Inspiron Micro Desktop

3000 Series

Service Manual

Computer Model: Inspiron 3050
Regulatory Model: D12U
Regulatory Type: D12U001

Notes, cautions, and warnings

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

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

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

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Before working inside your computer

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

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

Before you begin

1. Save and close all open files and exit all open applications.
2. Shut down your computer.
   - Windows 8.1: On the **Start** screen, click or tap the power icon → **Shut down**.
   - Windows 7: Click or tap **Start** → **Shut down**.

   NOTE: If you are using a different operating system, see the documentation of your operating system for shut-down instructions.
3. Disconnect your computer and all attached devices from their electrical outlets.
4. Disconnect all cables such as telephone cables, network cables and so on, from your computer.
5. Disconnect all attached devices and peripherals, such as keyboard, mouse, monitor, and so on, from your computer.
6. Remove any media card and optical disc from your computer, if applicable.
7. After the computer is unplugged, press and hold the power button for 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 more safety best practices, see the Regulatory Compliance home page 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: You should only perform troubleshooting and repairs as authorized or directed by the Dell technical assistance team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. See the safety instructions that shipped with the product or at dell.com/regulatory_compliance.

CAUTION: Before touching anything inside your computer, ground yourself by touching an unpainted metal surface. 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 ports and connectors 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.

CAUTION: Press and eject any installed card from the media-card reader.

Recommended tools

The procedures in this document may require the following tools:

- Philips screwdriver
- Plastic scribe

After working inside your computer

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

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

Technical overview

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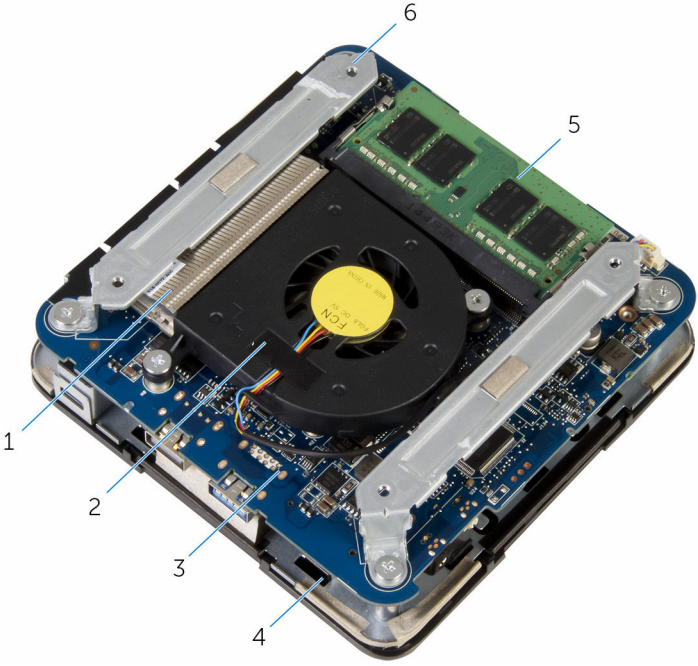
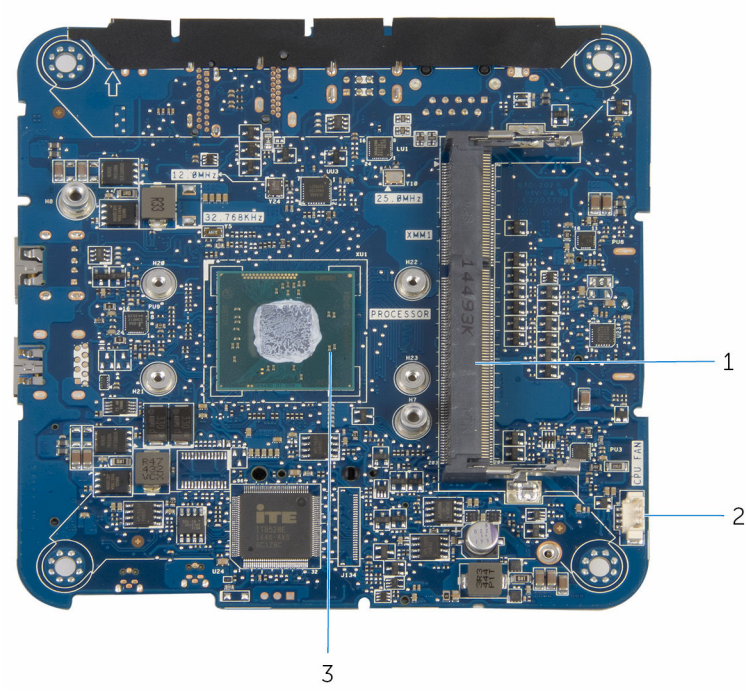
Inside view of your computer



1	processor heat-sink	2	processor fan
3	system board	4	top-cover assembly

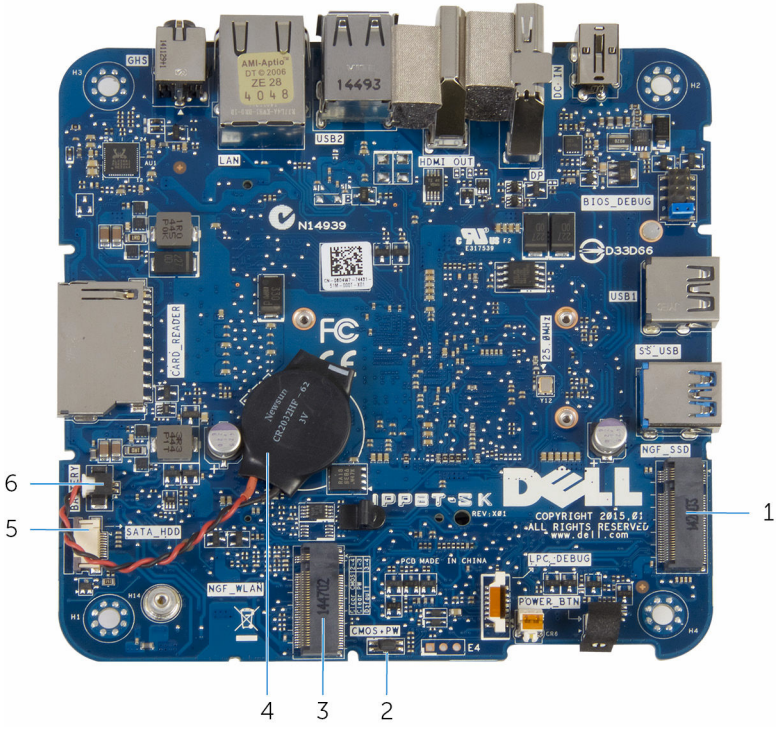
5	memory module	6	brackets (2)

System-board components (top view)



1	memory-module slot	2	processor-fan cable connector (CPU FAN)
3	processor		

System-board components (bottom view)



1	solid-state drive slot (NGF_SSD)	2	CMOS and password reset jumper (CMOS+PW)
3	wireless-card slot (NGF_WLAN)	4	coin-cell battery
5	hard-drive cable connector (SATA_HDD)	6	coin-cell battery cable connector (BATTERY)

Removing the base cover

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Procedure

CAUTION: Place the computer on a soft and clean surface to avoid scratching the top cover.

1 Turn the computer over.

2 Remove the screws that secure the base cover to the top-cover assembly.

1 screws (4) 2 base cover

3 Hold the base cover and gently loosen it to release the tabs that secure the base cover to the top-cover assembly.

4 Lift the base cover off the top-cover assembly.

1	base cover	2	top-cover assembly
3	tabs (4)		

Replacing the base cover

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Procedure

1. Align the tabs on the top-cover assembly with the slots on the base cover and snap the top-cover assembly in place.
2. Replace the screws that secure the base cover to the top-cover assembly.
3. Turn the computer over.

Removing the memory module

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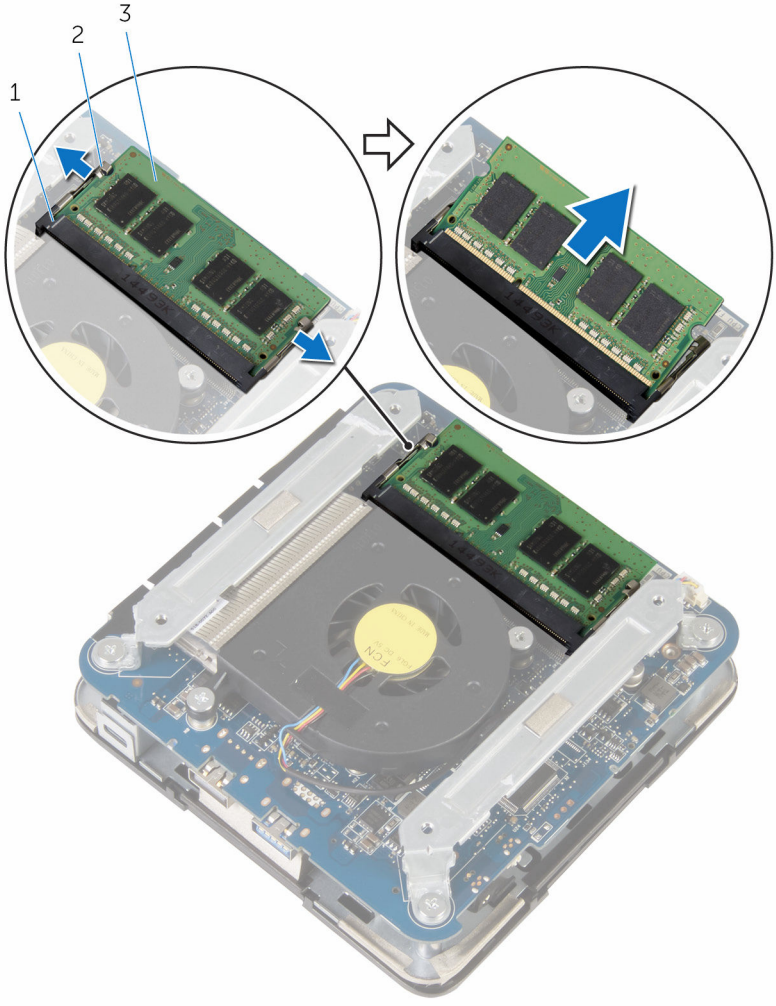
Prerequisites

Remove the base cover.

Procedure

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

2 Slide and remove the memory module from the memory-module slot.



1 memory-module slot
2 securing clips (2)
3 memory module

Replacing the memory module

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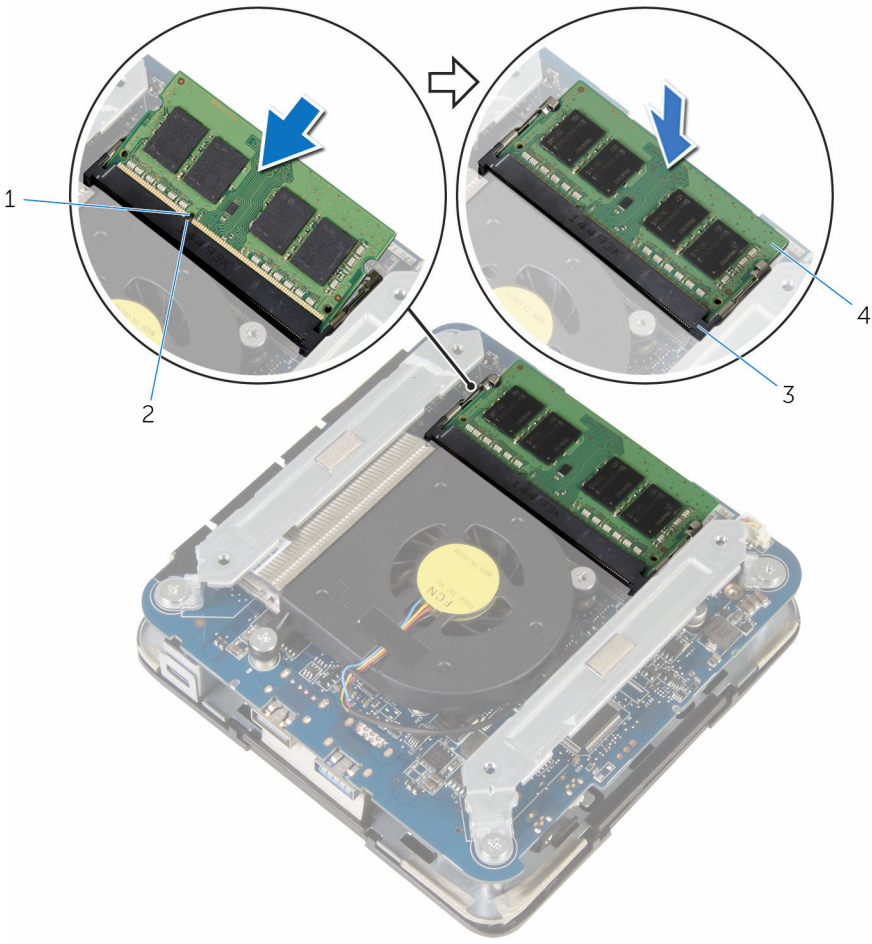
Procedure

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

2 Slide the memory module firmly into the slot at an angle and gently press the memory module down until it clicks into place.

NOTE: If you do not hear the click, remove the memory module and reinstall it.



1	notch	2	tab
3	memory-module slot	4	memory module

Post-requisites

Replace the base cover.

Removing the processor fan

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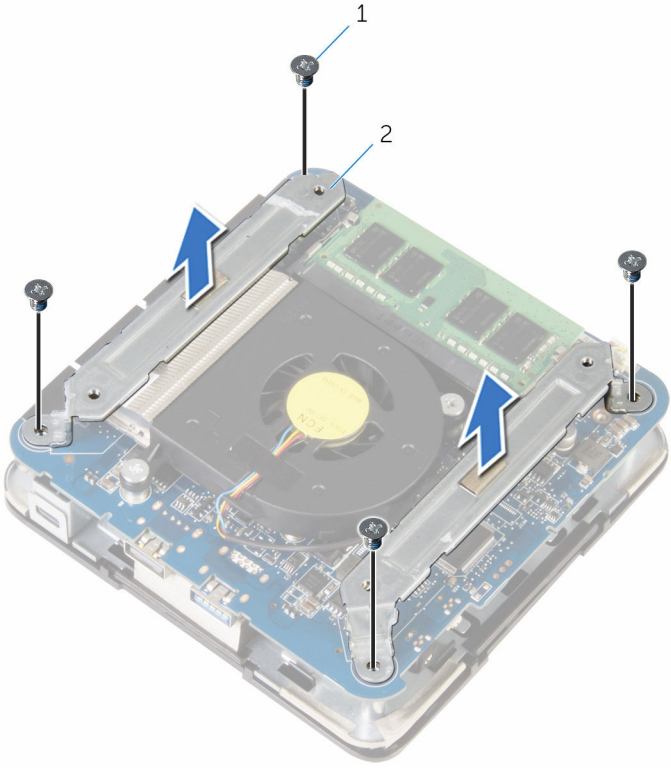
Prerequisites

Remove the base cover.

Procedure

1 Remove the screws that secure the brackets to the system board.

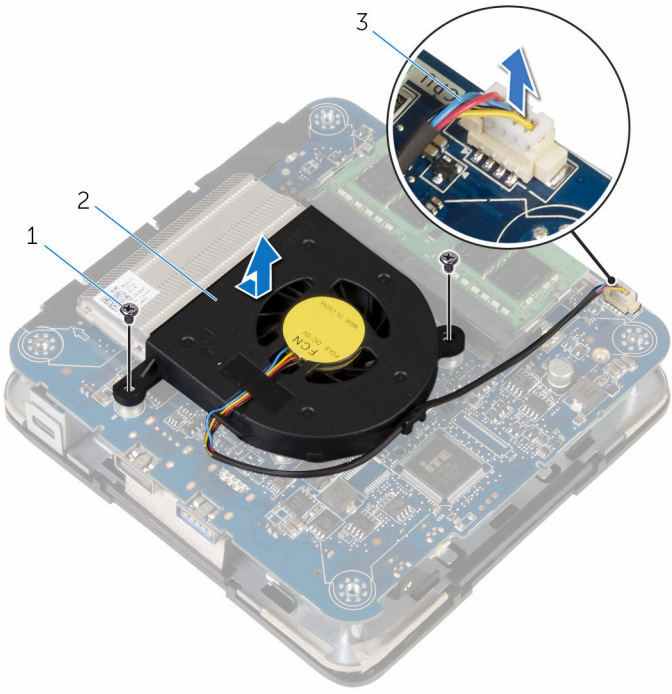
2 Lift the brackets off the system board.



1 screws (4) 2 brackets (2)

3 Remove the screws that secure the processor fan to the system board.

4 Disconnect the processor-fan cable from the system board and lift the processor fan off the system board.



1 screws (2)
2 processor fan
3 processor fan-cable

Replacing the processor fan

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Procedure

1. Connect the processor-fan cable to the system board.
2. Align the screw holes on the processor fan with the screw holes on the system board.
3. Replace the screws that secure the processor fan to the system board.
4. Align the screw holes on the brackets with the screw holes on the system board.
5. Replace the screws that secure the brackets to the system board.

Post-requisites

Replace the base cover.

Removing the processor heat-sink

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CAUTION: For maximum cooling of the processor, do not touch the heat transfer areas on the heat sink. The oils in your skin can reduce the heat transfer capability of the thermal grease.

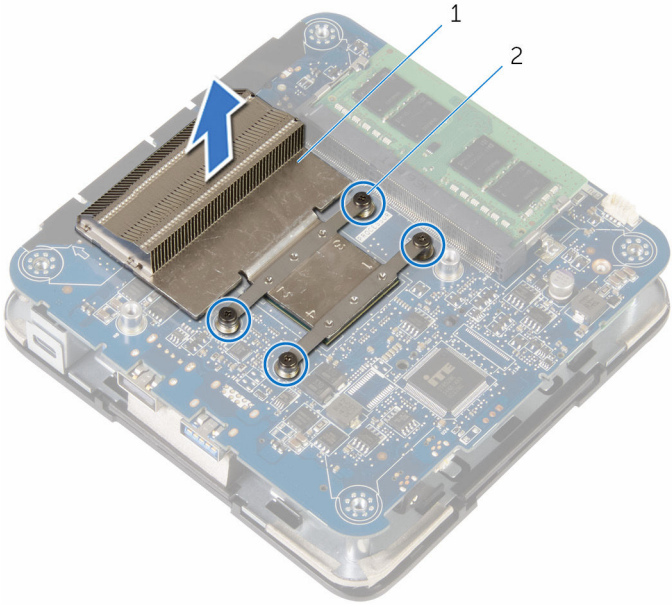
Prerequisites

1 Remove the base cover.
2 Remove the processor fan.

Procedure

1 Loosen the captive screws that secure the processor heat-sink to the system board.

2 Lift the processor heat-sink off system board.



1 processor heat-sink 2 captive screws (4)

Replacing the processor heat-sink

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CAUTION: For maximum cooling of the processor, do not touch the heat transfer areas on the heat sink. The oils in your skin can reduce the heat transfer capability of the thermal grease.

Procedure

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

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

1. Align the captive screws on the processor heat-sink with the screw holes on the system board.
2. Tighten the captive screws that secure the processor heat-sink to the system board.

Post-requisites

1. Replace the processor fan.
2. Replace the base cover.

Removing the wireless card

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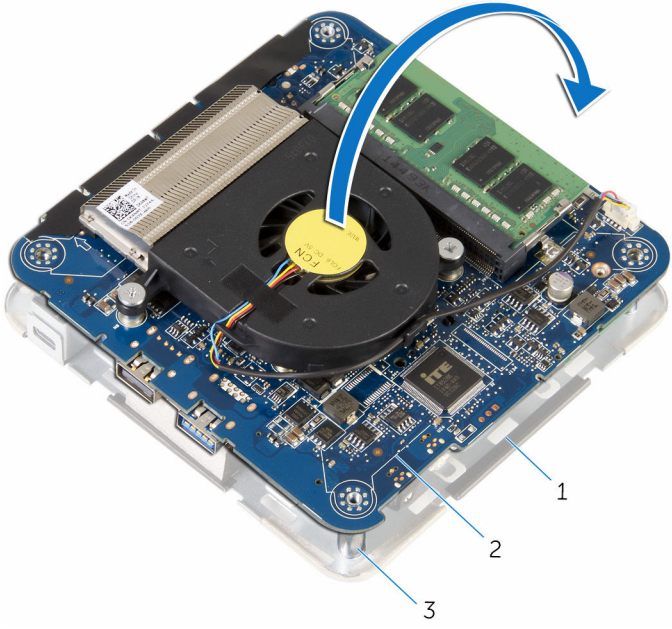
Prerequisites

1. Remove the base cover.
2. Follow the procedure from step 1 to step 2 in "Removing the processor fan".

Procedure

1 Carefully lift the system-board assembly and turn it over.



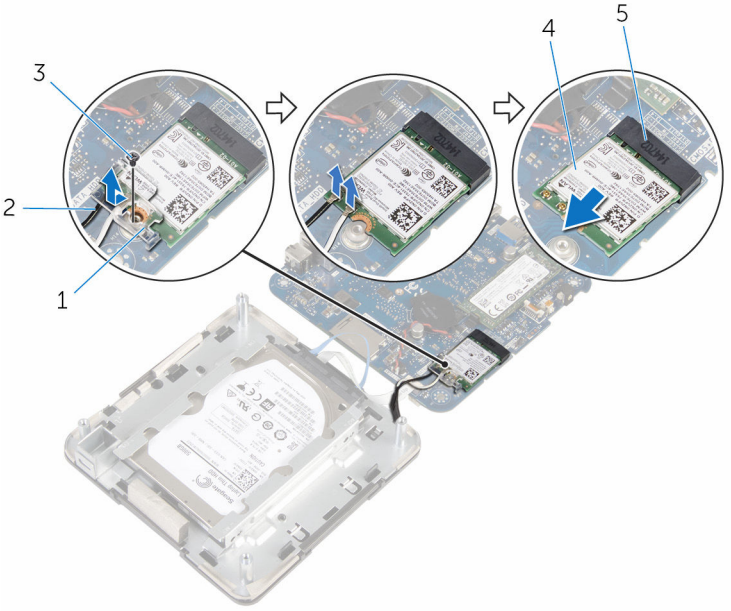
1 top-cover assembly
2 system-board assembly
3 alignment posts (4)

2 Remove the screw that secures the wireless-card bracket to the wireless card.

3 Slide and lift the wireless-card bracket off the wireless card.

4 Disconnect the antenna cables from the wireless card.

5 Slide and remove the wireless card from the wireless-card slot.



1	wireless-card bracket	2	antenna cables (2)
3	screw	4	wireless card
5	wireless-card slot		

Replacing the wireless card

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Procedure

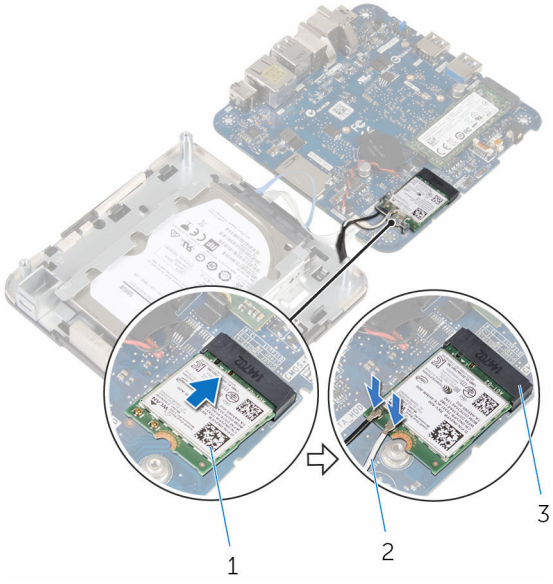
CAUTION: To avoid damage to the wireless card, do not place any cables under it.

1. Align the notch on the wireless card with the tab on the wireless-card slot.
2. Slide the wireless card at an angle into the wireless-card slot.

3 Press the other end of the wireless card down and connect the antenna cables to the wireless card.

The following table provides the antenna-cable color scheme for the wireless card supported by your computer:

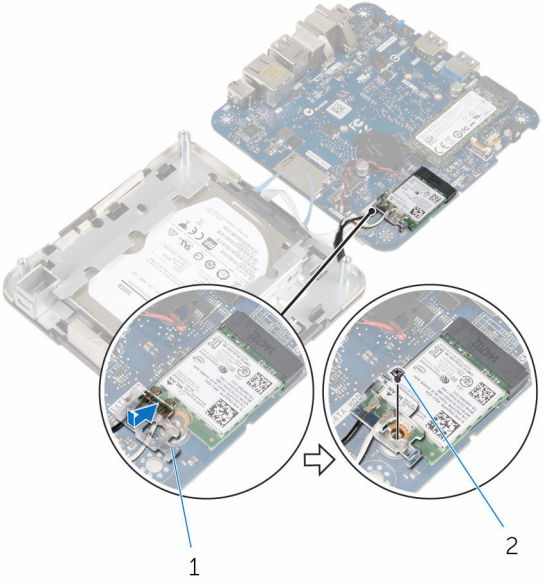
Connectors on the wireless card	Antenna-cable sticker color
Main (white triangle)	White
Auxiliary (black triangle)	Black



1 wireless card
2 antenna cables (2)
3 wireless-card slot

4 Press the other end of the wireless card down and slide the wireless-card bracket into the wireless card.

5 Align the screw hole on the wireless-card bracket with the screw hole on the wireless card and replace the screw that secures the wireless-card bracket to the wireless card.



1 wireless-card bracket 2 screw

6 Turn the system-board assembly over and using the alignment posts, snap the system-board assembly into place.

Post-requisites

1 Follow the procedure from step 4 to step 5 in "Replacing the processor fan".

2 Replace the base cover.

Removing the coin-cell battery

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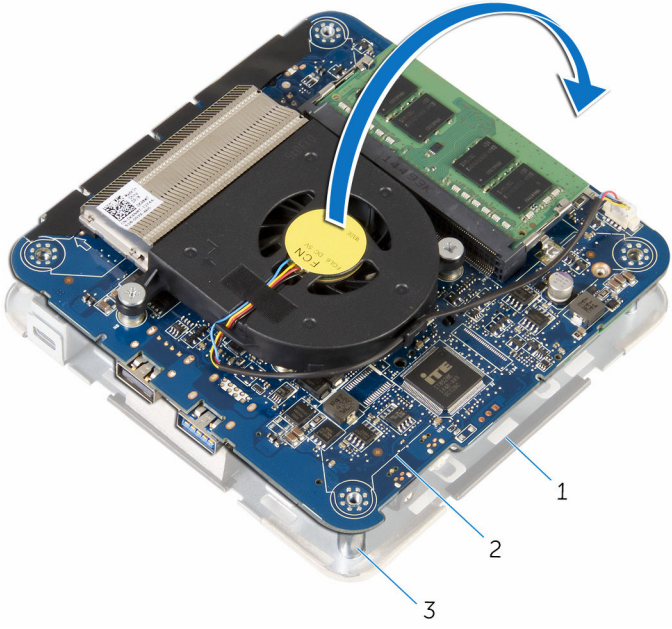
CAUTION: Removing the coin-cell battery resets the BIOS setup program's settings to default. It is recommended that you note the BIOS setup program's settings before removing the coin-cell battery.

Prerequisites

1. Remove the base cover.
2. Follow the procedure from step 1 to step 2 in "Removing the processor fan".

Procedure

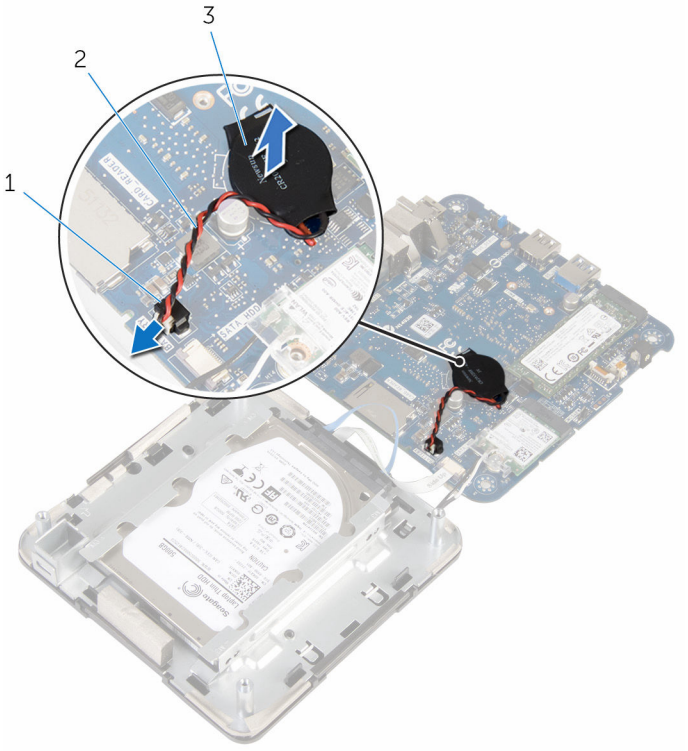
1 Carefully lift the system-board assembly and turn it over.



1 top-cover assembly
2 system-board assembly
3 alignment posts (4)

2 Disconnect the coin-cell battery cable from the system board.

3 Peel off the coin-cell battery from the system board.



1 coin-cell battery connector
2 coin-cell battery cable
3 coin-cell battery

Replacing the coin-cell battery

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Procedure

1. Adhere the coin-cell battery to the system board.
2. Connect the coin-cell battery cable to the system board.
3. Turn the system-board assembly over and using the alignment posts, snap the system-board assembly into place.

Post-requisites

1. Follow the procedure from step 4 to step 5 in "Replacing the processor fan".
2. Replace the base cover.

Removing the solid-state drive

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CAUTION: Solid-state drives are fragile. Exercise care when handling the hard drive.

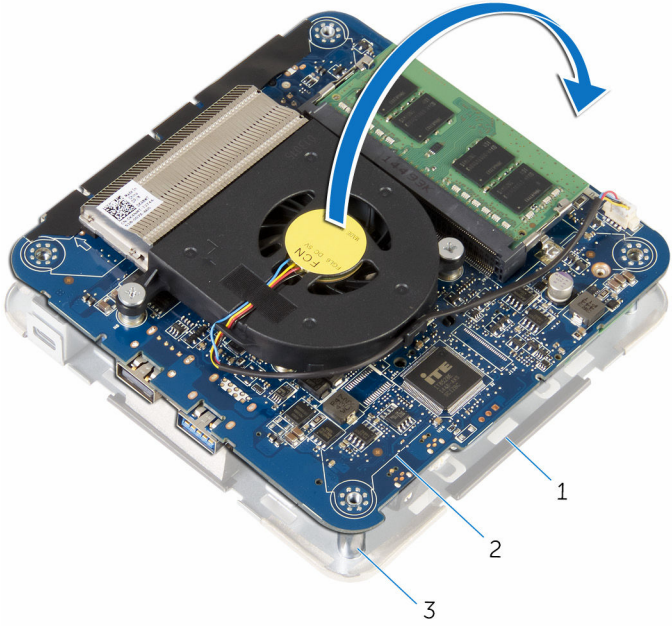
CAUTION: To avoid data loss, do not remove the solid-state drive while the computer is in sleep or on state.

Prerequisites

1. Remove the base cover.
2. Follow the procedure from step 1 to step 2 in "Removing the processor fan".

Procedure

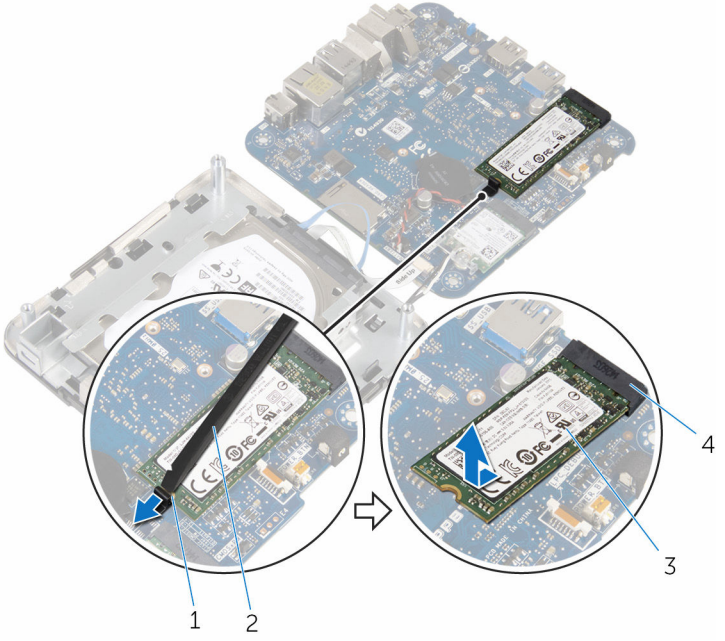
1 Carefully lift the system-board assembly and turn it over.



1 top-cover assembly
2 system-board assembly
3 alignment posts (4)

2 Using a plastic scribe, push the securing tab to release the solid-state drive.

3 Slide and lift the solid-state drive off the system-board assembly.



1	securing tab	2	plastic scribe
3	solid-state drive	4	solid-state drive slot

Replacing the solid-state drive

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CAUTION: Solid-state drives are fragile. Exercise care when handling the hard drive.

Procedure

1 Slide the solid-state drive firmly into the slot at an angle and gently press the solid-state drive down until it snaps into position.

NOTE: Ensure that the solid-state drive is firmly seated.

2 Turn the system board over.

3 Using the alignment posts on the top-cover assembly, snap the system-board assembly into place.

Post-requisites

1 Follow the procedure from step 4 to step 5 in "Replacing the processor fan".

2 Replace the base cover.

Removing the hard drive

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

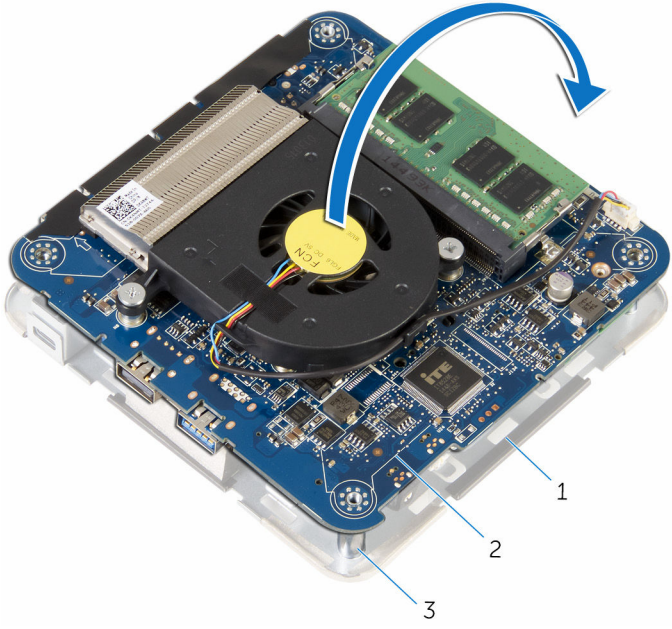
CAUTION: To avoid data loss, do not remove the hard drive while the computer is in sleep or on state.

Prerequisites

1. Remove the base cover.
2. Follow the procedure from step 1 to step 2 in "Removing the processor fan".

Procedure

1 Carefully lift the system-board assembly and turn it over.



1 top-cover assembly
2 system-board assembly
3 alignment posts (4)

2 Using your fingertips, gently release the securing tabs on the hard-drive cable.

3 Disconnect the hard-drive cable from the system board.

4 Remove the screws that secure the hard drive to the hard-drive bay.

5 Slide and lift the hard-drive assembly off the hard-drive bay.

1	securing tabs (2)	2	hard-drive cable
3	hard-drive assembly	4	hard-drive bay
5	screws (4)		

6 Disconnect the interposer from the hard drive.

1 interposer 2 hard drive

Replacing the hard drive

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

Procedure

1. Connect the interposer to the hard drive.
2. Slide the hard-drive assembly into the hard-drive bay.
3. Align the screw holes on the hard-drive assembly with the screw holes on the hard-drive bay.
4. Replace the screws that secure the hard-drive assembly to the hard-drive bay.
5. Slide the hard-drive cable into the connector on the system board and push the securing tabs to secure the cable.
6. Turn the system-board assembly over and using the alignment posts, snap the system-board assembly into place.

Post-requisites

1. Follow the procedure from step 4 to step 5 in "Replacing the processor fan".
2. Replace the base cover.

Removing the system board

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

NOTE: Replacing the system board removes any changes you have made to the BIOS using the BIOS setup program. You must make the desired changes again after you replace the system board.

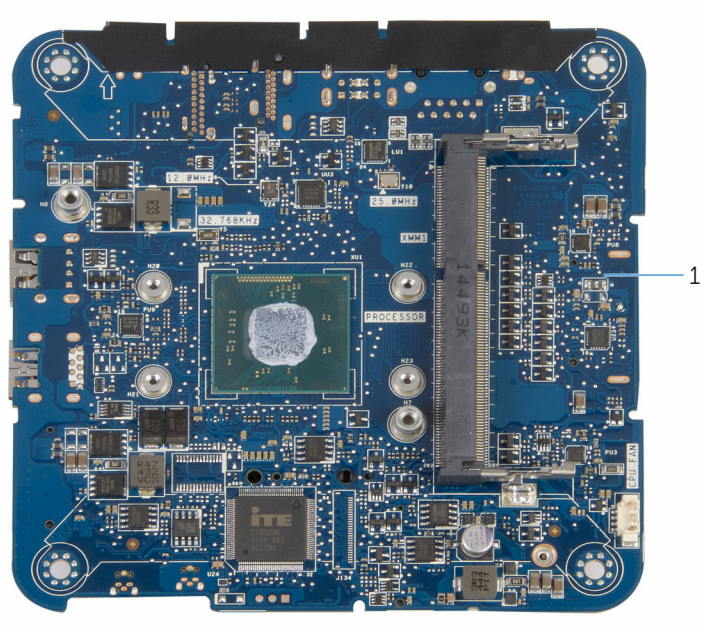
NOTE: Before disconnecting the cables from the system board, note the location of the connectors so that you can reconnect them correctly after you replace the system board.

Prerequisites

1. Remove the base cover.
2. Remove the processor fan.
3. Remove the processor heat-sink.
4. Remove the memory module.
5. Remove the wireless card.
6. Remove the coin-cell battery.
7. Remove the solid-state drive.

Procedure

After performing all the steps in prerequisites, we are left with the system board.



1 system board

Replacing the system board

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see the Regulatory Compliance home page at dell.com/regulatory_compliance.

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

NOTE: Replacing the system board removes any changes you have made to the BIOS using the BIOS setup program. You must make the desired changes again after you replace the system board.

Procedure

Place the system board on a clean, flat surface.

Post-requisites

1. Replace the solid-state drive.
2. Replace the coin-cell battery.
3. Replace the wireless card.
4. Replace the memory module.
5. Replace the processor heat-sink.
6. Replace the processor fan.
7. Replace the base cover.

Removing the top-cover assembly

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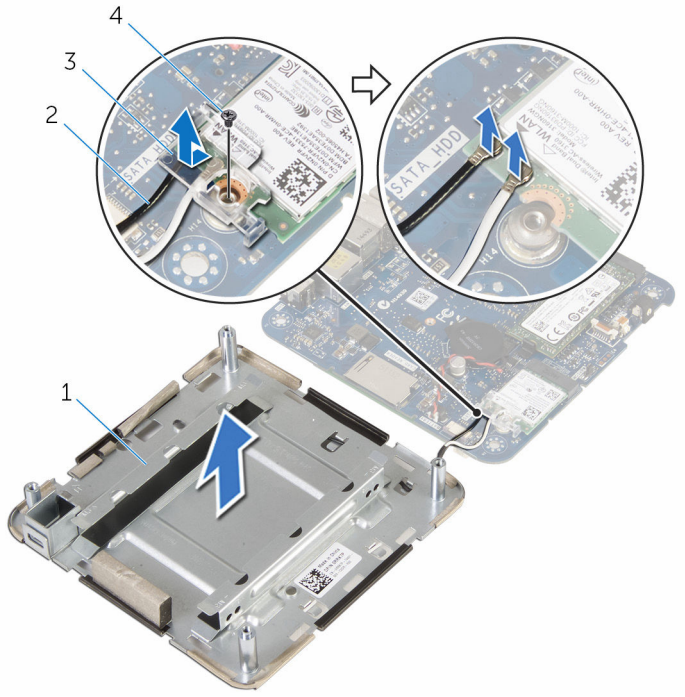
Prerequisites

1. Remove the base cover.
2. Follow the procedure from step 1 to step 2 in "Removing the processor fan".
3. Follow the procedure from step 1 to step 5 in "Removing the hard drive".

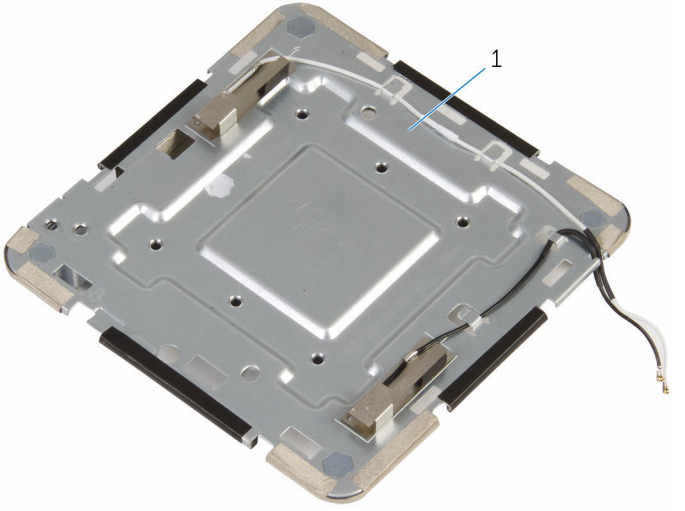
Procedure

1. Remove the screw that secures the wireless-card bracket to the wireless card.
2. Lift the wireless-card bracket off the wireless card.
3. Disconnect the antenna cables from the wireless card.

4 Lift the top-cover assembly and keep it aside.



1	top-cover assembly	2	antenna cables (2)
3	wireless-card bracket	4	screw



1 top-cover assembly

Replacing the top-cover assembly

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Procedure

1. Press the other end of the wireless card down and connect the antenna cables to the wireless card.

   The following table provides the antenna-cable color scheme for the wireless card supported by your computer:

Connectors on the wireless card	Antenna-cable sticker color
Main (white triangle)	White
Auxiliary (black triangle)	Black

2. Press the other end of the wireless card down and place the wireless-card bracket on the wireless card.
3. Align the screw hole on the wireless-card bracket with the screw hole on the wireless card and replace the screw that secures the wireless-card bracket to the wireless card.

Post-requisites

1. Follow the procedure from step 2 to step 6 in "Replacing the hard drive".
2. Follow the procedure from step 4 to step 5 in "Replacing the processor fan".
3. Replace the base cover.

BIOS setup program

Overview

CAUTION: Unless you are an expert computer user, do not change the settings in the BIOS setup program. Certain changes can make your computer work incorrectly.

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

Use BIOS setup program to:

- Get information about the hardware installed in 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.

Entering BIOS setup program

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 operating system's desktop. Then, turn off your computer and try again.

Clearing Forgotten Passwords

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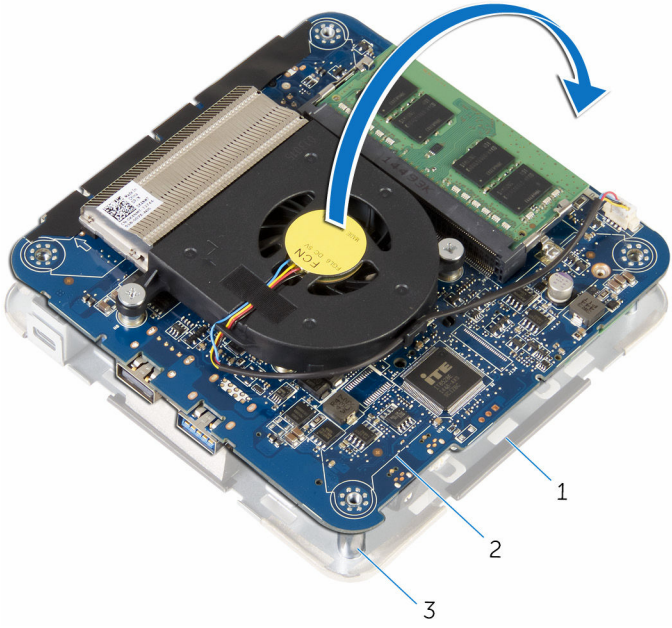
Prerequisites

1. Remove the base cover.
2. Follow the procedure from step 1 to step 2 in "Removing the processor fan".

Procedure

1 Carefully lift the system-board assembly and turn it over.

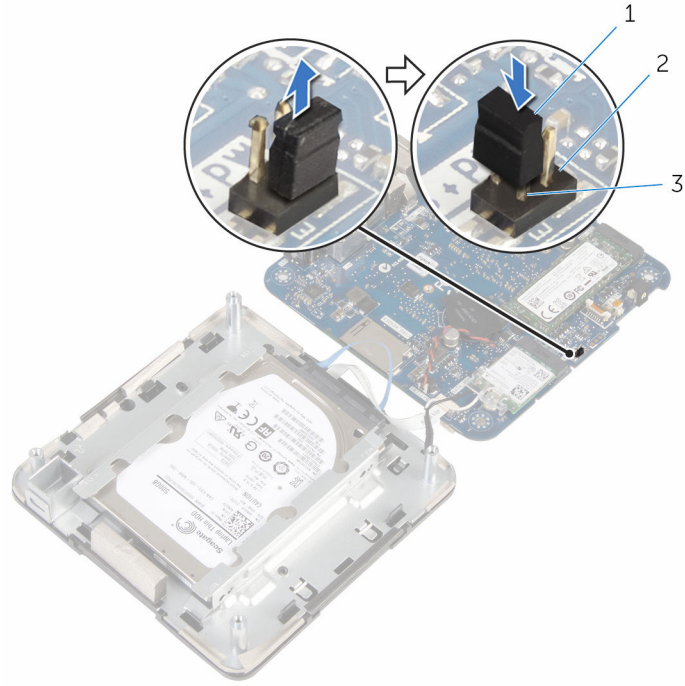


1 top-cover assembly
2 system-board assembly
3 alignment posts (4)

2 Locate the CMOS and password reset jumper (CMOS+PW) on the system board.

For more information on the location of CMOS and password reset jumper, see "System-board components".

3 Remove the jumper plug and replace it on the password jumper-pins.



1 jumper plug
2 CMOS jumper-pins
3 password jumper-pins

4 Follow the procedure from step 4 to step 5 in "Replacing the processor fan".
5 Replace the base cover.
6 Turn on your computer and wait till the operating system is completely loaded.
7 Shut down your computer.
8 Remove the base cover.
9 Follow the procedure from step 1 to step 2 in "Removing the processor fan".
10 Replace the jumper plug to its original position.

Post-requisites

1 Follow the procedure from step 4 to step 5 in "Replacing the processor fan".

2 Replace the base cover.

Clearing CMOS Settings

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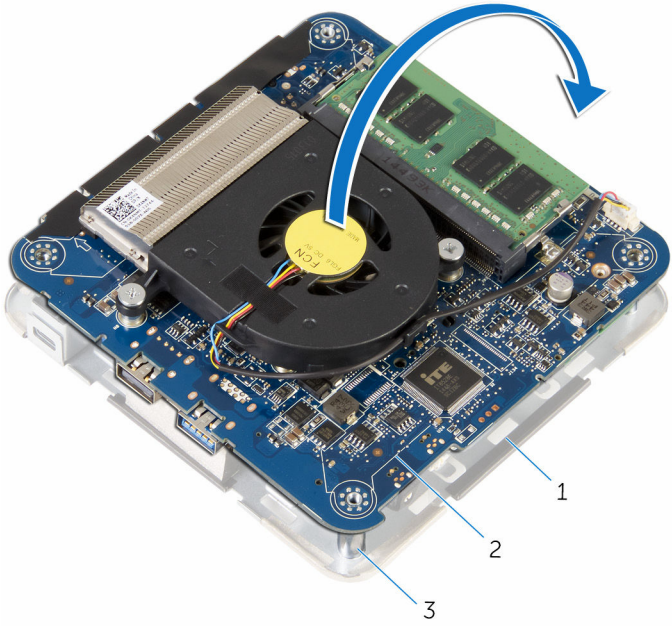
Prerequisites

1 Remove the base cover.

2 Follow the procedure from step 1 to step 2 in "Removing the processor fan".

Procedure

1 Carefully lift the system-board assembly and turn it over.

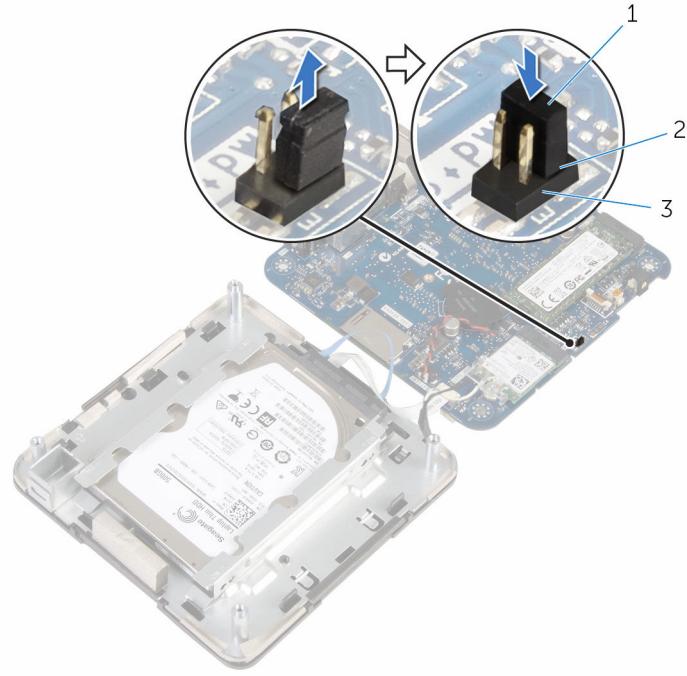


1 top-cover assembly
2 system-board assembly
3 alignment posts (4)

2 Locate the CMOS and password reset jumper (CMOS+PW) on the system board.

NOTE: For more information on the location of CMOS and password reset jumper, see "System-board components".

3 Remove the jumper plug and replace it on the CMOS jumper-pins.



1 jumper plug
2 CMOS jumper-pins
3 password jumper-pins

4 Follow the procedure from step 4 to step 5 in "Replacing the processor fan".

5 Replace the base cover.

6 Turn on your computer and wait till the operating system is completely loaded.

7 Shut down your computer.

8 Remove the base cover.

9 Follow the procedure from step 1 to step 2 in "Removing the processor fan".

10 Replace the jumper plug to its original position.

Post-requisites

1. Follow the procedure from step 4 to step 5 in "Replacing the processor fan".
2. Replace the base cover.

Flashing the BIOS

You may need to flash (update) the BIOS when an update is available or when you replace the system board. To flash the BIOS:

1. Turn on the computer.
2. Go to **dell.com/support**.
3. Click **Product Support**, enter the Service Tag of your laptop and click **Submit**.

   NOTE: If you do not have the Service Tag, use the auto-detect feature or manually browse for your computer model.
4. Click **Drivers & downloads**.
5. Scroll down the page and select **BIOS** from the **Category** drop-down list.

   NOTE: In the **Change OS** drop-down list, select the operating system installed on your computer.
6. Expand **BIOS** to view the available BIOS files.
7. Click **Download File** to download the latest version of the BIOS for your computer.
8. Save the file and once the download is complete, navigate to the folder where you saved the BIOS update file.
9. Double-click the BIOS update file icon and follow the instructions on the screen.

Getting help and contacting Dell

Self-help resources

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

Self-Help Information	Self-Help Options
Accessing Windows Help	**Windows 8.1**—Open the Search charm, type **Help and Support** in the search box, and press **Enter**. **Windows 7**—Click **Start** → **Help and Support**.
Information about Dell products and services	See **dell.com**.
Troubleshooting information, user manuals, setup instructions, product specifications, technical help blogs, drivers, software updates, and so on	See **dell.com/support**.
Information about Microsoft Windows 8.1	See **dell.com/windows8**.
Information about Microsoft Windows 7	Click **Start** → **All Programs** → **Dell Help Documentation**.
Learn about your operating system, setting up and using your computer, data backup, diagnostics, and so on.	See *Me and My Dell* at **dell.com/support/manuals**.

Contacting Dell

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

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

NOTE: If you do not have an active internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.