

Dell OptiPlex 7440 All-In-One

Owner's Manual



Notes, cautions, and warnings

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

 **CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

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

Chapter 1: Working on your computer	6
Before working inside your computer.....	6
Recommended tools.....	6
Safety instructions.....	6
Turning off your computer.....	7
After working inside your computer.....	7
Important Information.....	8
Chapter 2: Disassembly and reassembly	9
Stand.....	9
Removing the stand.....	9
Installing the stand.....	12
Cable cover.....	13
Removing the cable cover.....	13
Installing the cable cover.....	14
Back cover.....	14
Removing the back cover.....	14
Installing the back cover.....	17
Speaker cover.....	18
Removing the speaker cover.....	18
Installing the speaker cover.....	20
Solid State Drive — optional	21
Removing the SSD card.....	21
Installing the SSD card.....	21
Hard drive assembly.....	22
Removing the hard drive assembly.....	22
Installing the hard drive assembly.....	24
Optical drive assembly.....	24
Removing the optical drive assembly.....	24
Installing the optical drive assembly.....	26
System board shield.....	26
Removing the system board shield.....	26
Installing the system board shield.....	28
Heat sink.....	28
Removing the heat sink	28
Installing the heat sink.....	30
WLAN card.....	30
Removing the WLAN card.....	30
Installing the WLAN card.....	32
Speaker module.....	32
Removing the speaker module.....	32
Installing the speaker module.....	36
Converter board.....	36
Removing the converter board.....	36

Installing the converter board.....	38
Power supply unit.....	39
Removing the Power Supply Unit - PSU.....	39
Installing the Power Supply Unit - PSU.....	45
Mount bracket.....	45
Removing the VESA mount bracket.....	45
Installing the VESA mount bracket.....	47
System fan.....	47
Removing the system fan.....	47
Installing the system fan.....	49
Memory module.....	49
Removing the memory module.....	49
Installing the memory module.....	50
Intrusion switch.....	51
Removing the intrusion switch.....	51
Installing the intrusion switch.....	53
OSD button board.....	54
Removing the On-Screen Display- OSD buttons board.....	54
Installing the OSD buttons board.....	56
Coin cell battery.....	56
Removing the coin cell battery.....	56
Installing the coin cell battery.....	57
Processor.....	57
Removing the processor.....	57
Installing the processor.....	58
System board.....	59
Removing the system board.....	59
System Board Layout.....	61
Installing the system board.....	62
Display assembly.....	62
Removing the display assembly.....	62
Installing the display assembly.....	64
Chapter 3: System setup.....	66
Boot Sequence.....	66
Navigation keys.....	67
System setup options.....	67
General screen options.....	67
System configuration screen options.....	68
Security screen options.....	69
Secure boot screen options.....	71
Performance screen options.....	71
Power management screen options.....	72
POST behavior screen options.....	72
Virtualization support screen options.....	73
Wireless screen options.....	73
Maintenance screen options.....	73
Cloud desktop screen options.....	74
Updating the BIOS	75
System and setup password.....	75

Assigning a system password and setup password.....	76
Deleting or changing an existing system and-or setup password.....	76
Chapter 4: Technical specifications.....	77
System specifications.....	77
Memory specifications.....	77
Video specifications.....	78
Audio specifications.....	78
Communication specifications.....	78
Cards specifications.....	79
Display specifications.....	79
Drives specifications.....	79
Port and connector specifications.....	79
Power specifications.....	80
Camera specifications - optional.....	80
Stand specifications.....	80
Physical specifications.....	80
Environmental specifications.....	81
Chapter 5: Contacting Dell.....	82

Working on your computer

Topics:

- [Before working inside your computer](#)
- [Recommended tools](#)
- [Safety instructions](#)
- [Turning off your computer](#)
- [After working inside your computer](#)
- [Important Information](#)

Before working inside your computer

About this task

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

Steps

1. Ensure that you follow the [Safety Instruction](#).
2. Ensure that your work surface is flat and clean to prevent the computer cover from being scratched.
3. Ensure you follow the [Turning off your computer](#).
4. Disconnect all network cables from the computer.

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

5. Disconnect your computer and all attached devices from their electrical outlets.
 6. Press and hold the power button while the computer is unplugged to ground the system board.
-  **NOTE:** 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.

Recommended tools

The procedures in this document require the following tools:

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

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.
-  **NOTE:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.Dell.com/regulatory_compliance
-  **CAUTION:** Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.
-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface 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.
-  **NOTE:** The color of your computer and certain components may appear differently than shown in this document.
-  **CAUTION:** System will shut down if side covers are removed while the system is running. The system will not power on if the side cover is removed.
-  **CAUTION:** System will shut down if side covers are removed while the system is running. The system will not power on if the side cover is removed.
-  **CAUTION:** System will shut down if side covers are removed while the system is running. The system will not power on if the side cover is removed.

Turning off your computer

After working inside your computer

About this task

After you complete any replacement procedure, ensure that you connect any external devices, cards, and cables before turning on your computer.

Steps

1. Connect any telephone or network cables to your computer.
 -  **CAUTION:** To connect a network cable, first plug the cable into the network device and then plug it into the computer.
2. Connect your computer and all attached devices to their electrical outlets.
3. Turn on your computer.
4. If required, verify that the computer works correctly by running **ePSA diagnostics**.

Important Information

About this task

-  **NOTE:** Avoid using the touchscreen in dusty, hot, or humid environments.
-  **NOTE:** Sudden change in temperature may cause condensation on the inner surface of the glass screen, which will disappear after a short time and does not affect normal usage.

Disassembly and reassembly

Topics:

- Stand
- Cable cover
- Back cover
- Speaker cover
- Solid State Drive — optional
- Hard drive assembly
- Optical drive assembly
- System board shield
- Heat sink
- WLAN card
- Speaker module
- Converter board
- Power supply unit
- Mount bracket
- System fan
- Memory module
- Intrusion switch
- OSD button board
- Coin cell battery
- Processor
- System board
- Display assembly

Stand

Removing the stand

About this task

i **NOTE:** The system is shipped with three different type of stands:

- Height Adjustable Stand
- Basic Stand
- Articulating Stand

The removal procedure is the same for all the three stands.

Steps

1. Follow the procedure in [Before working inside your computer](#).
2. Place the computer on clean, flat surface with the display facing downward.
3. To remove the stand:
 - a. Press the tab on the cover to release the stand [1].
 - b. Lift the stand upward [2].

i **NOTE:** Each of the three stands will attach and detach in the same manner.

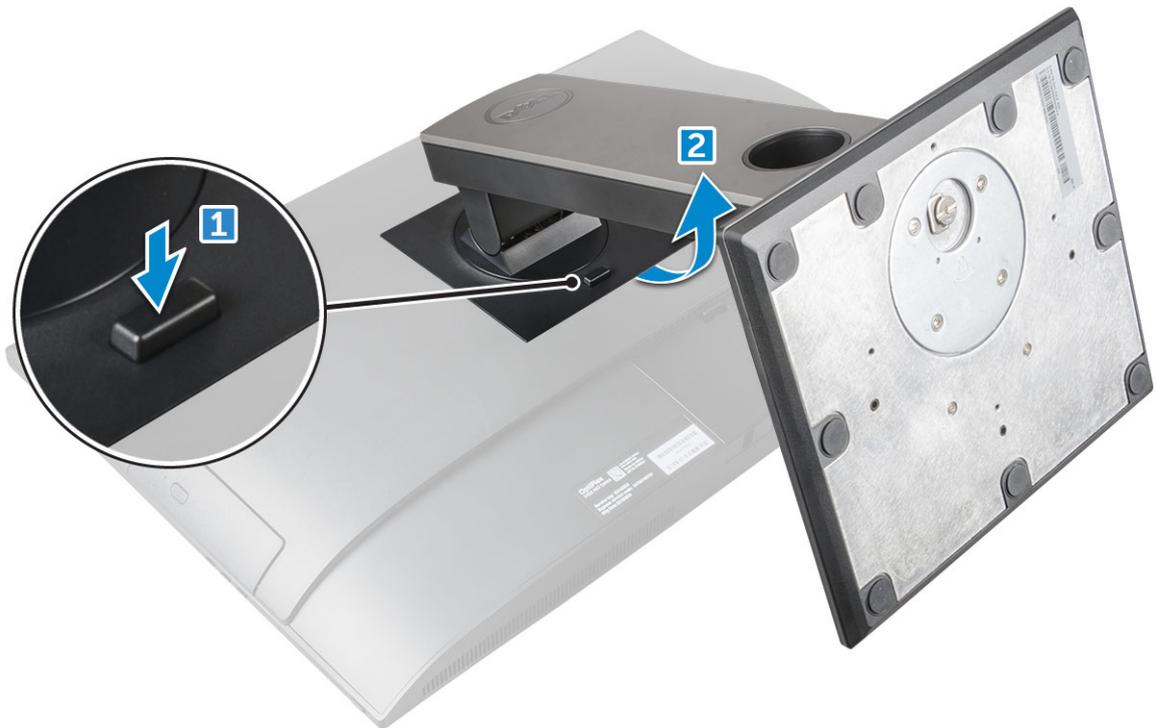


Figure 1. Height Adjustable Stand



Figure 2. Height Adjustable Stand

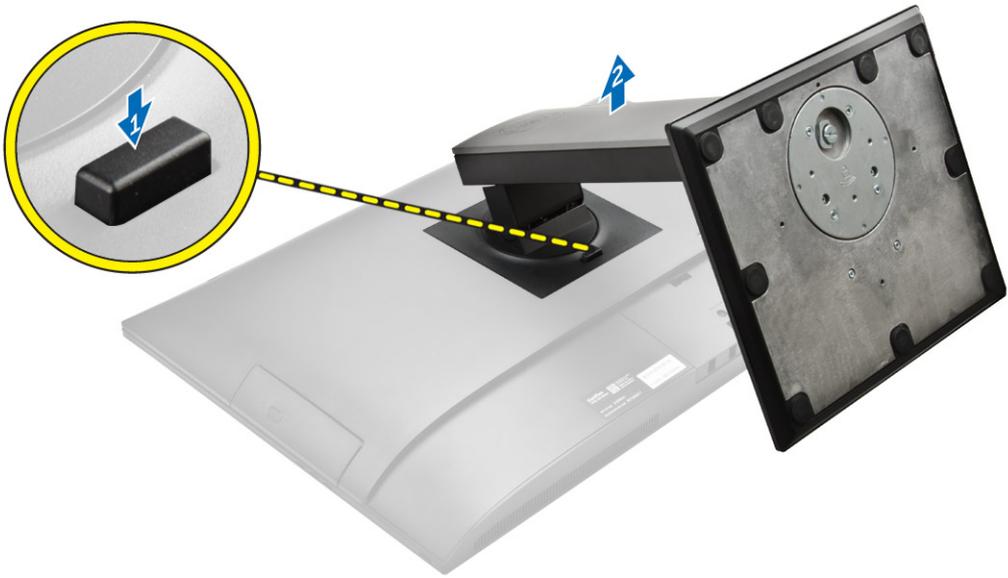


Figure 3. Fix stand



Figure 4. Articulate stand

4. Slide the stand and lift it away from the back cover.



Installing the stand

Steps

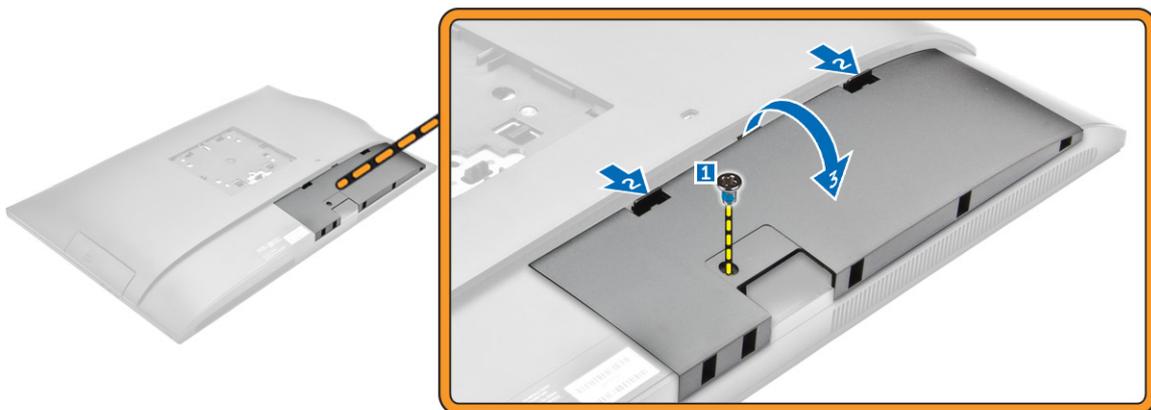
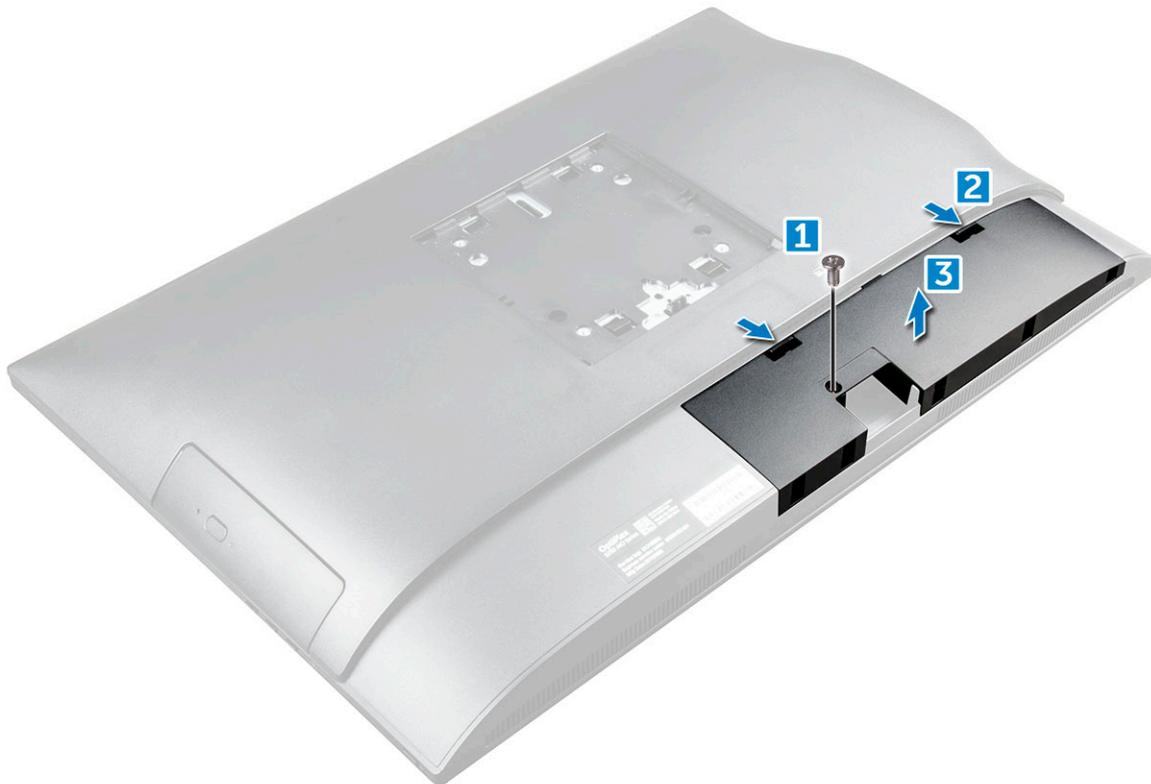
1. Place the computer on a clean, flat surface and align the stand, and then slide it on the back of the computer.
2. Press the stand down till it snaps in.
3. Follow the procedure in [After working inside your computer](#).

Cable cover

Removing the cable cover

Steps

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the [stand](#).
3. To remove the cable cover:
 - a. Remove the screw that secures the cable cover to the computer [1].
 - b. Push the release tabs to release the cable cover [2].
 - c. Lift the cable cover away from the computer [3].





Installing the cable cover

Steps

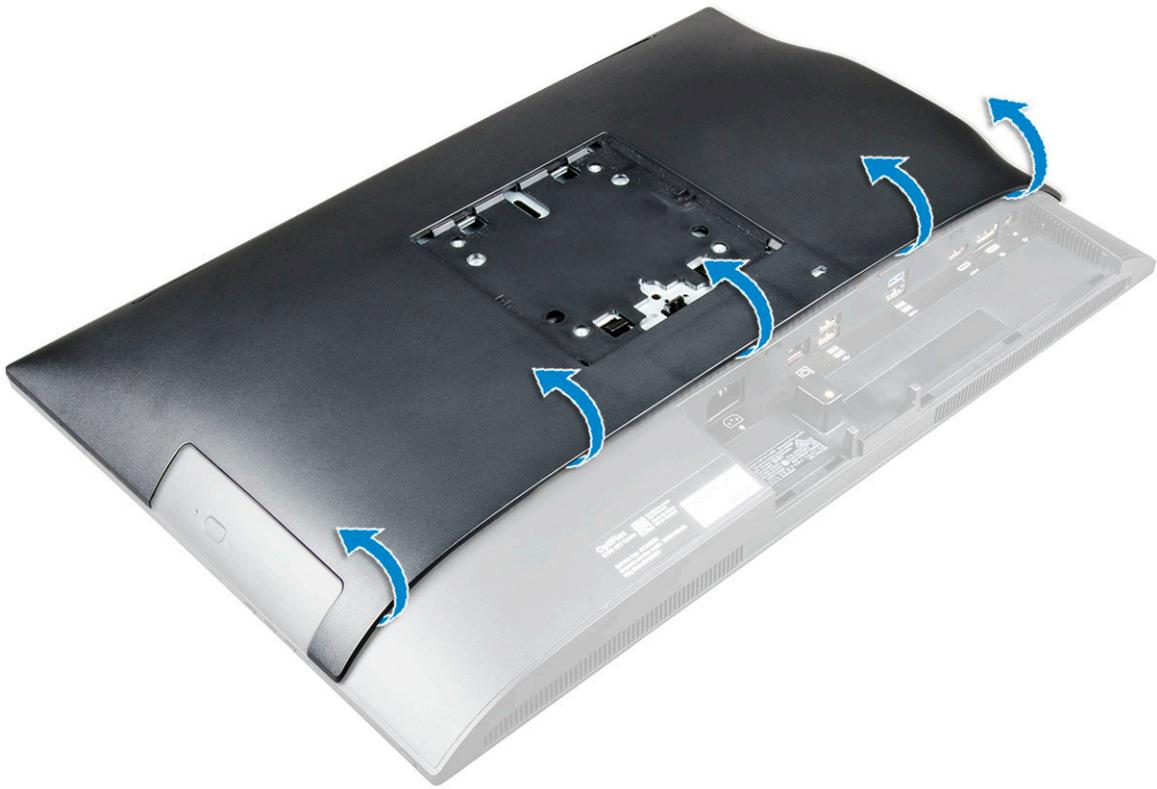
1. Align the notches on the cable cover to the holes on the computer and press the cable cover until it snaps in.
2. Tighten the screw to secure the cable cover to the computer.
3. Install the [stand](#).
4. Follow the procedure in [After working inside your computer](#).

Back cover

Removing the back cover

Steps

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the:
 - a. [stand](#)
 - b. [cable cover](#)
3. Pry the edges of the back cover from the bottom to release it from the computer.





4. Lift the back cover from the computer.





Installing the back cover

Steps

1. Align the notches on the back cover to the holes on the computer, and press the back cover until it snaps in.
2. Install the:
 - a. [cable cover](#)
 - b. [stand](#)
3. Follow the procedure in [After working inside your computer](#).

Speaker cover

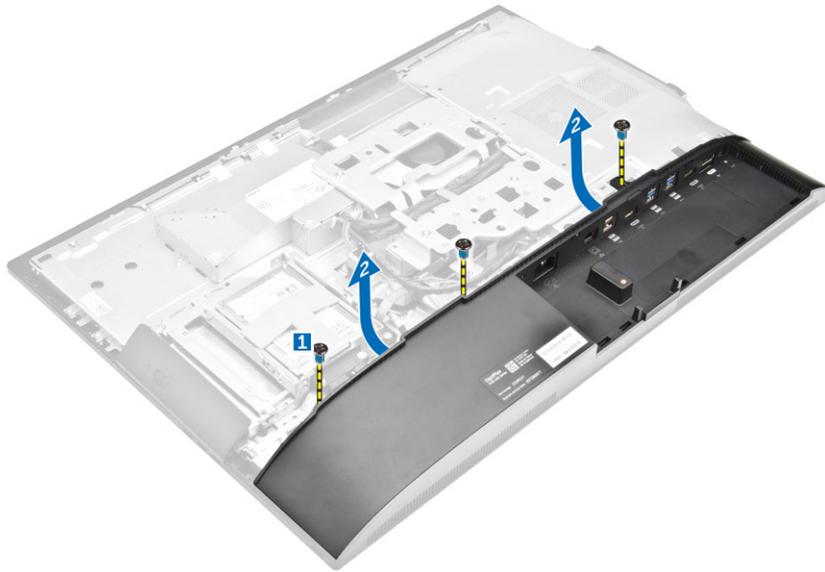
Removing the speaker cover

Steps

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the:
 - a. [stand](#)
 - b. [cable cover](#)
 - c. [back cover](#)
3. Remove the screws that secure the speaker cover to the computer.

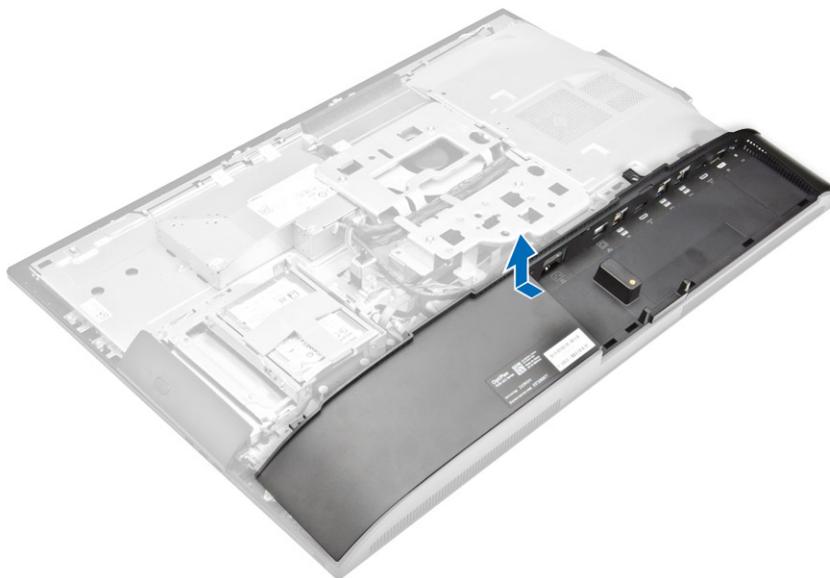
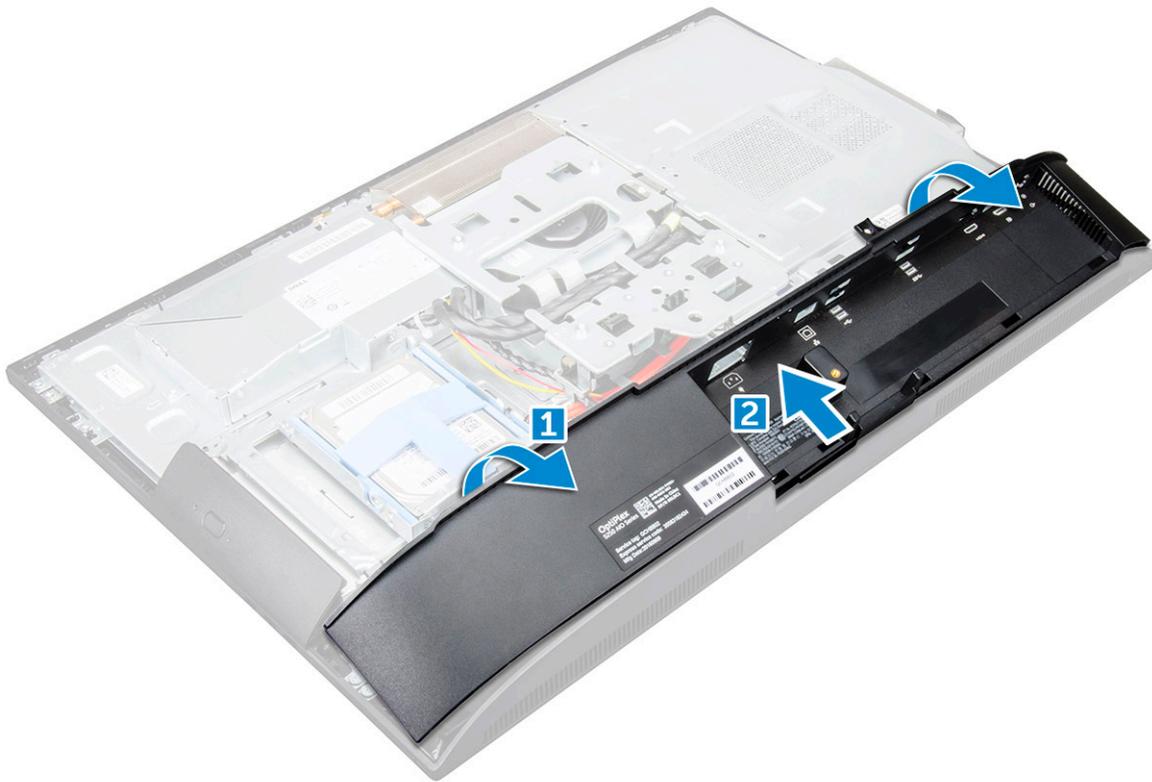


4. To remove the speaker cover:
 - a. Remove the screws that secure the speaker cover to the computer [1].
 - b. Slide the speaker cover to release it from the computer [2].



5. Pull and remove the speaker cover from the computer.

i **NOTE:** To avoid damage to the back cover, release it from the pull tabs.



Installing the speaker cover

Steps

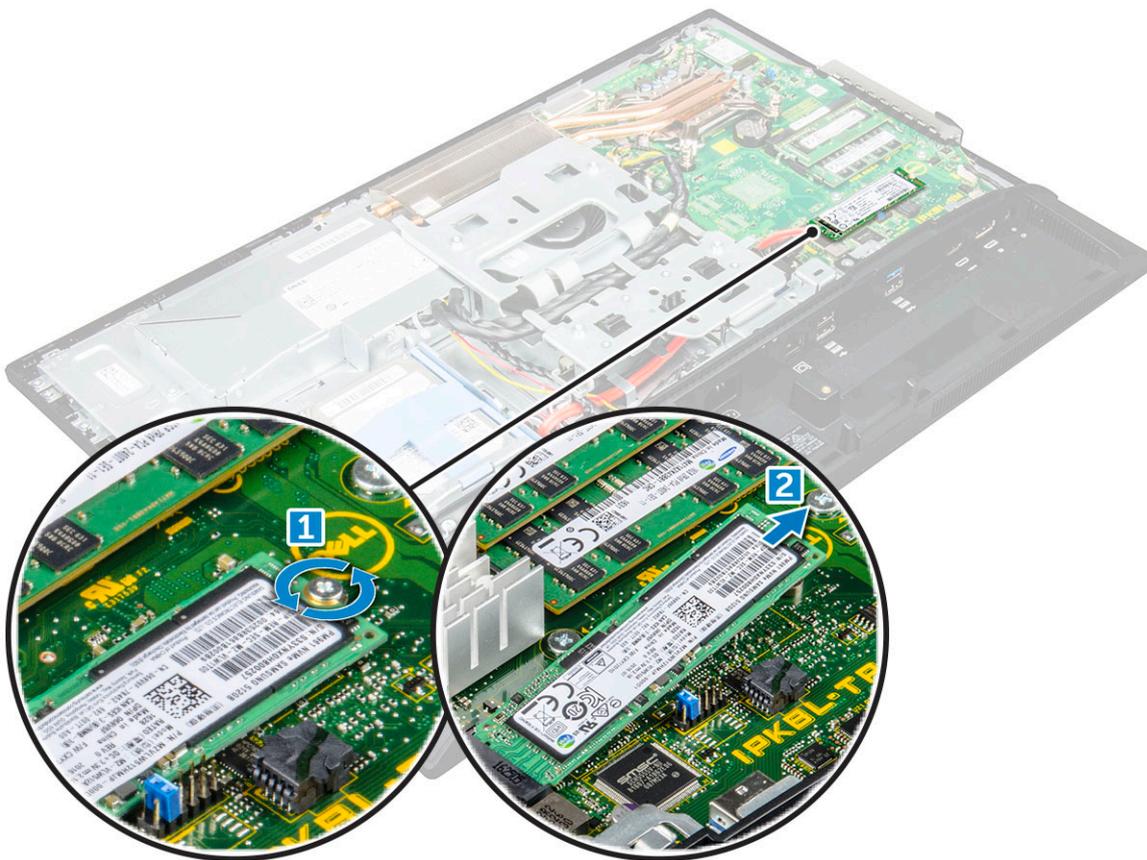
1. Align and push the speaker cover to pop tabs into its position on the back of the computer.
2. Tighten the screws to secure the speaker cover to the computer.
3. Install the:
 - a. [back cover](#)
 - b. [cable cover](#)
 - c. [stand](#)
4. Follow the procedure in [After Working Inside Your Computer](#).

Solid State Drive — optional

Removing the SSD card

Steps

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the:
 - a. stand
 - b. back cover
 - c. system board shield
3. To remove the SSD card:
 - a. Remove the screw that secures the SSD card to the computer [1].
i **NOTE:** System is shipped with 2.5 inch SATA drive on the ODD drive port (Optional).
 - b. Lift the SSD card away from the connector [2].



Installing the SSD card

Steps

1. Insert the SSD card into the connector.
2. Tighten the screw to secure the SSD card to the system board.
3. Install the:
 - a. system board shield
 - b. back cover
 - c. stand

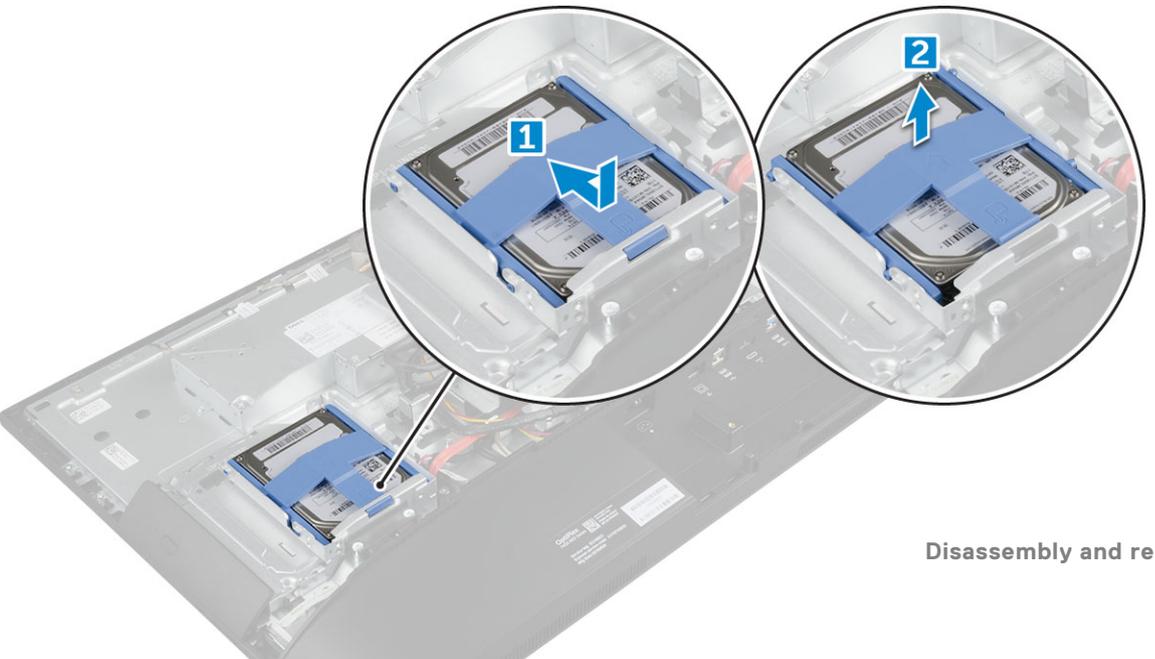
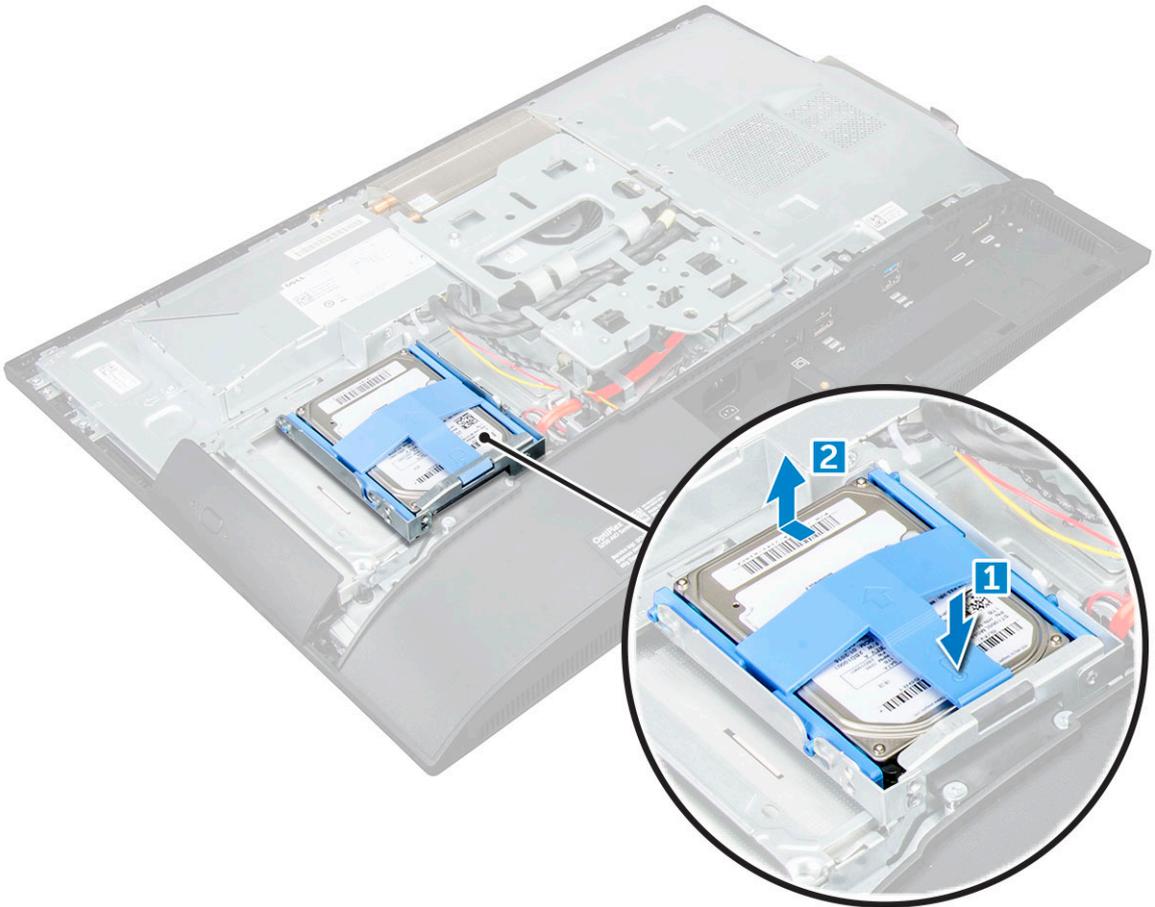
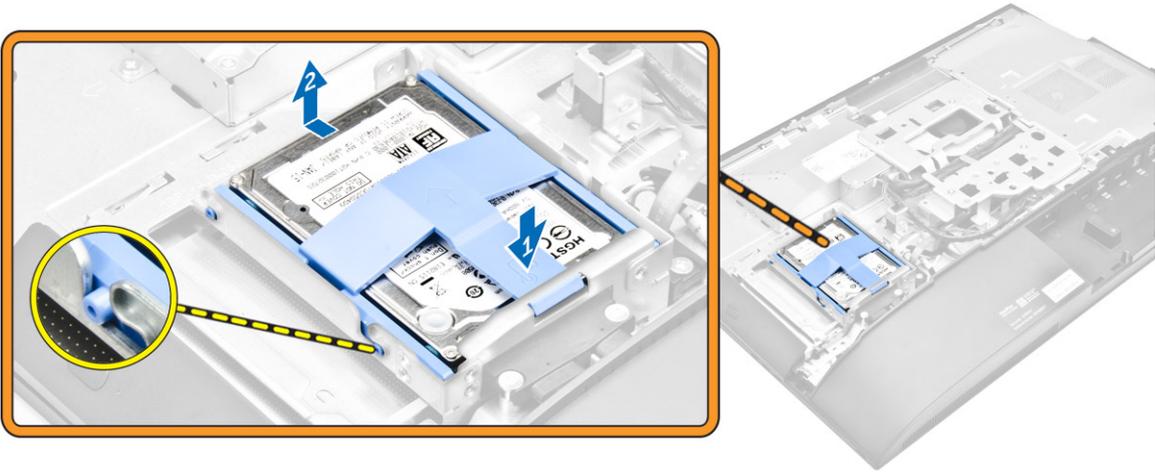
4. Follow the procedure in [After working inside your computer](#).

Hard drive assembly

Removing the hard drive assembly

Steps

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the:
 - a. [stand](#)
 - b. [back cover](#)
3. To remove the hard drive assembly:
 - a. Press the tab on the bracket, and slide the hard-drive assembly until the tabs are released from either side of the assembly [1].
 - b. Slide the hard-drive assembly upwards to remove it from the computer [2].



4. To remove the hard drive bracket:
 - a. Pry the edges of the bracket to release the hard drive [1].
 - b. Slide the hard drive and lift it away from the bracket [2].



Installing the hard drive assembly

Steps

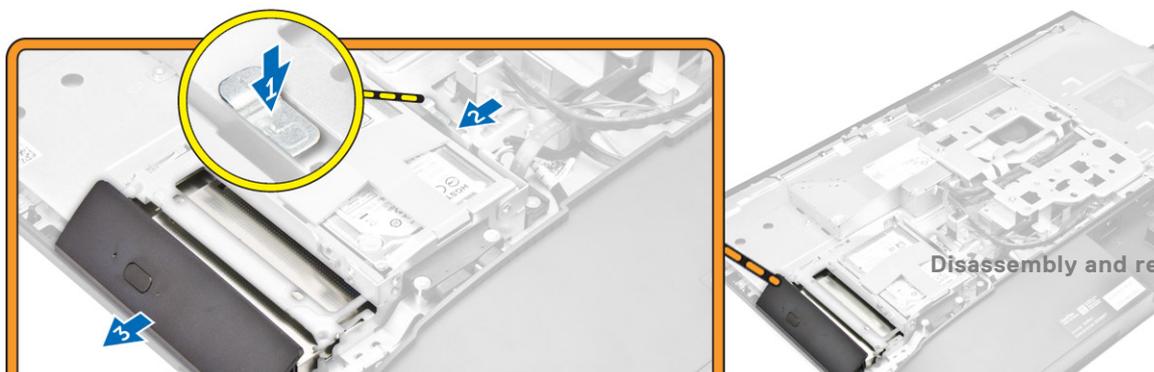
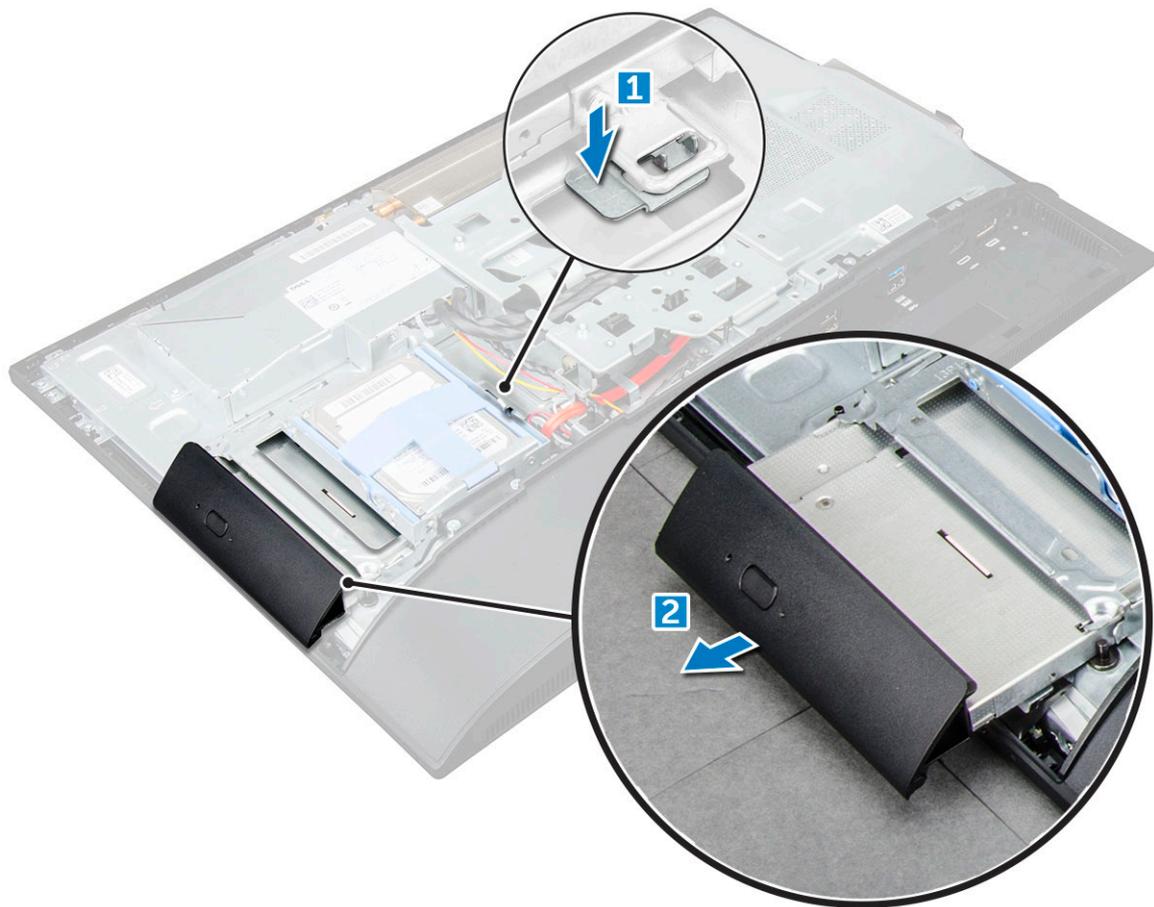
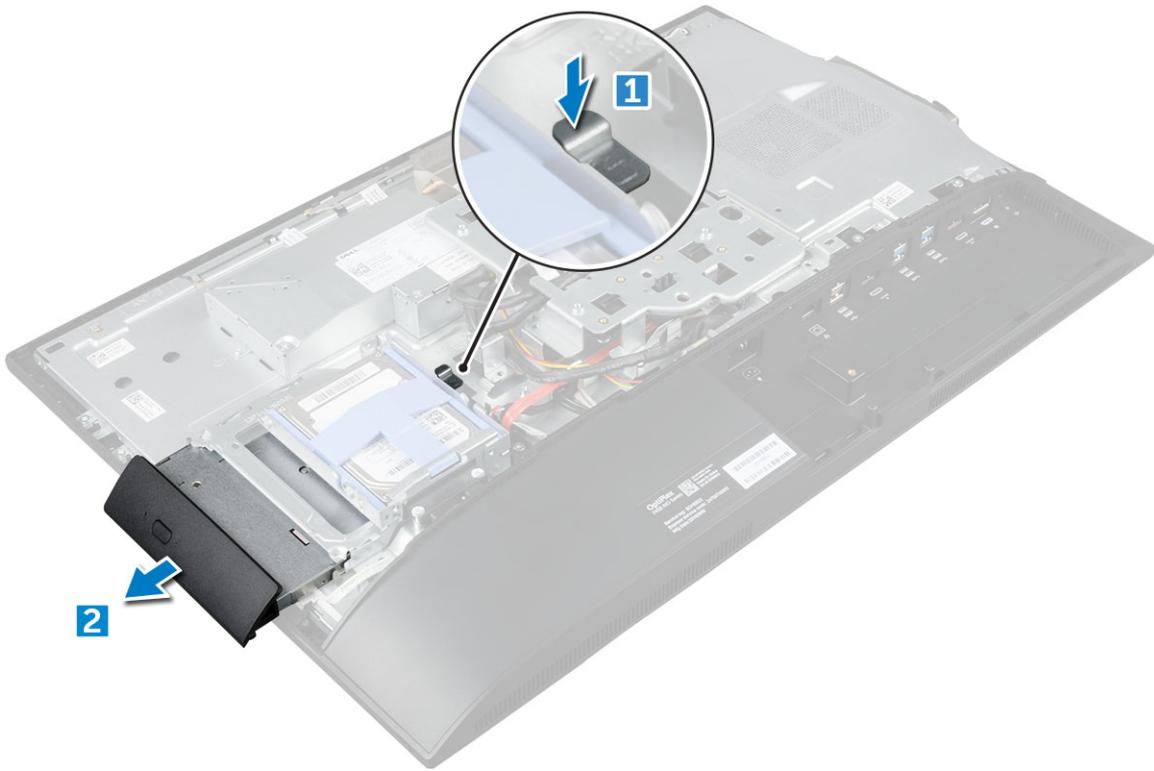
1. Align the hard drive until the notches are aligned and the hard drive is secured in the bracket.
2. Place the hard drive onto the hard drive cage until the notches are aligned, then slide the Hard Drive assembly until the tab locks into the cage.
3. Install the:
 - a. [back cover](#)
 - b. [stand](#)
4. Follow the procedure in [After working inside your computer](#).

Optical drive assembly

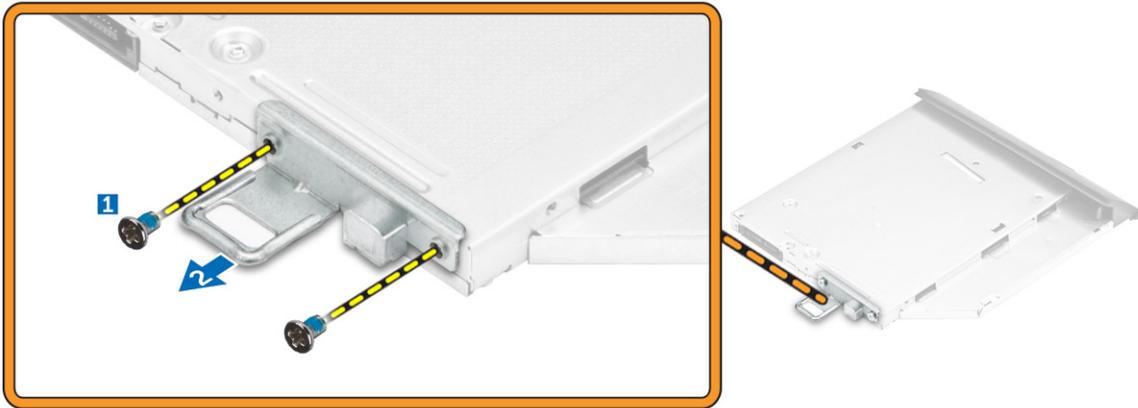
Removing the optical drive assembly

Steps

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the:
 - a. [stand](#)
 - b. [back cover](#)
3. To remove the optical drive assembly:
 - a. Press the securing tab at the base of the drive to release the optical drive assembly [1].
 - b. Push the back side of the optical drive [2].
 - c. Slide the optical drive assembly to remove it away from the computer [3][2].



4. To remove the optical drive bracket:
 - a. Remove the screws that secure the optical drive bracket [1].
 - b. Remove the bracket away from the optical drive [2].



Installing the optical drive assembly

Steps

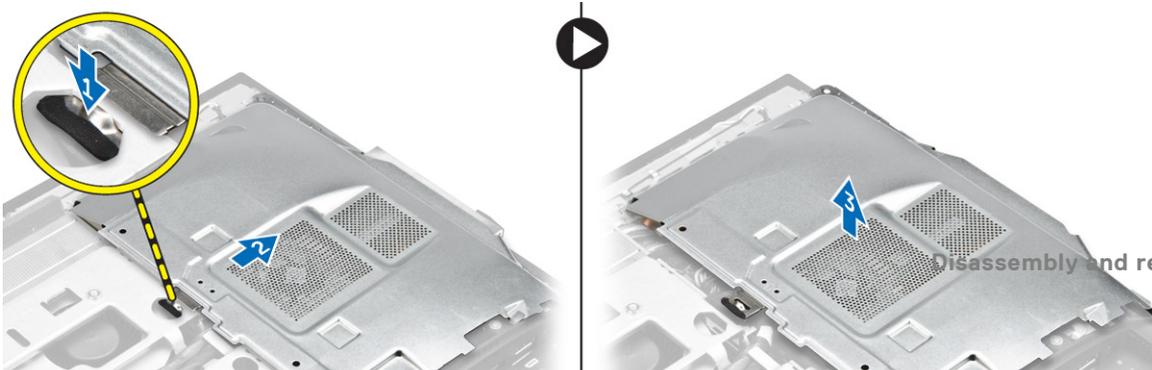
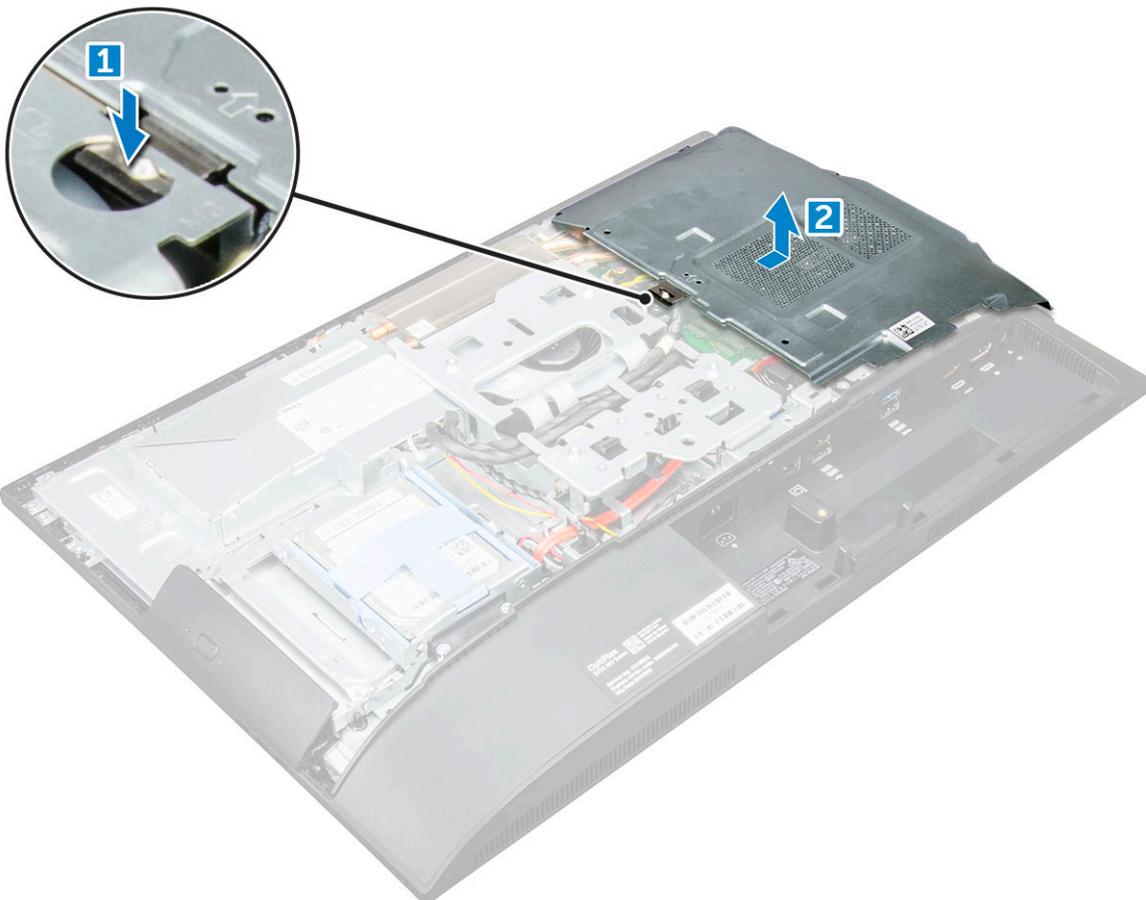
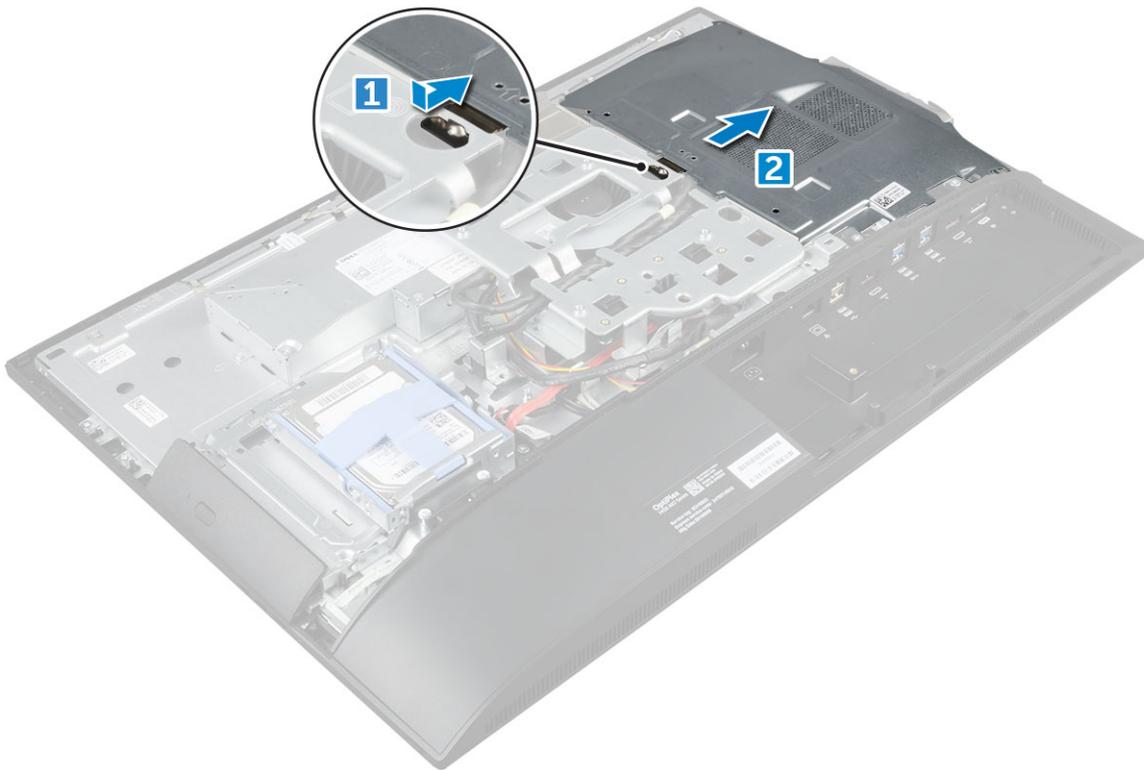
1. Place the bracket to align the screw holders on the optical drive.
2. Tighten the screws to secure the bracket to the optical drive.
3. Insert the optical drive assembly into the drive slot, until it snaps in.
4. Install the:
 - a. [back cover](#)
 - b. [stand](#)
5. Follow the procedure in [After working inside your computer](#).

System board shield

Removing the system board shield

Steps

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the:
 - a. [stand](#)
 - b. [back cover](#)
3. To remove the system board shield:
 - a. Press the securing tab to release the system board shield from the slots on the computer [1].
 - b. Slide the system board shield away from the computer [2].
 - c. Lift the system-board shield from the computer [3].



Installing the system board shield

Steps

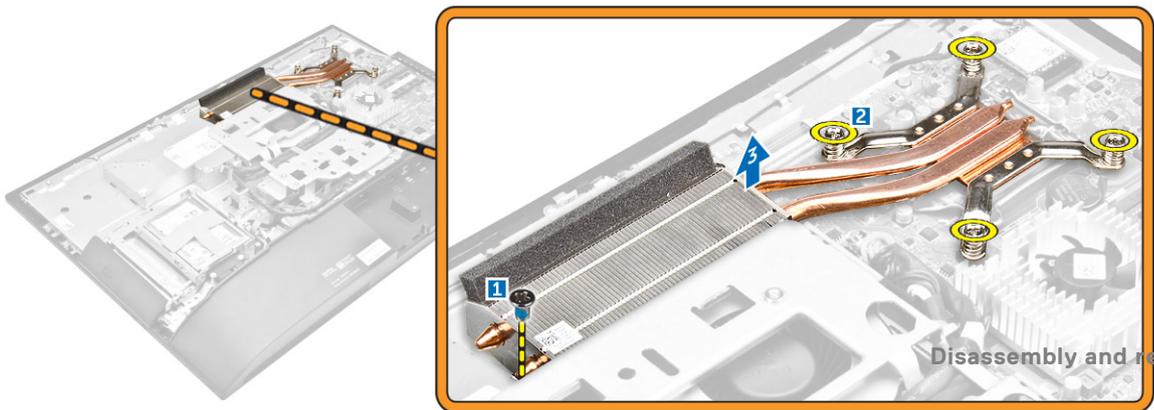
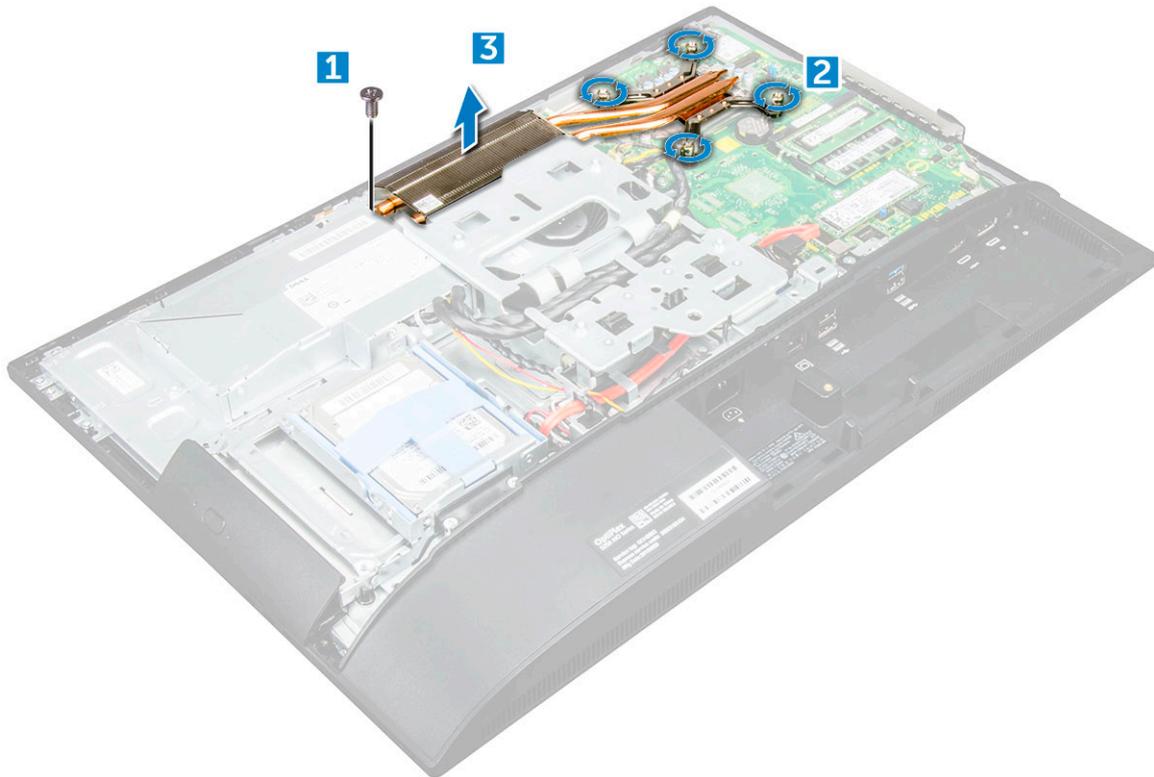
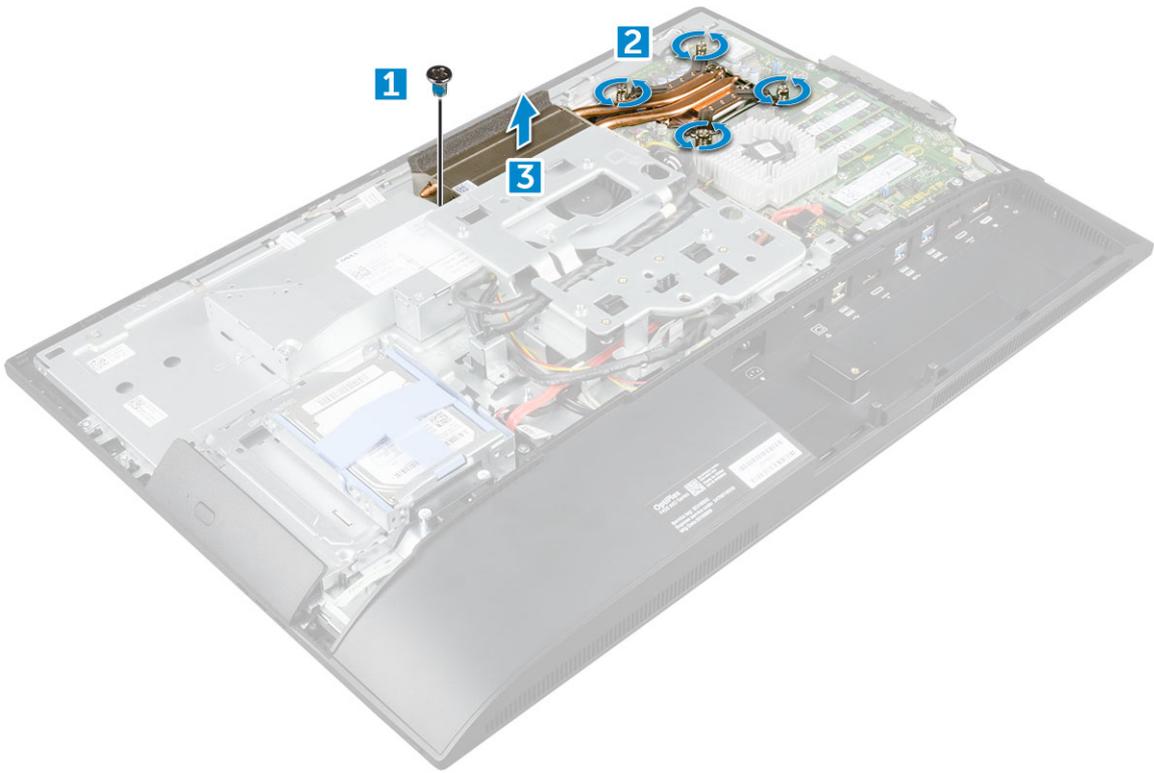
1. Align and slide the system board shield until it snaps in.
2. Install the:
 - a. [back cover](#)
 - b. [stand](#)
3. Follow the procedure in [After working inside your computer](#).

Heat sink

Removing the heat sink

Steps

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the:
 - a. [stand](#)
 - b. [back cover](#)
 - c. [system board shield](#)
3. To remove the heat sink:
 - a. Remove the screws that secure the heat sink to the chassis [1, 2].
 - b. Lift the heat sink away from the computer [3].



Installing the heat sink

Steps

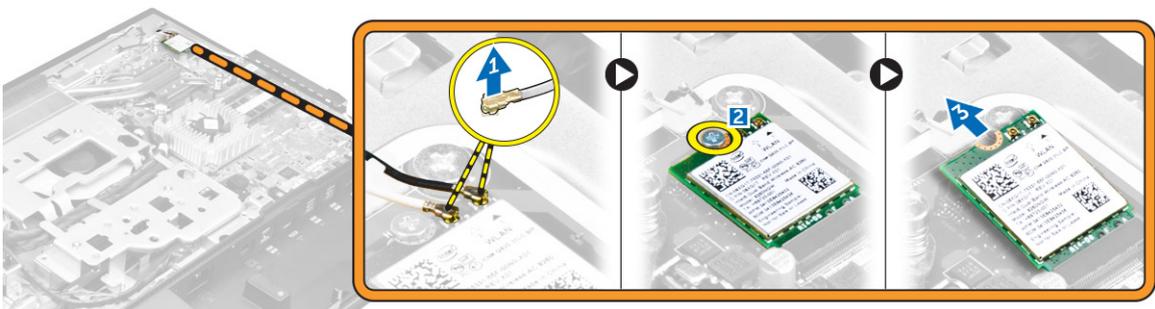
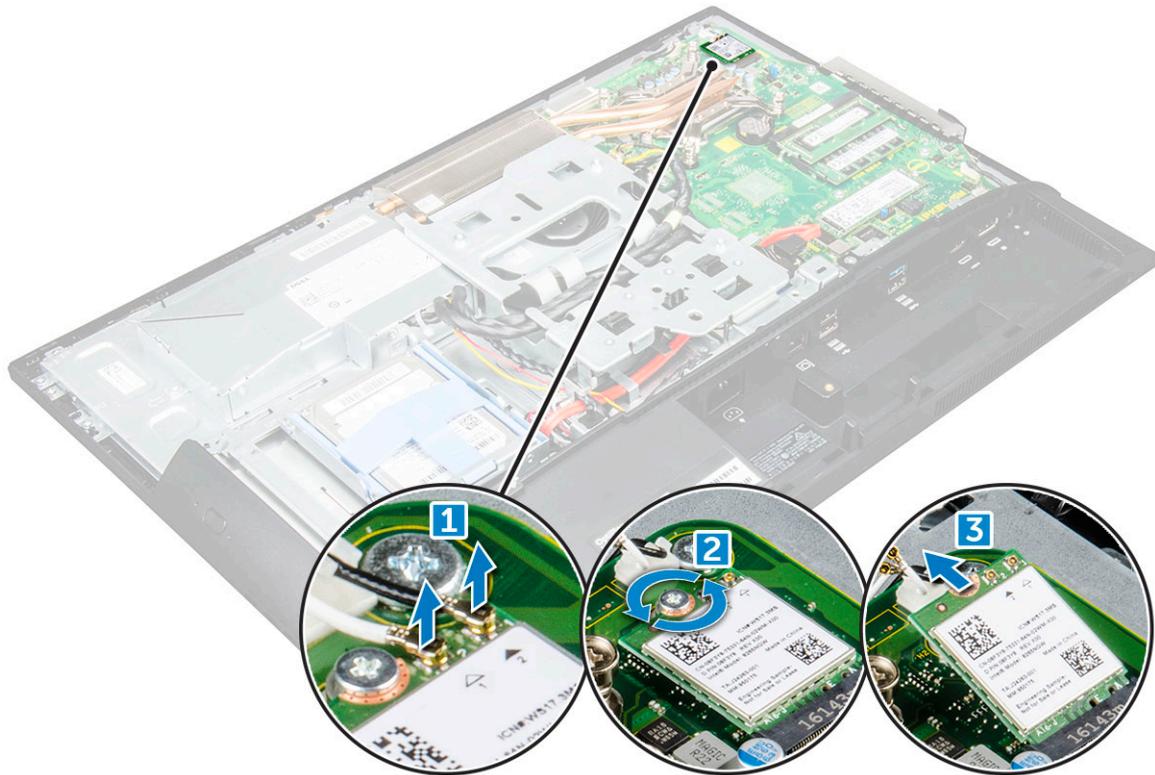
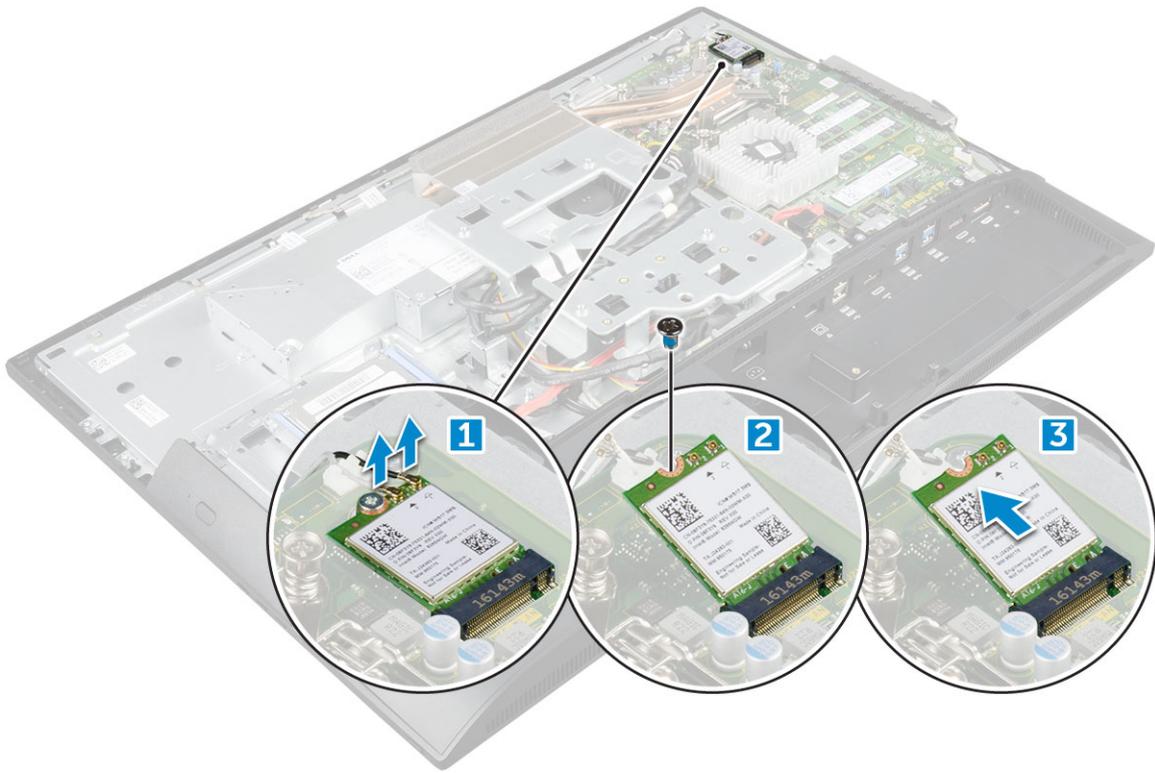
1. Align and place the heat sink in the slot.
2. Tighten the screws to secure the heat sink to the computer.
3. Install the:
 - a. [system board shield](#)
 - b. [back cover](#)
 - c. [stand](#)
4. Follow the procedure in [After working inside your computer](#).

WLAN card

Removing the WLAN card

Steps

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the:
 - a. [stand](#)
 - b. [back cover](#)
 - c. [system board shield](#)
3. To remove the WLAN card:
 - a. Disconnect the antenna cables from the connectors on the WLAN card [1].
 - b. Remove the screw that secures the WLAN card to the system board [2].
 - c. Hold the WLAN card and pull it from the connector on the system board [3].



Installing the WLAN card

Steps

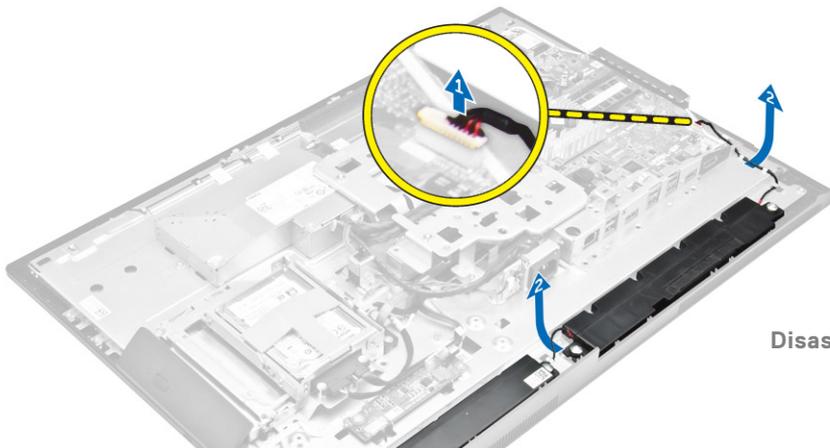
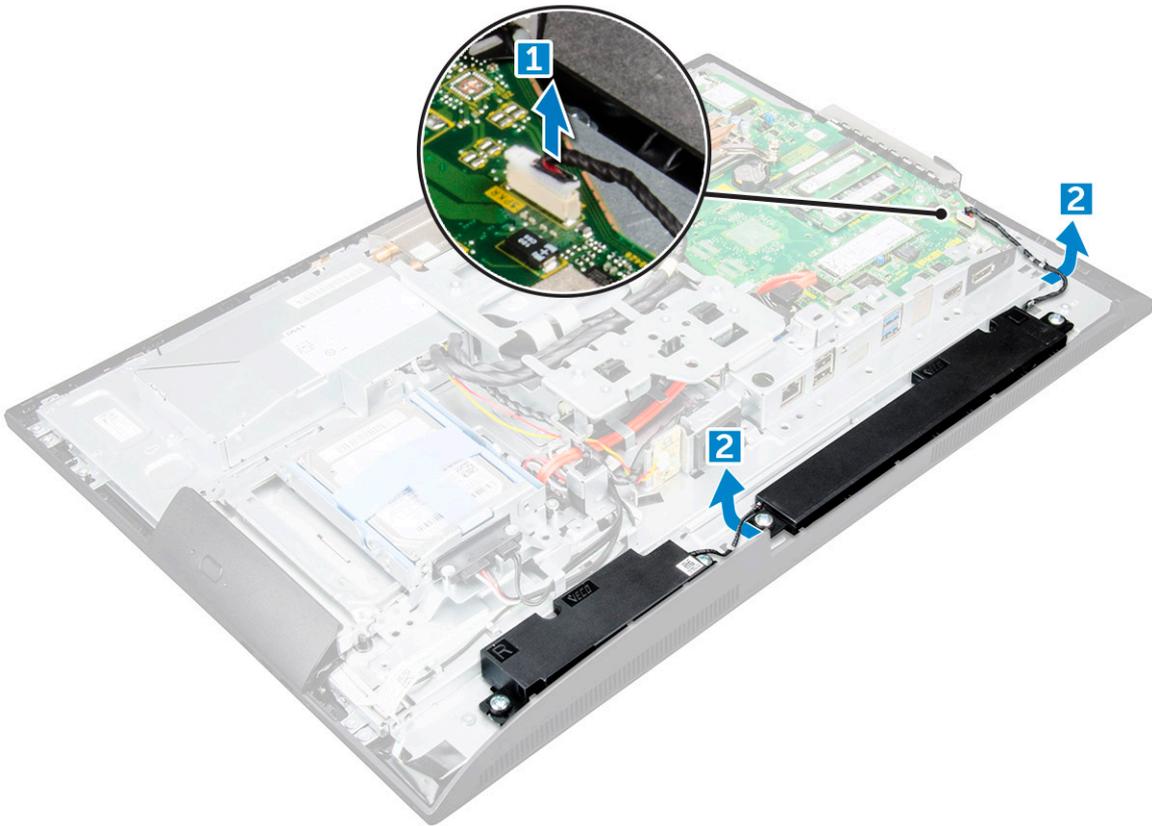
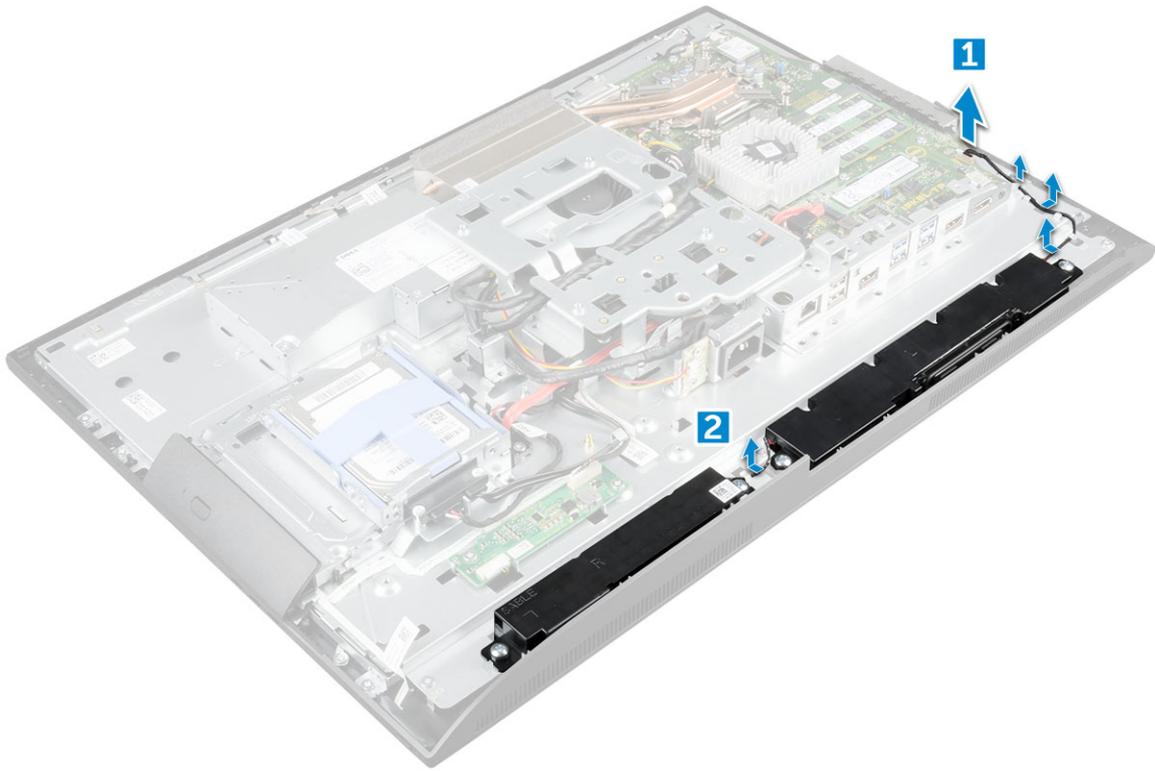
1. Align the WLAN card to the connector on the system board.
2. Tighten the screw to secure the WLAN card to the system board.
3. Connect the antenna cables to the connectors on the WLAN card.
4. Install the:
 - a. [system board shield](#)
 - b. [back cover](#)
 - c. [stand](#)
5. Follow the procedure in [After working inside your computer](#).

Speaker module

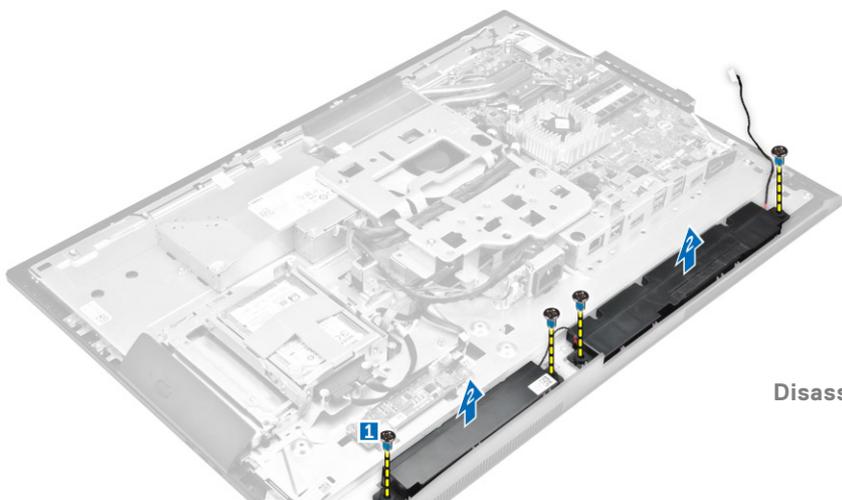
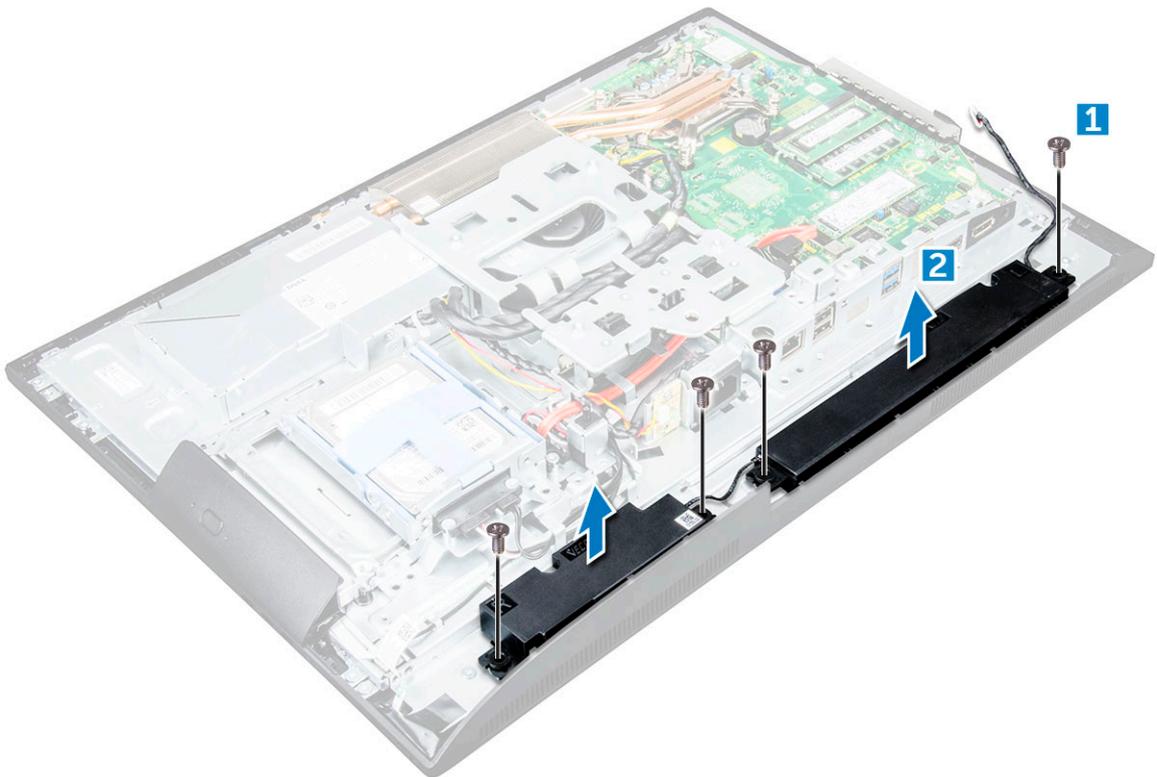
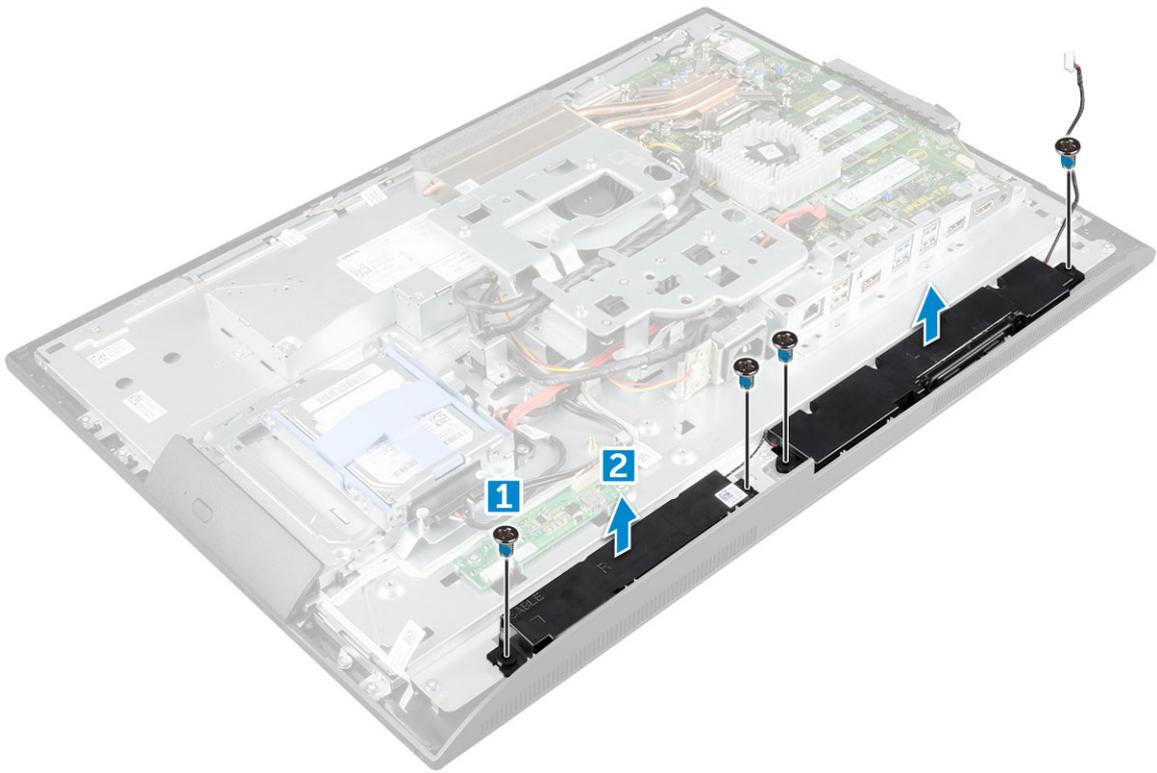
Removing the speaker module

Steps

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the:
 - a. [stand](#)
 - b. [back cover](#)
 - c. [cable cover](#)
 - d. [speaker cover](#)
 - e. [system board shield](#)
3. To release the speaker module:
 - a. Disconnect the speaker cable from the connector on the system board [1].
 - b. Unthread the speaker cables from the retention clips [2].



4. To remove the speaker module:
 - a. Remove the screws that secure the speaker module to the chassis [1].
 - b. Lift the speaker module and remove it from the chassis [2].



Installing the speaker module

Steps

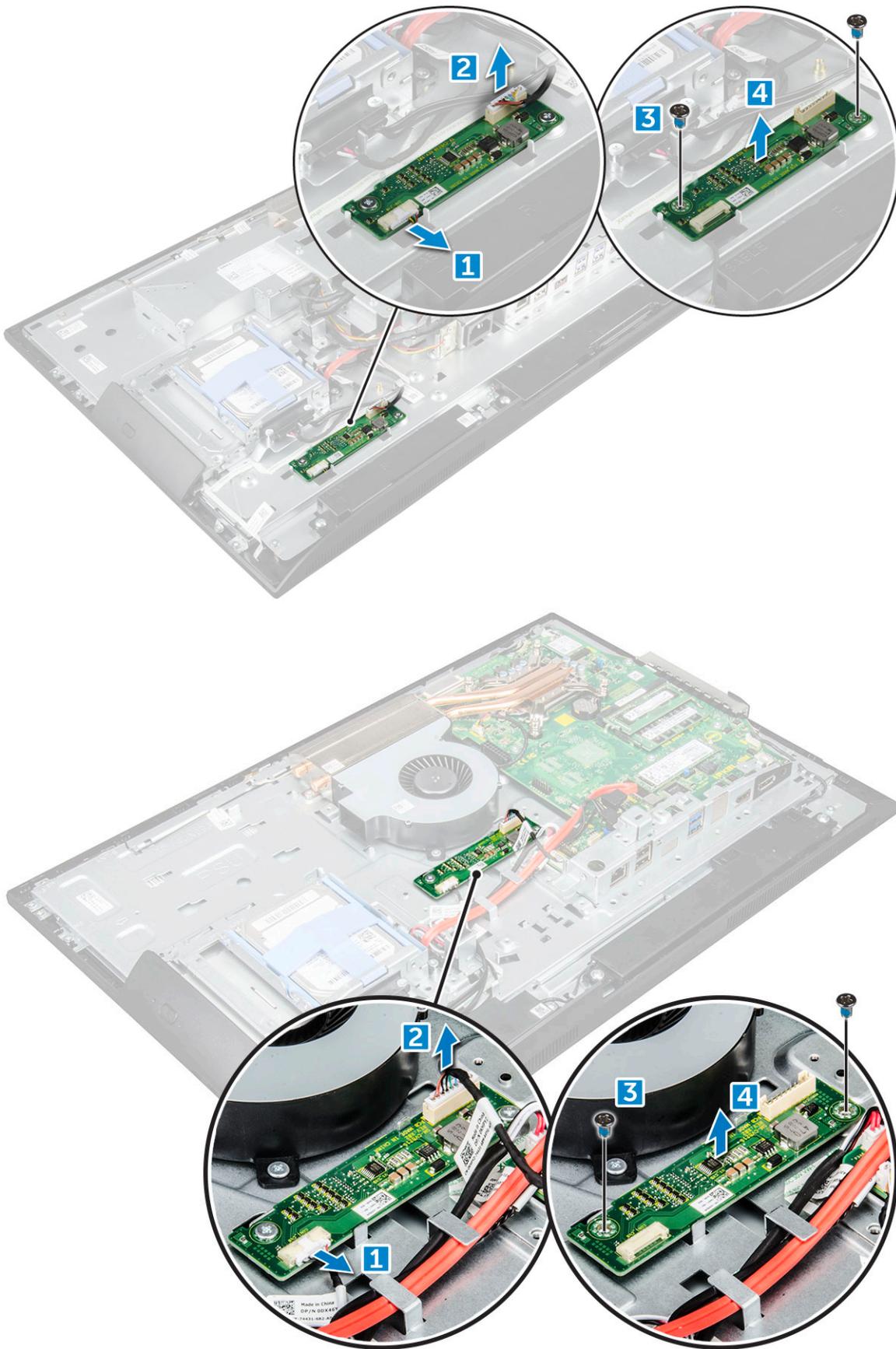
1. Insert the speaker module into the slot on the chassis.
2. Tighten the screws to secure the speaker to the chassis.
3. Secure the speaker cables through the retention clips.
4. Connect the speaker cable to the connector on the system board.
5. Install the:
 - a. [system board shield](#)
 - b. [speaker cover](#)
 - c. [back cover](#)
 - d. [cable cover](#)
 - e. [stand](#)
6. Follow the procedure in [After working inside your computer](#).

Converter board

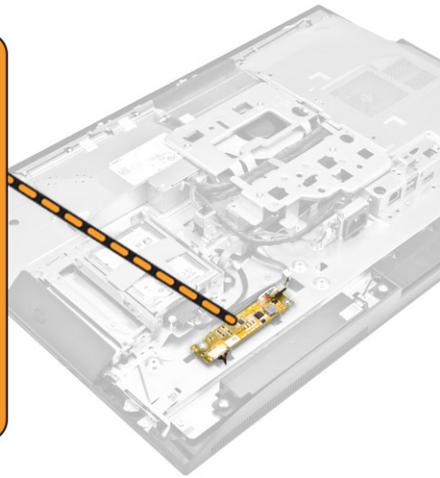
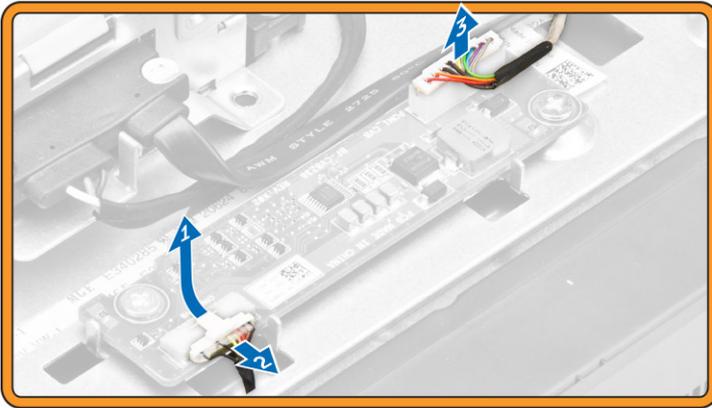
Removing the converter board

Steps

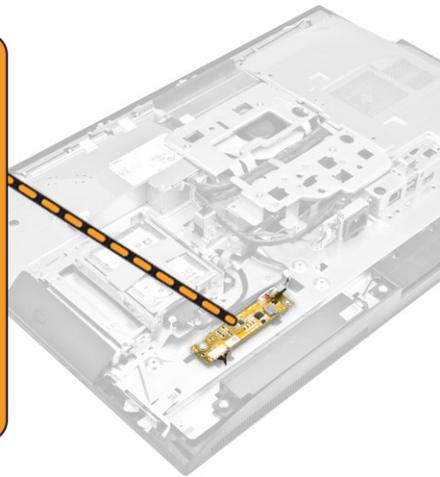
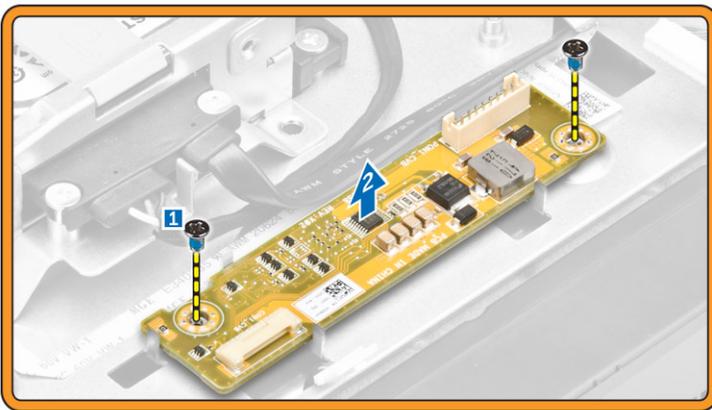
1. Follow the procedure in [Before working inside your computer](#).
2. Remove the:
 - a. [stand](#)
 - b. [back cover](#)
 - c. [cable cover](#)
 - d. [speaker cover](#)
 - e. [system board shield](#)
 - f. [power supply unit](#)
 - g. [VESA mount bracket](#)
3. To remove the converter board:
 - a. Disconnect the convertor board cable from the converter board [1].
 - b. Disconnect the display backlight cable from the converter board [2].
 - c. Remove the screws that secure the converter board to the computer [3].
 - d. Lift the converter board away from the computer [4].



4. Perform the following steps as shown in the illustration:
- a. Disconnect the converter-board cable from the converter board [1, 2].
 - b. Disconnect the display-backlight cable from the converter board [3].



5. Perform the following steps as shown in the illustration:
 - a. Remove the screws that secure the converter board to the chassis [1].
 - b. Lift the converter board away from the chassis [2].



Installing the converter board

Steps

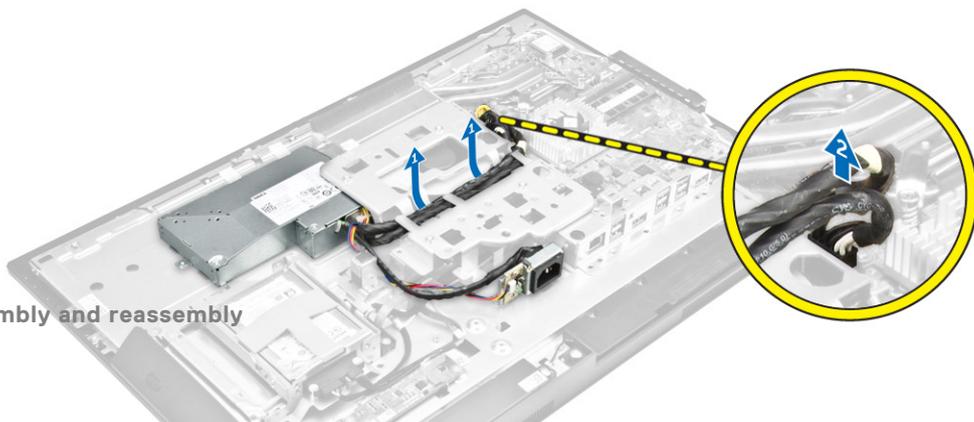
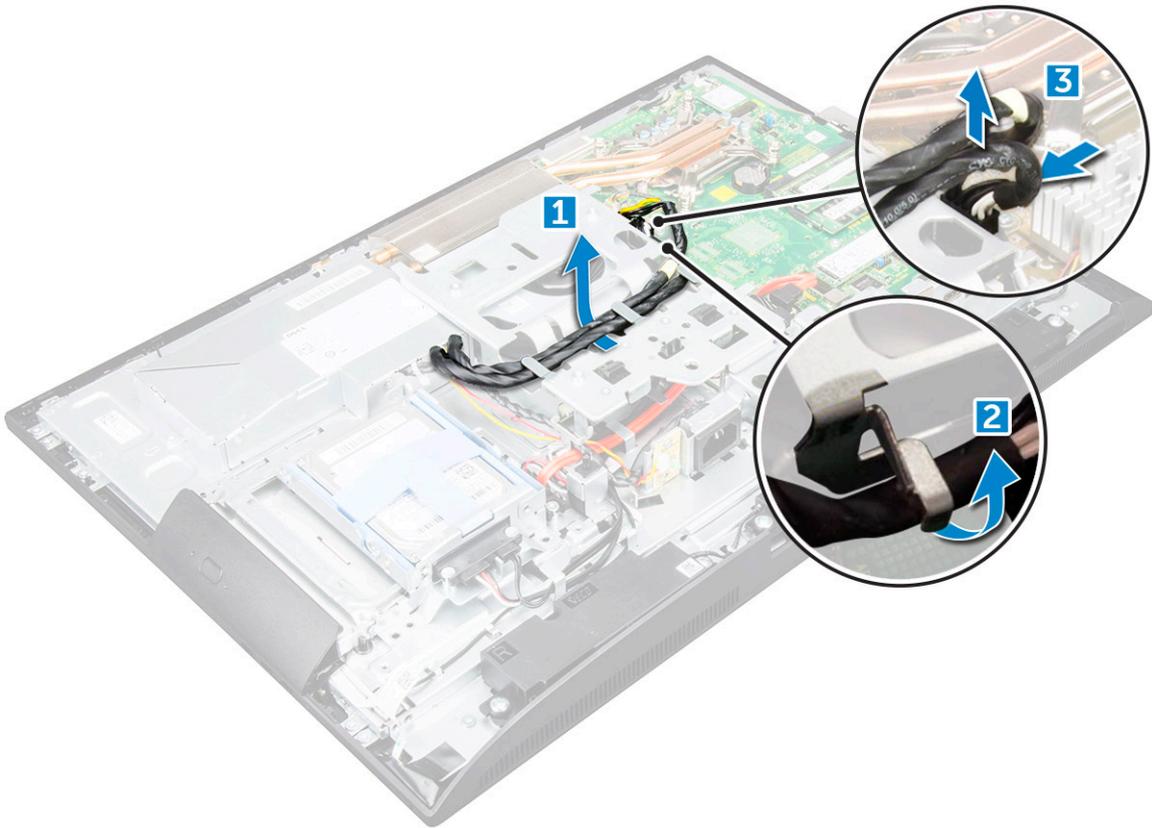
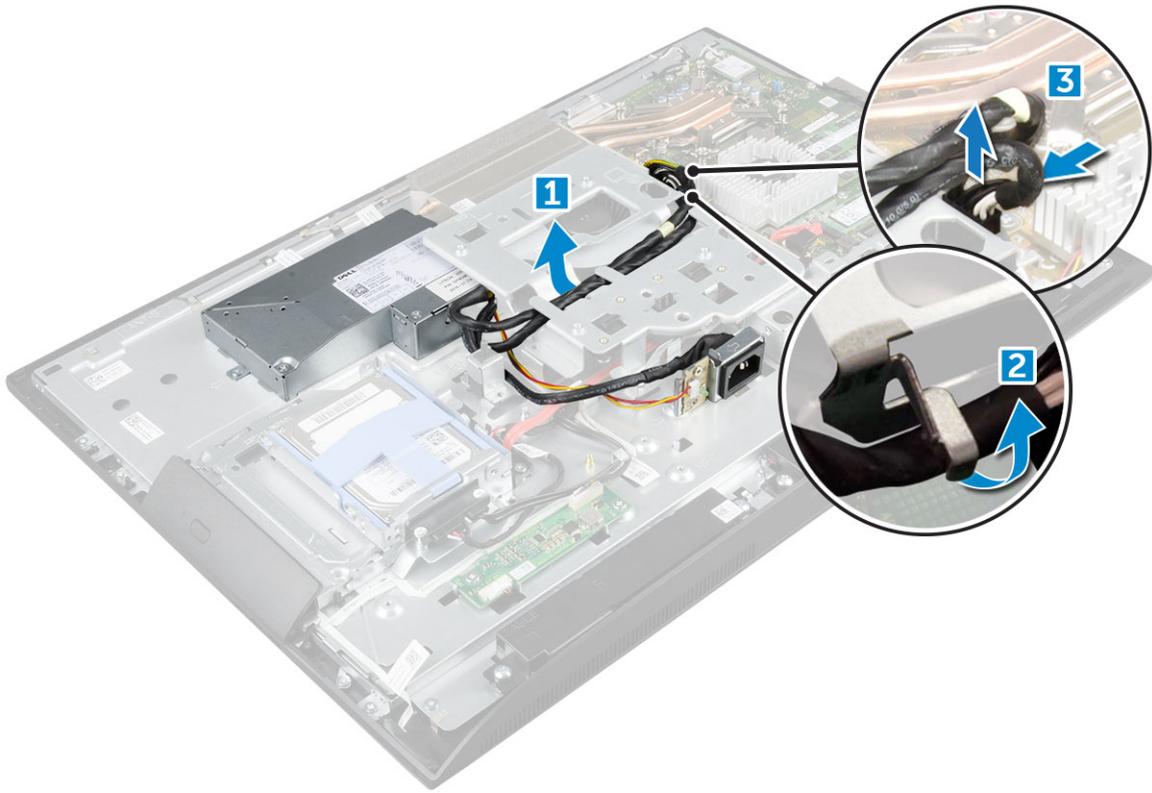
1. Place the converter board in the slot.
2. Tighten the screws to secure the converter board to the chassis.
3. Connect the converter board cable and display backlight cable to the connectors on the converter board.
4. Install the:
 - a. VESA mount bracket
 - b. power supply unit
 - c. system board shield
 - d. speaker cover
 - e. cable cover
 - f. back cover
 - g. stand
5. Follow the procedure in [After working inside your computer](#).

Power supply unit

Removing the Power Supply Unit - PSU

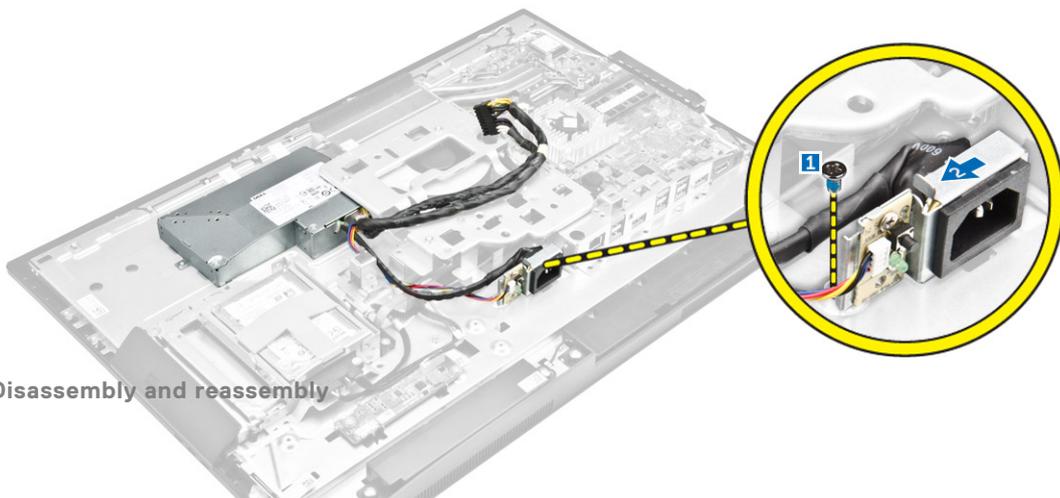
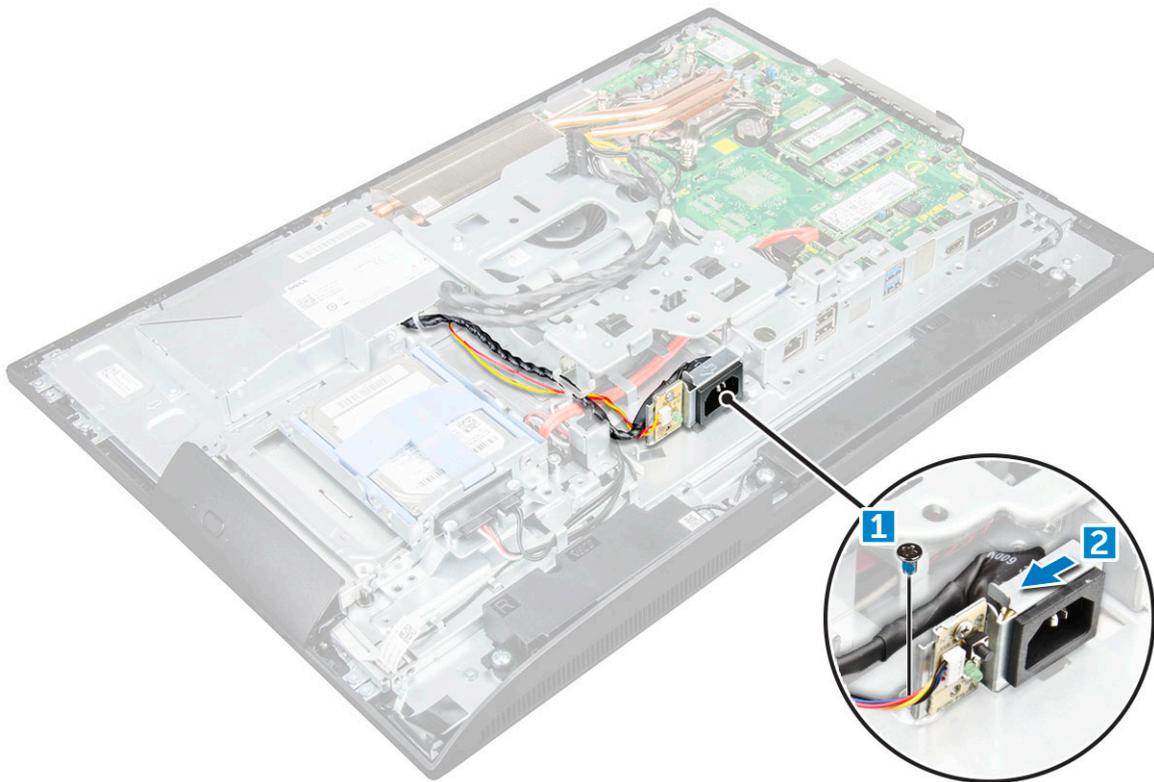
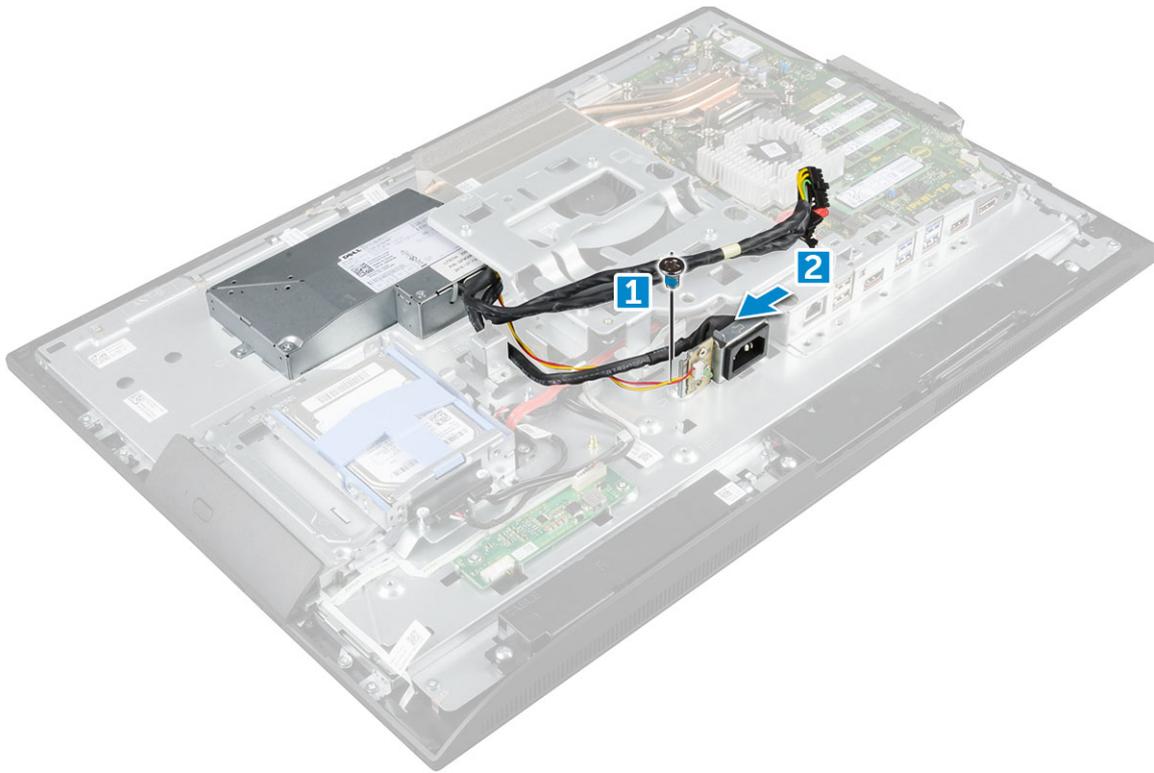
Steps

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the:
 - a. [stand](#)
 - b. [back cover](#)
 - c. [cable cover](#)
 - d. [speaker cover](#)
 - e. [system board shield](#)
3. To release the PSU cable:
 - a. Unthread the power supply cables from the retention clips in the chassis [1].
 - b. Disconnect the power supply cable from the connector on the system board [2].
 -  **NOTE:** Press lock clip to release the power supply cable from the system board.



4. To release the PSU:

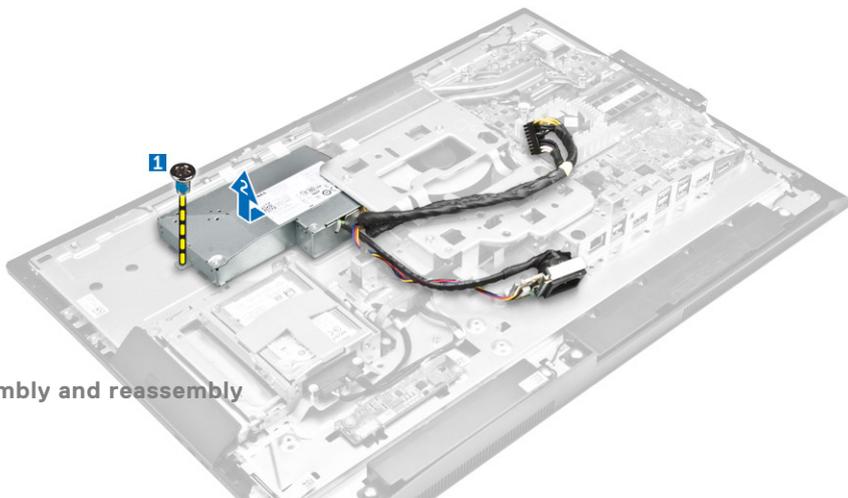
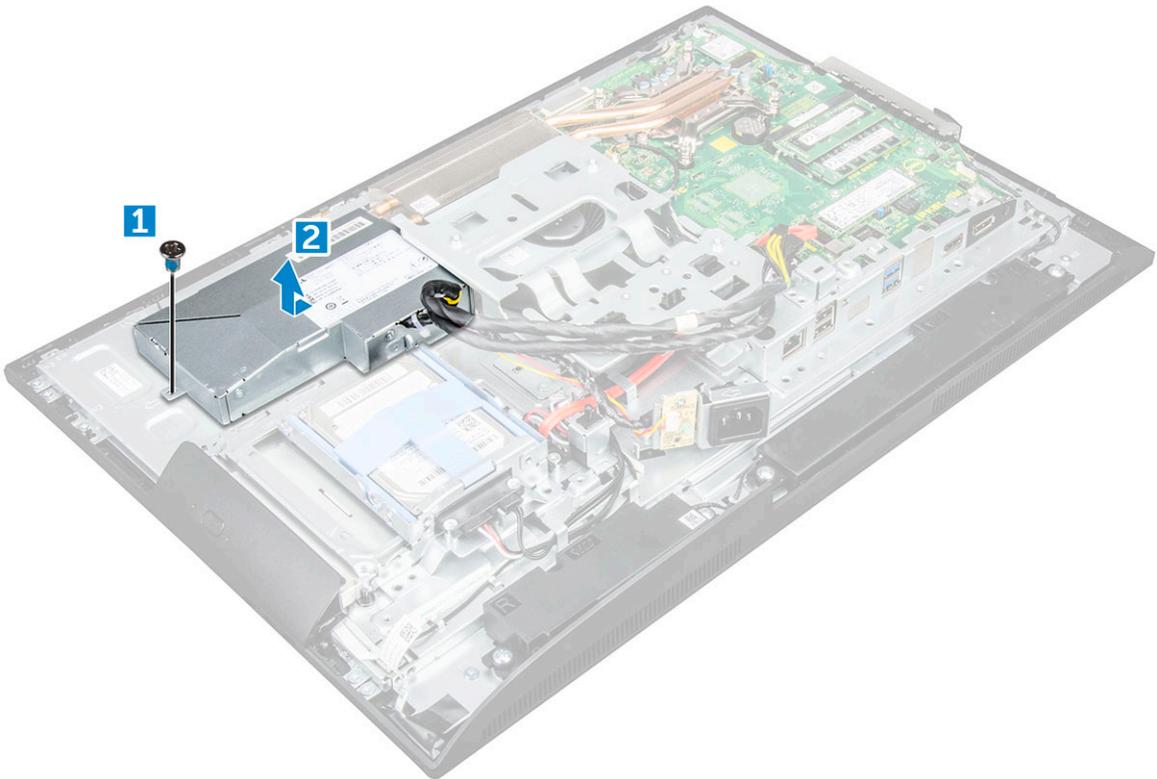
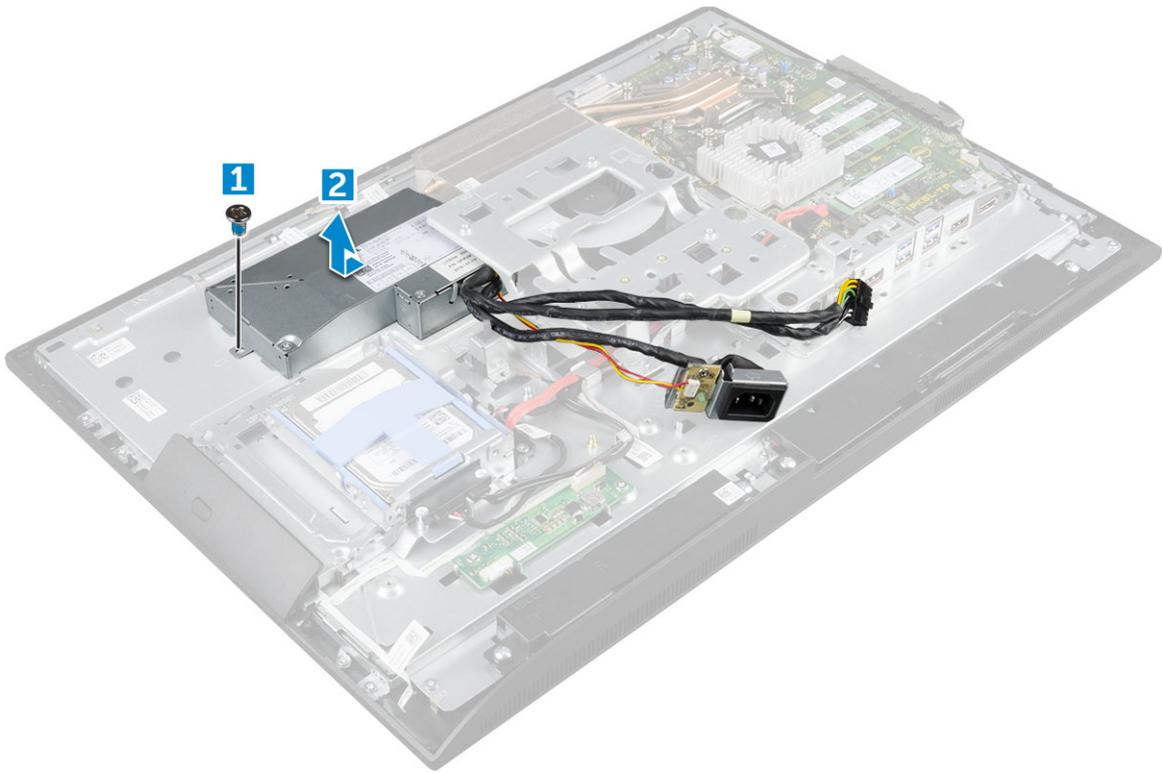
-  **NOTE:** There is an additional cable retention clip on the side of the VESA mount bracket. The PSU near that is not visible in the removing cables from retention clips image.
- a. Remove the screw that secures the power supply socket to the chassis [1].
- b. Slide the socket to remove it from the computer [2].



5. To remove the PSU:

i **NOTE:** Field Engineers to ensure defective Power Supply Unit is returned along with BIST board.

- a. Remove the screw that secures the PSU to the chassis [1].
- b. Slide the PSU and lift it away from the chassis [2].



Installing the Power Supply Unit - PSU

Steps

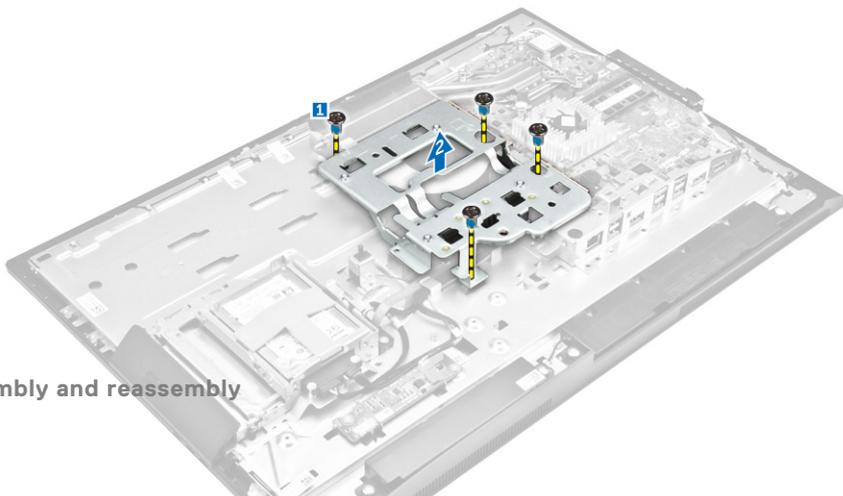
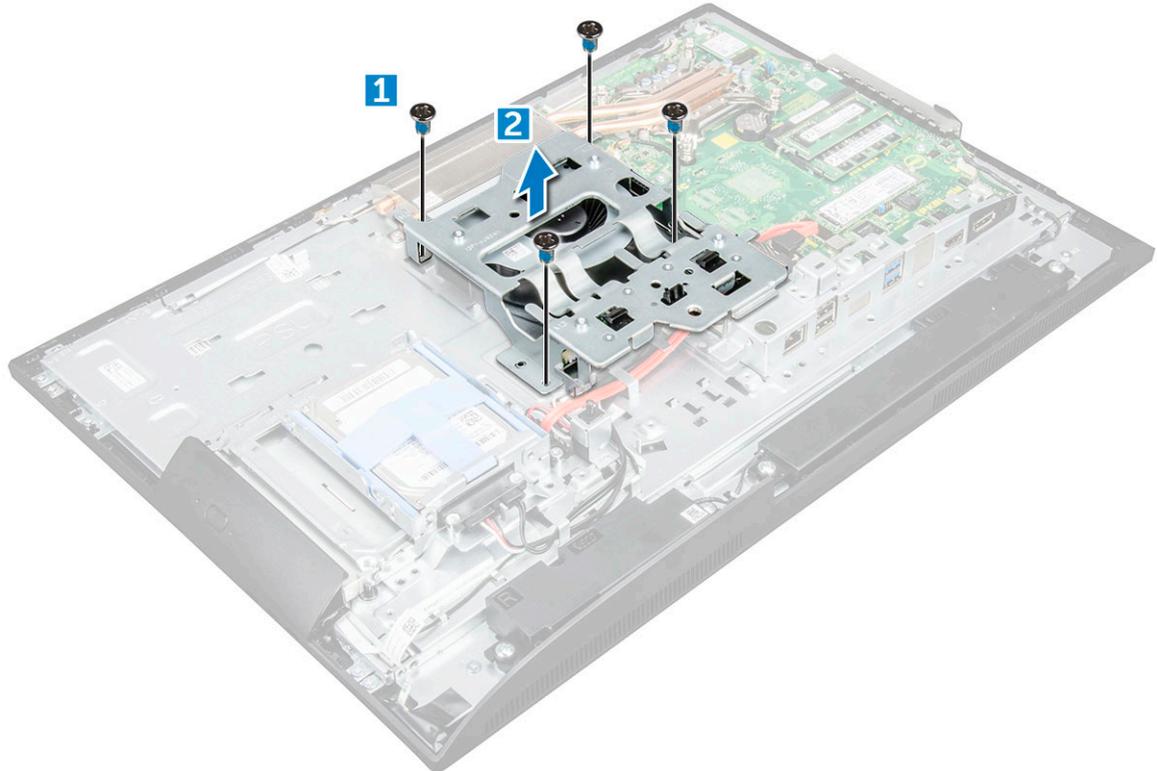
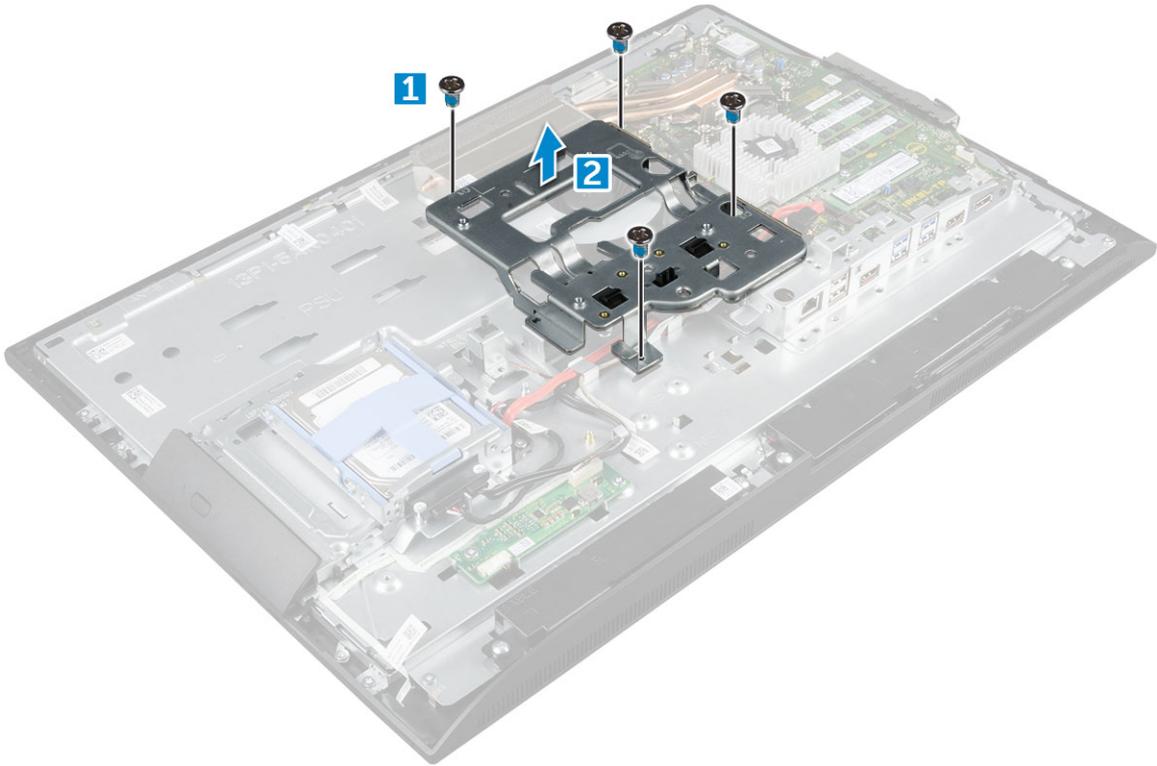
1. Place the PSU on the chassis.
2. Tighten the screw to secure the PSU to the chassis.
3. Place the power supply socket in the slot on the chassis.
4. Tighten the screw to secure the power supply socket to the chassis.
5. Secure the power supply cable on the retention clips in the chassis.
6. Connect the power supply cables to the connectors on the system board.
7. Install the:
 - a. [system board shield](#)
 - b. [speaker cover](#)
 - c. [cable cover](#)
 - d. [back cover](#)
 - e. [stand](#)
8. Follow the procedure in [After working inside your computer](#).

Mount bracket

Removing the VESA mount bracket

Steps

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the:
 - a. [stand](#)
 - b. [back cover](#)
 - c. [cable cover](#)
 - d. [speaker cover](#)
 - e. [system board shield](#)
 - f. [power supply unit](#)
3. To remove the VESA mount bracket:
 - a. Remove the screws that secure the VESA mount bracket to the computer [1].
 - b. Lift the bracket away from the computer [2].



Installing the VESA mount bracket

Steps

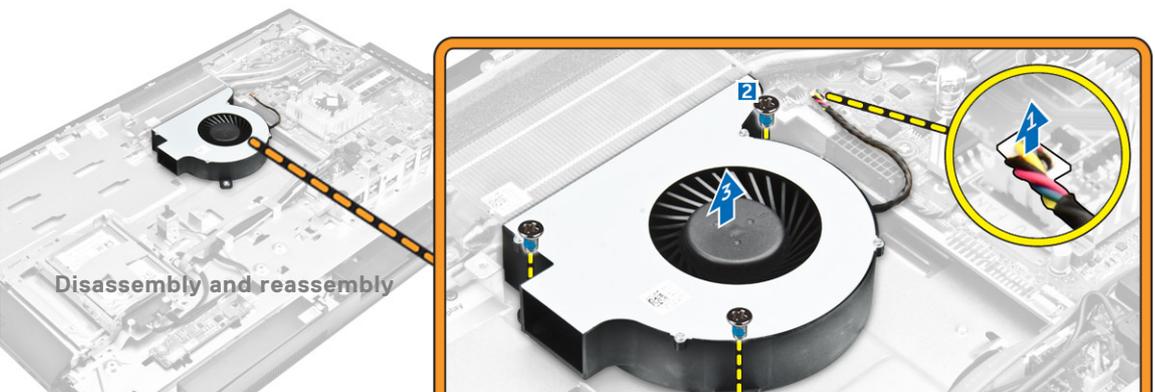
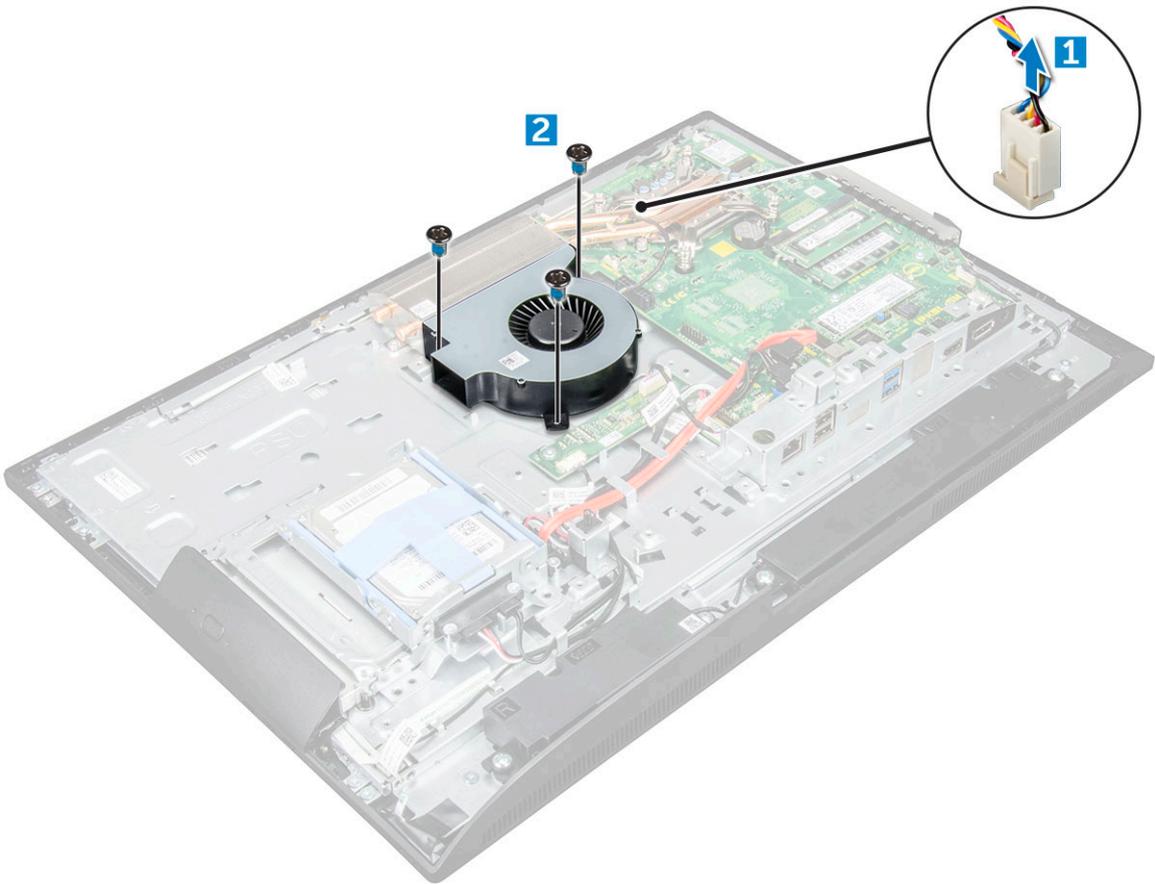
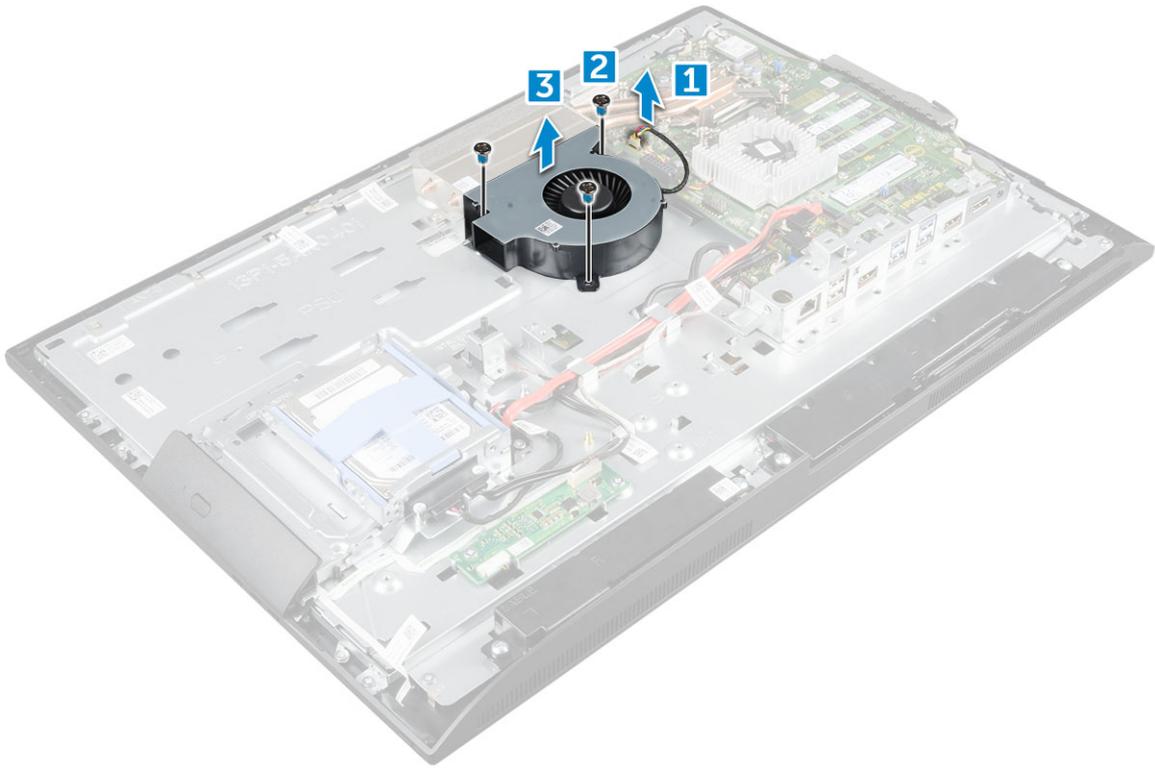
1. Align and place the bracket in the slot on the computer.
2. Tighten the screws that secure the VESA mount bracket to the computer.
3. Install the:
 - a. [power supply unit](#)
 - b. [system board shield](#)
 - c. [speaker cover](#)
 - d. [cable cover](#)
 - e. [back cover](#)
 - f. [stand](#)
4. Follow the procedure in [After working inside your computer](#).

System fan

Removing the system fan

Steps

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the:
 - a. [stand](#)
 - b. [back cover](#)
 - c. [cable cover](#)
 - d. [speaker cover](#)
 - e. [system board shield](#)
 - f. [power supply unit](#)
 - g. [VESA mount bracket](#)
3. To remove the system fan:
 - a. Disconnect the system fan cable from the connector on the system board [1].
 - b. Remove the screws that secure the system fan to the computer [2].
 - c. Lift the system fan away from the computer [3].



Installing the system fan

Steps

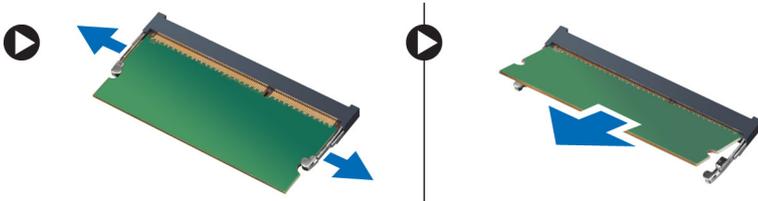
1. Align and place the system fan in the slot on the chassis.
2. Tighten the screws to secure the system fan to the system board.
3. Connect the system fan cable to the connector on the system board.
4. Install the:
 - a. VESA mount bracket
 - b. power supply unit
 - c. system board shield
 - d. speaker cover
 - e. cable cover
 - f. back cover
 - g. stand
5. Follow the procedure in [After working inside your computer](#).

Memory module

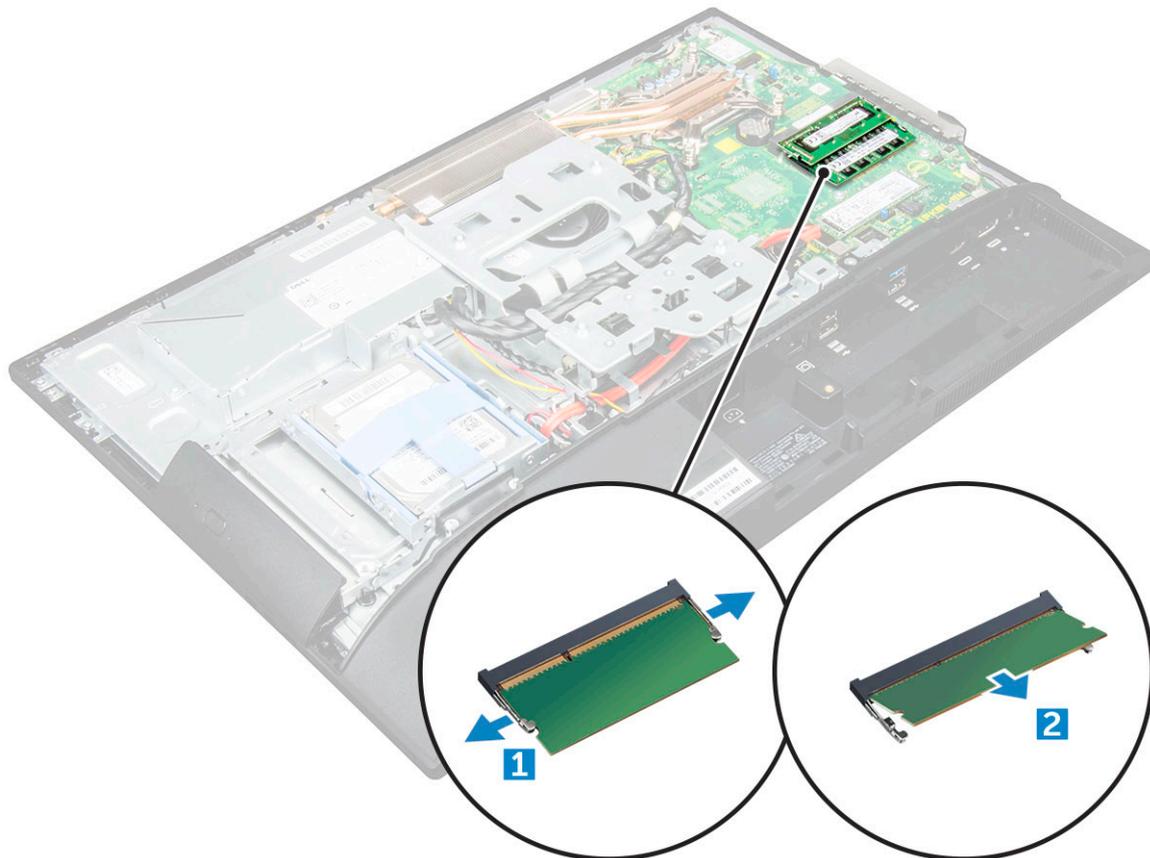
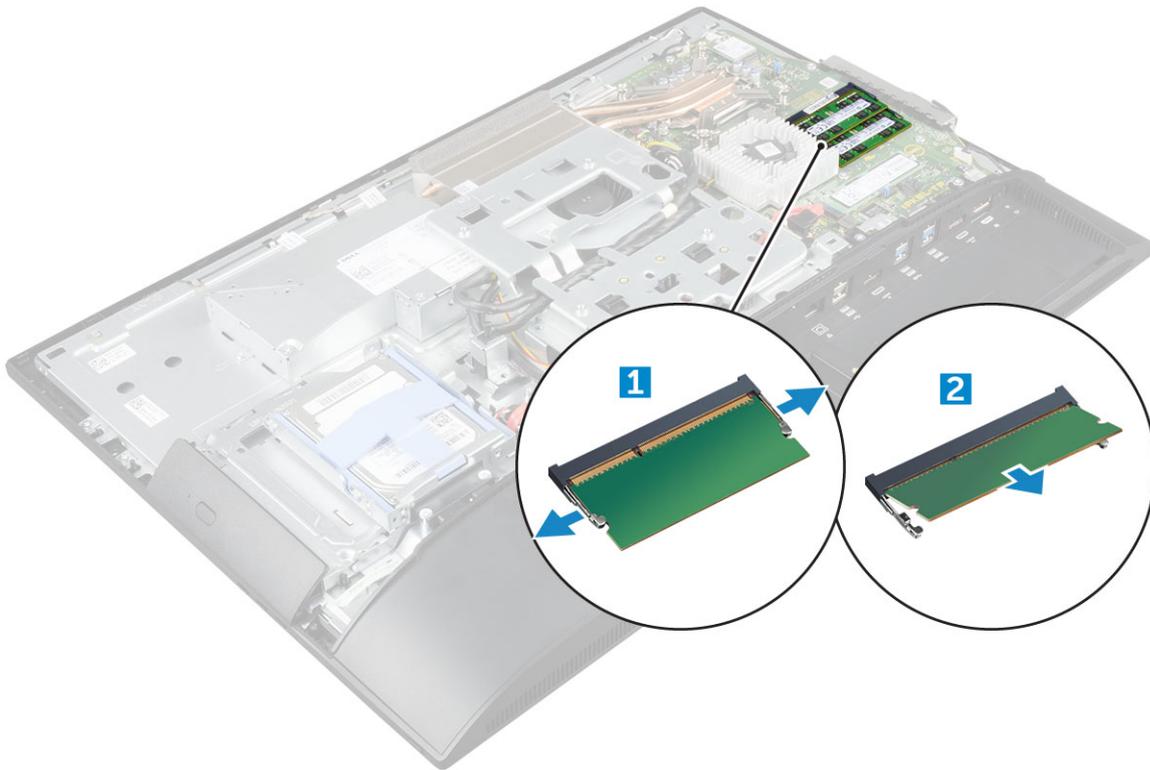
Removing the memory module

Steps

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the:
 - a. stand
 - b. back cover
 - c. system board shield
3. Pry the retention clips away from the memory module until it pops up. Lift and remove the memory module from its connector.



4. To remove the memory module:
 - a. Pry the retention clips away from the memory module until it pops up [1].
 - b. Lift the memory module from the connector [2].



Installing the memory module

Steps

1. Insert the memory module on the memory connector until the clips secure the memory module.

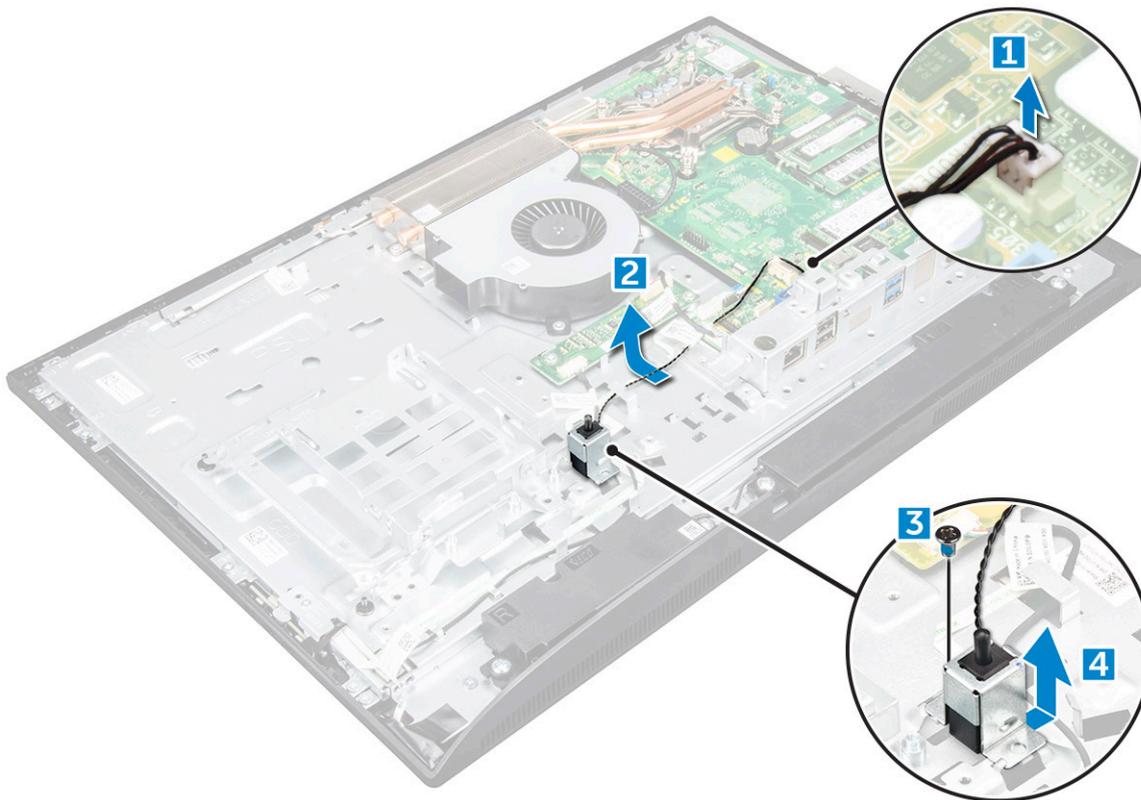
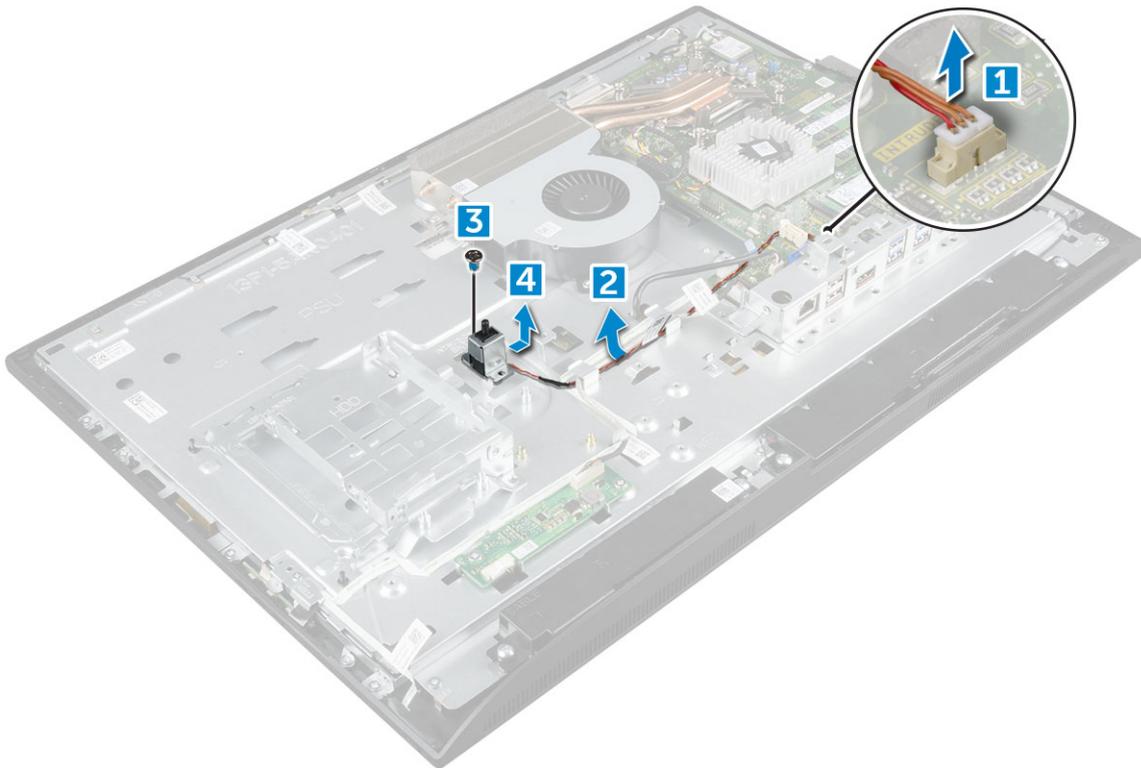
2. Install the:
 - a. [system board shield](#)
 - b. [back cover](#)
 - c. [stand](#)
3. Follow the procedure in [After working inside your computer](#).

Intrusion switch

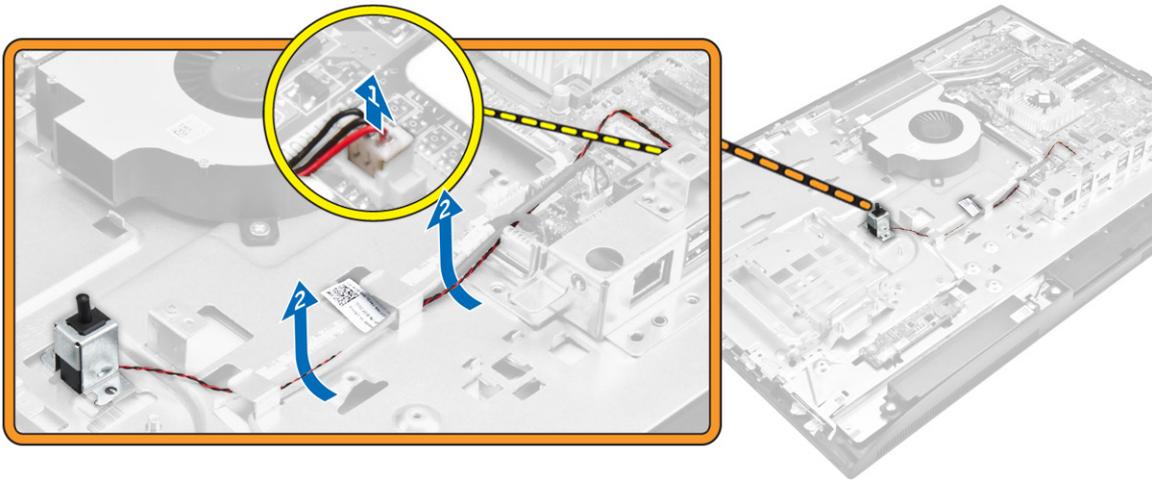
Removing the intrusion switch

Steps

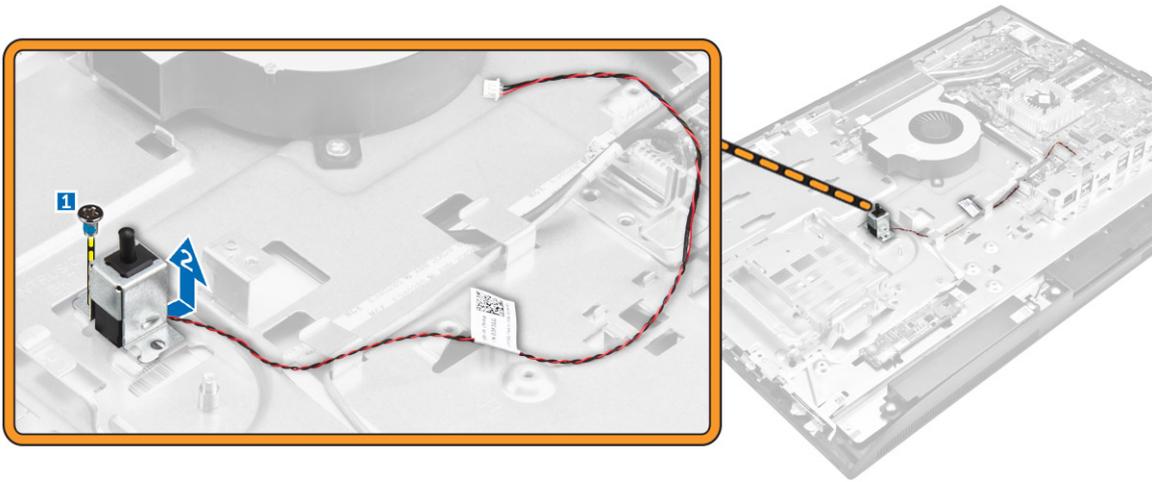
1. Follow the procedure in [Before working inside your computer](#).
2. Remove the:
 - a. [stand](#)
 - b. [back cover](#)
 - c. [cable cover](#)
 - d. [speaker cover](#)
 - e. [system board shield](#)
 - f. [power supply unit](#)
 - g. [VESA mount bracket](#)
3. To remove the intrusion switch:
 - a. Disconnect the intrusion switch cable from the connector on the system board [1].
 - b. Unthread the intrusion switch cable from the retention clips on the computer [2].
 - c. Remove the screw that secures the intrusion switch to the computer [3].
 - d. Slide and lift the intrusion switch away from the computer [4].



4. Perform the following instructions as shown in the illustration:
- a. Disconnect the intrusion-switch cable from the connector on the system board [1].
 - b. Unthread the intrusion-switch cable from the retention clips on the computer [2].



5. Perform the following instructions as shown in the illustration:
 - a. Remove the screw that secures the intrusion switch to the chassis [1].
 - b. Slide and lift the intrusion switch to remove it from the computer [2].



Installing the intrusion switch

Steps

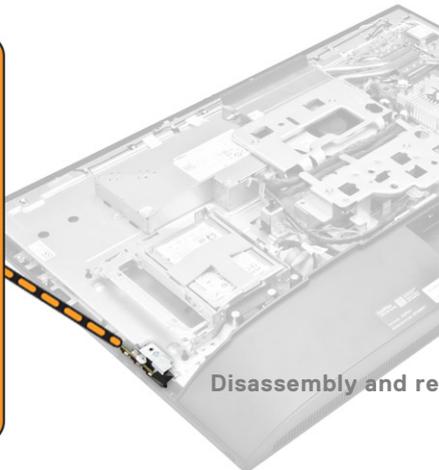
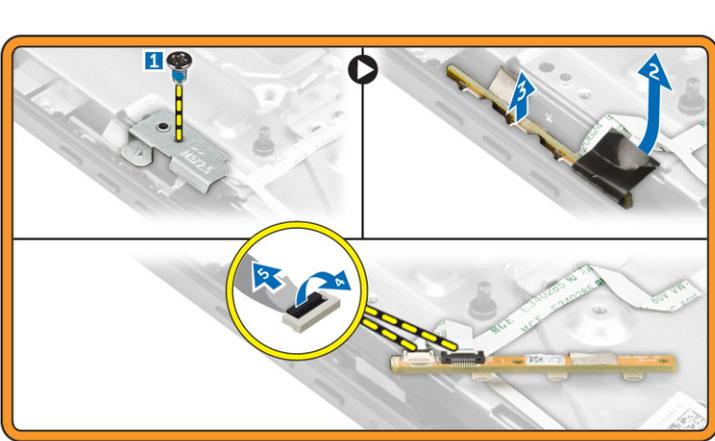
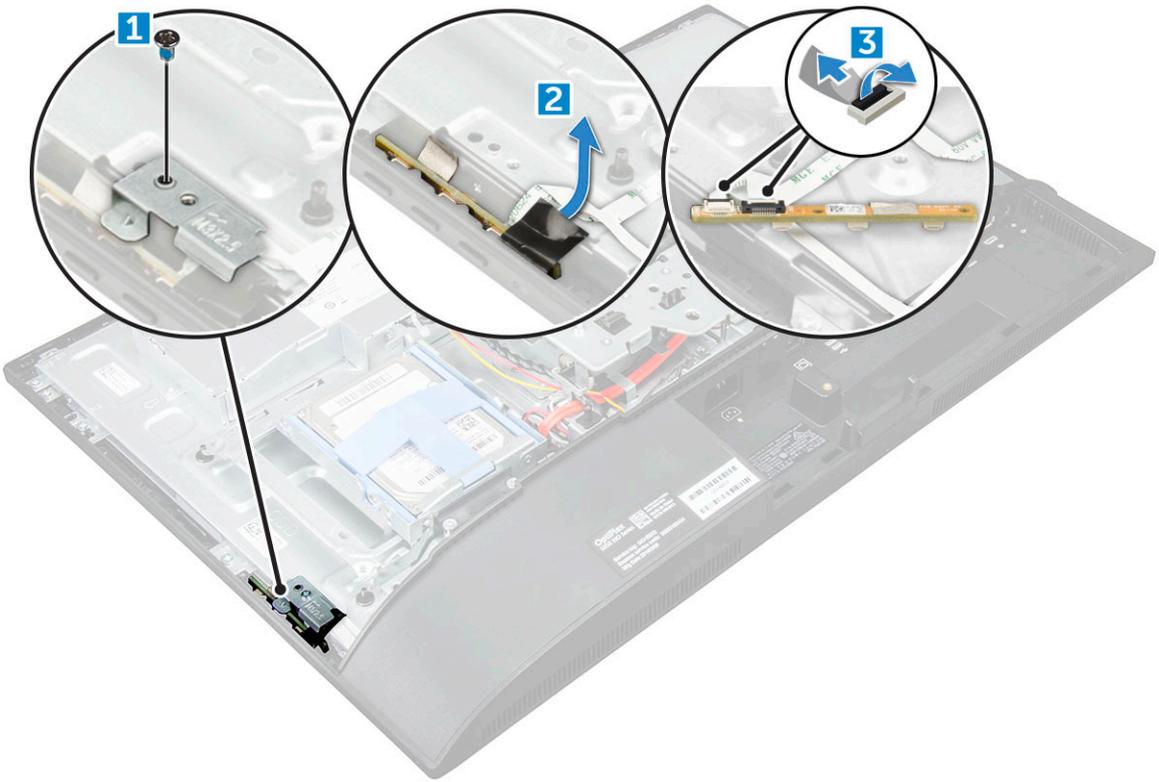
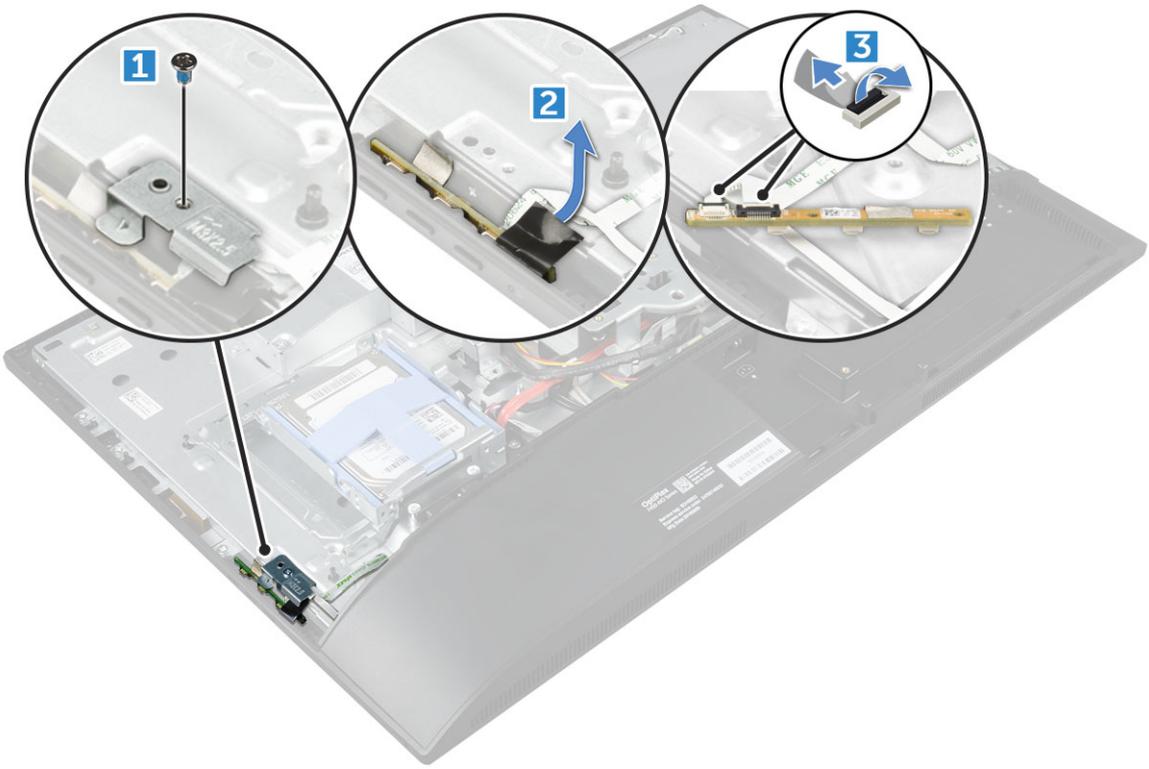
1. Place the intrusion switch in the slot on the computer.
2. Tighten the screw to secure the intrusion switch to the chassis.
3. Route intrusion switch cable along the retention clips on the chassis.
4. Connect the intrusion switch cable to the connector on the system board.
5. Install:
 - a. [VESA mount bracket](#)
 - b. [power supply unit](#)
 - c. [system board shield](#)
 - d. [speaker cover](#)
 - e. [cable cover](#)
 - f. [back cover](#)
 - g. [stand](#)
6. Follow the procedures in [After working inside your computer](#).

OSD button board

Removing the On-Screen Display- OSD buttons board

Steps

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the:
 - a. [stand](#)
 - b. [back cover](#)
 - c. [optical drive](#)
3. To remove the OSD buttons board:
 - a. Remove the screw to remove the metal plate that secures the OSD buttons board to the computer [1].
 - b. Peel off the tape from the OSD buttons board [2].
 - c. Remove the OSD buttons board from the chassis. [3].
 - d. Disconnect the cables from the OSD buttons board to release the board from the computer [4, 5][3].



Installing the OSD buttons board

Steps

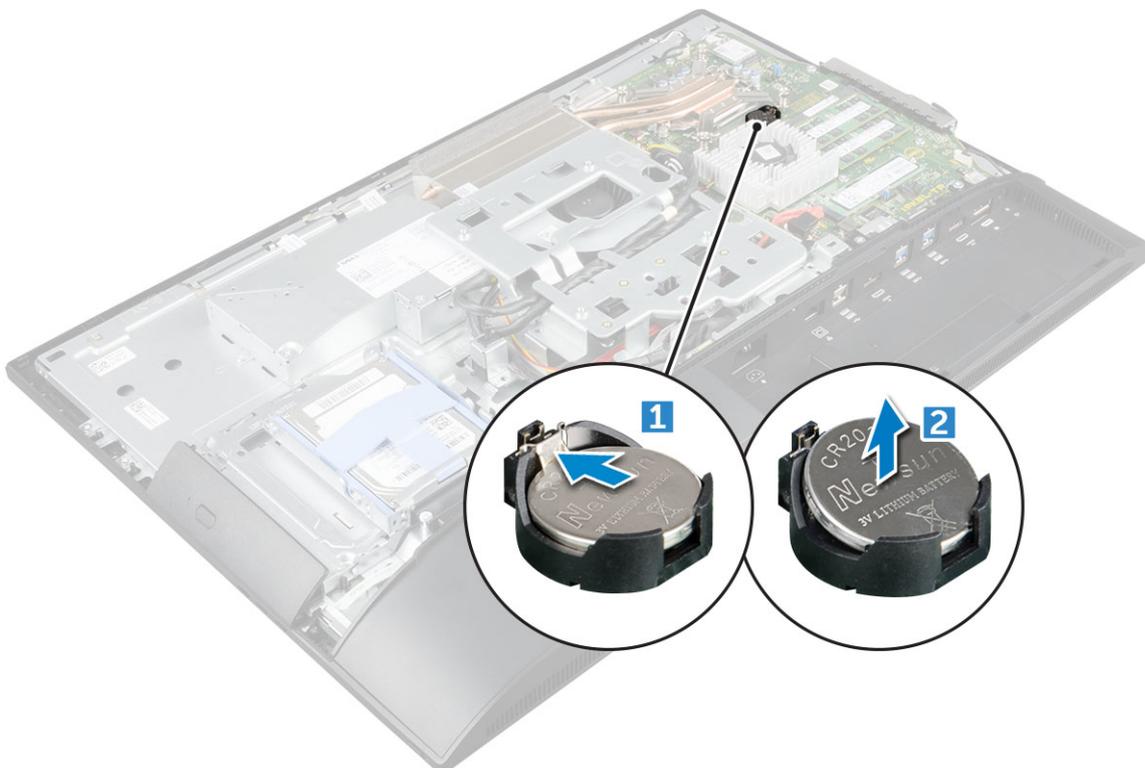
1. Connect the cable to the OSD buttons board.
2. Affix the tape on the OSD buttons board.
3. Insert the OSD buttons board into the slot.
4. Align the metal plate on the OSD buttons board.
5. Tighten the screw to secure the OSD buttons board.
6. Install the:
 - a. [optical drive](#)
 - b. [back cover](#)
 - c. [stand](#)
7. Follow the procedure in [After working inside your computer](#).

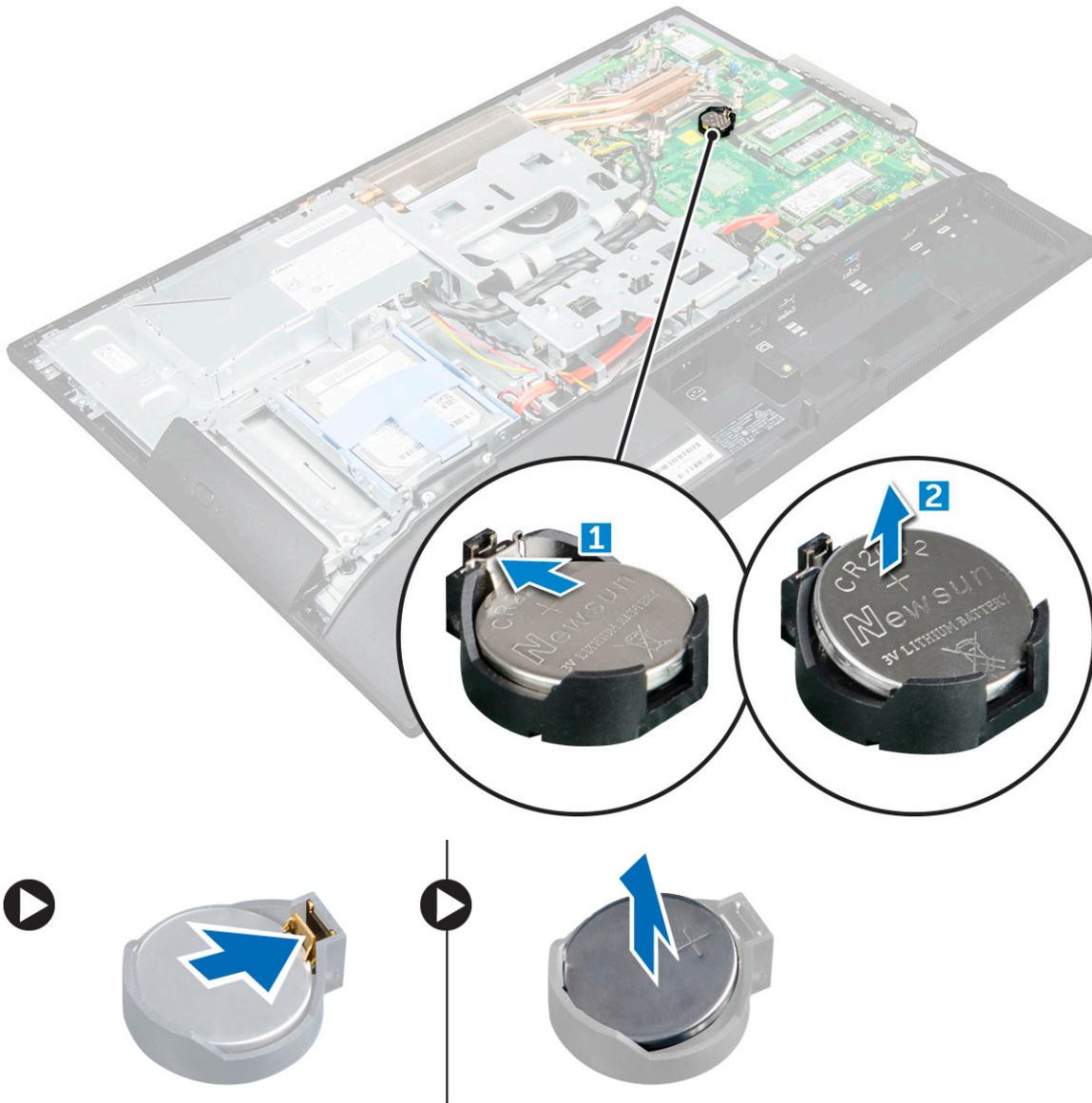
Coin cell battery

Removing the coin cell battery

Steps

1. Follow the procedure in [Before working inside your computer](#).
2. Remove the:
 - a. [stand](#)
 - b. [back cover](#)
 - c. [system board shield](#)
3. Press the latch to release the coin cell battery and remove it from the computer.





Installing the coin cell battery

Steps

1. Insert the coin cell battery into the slot on the system board until it fits securely.
2. Install the:
 - a. [system board shield](#)
 - b. [back cover](#)
 - c. [stand](#)
3. Follow the procedure in [After working inside your computer](#).

Processor

Removing the processor

Steps

1. Follow the procedure in [Before working inside your computer](#).

2. Remove the:
 - a. stand
 - b. back cover
 - c. cable cover
 - d. speaker cover
 - e. speaker
 - f. VESA mount bracket
 - g. system board shield
 - h. SSD card
 - i. WLAN card
 - j. memory
 - k. heat sink
 - l. system fan

3. To remove the processor:

- a. Release the socket lever by pushing the lever down and out from under the tab on the processor shield [1].
- b. Lift the lever upward and lift the processor shield [2].

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

- c. Lift the processor out of the socket [3].

NOTE: After removing the processor, place it in an antistatic container for reuse, return, or temporary storage. Do not touch the bottom of the processor to avoid damage to the processor contacts. Touch only the side edges of the processor.



Installing the processor

Steps

1. Align the processor with the socket keys.

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

2. Align the pin-1 indicator of the processor with the triangle on the socket.
3. Place the processor on the socket such that the slots on the processor align with the socket keys.
4. Close the processor shield by sliding it under the retention screw.
5. Lower the socket lever and push it under the tab to lock it.
6. Install:
 - a. system fan
 - b. heat sink
 - c. memory
 - d. WLAN card
 - e. SSD card
 - f. system board shield
 - g. VESA mount bracket

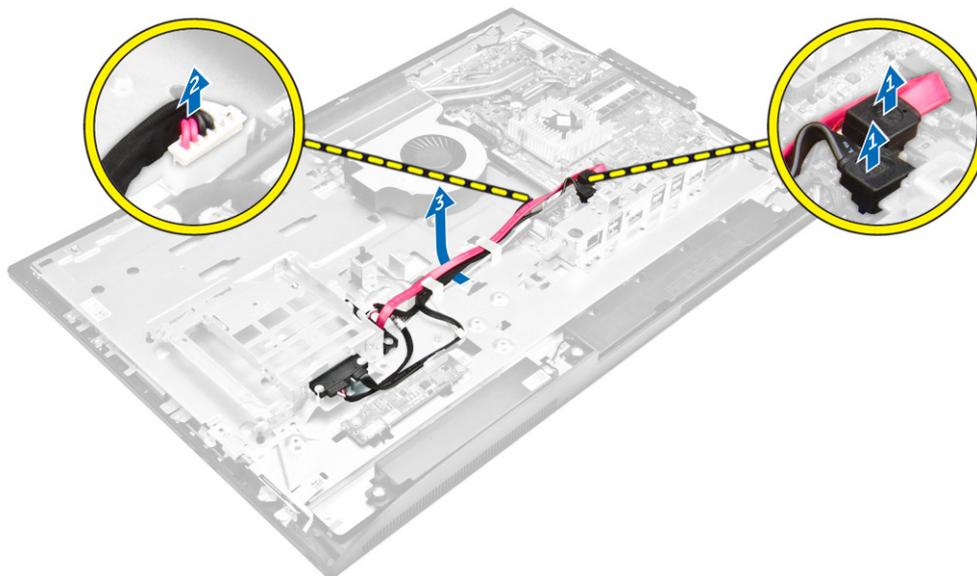
- h. cable cover
 - i. speaker
 - j. speaker cover
 - k. back cover
 - l. stand
7. Follow the procedure in [After working inside your computer](#).

System board

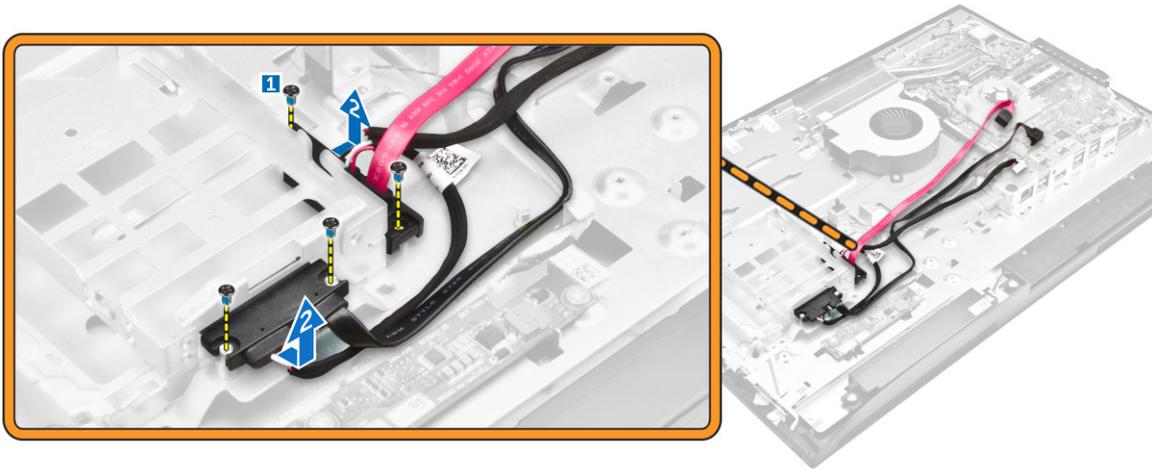
Removing the system board

Steps

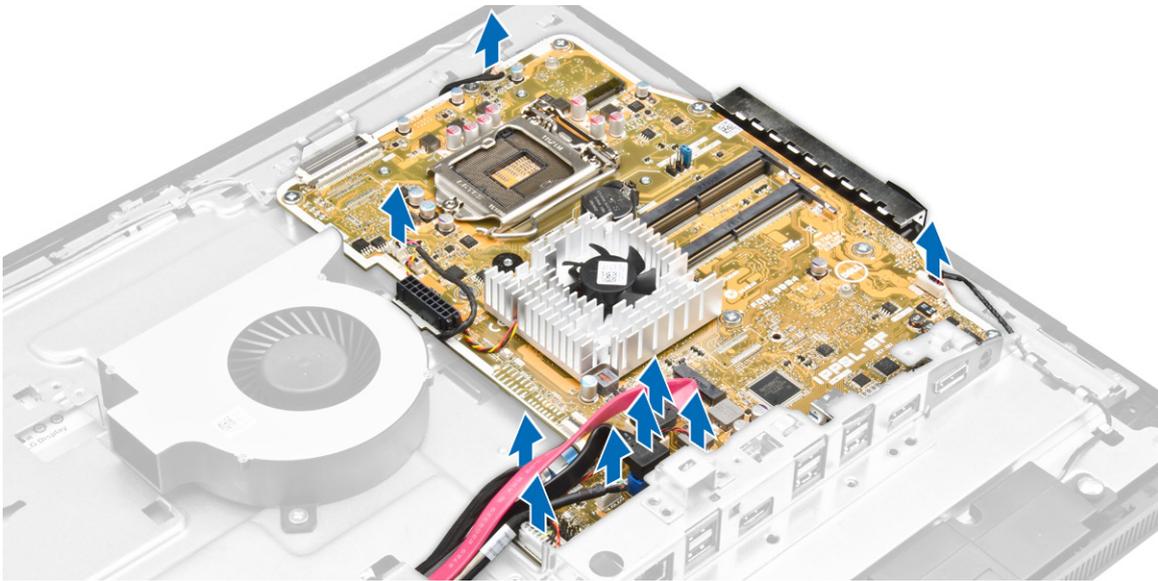
1. Follow the procedure in [Before Working Inside Your Computer](#).
2. Remove the:
 - a. stand
 - b. back cover
 - c. cable cover
 - d. speaker cover
 - e. VESA mount bracket
 - f. system-board shield
 - g. memory
 - h. optical drive
 - i. hard drive
 - j. heatsink
 - k. power-supply unit
 - l. converter board
 - m. processor fan
3. Perform the following steps as shown in the illustration:
 - a. Disconnect the optical-drive cable and hard-drive cable from the connectors on the system board [1].
 - b. Disconnect the touch pad cable from the connector on the system board [2].
 - c. Unthread the cable from the retention clips of the computer [3].



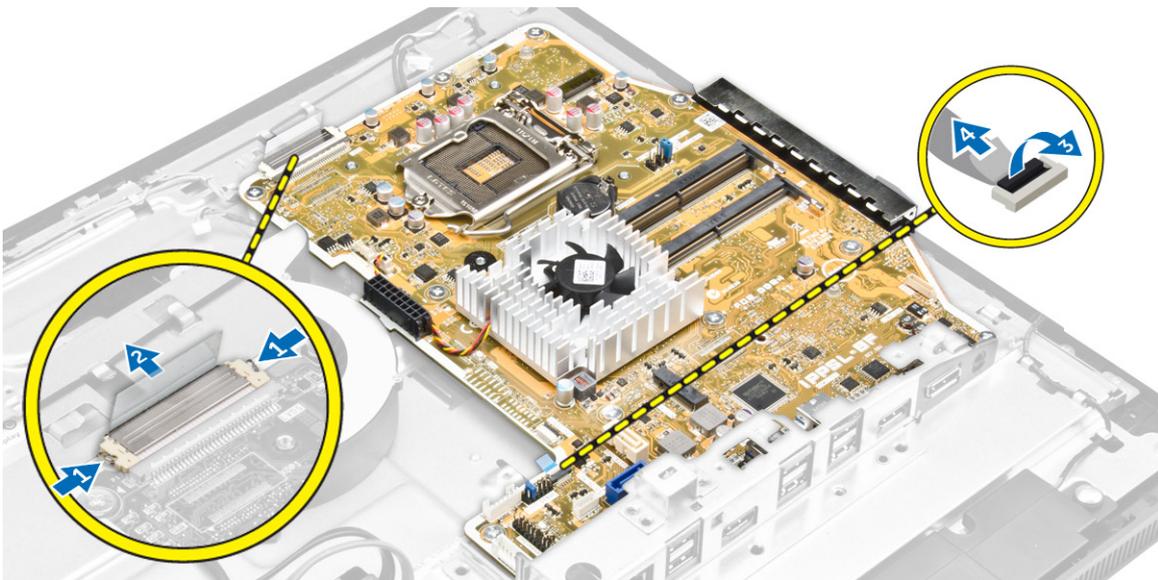
4. Perform the following steps as shown in the illustration:
 - a. Remove the screws that secure the optical-drive cable and hard-drive cable to the system [1].
 - b. Disconnect the optical-drive cable and hard-drive cable [2].



5. Disconnect all the cables that are connected to the system board.

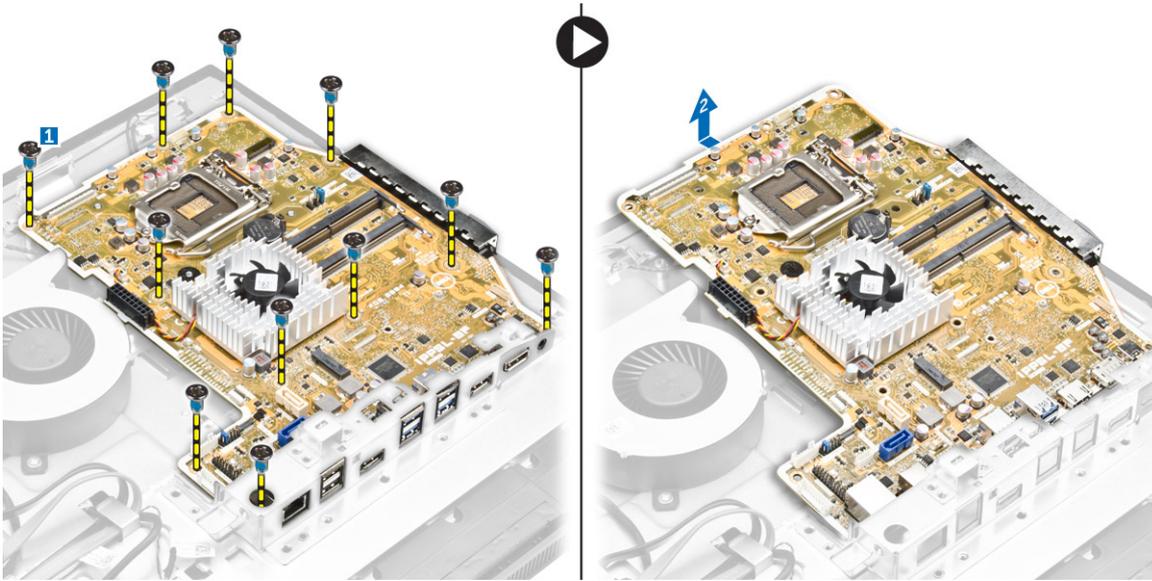


6. Perform the following steps as shown in the illustration:
- a. Press the latches on either side of the connector and pull the LVDS cable to disconnect it from the system board [1,2].
 - b. Lift the latch and disconnect the cable from the connector [3,4].



7. Perform the following steps as shown in the illustration.

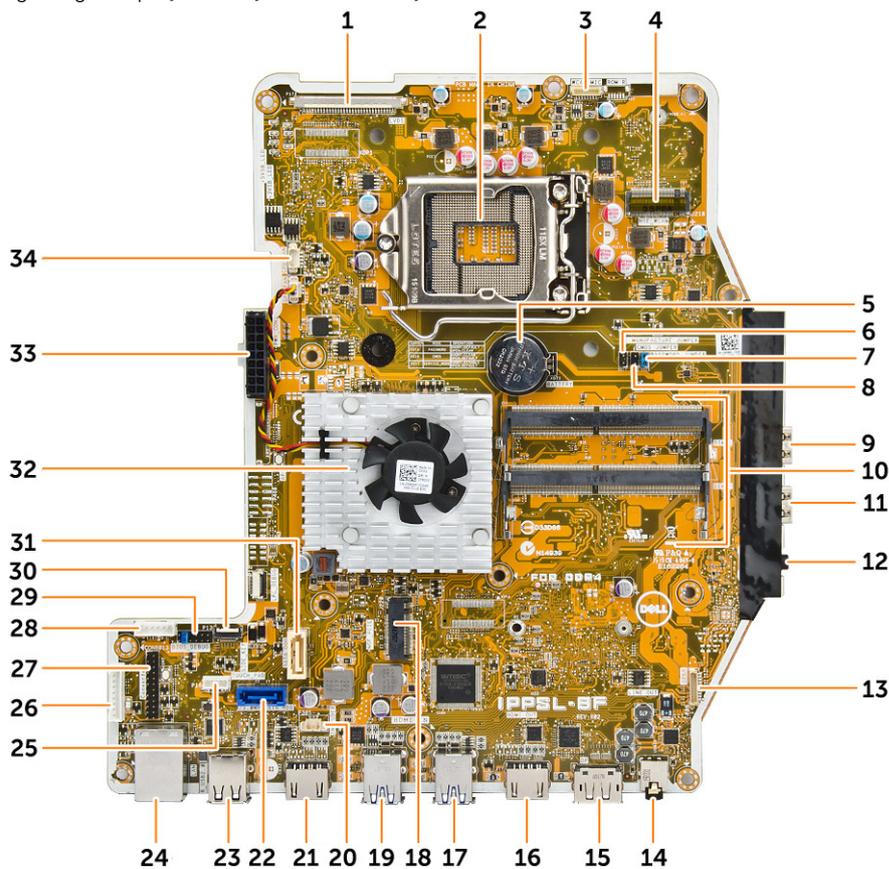
- a. Remove the screws that secure the system board to the chassis [1].
- b. Slide the system board and lift it away from the chassis [2].



System Board Layout

About this task

The following image displays the system board layout of the



computer.

- | | |
|----------------------|---------------------|
| 1. LVDS connector | 2. processor socket |
| 3. camera connector | 4. WLAN connector |
| 5. coin-cell battery | 6. jumper connector |

7. jumper connector
9. USB 3.0 connector
11. USB 3.0 connector
13. speaker connector
15. DisplayPort connector
17. USB 3.0 connector
19. USB 3.0 connector
21. HDMI-in connector
23. USB 2.0 connector
25. touchpad connector
27. Windows serial debug connector
29. SPI-debug connector
31. optical-drive connector
33. power-supply connector

8. jumper connector
10. memory connectors (SODIMM sockets)
12. audio connector
14. audio connector
16. HDMI-out connector
18. M.2 SSD slot
20. intrusion-switch connector
22. hard-drive connector
24. ethernet connector
26. convertor-board connector
28. HDD/ODD power connector
30. Side key board connector
32. heat sink
34. processor-fan connector

Installing the system board

Steps

1. Place the system board on the computer.
2. Connect all the cables to the system board.
3. Tighten the screws to secure the system board to the base panel.
4. Connect the optical-drive cable and hard-drive cable to the system and thread the cables through the retention clips.
5. Install:
 - a. [processor fan](#)
 - b. [converter board](#)
 - c. [power-supply unit](#)
 - d. [heatsink](#)
 - e. [hard drive](#)
 - f. [optical drive](#)
 - g. [memory](#)
 - h. [system-board shield](#)
 - i. [VESA mount bracket](#)
 - j. [cable cover](#)
 - k. [speaker cover](#)
 - l. [back cover](#)
 - m. [stand](#)
6. Follow the procedure in [After Working Inside Your Computer](#).

Display assembly

Removing the display assembly

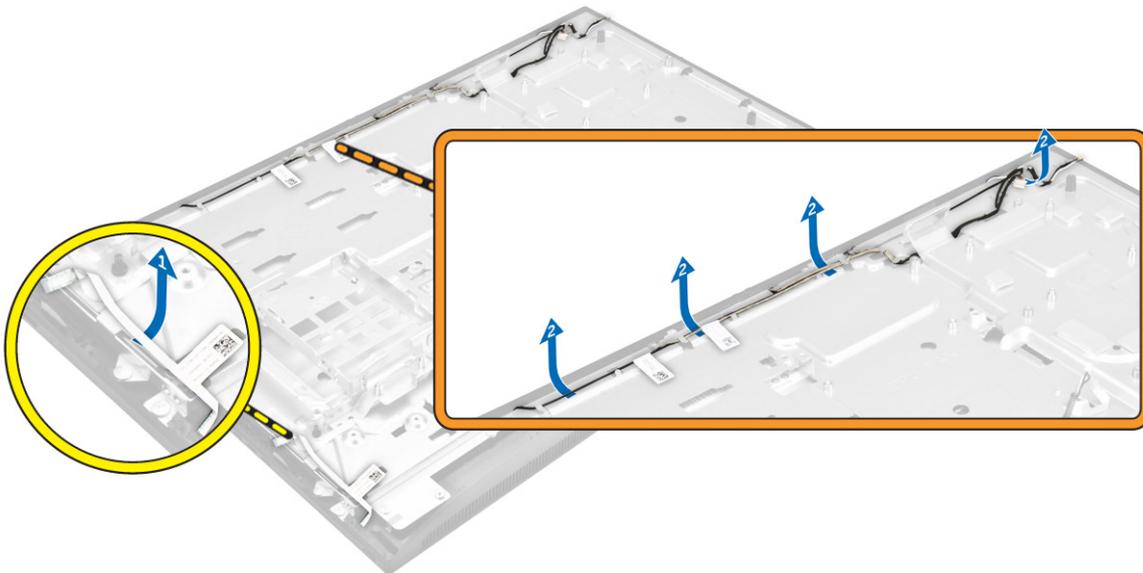
Steps

1. Follow the procedure in [Before Working Inside Your Computer](#).
2. Remove the:
 - a. [stand](#)
 - b. [back cover](#)
 - c. [cable cover](#)
 - d. [speaker cover](#)
 - e. [VESA mount bracket](#)
 - f. [system-board shield](#)

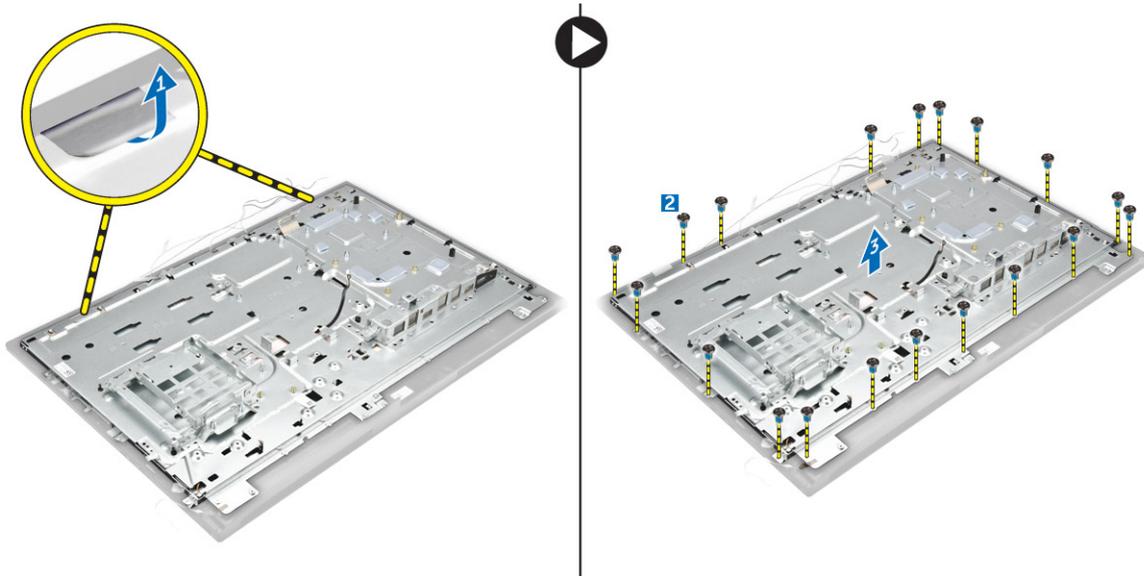
- g. WLAN card
- h. optical drive
- i. hard drive
- j. intrusion switch
- k. OSD buttons board
- l. converter board
- m. power-supply unit
- n. heatsink
- o. processor fan
- p. speakers
- q. system board

i **NOTE:** These instructions are valid only for non-touch computers. For touch computers, the display panel should be disassembled in a clean-room environment.

3. Perform the following steps as shown in the illustration:
 - a. Remove the power-switch cable from the retention clip [1].
 - b. Unthread the camera cable from the retention clips on the display panel [2].

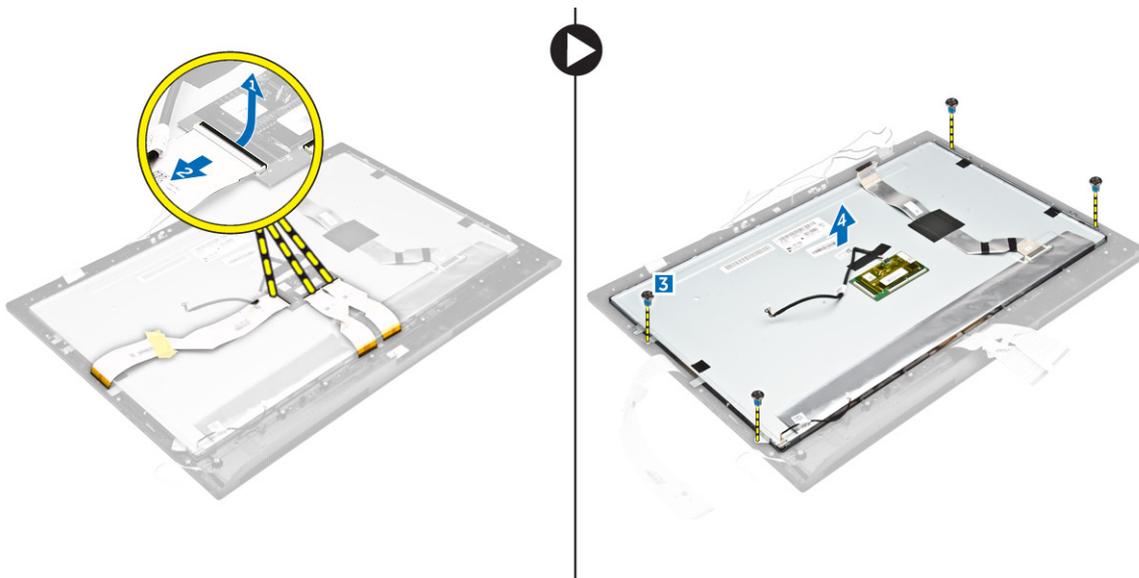


4. Perform the following steps as shown in the illustration:
 - a. Peel off the tape to access the cables [1].
 - b. Remove the screws that secure the base panel to the chassis [2].
 - c. Lift the display-panel base from the display bezel [3].



5. Perform the following steps as shown in the illustration:

- a. Lift the latch and disconnect the cables [1,2].
- b. Remove the screws that secure the display assembly to the chassis [3].
- c. Lift the display assembly away from the computer [4].



Installing the display assembly

Steps

1. Tighten the screws to secure the display bracket to the display panel.
2. Place the display panel on the chassis.
3. Affix the tape on the display panel.
4. Align all the cables through their retention clips on the display panel.
5. Tighten the screws to secure the latches to the computer.
6. Install the:
 - a. [system board](#)
 - b. [speakers](#)
 - c. [processor fan](#)
 - d. [heatsink](#)

- e. power-supply unit
 - f. converter board
 - g. OSD buttons board
 - h. intrusion switch
 - i. hard drive
 - j. optical drive
 - k. WLAN card
 - l. system-board shield
 - m. VESA mount bracket
 - n. speaker cover
 - o. cable cover
 - p. back cover
 - q. stand
7. Follow the procedure in [After Working Inside Your Computer](#).

System setup

System setup enables you to manage your tablet/desktop/notebook hardware and specify BIOS level options. From the System setup, you can:

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

Topics:

- [Boot Sequence](#)
- [Navigation keys](#)
- [System setup options](#)
- [General screen options](#)
- [System configuration screen options](#)
- [Security screen options](#)
- [Secure boot screen options](#)
- [Performance screen options](#)
- [Power management screen options](#)
- [POST behavior screen options](#)
- [Virtualization support screen options](#)
- [Wireless screen options](#)
- [Maintenance screen options](#)
- [Cloud desktop screen options](#)
- [Updating the BIOS](#)
- [System and setup password](#)

Boot Sequence

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

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

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

- Removable Drive (if available)
- STXXXX Drive
 - **i** **NOTE:** XXX denotes the SATA drive number.
- Optical Drive (if available)
- SATA Hard Drive (if available)
- Diagnostics
 - **i** **NOTE:** Choosing **Diagnostics**, will display the **ePSA diagnostics** screen.

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

Navigation keys

NOTE: For most of the System Setup options, changes that you make are recorded but do not take effect until you restart the system.

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

System setup options

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

General screen options

This section lists the primary hardware features of your computer.

Option	Description
System Information	<ul style="list-style-type: none">System Information: Displays BIOS Version, Service Tag, Asset Tag, Ownership Tag, Ownership Date, Manufacture Date, and the Express Service Code.Memory Information: Displays Memory Installed, Memory Available, Memory Speed, Memory Channels Mode, Memory Technology, DIMM A Size, DIMM B Size.PCI information: Displays SLOT 1 and SLOT 2Processor Information: Displays Processor Type, Core Count, Processor ID, Current Clock Speed, Minimum Clock Speed, Maximum Clock Speed, Processor L2 Cache, Processor L3 Cache, HT Capable, and 64-Bit technology.Device Information: Displays SATA-0, SATA-1, LOM MAC Address, Video Controller, dGPU Video Controller, Audio Controller, Wi Fi Device, and Bluetooth Device.
Boot Sequence	<p>Boot Sequence Allows you to specify the order in which the computer attempts to find an operating system. To change the boot order, select the device that you want to change in the list, which is available on the right-hand side. After you select the device, click up or down arrows or use your keyboard Page Up or Page Down keys to change the boot options order. You can also select or de-select from the list using the check-boxes available on the left hand side. You should enable the Legacy Option ROMs to setup the Legacy boot mode. This Legacy boot mode is not allowed when you enable the Secure Boot. The options are:</p> <ul style="list-style-type: none">Boot Sequence - By default, the Windows Boot Manager check box is selected. NOTE: The default option might differ based on the operating system of your computer.Boot List Option - The list options are Legacy and UEFI. By default, the option UEFI is selected. NOTE: The default option might differ based on the operating system of your computer.Add Boot Option - Enables you to add a boot option.

Option	Description
	<ul style="list-style-type: none"> • Delete Boot Option - Enables you to delete an existing boot option. • View - Enables you to view the current boot option in the computer. • Restore Settings - Restores the default settings of the computer. • Save Settings - Saves the settings of the computer. • Apply - Enables you to apply the settings. • Exit - Exits and starts the computer. <p>Boot List Options Allows you to change the boot list option:</p> <ul style="list-style-type: none"> • Legacy • UEFI (enabled by default)
Advanced Boot Options	<p>This option allows you the legacy option ROMs to load. By default, the Enable Legacy Option ROMs is disabled.</p> <ul style="list-style-type: none"> • Restore Settings - Restores the default settings of the computer • Save Settings - Saves the settings of the computer • Apply - Enables you to apply the settings • Exit - Exits and starts the computer
Date/Time	Allows you to change the date and time.

System configuration screen options

Option	Description
Integrated NIC	<p>If you enable UEFI network stack, UEFI network protocols will be available. UEFI network allows pre-os and early os networking features to use NICs that are enabled. This may be used without PXE turned on. When you enable Enabled w/PXE, the type of PXE boot (Legacy PXE or UEFI PXE) depends on the current boot mode and type of option ROMs in use. The UEFI Network Stack is required in order to have UEFI PXE functionality fully enabled.</p> <ul style="list-style-type: none"> • Enabled UEFI Network Stack - This option is disabled by default. <p>Allows you to configure the integrated network controller. The options are:</p> <ul style="list-style-type: none"> • Disabled • Enabled • Enabled w/PXE: This option is enabled by default. • Enabled w/Cloud Desktop <p> NOTE: Depending on the computer and its installed devices, the items listed in this section may or may not appear.</p>
SATA Operation	<p>Allows you to configure the internal SATA hard-drive controller. The options are:</p> <ul style="list-style-type: none"> • Disabled • AHCI • RAID On: This option is enabled by default.
Drives	<p>Allows you to configure the SATA drives on board. All drives are enabled by default. The options are:</p> <ul style="list-style-type: none"> • SATA-0 • SATA-1 • SATA-4 • M.2 PCIe SSD-0
SMART Reporting	<p>This field controls whether hard drive errors for integrated drives are reported during system startup. This technology is part of the SMART (Self Monitoring Analysis and Reporting Technology) specification. This option is disabled by default.</p> <ul style="list-style-type: none"> • Enable SMART Reporting
USB Configuration	<p>This field configures the integrated USB controller. If Boot Support is enabled, the system is allowed to boot any type of USB Mass Storage Devices (HDD, memory key, floppy).</p> <p>If USB port is enabled, device attached to this port is enabled and available for OS.</p>

Option	Description
	<p>If USB port is disabled, the OS cannot see any device attached to this port.</p> <p>The options are:</p> <ul style="list-style-type: none"> • Enable USB Boot Support • Enable Rear USB Ports: Include options for 6 ports • Enable Side USB Ports: Include options for 2 ports <p>All the options are enabled by default.</p> <p> NOTE: USB keyboard and mouse always work in the BIOS setup irrespective of these settings.</p>
Rear USB Configuration	<p>This field allows you to enable or disable rear USB ports.</p> <ul style="list-style-type: none"> • Enable/Disable Rear USB Ports
Side USB Configuration	<p>This field allows you to enable or disable side USB ports.</p> <ul style="list-style-type: none"> • Enable/Disable Side USB Ports
USB PowerShare	<p>This field configures the USB PowerShare feature behavior. This option allows you to charge external devices using the stored system battery power through the USB PowerShare port.</p>
Audio	<p>This field enables or disables the integrated audio controller. By default, the Enable Audio option is selected. The options are:</p> <ul style="list-style-type: none"> • Enable Microphone (by default enable) • Enable Internal Speaker (by default enable)
OSD Button Management	<p>This field allows you to enable or disable the OSD (On-Screen Display) buttons on the All-In-One system.</p> <ul style="list-style-type: none"> • Disable OSD buttons: This option is unchecked by default.
Touchscreen	<p>This option allows you to enable or disable touchscreen.</p>
Miscellaneous Devices	<p>Allows you to enable or disable the following devices:</p> <ul style="list-style-type: none"> • Enable Camera (enabled by default) • Enable Media Card (enabled by default) • Disable Media Card

Security screen options

Option	Description
Admin Password	<p>Allows you to set, change, or delete the administrator (admin) password.</p> <p> NOTE: You must set the admin password before you set the system or hard drive password. Deleting the admin password automatically deletes the system password and the hard drive password.</p> <p> NOTE: Successful password changes take effect immediately.</p> <p>Default setting: Not set</p>
System Password	<p>Allows you to set, change or delete the system password.</p> <p> NOTE: Successful password changes take effect immediately.</p> <p>Default setting: Not set</p>
Internal HDD-0 Password	<p>Allows you to set, change or delete the system's internal hard disk's password.</p> <p>Default setting: Not set</p> <p> NOTE: Successful password changes take effect immediately.</p>
Strong Password	<p>Allows you to enforce the option to always set strong passwords.</p> <p>Default Setting: Enable Strong Password is not selected.</p>

Option	Description
	<p> NOTE: If Strong Password is enabled, Admin and System passwords must contain at least one uppercase character, one lowercase character and be at least 8 characters long.</p>
Password Configuration	Allows you to determine the minimum and maximum length of Administrator and System passwords.
Password Bypass	<p>Allows you to enable or disable the permission to bypass the System and the Internal HDD password, when they are set. The options are:</p> <ul style="list-style-type: none"> • Disabled • Reboot bypass <p>Default setting: Disabled</p>
Password Change	<p>Allows you to enable the disable permission to the System and Hard Drive passwords when the admin password is set.</p> <p>Default setting: Allow Non-Admin Password Changes is selected.</p>
TPM 1.2 Security	<p>Allows you to enable the Trusted Platform Module (TPM) during POST. This option is enabled by default. The options are:</p> <ul style="list-style-type: none"> • Clear • PPI Bypass for Enabled Commands • PPI Bypass for Disabled Commands • Attestation Enable • Key Storage Enable • SHA - 256 <p> NOTE: Activation, deactivation, and clear options are not affected if you load the setup program's default values. Changes to this option take effect immediately.</p>
Computrace (R)	<p>Allows you to activate or disable the optional Computrace software. The options are:</p> <ul style="list-style-type: none"> • Deactivate • Disable • Activate <p> NOTE: The Activate and Disable options will permanently activate or disable the feature and no further changes will be allowed</p> <p>Default setting: Deactivate</p>
Chassis Intrusion	<p>This field controls the chassis intrusion feature. The options are:</p> <ul style="list-style-type: none"> • Disabled • Enabled <p>Default setting: Disabled</p>
CPU XD Support	<p>Allows you to enable or disable the Execute Disable mode of the processor.</p> <p>Enable CPU XD Support (default)</p>
OROM Keyboard Access	<p>Allows you to set an option to enter the Option ROM Configuration screens using hotkeys during boot. The options are:</p> <ul style="list-style-type: none"> • Enabled • One Time Enable • Disabled <p>Default setting: Enable</p>
Admin Setup Lockout	<p>Allows you to enable or disable the option to enter setup when an admin password is set.</p> <ul style="list-style-type: none"> • Enable Admin Setup Lockout - This option is disabled by default.
HDD Protection Support	<p>Allows you to enable or disable the HDD Protection feature.</p> <ul style="list-style-type: none"> • HDD Protection Support - This option is disabled by default.

Secure boot screen options

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

Performance screen options

Option	Description
Multi Core Support	<p>Specifies whether the process will have one or all cores enabled. The performance of some applications will improve with the additional cores.</p> <ul style="list-style-type: none">• All - This option is enabled by default• 1• 2• 3
Intel SpeedStep	<p>Allows you to enable or disable the Intel SpeedStep feature.</p> <ul style="list-style-type: none">• Enable Intel SpeedStep <p>Default setting: The option is enabled.</p>
C-States Control	<p>Allows you to enable or disable the additional processor sleep states.</p> <ul style="list-style-type: none">• C states <p>Default setting: The option is enabled.</p>
Limit CPUID Value	<p>Allows you to limit the maximum value of the Standard CPUID function support. Some operation systems will not complete installation when maximum CPUID Function supported is greater than 3.</p> <ul style="list-style-type: none">• Enable CPUID Limit - This option is disabled by default.
Intel TurboBoost	<p>Allows you to enable or disable the Intel TurboBoost mode of the processor.</p> <ul style="list-style-type: none">• Enable Intel TurboBoost <p>Default setting: The option is enabled.</p>

Power management screen options

Option	Description
AC Recovery	<p>Specifies how the computer will respond when AC power is applied after an AC power loss. You can set the AC Recovery to:</p> <ul style="list-style-type: none">• Power Off (default)• Power On• Last Power State
Auto On Time	<p>Allows you to set the time at which the computer must turn on automatically. The options are:</p> <ul style="list-style-type: none">• Disabled• Every Day• Weekdays• Select Days <p>Default setting: Disabled</p> <p>NOTE: This feature does not work if you turn off your computer using the switch on a power strip or surge protector or if Auto Power is set to disabled.</p>
Deep Sleep Control	<p>Allows you to define the controls when Deep Sleep is enabled.</p> <ul style="list-style-type: none">• Disabled• Enabled in S5 only• Enabled in S4 and S5 – This option is enabled by default.
Fan Control Override	<p>Controls the speed of the system fan. This option is disabled by default.</p> <p>NOTE: When enabled, the fan runs at full speed.</p>
USB Wake Support	<p>Allows you to enable USB devices to wake the system from Standby.</p> <p>NOTE: This feature is only functional when the AC power adapter is connected. If the AC power adapter is removed during Standby, the system setup removes power from all the USB ports to conserve battery power.</p> <ul style="list-style-type: none">• Enable USB Wake Support <p>Default setting: The option is disabled.</p>
Wake on LAN/WLAN	<p>Allows you to enable or disable the feature that powers on the computer from the Off state when triggered by a LAN signal.</p> <ul style="list-style-type: none">• Disabled• LAN Only• WLAN Only• LAN or WLAN <p>Default setting: Disabled</p>
Block Sleep	<p>This option lets you block entering to sleep (S3 state) in operating system environment.</p> <p>Block Sleep (S3 state)</p> <p>Default setting: This option is disabled</p>
Intel Ready Mode	<p>This option enables the capability of Intel Ready Mode technology.</p>

POST behavior screen options

Option	Description
Numlock LED	<p>Specifies if the NumLock function can be enabled when the system boots. This option is enabled by default.</p>
Keyboard Errors	<p>Specifies whether keyboard related errors are reported when it boots. This option is enabled by default.</p>

Option	Description
MEBx Hotkey	Allows you to specify whether the MEBx Hotkey function should be enabled during the system boot. Default Setting: Enable MEBx Hotkey
Fastboot	Allows you to speed up the boot process by bypassing some of the compatibility steps. The options are: <ul style="list-style-type: none"> • Minimal • Through (default) • Auto

Virtualization support screen options

Option	Description
Virtualization	Allows you to enable or disable the Intel Virtualization Technology. Enable Intel Virtualization Technology (default).
VT for Direct I/O	Enables or disables the Virtual Machine Monitor (VMM) from utilizing the additional hardware capabilities provided by Intel® Virtualization technology for direct I/O. Enable VT for Direct I/O - enabled by default.
Trusted Execution	This option specifies whether a Measured Virtual Machine Monitor (MVMM) can utilize the additional hardware capabilities provided by Intel Trusted Execution Technology. The TPM Virtualization Technology, and Virtualization technology for direct I/O must be enabled to use this feature. Trusted Execution - disabled by default.

Wireless screen options

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

Maintenance screen options

Option	Description
Service Tag	Displays the Service Tag of your computer.
Asset Tag	Allows you to create a system asset tag if an asset tag is not already set. This option is not set by default.
SERR Messages	Controls the SERR message mechanism. This option is enabled by default. Some graphics cards require that the SERR message mechanism be disabled.
BIOS Downgrade	This controls flashing of the system firmware to previous revisions. <ul style="list-style-type: none"> • Data Wipe • Wipe on Next boot • BIOS recovery • BIOS recovery from the hard drive Follow the procedure to recover BIOS from hard drive. <ol style="list-style-type: none"> 1. Power on the system. 2. While the blue Dell logo is visible, press the F2 key to enter the System Setup.

Option	Description
	<ol style="list-style-type: none"> 3. Press the Num Lock key, and verify that the Num Lock light is on. 4. Press the Caps Lock key, and verify that the Caps Lock light is on. 5. Press the Scroll Lock key, and verify that the Scroll Lock light is on. 6. Press the Alt + F keys at the same time. The system will beep as the setup defaults are restored. 7. Press the Alt + F keys at the same time to restart the system. The changes are automatically saved.

Cloud desktop screen options

Option	Description
Server Lookup Method	<p>This option specifies how the Cloud Desktop software will lookup the server address. The options are:</p> <ul style="list-style-type: none"> • Static IP - Uses the static IP address • DNS - Obtains several IP addresses using the Domain Name System (DNS) protocol. This option is selected by default <p> NOTE: This option is relevant only when the Integrated NIC control in the System Configuration group is set to Enable with Cloud Desktop.</p>
Server Name	<p>This option specifies the server name of the server.</p> <p> NOTE: This option is relevant only when the Integrated NIC control in the System Configuration group is set to Enable with Cloud Desktop, and when the server look up method is set to DNS.</p>
Server IP Address	<p>This option specifies the primary static IP address of the Cloud Desktop Server with which the client software communicates. The default Server IP Address is 255.255.255.255</p> <p> NOTE: This option is relevant only when the Integrated NIC control in the System Configuration group is set to Enable with Cloud Desktop.</p>
Server Port	<p>This option specifies the primary IP port of the Cloud Desktop with which the client software communicates. The default Server Port value is 06910.</p> <p> NOTE: This option is relevant only when the Integrated NIC control in the System Configuration group is set to Enable with Cloud Desktop.</p>
Client Address Method	<p>This option specifies how the client obtains its IP address. The options are:</p> <ul style="list-style-type: none"> • Static IP - Uses the static IP address • DHCP - Obtains IP address using Dynamic Host Configuration Protocol(DHCP). This option is selected by default. <p> NOTE: This option is relevant only when the Integrated NIC control in the System Configuration group is set to Enable with Cloud Desktop.</p>
Client IP Address	<p>This option specifies the static IP address of the client. The default IP Address is 255.255.255.255</p> <p> NOTE: This option is relevant only when the Integrated NIC control in the System Configuration group is set to Enable with Cloud Desktop.</p>
Client Subnet Mask	<p>This option specifies the subnet mask IP address of the client. The default IP Address is 255.255.255.255</p> <p> NOTE: This option is relevant only when the Integrated NIC control in the System Configuration group is set to Enable with Cloud Desktop.</p>
Client Gateway	<p>This option specifies the gateway IP address of the client. The default IP Address is 255.255.255.255</p> <p> NOTE: This option is relevant only when the Integrated NIC control in the System Configuration group is set to Enable with Cloud Desktop.</p>
DNS IP address	<p>This option specifies the DNS IP address of the client. The default IP Address is 255.255.255.255</p> <p> NOTE: This option is relevant only when the Integrated NIC control in the System Configuration group is set to Enable with Cloud Desktop.</p>
Domain Name	<p>This option specifies the domain name of the client.</p>

Option	Description
	 NOTE: This option is relevant only when the Integrated NIC control in the System Configuration group is set to Enable with Cloud Desktop, and when the client address method is set to static IP.
Advanced	This option turns on the Verbose Mode for advanced debugging. By default, this option is disabled.  NOTE: This option is relevant only when the Integrated NIC control in the System Configuration group is set to Enable with Cloud Desktop.

Updating the BIOS

Prerequisites

It is recommended to update your BIOS (system setup), on replacing the system board or if an update is available.

Steps

1. Re-start the computer.
2. Go to **dell.com/support**.
3. Enter the **Service Tag** or **Express Service Code** and click **Submit**.
 - a. To locate the Service Tag, click **Where is my Service Tag?**
 - b. If you cannot find your Service Tag, click **Detect My Product**. Proceed with the instructions on screen.
4. If you are unable to locate or find the Service Tag, click the **Choose from all products**.
5. Choose the **Products** from the list.

 **NOTE:** Choose the appropriate category to reach the product page.
6. Select your computer model and the **Product Support** page of your computer appears.
7. Click **Get drivers** and click **Drivers and Downloads**.
The Drivers and Downloads page opens.
8. On the Drivers and Downloads screen, click **Find it myself**
9. Click **BIOS** to view the BIOS versions.
10. Identify the latest BIOS file and click **Download** .
You can also analyze which drivers need an update. To do this for your product, click **Analyze System for Updates** and follow the instructions on the screen.
11. Select your preferred download method in the **Please select your download method below** window; click **Download File**.
The **File Download** window appears.
12. Click **Save** to save the file on your computer.
13. Click **Run** to install the updated BIOS settings on your computer.

 **NOTE:** Follow the instructions on the screen.

System and setup password

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

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

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

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

 **NOTE:** System and setup password feature is disabled.

Assigning a system password and setup password

Prerequisites

You can assign a new **System Password** only when the status is in **Not Set**.

About this task

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

Steps

1. In the **System BIOS** or **System Setup** screen, select **Security** and press Enter.
The **Security** screen is displayed.
2. Select **System Password** and create a password in the **Enter the new password** field.
Use the following guidelines to assign the system password:
 - A password can have up to 32 characters.
 - The password can contain the numbers 0 through 9.
 - Only lower case letters are valid, upper case letters are not allowed.
 - Only the following special characters are allowed: space, ("), (+), (.), (-), (/), (:), ([), (\), (]), (`).
3. Type the system password that you entered earlier in the **Confirm new password** field and click **OK**.
4. Press Esc and a message prompts you to save the changes.
5. Press Y to save the changes.
The computer reboots.

Deleting or changing an existing system and-or setup password

Prerequisites

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

About this task

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

Steps

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

Technical specifications

NOTE: Offerings may vary by region. For more information regarding the configuration of your computer in:

- Windows 10, click or tap **Start**  > **Settings** > **System** > **About**.
- Windows 8.1 and Windows 8, from the charms sidebar, click or tap **Settings** > **Change PC settings**. In the **PC Settings** window, select **PC and devices** > **PC Info**.
- Windows 7, click **Start** , right-click **My Computer**, and then select **Properties**.

Topics:

- [System specifications](#)
- [Memory specifications](#)
- [Video specifications](#)
- [Audio specifications](#)
- [Communication specifications](#)
- [Cards specifications](#)
- [Display specifications](#)
- [Drives specifications](#)
- [Port and connector specifications](#)
- [Power specifications](#)
- [Camera specifications - optional](#)
- [Stand specifications](#)
- [Physical specifications](#)
- [Environmental specifications](#)

System specifications

Feature	Specification
Processor cache	Intel Core i3/ i5 / i7 series
Total cache	Up to 8 MB cache depending on processor type
Chipset	Intel Q270 chipset

Memory specifications

Feature	Specification
Memory type	up to 2400 MHz, unbuffered non-ECC, dual-channel DDR4 2133 configuration (2133 MHz on Intel 6th generation processors)
Memory capacity	4 GB, 8 GB
Memory connectors	two internally-accessible DDR4 SODIMM sockets
Minimum memory	4 GB

Feature	Specification
Maximum memory	16 GB

Video specifications

Feature	Specification
Video Controller	<ul style="list-style-type: none"> Integrated Intel HD 630/610/530/510 Graphics Optional AMD Radeon M465, 2GB
Video Memory	shared memory
External display support	DisplayPort, HDMI in and HDMI out (Optional only on FHD model configuration 7450 AIO)

Audio specifications

Feature	Specification
Controller	Intel High Definition Audio with Waves MaxxVoice Pro
Speaker	single 4-ohms speakers in both the left and right speaker assembly (4 W average per channel)
Internal speaker amplifier	up to 7.6 W at 4-ohm per channel
Internal microphone support	dual digital microphone
Volume controls	Program menus, and keyboard media-control keys  WARNING: Excessive sound pressure from earphones or headphones can cause hearing damage or loss. Adjustment of the volume control as well as the equalizer to settings other than the center position may increase the earphones or headphones output voltage, and therefore the sound pressure level. The use of factors influencing the earphones or headphones output other than those specified by the manufacturer (e.g. operating system, equalizer software, firmware, driver, etc.) may increase the earphones or headphones output voltage and therefore the sound pressure level. The use of earphones or headphones other than those specified by the manufacturer may lead to heightened sound pressure level.

Communication specifications

Features	Specification
Network adapter	Intel 10/100/1000 Mbps RJ-45 Ethernet
Wireless	Combo M.2 card (Intel Wireless 8265 M.2 PCIe WLAN card (802.11n/ac) with Bluetooth)

Cards specifications

Feature	Specification
M.2 slots	<ul style="list-style-type: none">• One SSD, 256GB, Encrypted-SED opal 2, SATAA3, M.2, 22mm/80mm/2.38mm, 512MB, Multi Level Cell, Hynix• SSD, 256GB, SATA3, M.2, 22mm/80mm/2.38mm, LiteOn

Display specifications

Feature	Specification
Type	23.8 inch, FHD and UHD (4K)
Maximum resolution	3840 x 2160
Refresh rate	60 Hz
Brightness	Brightness up/down buttons
Operating angle	178 horizontal/ 178 vertical
Pixel pitch	0.2475 mm
Controls	on-screen controls

Drives specifications

Feature	Specification
Hard drive	one 2.5-inch SATA drive with an adapter bracket , one 2.5-inch SATA drive (optional) and SSD M.2 (optional)
Optical drive (optional)	one DVD-ROM SATA drive or DVD+/- RW SATA drive

Port and connector specifications

Feature	Specification
Audio	<ul style="list-style-type: none">• one line-out connector at rear• one global headset port at side
Network adapter	One RJ-45 connector
USB 2.0 (Rear)	0(side)/2
USB 3.0 (Rear)	2(side)/4
USB port with PowerShare support	1(side) USB 3.0 Type C connector
Video	one display port
HDMI	<ul style="list-style-type: none">• one 19-pin output port• one 19-pin input port
Media card reader	one 4-in-1 slot

Power specifications

Feature	Specification
155 Watt PSU for UMA	
200 Watt dGPU and UHD(4K)	
Frequency	47 Hz — 63 Hz
Voltage	90 VAC — 264 VAC
Input current	<ul style="list-style-type: none">• Maximum 2.6 A (Low AC range)• Maximum 1.3 A (High AC range)

Camera specifications - optional

Feature	Specification
Image resolution	2.0 megapixel
Video resolution	FHD (1080p)
Diagonal viewing angle	74 degrees

Stand specifications

Feature	Specification
Tilt	– 5 degrees to 30 degrees
Stand Dimensions (Width x Depth) and Weight	<ul style="list-style-type: none">• 8.86 x 8.46 / 22.50 x 21.55 (inches / centimeters)• 2.25 / 4.96 (Kilograms / pounds)

Physical specifications

Feature	Specification
Width	575.24 mm (22.65 inches)
Height	392.90 mm (15.47 inches)
Depth:	
Non-touch	63.5 mm (2.5 inches)
Touch	62.79 mm (2.47 inches)
Weight:	
Non-touch	9.76 kg with stand (21.52 lb)
Touch	11.00 kg with stand (24.25 lb)

 **NOTE:** The weight of your computer may vary depending on the configuration ordered and the manufacturing variability.

Environmental specifications

Temperature Specifications

Operating	0°C to 35°C (32°F to 95°F)
Storage	-40°C to 65°C (-40°F to 149°F)

Relative humidity (maximum) Specifications

Operating	20 % to 80 % (non condensing)
Storage	20 % to 80 % (non condensing)

Maximum vibration Specifications

Operating	0.26 GRMS at 5 to 350 Hz
Storage	1.37 GRMS at 5 to 200 Hz

Maximum shock Specifications

Operating	40 G
Storage	105 G

Altitude (maximum) Specifications

Operating	0 m to 5000 m (0 ft to 16,404 ft)
Non-operating	0 m to 5000 m (0 ft to 16,404 ft)

Airborne contaminant level	G2 or lower as defined by ANSI/ISA-S71.04-1985
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Contacting Dell

Prerequisites

 **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.

About this task

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

Steps

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