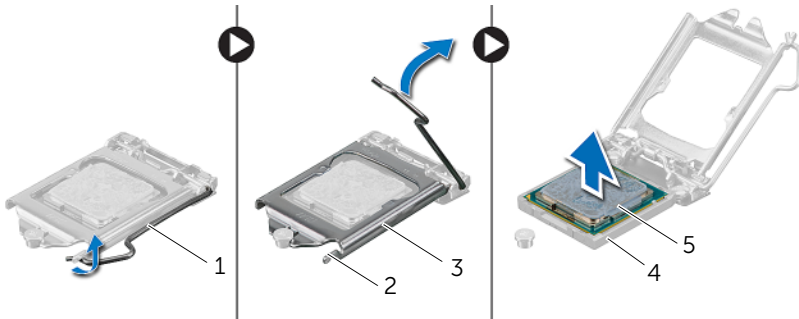
1	release lever	2	tab
3	processor cover	4	socket
5	processor		

Replacing the Processor

Procedure

1 Unpack the new processor, being careful not to touch the underside of the processor.

⚠ **CAUTION: Ground yourself by touching an unpainted metal surface.**

2 If the release lever on the socket is not fully extended, move it to that position.

⚠ **CAUTION: You must position the processor correctly in the processor socket to avoid permanent damage to the processor.**

3 Orient the alignment notches on the processor with the alignment tabs on the socket.

4 Align the pin-1 corners of the processor and socket.

⚠ **CAUTION: Ensure that the processor cover notch is positioned underneath the alignment post.**

5 When the processor is fully seated in the socket, close the processor cover.

6 Pivot the release lever down and place it under the tab on the processor cover.
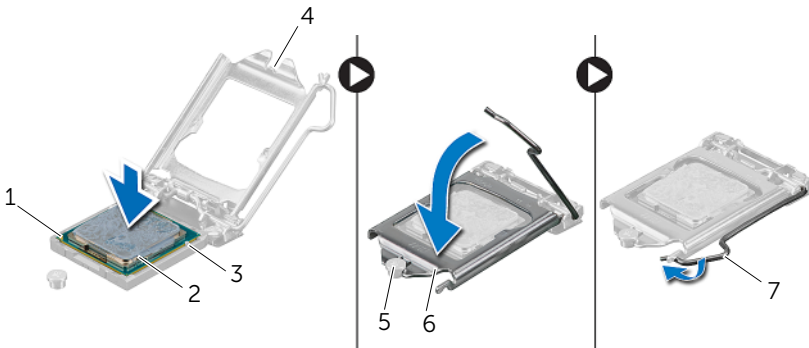
1	processor pin-1 indicator	2	processor
3	alignment notches (2)	4	processor cover notch
5	alignment post	6	processor cover
7	release lever		

7 Clean the thermal grease from the bottom of the processor heat-sink.

8 Apply the new thermal grease to the top of the processor.

⚠ **CAUTION: Ensure that you apply new thermal grease. New thermal grease is critical for ensuring adequate thermal bonding, which is a requirement for optimal processor operation.**

Postrequisites

1 Replace the processor heat-sink. See "Replacing the Processor Heat-Sink" on page 63.

2 Replace the system-board shield. See "Replacing the System-Board Shield" on page 36.

3 Replace the back cover. See "Replacing the Back Cover" on page 20.

4 Replace the stand. See "Replacing the Stand" on page 18.

5 Replace the stand cover. See "Replacing the Stand Cover" on page 16.

6 Follow the instructions in "After Working Inside Your Computer" on page 13.

23

System Board

⚠️ **WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.**

Removing the System Board

Prerequisites

1 Remove the stand cover. See "Removing the Stand Cover" on page 15.

2 Remove the stand. See "Removing the Stand" on page 17.

3 Remove the back cover. See "Removing the Back Cover" on page 19.

4 Remove the system-board shield. See "Removing the System-Board Shield" on page 35.

5 Remove the memory module(s). See "Removing the Memory Module(s)" on page 31.

6 Remove the wireless Mini-Card. See "Removing the Wireless Mini-Card" on page 45.

7 Remove TV-tuner card, if applicable. See "Removing the TV-Tuner Card" on page 41.

8 Remove the processor heat-sink. See "Removing the Processor Heat-Sink" on page 61.

9 Remove the processor. See "Removing the Processor" on page 65.

Procedure

📝 **NOTE:** Make a note of the cable routing before disconnecting the cables from the system board.

📝 **NOTE:** Your computer's Service Tag is stored in the system board.
You must enter the Service Tag in the BIOS after you replace the system board.

1 Disconnect all the cables from their connectors on the system board.

2 Remove the screws that secure the system board to the chassis.

3 Lift the system board at an angle and then slide it to release the connectors on the system board from the slots on the chassis.

4 Remove the system board away from the chassis.
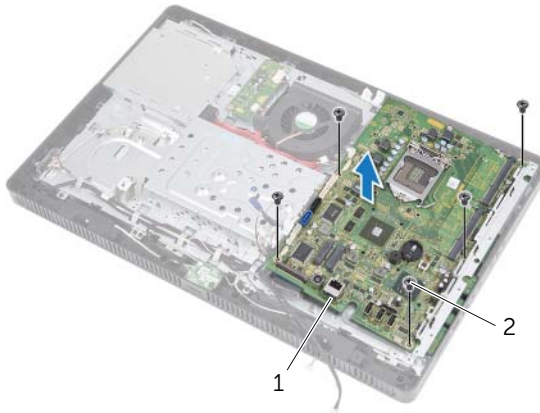
1	system board	2	screws (5)

Replacing the System Board

Procedure

1 Slide the system board connectors into the slots on the chassis and align the screw holes on the system board with the screw holes on the chassis.

2 Replace the screws that secure the system board to the chassis.

3 Connect all the required cables to their connectors on the system board.

Postrequisites

1 Replace the processor. "Replacing the Processor" on page 67.

2 Replace the processor heat-sink. See "Replacing the Processor Heat-Sink" on page 63.

3 Replace TV-tuner card, if applicable. See "Replacing the TV-Tuner Card" on page 43.

4 Replace the wireless Mini-Card. See "Replacing the Wireless Mini-Card" on page 47.

5 Replace the memory module(s). See "Replacing the Memory Module(s)" on page 33.

6 Replace the system-board shield. See "Replacing the System-Board Shield" on page 36.

7 Replace the back cover. See "Replacing the Back Cover" on page 20.

8 Replace the stand. See "Replacing the Stand" on page 18.

9 Replace the stand cover. See "Replacing the Stand Cover" on page 16.

10 Follow the instructions in "After Working Inside Your Computer" on page 13.

Entering the Service Tag in the BIOS

1 Turn on the computer.

2 Press <F2> during POST to enter the system setup program.

3 Navigate to the main tab and enter the Service Tag in the **Service Tag Input** field.

24 Display Panel

⚠️ **WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.**

Removing the Display Panel

Prerequisites

1 Remove the stand cover. See "Removing the Stand Cover" on page 15.
2 Remove the stand. See "Removing the Stand" on page 17.
3 Remove the back cover. See "Removing the Back Cover" on page 19.
4 Follow the instructions from step 1 to step 3 in "Removing the Optical Drive" on page 25.
5 Follow the instructions from step 1 to step 2 in "Removing the Hard Drive" on page 21.
6 Remove the converter board. See "Removing the Converter Board" on page 29.
7 Remove the fan. See "Removing the Fan" on page 55.
8 Remove the system-board shield. See "Removing the System-Board Shield" on page 35.
9 Remove the system board. See "Removing the System Board" on page 69.

Procedure

1 Make note of the routing of all the cables (except the converter-board cable and antenna cables) and remove them from the routing guides on the chassis.

2 Remove the screws that secure the chassis to the middle frame.

3 Lift the chassis along with the display panel off the middle frame and place it on a clean surface.
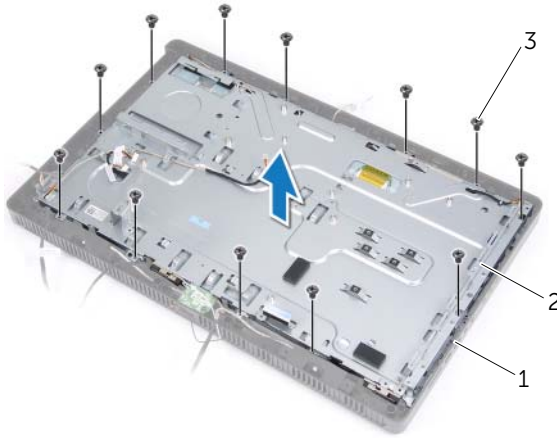
1	middle frame	2	chassis
3	screws (13)		

4 Disconnect the converter-board cable from the connector on the display panel.

5 Remove the screws that secure the display panel to the chassis.

1	converter-board cable	2	screws (4)

6 Lift the chassis off the display panel.
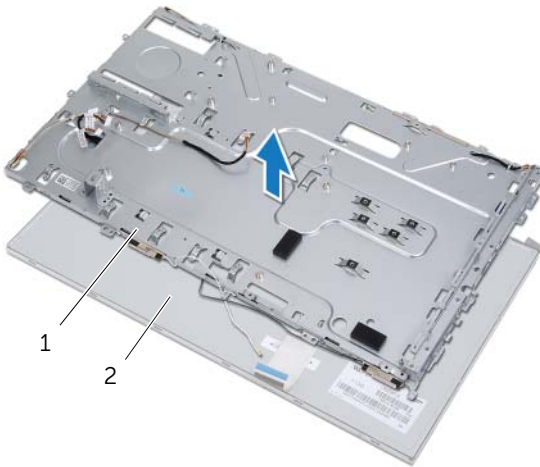
1	chassis	2	display panel

7 Peel and release the tape that secures the display cable to the display-cable connector.

8 Press the release latch on either side of the display cable and then pull the display cable to disconnect it from the display-cable connector.

1	display cable	2	display panel
3	release latches (2)	4	display-cable connector
5	tape		

Replacing the Display Panel

Procedure

1 Connect the display cable to the connector on the display panel and secure it with the tape.
2 Align the screw holes on the display panel with the screw holes on the chassis.
3 Replace the screws that secure the display panel to the chassis.
4 Connect the converter-board cable to the connector on the display panel.
5 Align the screw holes on the chassis with the screw holes on the middle frame.
6 Replace the screws that secure the chassis to the middle frame.
7 Route all the cables through the routing guides on the chassis.

Postrequisites

1 Replace the system board. See "Replacing the System Board" on page 71.
2 Replace the system-board shield. See "Replacing the System-Board Shield" on page 36.
3 Replace the fan. See "Replacing the Fan" on page 56.
4 Replace the converter board. See "Replacing the Converter Board" on page 30.
5 Follow the instructions from step 3 to step 5 in "Replacing the Hard Drive" on page 23.
6 Follow the instructions from step 4 to step 6 in "Replacing the Optical Drive" on page 26.
7 Replace the back cover. See "Replacing the Back Cover" on page 20.
8 Replace the stand. See "Replacing the Stand" on page 18.
9 Replace the stand cover. See "Replacing the Stand Cover" on page 16.
10 Follow the instructions in "After Working Inside Your Computer" on page 13.

25

Infrared (IR) Receiver

⚠️ **WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.**

Removing the Infrared Receiver

Prerequisites

1   Remove the stand cover. See "Removing the Stand Cover" on page 15.
2   Remove the stand. See "Removing the Stand" on page 17.
3   Remove the back cover. See "Removing the Back Cover" on page 19.
4   Follow the instructions from step 1 to step 3 in "Removing the Optical Drive" on page 25.
5   Follow the instructions from step 1 to step 2 in "Removing the Hard Drive" on page 21.
6   Remove the converter board. See "Removing the Converter Board" on page 29.
7   Remove the fan. See "Removing the Fan" on page 55.
8   Remove the system-board shield. See "Removing the System-Board Shield" on page 35.
9   Remove the system board. See "Removing the System Board" on page 69.

Procedure

1 Make note of the routing of all the cables (except the converter-board cable and antenna cables) and remove them from the routing guides on the chassis.

2 Remove the screws that secure the chassis to the middle frame.

3 Lift the chassis along with the display panel off the middle frame and keep it on a clean surface.

1	middle frame	2	chassis
3	screws (13)		

4 Push the tabs that secure the IR receiver outward and remove the IR receiver from the display bezel.
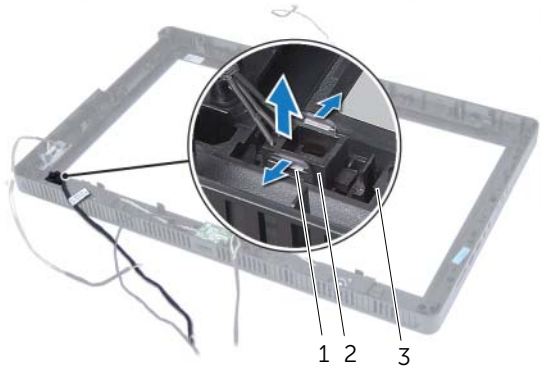
1	tabs (2)	2	IR receiver
3	display bezel		

Replacing the Infrared Receiver

Procedure

1 Place the IR receiver in position on the display bezel and snap the IR receiver into place.

2 Align the screw holes on the chassis with the screw holes on the middle frame.

3 Replace the screws that secure the chassis to the middle frame.

4 Route all the cables through the routing guides on the chassis.

Postrequisites

1 Replace the system board. See "Replacing the System Board" on page 71.

2 Replace the system-board shield. See "Replacing the System-Board Shield" on page 36.

3 Replace the fan. See "Replacing the Fan" on page 56.

4 Replace the converter board. See "Replacing the Converter Board" on page 30.

5 Follow the instructions from step 3 to step 5 in "Replacing the Hard Drive" on page 23.

6 Follow the instructions from step 4 to step 6 in "Replacing the Optical Drive" on page 26.

7 Replace the back cover. See "Replacing the Back Cover" on page 20.

8 Replace the stand. See "Replacing the Stand" on page 18.

9 Replace the stand cover. See "Replacing the Stand Cover" on page 16.

10 Follow the instructions in "After Working Inside Your Computer" on page 13.

26 Middle Frame

⚠ **WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.**
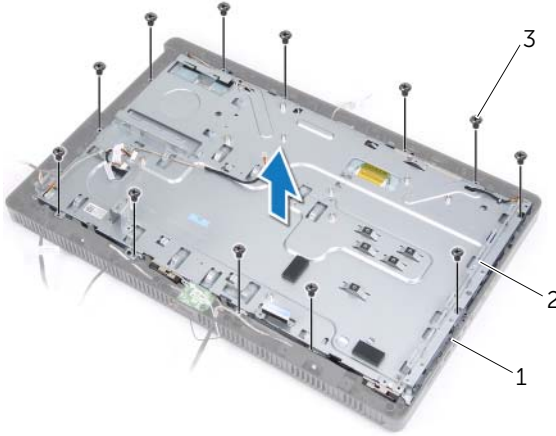
Removing the Middle Frame

Prerequisites

1 Remove the stand cover. See "Removing the Stand Cover" on page 15.
2 Remove the stand. See "Removing the Stand" on page 17.
3 Remove the back cover. See "Removing the Back Cover" on page 19.
4 Remove the B-CAS card. See "Removing the B-CAS Card" on page 27.
5 Remove the speakers. See "Removing the Speakers" on page 51.
6 Follow the instructions from step 1 to step 3 in "Removing the Optical Drive" on page 25.
7 Follow the instructions from step 1 to step 2 in "Removing the Hard Drive" on page 21.
8 Remove the converter board. See "Removing the Converter Board" on page 29.
9 Remove the fan. See "Removing the Fan" on page 55.
10 Remove the system-board shield. See "Removing the System-Board Shield" on page 35.
11 Remove the system board. See "Removing the System Board" on page 69.
12 Remove the display panel. See "Removing the Display Panel" on page 73.
13 Remove the infrared receiver. "Removing the Infrared Receiver" on page 79.

Procedure

1 Release the tabs that secure the middle frame to the display bezel.

2 Lift the middle frame off the display bezel.

1	middle frame	2	tabs

Replacing the Middle Frame

Procedure

Align the tabs on the middle frame with the slots on the display bezel and snap the middle frame into place.

Postrequisites

1 Replace the infrared receiver. "Replacing the Infrared Receiver" on page 82.

2 Replace the display panel. See "Replacing the Display Panel" on page 77.

3 Replace the system board. See "Replacing the System Board" on page 71.

4 Replace the system-board shield. See "Replacing the System-Board Shield" on page 36.

5 Replace the fan. See "Replacing the Fan" on page 56.

6 Replace the converter board. See "Replacing the Converter Board" on page 30.

7 Follow the instructions from step 3 to step 5 in "Replacing the Hard Drive" on page 23.

8 Follow the instructions from step 4 to step 6 in "Replacing the Optical Drive" on page 26.

9 Replace the speakers. See "Replacing the Speakers" on page 53.

10 Replace the B-CAS card. See "Replacing the B-CAS Card" on page 28.

11 Replace the back cover. See "Replacing the Back Cover" on page 20.

12 Replace the stand. See "Replacing the Stand" on page 18.

13 Replace the stand cover. See "Replacing the Stand Cover" on page 16.

14 Follow the instructions in "After Working Inside Your Computer" on page 13.

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Camera Module

⚠️ **WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.**

Removing the Camera Module

Prerequisites

1   Remove the stand cover. See "Removing the Stand Cover" on page 15.
2   Remove the stand. See "Removing the Stand" on page 17.
3   Remove the back cover. See "Removing the Back Cover" on page 19.
4   Follow the instructions from step 1 to step 3 in "Removing the Optical Drive" on page 25.
5   Follow the instructions from step 1 to step 2 in "Removing the Hard Drive" on page 21.
6   Remove the converter board. See "Removing the Converter Board" on page 29.
7   Remove the fan. See "Removing the Fan" on page 55.
8   Remove the system-board shield. See "Removing the System-Board Shield" on page 35.
9   Remove the system board. See "Removing the System Board" on page 69.
10   Remove the display panel. See "Removing the Display Panel" on page 73.
11   Remove the middle frame. See "Removing the Middle Frame" on page 83.

Procedure

1   Remove the screws that secure the camera assembly to the display bezel.
2   Lift the camera assembly along with its cable away from the display bezel.
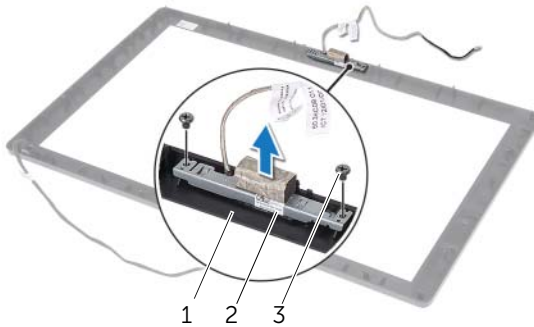
1	display bezel	2	camera assembly
3	screws (2)		

3   Remove the screw that secures the camera module to the camera-module bracket.
4   Slide and remove the camera module away from the camera-module bracket.
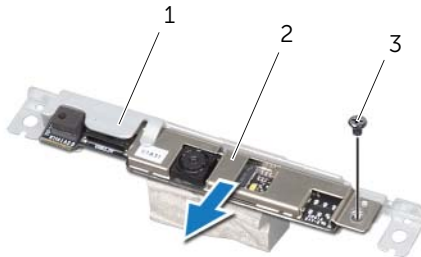
1	camera-module bracket	2	camera module
3	screw		

Replacing the Camera Module

Procedure

1 Slide the camera module into the camera-module bracket and align the screw hole on the came module with the screw hole on the camera-module bracket.

2 Replace the screw that secures the camera module to the camera-module bracket.

3 Align the screw holes on the camera assembly with the screw holes on the display bezel.

4 Replace the screws that secure the camera assembly to the display bezel.

Postrequisites

1 Replace the middle frame. See "Replacing the Middle Frame" on page 85.

2 Replace the display panel. See "Replacing the Display Panel" on page 77.

3 Replace the system board. See "Replacing the System Board" on page 71.

4 Replace the system-board shield. See "Replacing the System-Board Shield" on page 36.

5 Replace the fan. See "Replacing the Fan" on page 56.

6 Replace the converter board. See "Replacing the Converter Board" on page 30.

7 Follow the instructions from step 3 to step 5 in "Replacing the Hard Drive" on page 23.

8 Follow the instructions from step 4 to step 6 in "Replacing the Optical Drive" on page 26.

9 Replace the back cover. See "Replacing the Back Cover" on page 20.

10 Replace the stand. See "Replacing the Stand" on page 18.

11 Replace the stand cover. See "Replacing the Stand Cover" on page 16.

12 Follow the instructions in "After Working Inside Your Computer" on page 13.

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Display Bezel

⚠️ **WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.**

Removing the Display Bezel

Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.
4. Follow the instructions from step 1 to step 3 in "Removing the Optical Drive" on page 25.
5. Follow the instructions from step 1 to step 2 in "Removing the Hard Drive" on page 21.
6. Remove the converter board. See "Removing the Converter Board" on page 29.
7. Remove the fan. See "Removing the Fan" on page 55.
8. Remove the system-board shield. See "Removing the System-Board Shield" on page 35.
9. Remove the system board. See "Removing the System Board" on page 69.
10. Remove the display panel. See "Removing the Display Panel" on page 73.
11. Remove the middle frame. See "Removing the Middle Frame" on page 83.
12. Remove the infrared receiver. See "Removing the Infrared Receiver" on page 79.
13. Remove the camera module. See "Removing the Camera Module" on page 87.

Procedure

Remove the display bezel.
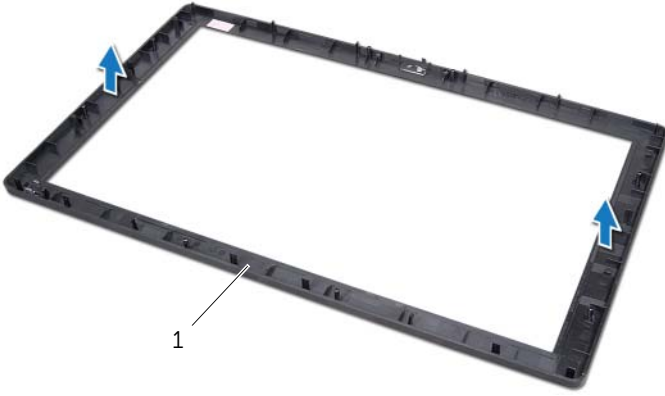
1	display bezel

Replacing the Display Bezel

Procedure

Place the display bezel on a clean surface.

Postrequisites

1   Replace the camera module. See "Replacing the Camera Module" on page 89.

2   Replace the infrared receiver. See "Replacing the Infrared Receiver" on page 82.

3   Replace the middle frame. See "Replacing the Middle Frame" on page 85.

4   Replace the display panel. See "Replacing the Display Panel" on page 77.

5   Replace the system board. See "Replacing the System Board" on page 71.

6   Replace the system-board shield. See "Replacing the System-Board Shield" on page 36.

7   Replace the fan. See "Replacing the Fan" on page 56.

8   Replace the converter board. See "Replacing the Converter Board" on page 30.

9   Follow the instructions from step 3 to step 5 in "Replacing the Hard Drive" on page 23.

10 Follow the instructions from step 4 to step 6 in "Replacing the Optical Drive" on page 26.

11 Replace the back cover. See "Replacing the Back Cover" on page 20.

12 Replace the stand. See "Replacing the Stand" on page 18.

13 Replace the stand cover. See "Replacing the Stand Cover" on page 16.

14 Follow the instructions in "After Working Inside Your Computer" on page 13.

29 System Setup

Overview

Use the system setup to utility to:

- Get information about the hardware installed on your computer, such as the amount of RAM, the size of the hard drive, and so on
- Change the system configuration information
- Set or change a user-selectable option, such as the user password, type of hard drive installed, enabling or disabling base devices, and so on

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

🖉 **NOTE:** Before you change system setup, it is recommended that you write down the system setup screen information for future reference.

Entering System Setup

1. Turn on (or restart) your computer.
2. During POST, when the DELL logo is displayed, watch for the F2 prompt to appear and then press <F2> immediately.

   🖉 **NOTE:** The F2 prompt indicates that the keyboard has initialized. This prompt can appear very quickly, so you must watch for it, and then press <F2>. If you press <F2> before the F2 prompt, this keystroke is lost. If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft Windows desktop. Then, turn off your computer and try again. See "Turn Off Your Computer and Connected Devices" on page 11.

System Setup Screens

The system setup screen displays current or changeable configuration information for your computer. Information on the screen is divided into three areas: the **setup item**, active **help screen**, and **key functions**.

Setup Item — This field appears on the left side of the system setup window. This field is a scrollable list containing features that define the configuration of your computer, including installed hardware, power conservation, and security features. Scroll up and down the list with the up- and down-arrow keys. As an option is highlighted, the **Help Screen** displays more information about that option and available settings.	**Help Screen** — This field appears on the right side of the system setup window and contains information about each option listed in the **Setup Item**. In this field you can view information about your computer and make changes to your current settings. Press the up-arrow and down-arrow keys to highlight an option. Press <Enter> to make that selection active and return to the **Setup Item**. **NOTE:** Not all settings listed in the **Setup Item** are changeable.
Key Functions — This field appears below the **Help Screen** and lists keys and their functions within the active system setup field.	

System Setup Options

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

Main — System Information	
BIOS Revision	Displays the BIOS revision number
BIOS Build Date	Displays the BIOS build date in mm/dd/yyyy format
System Name	Displays the computer model
System Time	Displays the current time in hh:mm:ss format
System Date	Displays the current date in mm/dd/yyyy format
Service Tag	Displays the Service Tag of the computer
Service Tag Input	Allows you to enter the Service Tag of the computer if the Service Tag field is empty
Asset Tag	Displays the asset tag of the computer when the asset tag is present

Main — Processor Information	
Processor Type	Displays the processor type
Processor ID	Displays the processor ID
Processor Core Count	Displays the number of core(s)
Processor L1 Cache	Displays the processor L1 cache size
Processor L2 Cache	Displays the processor L2 cache size
Processor L3 Cache	Displays the processor L3 cache size

Main — Memory Information	
Memory Installed	Indicates the amount of memory installed in MB
Memory Running Speed	Indicates the memory speed in MHz
Memory Technology	Indicates the type of installed memory

Main — SATA Information

SATA 1	
Device Type	Displays the SATA device connected to the SATA 1 connector
Device ID	Displays the serial number of the SATA 1 device
Device Size	Displays the size of the SATA 1 device in GB, if the device is a hard drive
SATA 2	
Device Type	Displays the SATA device connected to the SATA 2 connector
Device ID	Displays the serial number of the SATA 2 device
Device Size	Displays the size of the SATA 2 device in GB, if the device is a hard drive

Advanced — Processor Configuration

Intel Hyper-Threading Technology	Allows you to enable or disable Intel Hyper-Threading Technology feature for the processor — Enabled or Disabled (Enabled by default)
Intel(R) SpeedStep Technology	Allows you to enable or disable Intel SpeedStep Technology feature for the processor — Enabled or Disabled (Enabled by default)
Intel(R) Virtualization Technology	Allows you to enable or disable Intel Virtualization Technology feature for the processor — Enabled or Disabled (Enabled by default)
CPU XD Support	Allows you to enable or disable the execute disable mode for the processor — Enabled or Disabled (Enabled by default)
Limit CPUID Value	Allows you to limit the maximum value the processor standard CPUID function supports — Enabled or Disabled (Disabled by default)
Multi Core Support	Allows you to enable or disable multi-core processor — Enabled or Disabled (Enabled by default)
Intel(R) Turbo Boost Technology	Allows you to enable or disable Intel Turbo Boost Technology mode for the processor — Enabled or Disabled (Enabled by default) **NOTE:** The Intel Turbo Boost Technology option is displayed only if this feature is supported by the processor.

Advanced — USB Configuration

`Rear USB Ports`	Allows you to enable or disable the rear USB ports — Enabled or Disabled (Enabled by default)
`Side USB Ports`	Allows you to enable or disable the side USB ports — Enabled or Disabled (Enabled by default)

Advanced — Onboard Device Configuration

`Onboard Audio Controller`	Allows you to enable or disable the onboard audio controller Enabled or Disabled (Enabled by default)
`SATA Mode`	Displays the SATA mode on your computer (ATA by default)
`Onboard LAN Controller`	Allows you to enable or disable the onboard LAN controller Enabled or Disabled (Enabled by default)
`Onboard LAN Boot ROM`	Allows you to boot your computer from a network Enabled or Disabled (Disabled by default)

Boot

Numlock Key	Allows you to set the status of the Num Lock key during boot On or Off (On by default)
Keyboard Errors	Allows you to enable or disable the display of keyboard-related errors during boot Report or Do Not Report (Report by default)
USB Boot Support	Allows you to enable or disable booting from USB mass storage devices such as hard drive, optical drive, USB key, and so on Enable or Disable (Enabled by default)
Boot Mode	Allows you to choose a boot mode for your computer Legacy or UEFI (Legacy by default)
1st Boot Device	Displays the first boot device
2nd Boot Device	Displays the second boot device
3rd Boot Device	Displays the third boot device
4th Boot Device	Displays the fourth boot device
5th Boot Device	Displays the fifth boot device
Hard Disk Drivers	Displays the boot sequence of the hard drive
USB Storage Drivers	Displays the boot sequence of the USB storage drive
CD/DVD ROM Drivers	Displays the boot sequence of the optical drive

Power

Wake Up by Integrated LAN/WLAN	Allow the computer to be powered on by special LAN or wireless LAN signals Enabled or Disabled (Disabled by default)
AC Recovery	Allows you to configure the behavior of your computer after it recovers from a power failure Power Off, Power On, or Last Power State (Power Off by default)
Auto Power On	Allows you to enable or disable the computer from turning on automatically Enabled or Disabled (Disabled by default)
Auto Power On Mode	Allows you to set the computer to turn on automatically every day or on a preselected date; This option can be configured only if the Auto Power On mode is set to Enabled Everyday or Selected Day (Selected Day by default)
Auto Power On Date	Allows you to set the date on which the computer must turn on automatically; This option can be configured only if the Auto Power On mode is set to Enabled 1 to 31 (15 by default)
Auto Power On Time	Allows you to set the time at which the computer must turn on automatically; This option can be configured only if the Auto Power On mode is set to Enabled hh:mm:ss (12:30:30 by default)

Security

Supervisor Password	Displays the supervisor password
User Password	Displays the user password
Set User Password	Allows you to set, change, or delete the user password
Password Check	Allows you to enable password verification either when you attempt to enter system setup or each time the computer boots Setup or Always (Setup by default) **NOTE:** Password Check option is visible only when the user password is set.
Set Supervisor Password	Allows to set, change, or delete the supervisor password. The supervisor password controls access to the system setup utility. **NOTE:** Deleting the supervisor password deletes the user password. Set the supervisor password before setting the user password.
User Access Level	Allows you to restrict or provide access to the system setup utility. No Access, View Only, Limited, or Full Access (Full Access by default) • No Access: Restricts users from editing system setup options • View Only: Allows users to only view system setup options • Limited: Allows users to edit limited system setup options • Full Access: Allows users to edit all system setup options except the supervisor password

Exit

Save Changes and Reset	Allows you to exit system setup and save your changes
Discard Changes and Reset	Allows you to exit system setup and load previous values for all system setup options
Load Defaults	Allows you to load default values for all system setup options

Boot Sequence

This feature allows you to change the boot sequence for devices.

Boot Options

- **USB Floppy Device** — The computer attempts to boot from the USB floppy drive. If no operating system is on the drive, the computer generates an error message.
- **Internal HDD Devices** — The computer attempts to boot from the primary hard drive. If no operating system is on the drive, the computer generates an error message.
- **USB Storage Device —** Insert the memory device into a USB port and restart the computer. When F12 Boot Options appears in the lower-right corner of the screen, press <F12>. The BIOS detects the device and adds the USB flash option to the boot menu.
- **Internal ODD Devices** — The computer attempts to boot from the optical drive. If no disc is in the drive, or if the disc is not bootable, the computer generates an error message.

    NOTE: To boot to a USB device, the device must be bootable. To ensure that your device is bootable, check the device documentation.

- **Onboard NIC Device** — The computer attempts to boot from the network. If no operating system is found on the network, the computer generates an error message.

    NOTE: To boot from the network, ensure that the Onboard LAN boot ROM option is enabled in the system setup. See "System Setup Options" on page 97.

Changing Boot Sequence for the Current Boot

You can use this feature to change the current boot sequence, for example, to boot from the optical drive to run Dell Diagnostics from the *Drivers and Utilities* disc. On completion of the diagnostic tests, the previous boot sequence is restored.

1   If you are booting from a USB device, connect the USB device to a USB port.
2   Turn on (or restart) your computer.
3   When `F2 Setup, F12 Boot Options` appears in the lower-right corner of the screen, press <F12>.

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

The **Boot Device Menu** appears, listing all available boot devices.

4   On the Boot Device Menu choose the device you want to boot from.

For example, if you are booting to a USB memory key, highlight **USB Storage Device** and press <Enter>.

> **NOTE:** To boot to a USB device, the device must be bootable. To ensure your device is bootable, check the device documentation.

Changing Boot Sequence for Future Boots

1   Enter system setup. See "Entering System Setup" on page 95.
2   Use the arrow keys to highlight the **Boot** menu option and press <Enter> to access the menu.

> **NOTE:** Write down your current boot sequence in case you want to restore it.

3   Press the up- and down-arrow keys to move through the list of devices.
4   Press plus (+) or minus (−) to change the boot priority of the device.

Clearing Forgotten Passwords

⚠️ **WARNING: Before begin any of the procedures in this section, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.**

⚠️ **WARNING: The computer must be disconnected from the electrical outlet to clear the password setting.**

1   Remove the stand cover. See "Removing the Stand Cover" on page 15.

2   Remove the stand. See "Removing the Stand" on page 17.

3   Remove the back cover. See "Removing the Back Cover" on page 19.

4   Remove the system-board shield. See "Removing the System-Board Shield" on page 35.

5   Locate the 3-pin password reset jumper (PWCLR1) on the system board. See "System Board Components" on page 8.

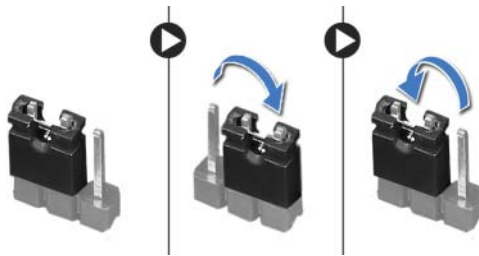6   Remove the 2-pin jumper plug from pins 2 and 3 and fix it on pins 1 and 2.
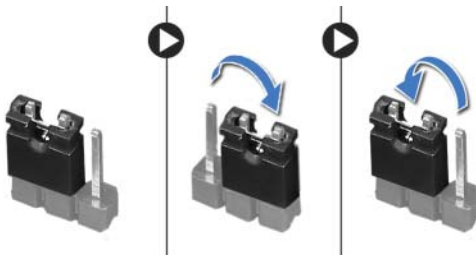
7   Wait for approximately five seconds to clear the password setting.

8   Remove the 2-pin jumper plug from pins 1 and 2 and replace it on pins 2 and 3.

9   Replace the system-board shield. See "Replacing the System-Board Shield" on page 36.

10   Replace the back cover. See "Replacing the Back Cover" on page 20.

11   Replace the stand. See "Replacing the Stand" on page 18.

12   Replace the stand cover. See "Replacing the Stand Cover" on page 16.

13   Follow the instructions in "After Working Inside Your Computer" on page 13.

Clearing CMOS Settings

⚠️ **WARNING:** **Before begin any of the procedures in this section, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.**

⚠️ **WARNING:** **The computer must be disconnected from the electrical outlet to clear the CMOS setting.**

1 Remove the stand cover. See "Removing the Stand Cover" on page 15.

2 Remove the stand. See "Removing the Stand" on page 17.

3 Remove the back cover. See "Removing the Back Cover" on page 19.

4 Remove the system-board shield. See "Removing the System-Board Shield" on page 35.

5 Locate the 3-pin CMOS reset jumper (CMOCL1) on the system board. See "System Board Components" on page 8.

6 Remove the 2-pin jumper plug from pins 2 and 3 and fix it on pins 1 and 2.

7 Wait for approximately five seconds to clear the CMOS settings.

8 Remove the 2-pin jumper plug from pins 1 and 2 and replace it on pins 2 and 3.

9 Replace the system-board shield. See "Replacing the System-Board Shield" on page 36.

10 Replace the back cover. See "Replacing the Back Cover" on page 20.

11 Replace the stand. See "Replacing the Stand" on page 18.

12 Replace the stand cover. See "Replacing the Stand Cover" on page 16.

13 Follow the instructions in "After Working Inside Your Computer" on page 13.

30 Flashing the BIOS

The BIOS may require flashing when an update is available or when replacing the system board.

To flash the BIOS:

1   Turn on the computer.

2   Go to **support.dell.com/support/downloads**.

3   Locate the BIOS update file for your computer:

> ![note icon] **NOTE:** The Service Tag for your computer is located on a label at the back of your computer. For more information, see the *Quick Start Guide* that shipped with your computer.

If you have your computer's Service Tag or Express Service Code:

a   Enter your computer's Service Tag or Express Service Code in the **Service Tag or Express Service Code** field**.**

b   Click **Submit** and proceed to step 4.

If you do not have your computer's Service Tag or Express Service Code:

a   Select one of the following options:

- **Automatically detect my Service Tag for me**
- **Choose from My Products and Services List**
- **Choose from a list of all Dell products**

b   Click **Continue** and follow the instructions on the screen.

4   A list of results appears on the screen. Click **BIOS**.

5   Click **Download File** to download the latest BIOS file.

6   In the **Please select your download method below** window, click **Download Now**.

7   In the **Save As** window, select an appropriate location to download the file on your computer.

8   If the **Download Complete** window appears, click **Close**.

9   Navigate to the folder where you downloaded the BIOS update file.
The file icon appears in the folder and is titled the same as the downloaded BIOS update file.

10 Double-click the BIOS update file icon and follow the instructions that appear on the screen.