Inspiron 27 7000

Service Manual

Computer Model: Inspiron 27-7775
Regulatory Model: W16C
Regulatory Type: W16C001

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.

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Identifier	GUID-5D3B1051-9384-409A-8D5B-9B53BD496DE8
Status	Released

Before working inside your computer

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

Identifier	GUID-0CBCCCC8-AEDC-4C92-992B-45062AB0B176
Status	Released

Before you begin

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

   NOTE: If you are using a different operating system, see the documentation of your operating system for shut-down instructions.
3. Disconnect your computer and all attached devices from their electrical outlets.
4. Disconnect all attached network devices and peripherals, such as keyboard, mouse, and monitor from your computer.
5. Remove any media card and optical disc from your computer, if applicable.
6. After the computer is unplugged, press and hold the power button for 5 seconds to ground the system board.

   CAUTION: Place the computer on a flat, soft, and clean surface to avoid scratches on the display.
7. Place the computer face down.

Identifier	GUID-71128823-CE64-4E17-9439-DEE95AF668C4
Status	Released

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 www.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 electrical outlet.

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 www.dell.com/regulatory_compliance.

CAUTION: Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate static electricity, which could harm internal components.

CAUTION: When you disconnect a cable, pull on its connector or on its pull tab, not on the cable itself. Some cables have connectors with locking tabs or thumb-screws that you must disengage before disconnecting the cable. When disconnecting cables, keep them evenly aligned to avoid bending any connector pins. When connecting cables, ensure that the ports and connectors are correctly oriented and aligned.

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

Identifier	GUID-DEA55279-6FE6-4A1F-A152-21F8A5572B33
Status	Released

Recommended tools

The procedures in this document may require the following tools:

- Phillips screwdriver
- Plastic scribe

Identifier	GUID-7A78925A-E09E-447B-800A-3DC937EF2DD5
Status	Released

Screw list

Table 1. Screw list

Component	Secured to	Screw type	Quantity	Screw image
Stand	Middle frame	M4x6	6	
Hard-drive bracket	Middle frame	M3x5	1	
Hard drive	Hard-drive bracket	M3x3.5	3	
System-board shield	System board	M3x5	6	
Fan	Middle frame	M3x5	3	
Solid-state drive	System board	M2x3.5	1	

Component	Secured to	Screw type	Quantity	Screw image
Wireless card bracket	System board	M2x3.5	1	
Heat sink	Middle frame	M3x5	1	
Inner frame	Middle frame	M3x5	8	
System board	Middle frame	M3x5	5	
Microphone board	Middle frame	M2x4	4	
Subwoofer	Middle frame	Washer type M3x4	4	
Side I/O-board bracket	Middle frame	M3x5	2	
Media-card reader	Side I/O-board bracket	M3x5	2	
Side I/O-board	Side I/O-board bracket	M3x5	2	
Camera	Front bezel	M3x5	2	
I/O bracket	Middle frame	M3x5	9	
Power-button board	Middle frame	M2x3.5	2	

Component	Secured to	Screw type	Quantity	Screw image
I/O board	Middle frame	M3x5	4	
Middle frame	Display	M3x5	8	
Front bezel	Middle frame	Step type M3x5.6	6	

Identifier	GUID-06588814-2678-4667-9FF9-C009F4BCE185
Status	Released

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, or cables you removed before working on your computer.
3. Replace any media cards, discs, or any other parts that you removed before working on your computer.
4. Connect your computer and all attached devices to their electrical outlets.
5. Turn on your computer.

Identifier	GUID-93575C2B-9DA3-42EF-B01E-9C841B3CE7F5
Status	Released

Technical overview

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Identifier	GUID-839B4282-96FD-4A76-896D-C515AA711C21
Status	Released

Inside view of your computer

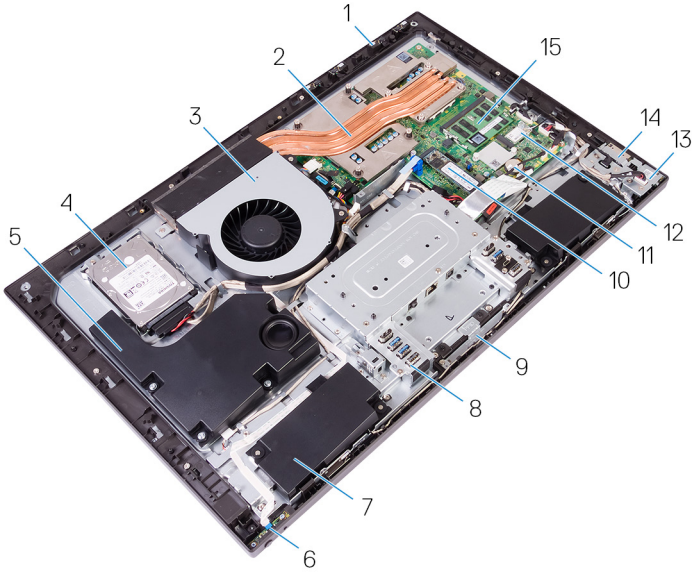

Figure 1. Inside view of your computer

1	microphone boards (4)	2	heat sink
3	fan	4	hard drive
5	subwoofer	6	power-button board
7	speakers (2)	8	I/O bracket
9	camera module	10	solid-state drive (M.2)
11	coin-cell battery	12	wireless card
13	side I/O-board	14	media-card reader
15	memory modules (2)		

Identifier	GUID-214C1440-0239-4508-B474-79C9F4F76FCE
Status	Released

System-board components

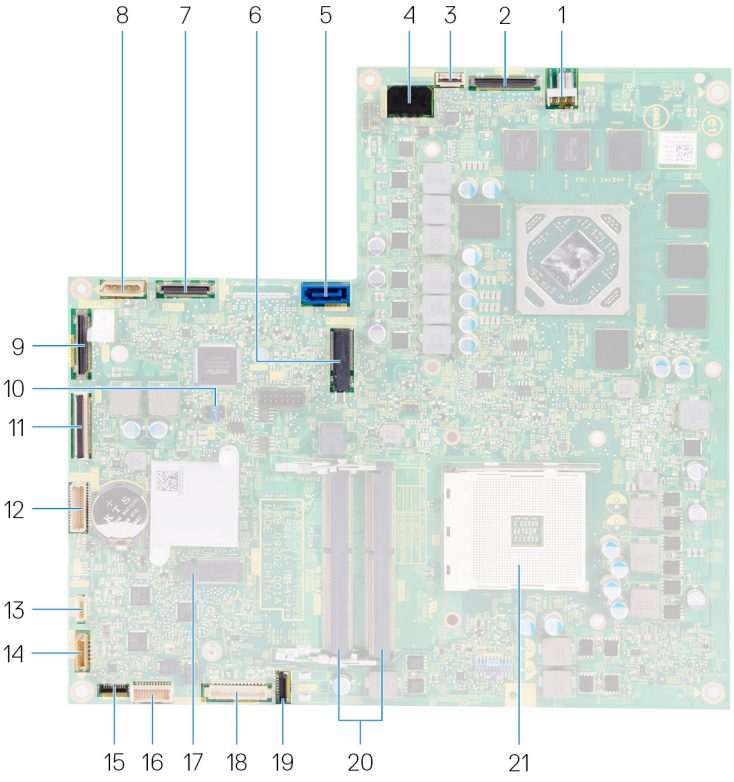

Figure 2. System-board components

1	fan-power cable connector (FAN_SYS)	2	display-cable connector (MB-DISPC)
3	power-button board cable connector (0SDC1)	4	power-cable connector (MB-DCPWR)
5	hard-drive data cable connector (SATA0)	6	solid-state drive slot (M.2)

7	I/O cable connector (RUSBC1)	8	hard-drive power cable connector (SATA_PWR1)
9	USB Typec-C cable connector (MB-TYPEC1)	10	system board jumper
11	I/O-board cable connector (LAUOC1)	12	I/O-board power cable (RPWRC1)
13	subwoofer cable (WOOFC1)	14	speaker cable (SPEAKER)
15	media-card reader cable connector (SDRDC1)	16	side I/O-board cable connector (MB-SUSBC)
17	wireless-card socket	18	camera-cable connector (WEBCAM)
19	microphones-cable connector (DMIC1)	20	memory module slots (2)
21	processor socket		

Identifier	GUID-AE7F608F-4CAF-464A-B977-4C4D9BB3963A
Status	Released

Removing the back cover

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Identifier	GUID-CF914F47-F704-43B1-B38A-255AED70CF2F
Status	Released

Procedure

1. Place the computer on a clean and flat surface.
2. Loosen the two captive screws that secure the back cover to the inner frame.

3 Slide the back cover towards the top of the computer, and lift the back cover off the inner frame.

Identifier	GUID-411D5FFA-086D-432E-9CE3-0ECBF9B7BA71
Status	Released

Replacing the back cover

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Identifier	GUID-A39F4C70-2FEA-4CD3-8A1E-0D1CC3DA91BC
Status	Released

Procedure

1. Align the tabs on the back cover with the slots on the inner frame.
2. Slide the back cover towards the bottom of the computer, and snap the back cover in place.
3. Tighten the captive screws that secure the back cover to the inner frame.

Identifier	GUID-4BBD3587-8BDA-47F1-ACEB-3CE6AB50FBB3
Status	Released

Removing the stand

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Identifier	GUID-67F8B481-ACBA-47A0-BCAF-357C6042B18E
Status	Released

Prerequisites

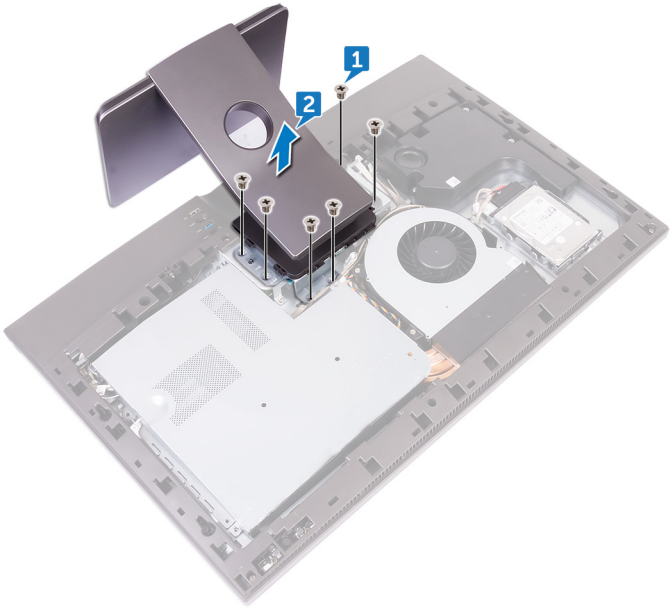
Remove the back cover.

Identifier	GUID-26732E87-B3C1-4440-B848-03635983547B
Status	Released

Procedure

1 Remove the six screws (M4x6) that secure the stand to the middle frame.

2 Lift the stand off the computer.



Identifier	GUID-A1A7E0D7-52BF-4F80-84FE-DF5301AE97BA
Status	Released

Replacing the stand

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Identifier	GUID-8E62DBB0-559F-4B2D-858A-F1656232760C
Status	Released

Procedure

1. Align the screw holes on the stand with the screw holes on the middle frame.
2. Replace the six screws (M4x6) that secure the stand to the middle frame.

Identifier	GUID-6C2AFA20-3736-4FA0-82F0-ADE9E9240AD7
Status	Released

Post-requisites

Replace the back cover.

Identifier	GUID-5DE1E07B-4633-4536-ACBF-4A3067007FE0
Status	Released

Removing the hard drive

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 www.dell.com/regulatory_compliance.

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.

Identifier	GUID-67F8B481-ACBA-47A0-BCAF-357C6042B18E
Status	Released

Prerequisites

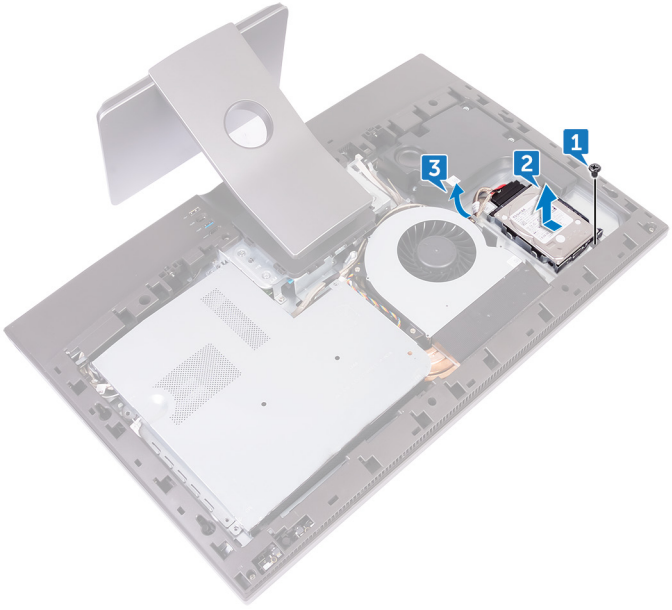
Remove the back cover.

Identifier	GUID-39B9E0E8-3EAA-40AA-811F-BEE3309FC821
Status	Released

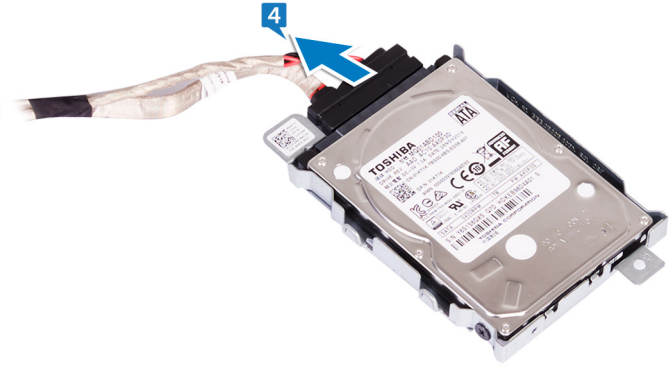
Procedure

1. Remove the screw (M3x5) that secures the hard-drive assembly to the middle frame.
2. Slide the hard-drive assembly out of the hard-drive slot and lift the hard-drive assembly off the computer.

3 Remove the power and data cable from the routing guides on the middle frame.



4 Disconnect the power and data cable from the hard drive.



5 Remove the three screws (M3x3.5) that secure the hard drive to the hard-drive bracket.

6 Lift the hard drive off the hard-drive bracket.

Identifier	GUID-8D72BB77-0F8B-428E-A98E-FF7DA2CDA899
Status	Released

Replacing the hard drive

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 www.dell.com/regulatory_compliance.

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

Identifier	GUID-2323848B-4918-4784-9E73-6E0DCF805118
Status	Released

Procedure

1. Place the hard drive into the hard-drive bracket and align the screw holes on the hard-drive bracket with the screw holes on the hard drive.
2. Replace the three screws (M3x3.5) that secure the hard drive to the hard-drive bracket.
3. Connect the power and data cable to the hard drive.
4. Slide the hard-drive assembly into the hard-drive slot on the computer.
5. Replace the screw (M3x5) that secures the hard-drive assembly to the middle frame.

Identifier	GUID-6C2AFA20-3736-4FA0-82F0-ADE9E9240AD7
Status	Released

Post-requisites

Replace the back cover.

Identifier	GUID-D70E2888-388C-4C7A-8DBA-D6AE0E7AF9C5
Status	Released

Removing the inner frame

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Identifier	GUID-D59A7B3D-EEDE-4408-A09B-369CCA408ADF
Status	Released

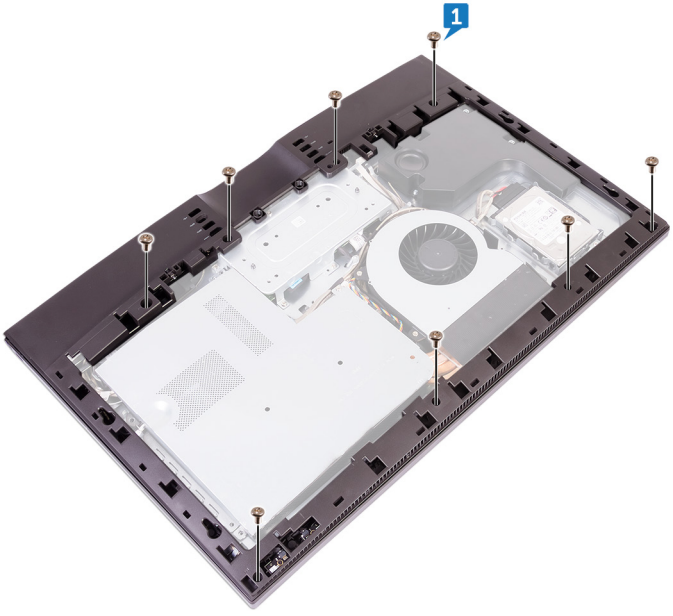
Prerequisites

1. Remove the back cover.
2. Remove the stand.

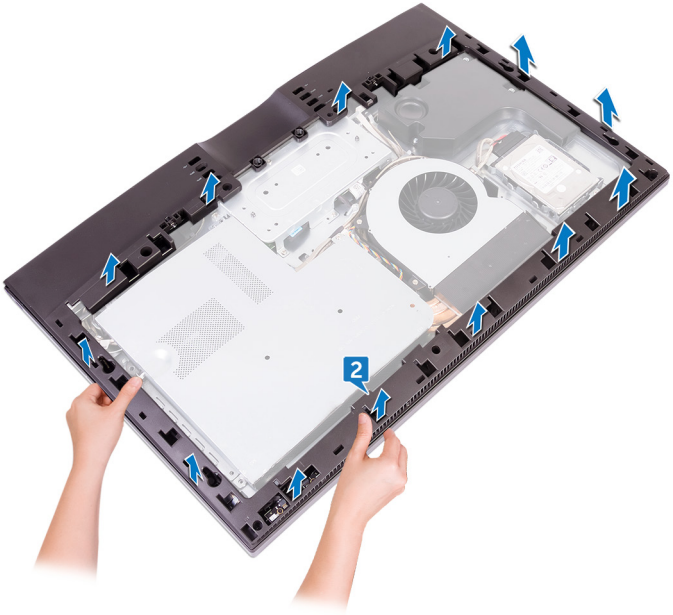
Identifier	GUID-800CED0C-12CB-4250-B4EE-263BF77CD0AA
Status	Released

Procedure

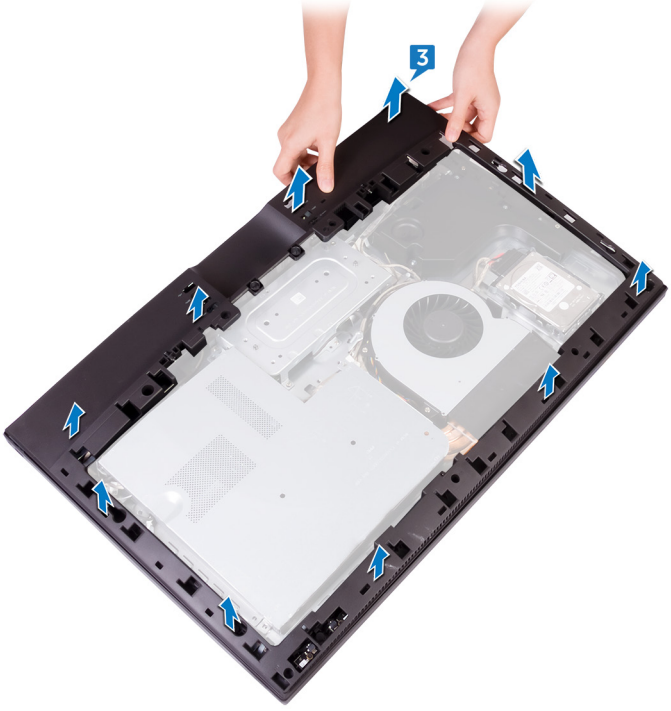
1 Remove the eight screws (M3x5) that secure the inner frame to the middle frame.



2 Gently lift the inner frame inwards from the top-right corner to release the inner frame from the edges of the middle frame.



3 Avoiding contact with the I/O ports at the back of the computer, lift the inner frame upright from the middle frame.



Identifier	GUID-037F1F4F-9569-4D86-A8B5-B2ABD95EF213
Status	Released

Replacing the inner frame

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Identifier	GUID-5BEFF9C1-5F0C-4B7E-AA87-1309243801D4
Status	Released

Procedure

1. Align the I/O port covers on the inner frame with the I/O ports on the I/O board.
2. Align the screw holes on the inner frame with the screw holes on the middle frame.
3. Snap the inner frame into place.
4. Replace the eight screws (M3x5) that secure the inner frame to the middle frame.

Identifier	GUID-824DB7F2-DD6B-4A5B-8AFB-D64D2FD9CFEF
Status	Released

Post-requisites

1. Replace the stand.
2. Replace the back cover.

Identifier	GUID-1FB16E7C-AF0C-4FA0-8736-EAD91D8969A8
Status	Released

Removing the camera

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 www.dell.com/regulatory_compliance.

Identifier	GUID-F35C996A-766A-42C4-AF15-BDAAFABE98EB
Status	Released

Prerequisites

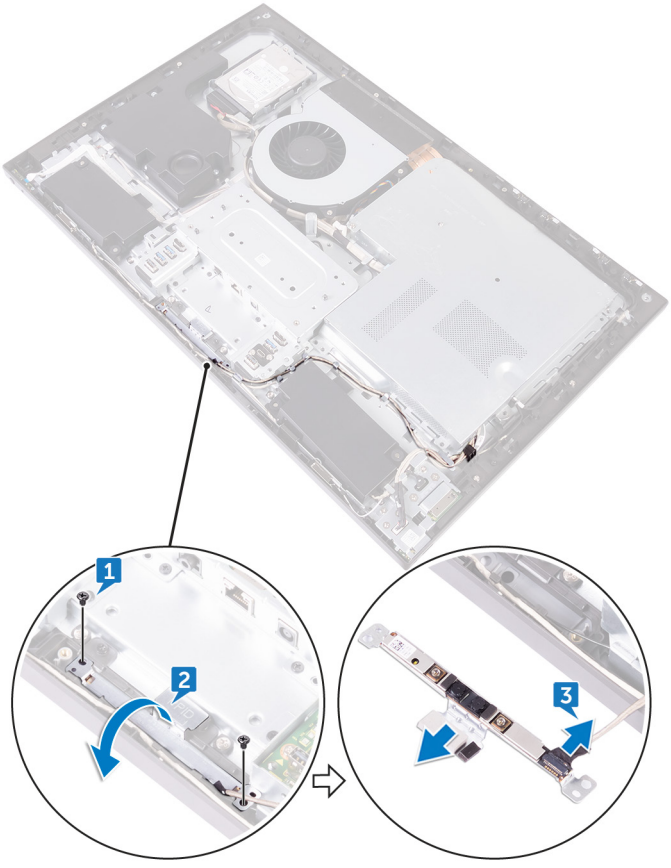
1. Remove the back cover.
2. Remove the stand.
3. Remove the inner frame.

Identifier	GUID-28502559-4C4B-4FB6-B622-343D211BD240
Status	Released

Procedure

1. Remove the two screws (M3x5) that secure the camera assembly to the front bezel.
2. Lift the camera assembly and turn it over.

3 Disconnect the camera cable (WEBCAM) from the camera assembly.



Identifier	GUID-690FF12D-2581-4326-8270-C4B813388FD3
Status	Released

Replacing the camera

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Identifier	GUID-D18194C7-3413-4FAA-A062-349ED0F22833
Status	Released

Procedure

1. Connect the camera cable (WEBCAM) to the camera assembly.
2. Align the screw holes on the camera assembly with the screw holes on the front bezel.
3. Replace the two screws (M3x5) that secure camera assembly to the front bezel.

Identifier	GUID-5BE3AE14-06F3-4D93-8158-E706F91E6665
Status	Released

Post-requisites

1. Replace the inner frame.
2. Replace the stand.
3. Replace the back cover.

Identifier	GUID-4A66256A-A5D7-4E79-972B-16EC49B5A599
Status	Released

Removing the microphones

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Identifier	GUID-F35C996A-766A-42C4-AF15-BDAAFABE98EB
Status	Released

Prerequisites

1. Remove the back cover.
2. Remove the stand.
3. Remove the inner frame.

Identifier	GUID-C7B7E46C-E335-4B3B-9E0E-4AF6C22E33C5
Status	Released

Procedure

1. Disconnect the microphones cable (DMIC1) from the microphone modules (4).
2. Remove the four screws (M2x4) that secure the microphone module to the middle frame.

3 Using a plastic scribe, carefully pry and lift the microphone modules (4) with the cable off the slots on the middle frame.

Identifier	GUID-3A2F1E45-BFAC-42D9-984B-18155ED41333
Status	Released

Replacing the microphones

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Identifier	GUID-4FEB7BCD-F2C2-4AC2-8895-63756A61115C
Status	Released

Procedure

1. Using the alignment post, place the microphone modules (4) into their respective slots on the middle frame.
2. Replace the four screws (M2x4) that secures the microphone module to the middle frame.
3. Connect the microphones cable (DMIC1) to the microphone modules (4).

Identifier	GUID-5BE3AE14-06F3-4D93-8158-E706F91E6665
Status	Released

Post-requisites

1. Replace the inner frame.
2. Replace the stand.
3. Replace the back cover.

Identifier	GUID-A35BD2D5-B3B3-4708-AF1C-D61C58B9F952
Status	Released

Removing the power-button 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 www.dell.com/regulatory_compliance.

Identifier	GUID-F35C996A-766A-42C4-AF15-BDAAFABE98EB
Status	Released

Prerequisites

1. Remove the back cover.
2. Remove the stand.
3. Remove the inner frame.

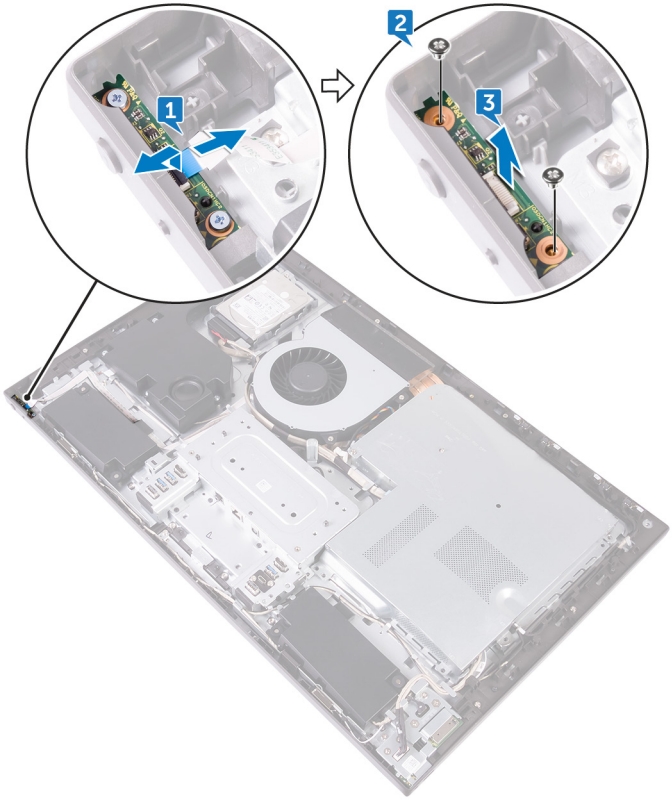
Identifier	GUID-0529F3FF-B349-427A-BA7C-8805F4692DE5
Status	Released

Procedure

NOTE: Note the routing of the cable as you remove it so that you can reroute it correctly after you replace the power-button board.

1. Open the latch and disconnect the power-button board cable (0SDC1) from the power-button board.
2. Remove the two screws (M2x3.5) that secures the power-button board to middle frame.

3 Lift the power-button board off the slot on the middle frame.



Identifier	GUID-FBA68EE4-1E13-4F28-9B84-362694B97060
Status	Released

Replacing the power-button 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 www.dell.com/regulatory_compliance.

Identifier	GUID-87244667-768A-44CE-B1F8-622A575E5C4B
Status	Released

Procedure

1. Connect the power-button board cable (0SDC1) to the power-button board.
2. Using the alignment post, place the power-button board into the slots on the middle frame.
3. Align the screw holes on power-button board to the screw holes on middle frame.
4. Replace the two screws (M2x3.5) that secures the power-button board to middle frame.

Identifier	GUID-5BE3AE14-06F3-4D93-8158-E706F91E6665
Status	Released

Post-requisites

1. Replace the inner frame.
2. Replace the stand.
3. Replace the back cover.

Identifier	GUID-E782B6FD-6208-4460-8AD1-2CF3F3D81247
Status	Released

Removing the front bezel

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 www.dell.com/regulatory_compliance.

Identifier	GUID-F35C996A-766A-42C4-AF15-BDAAFABE98EB
Status	Released

Prerequisites

1. Remove the back cover.
2. Remove the stand.
3. Remove the inner frame.

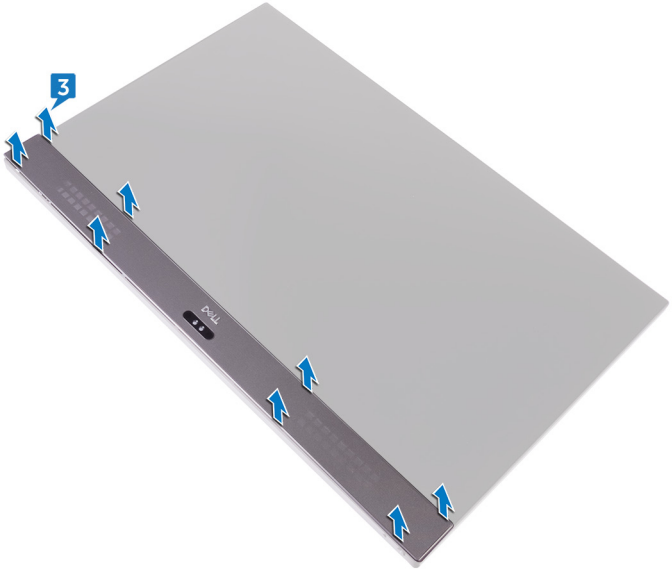
Identifier	GUID-5931EF4F-2EAA-463D-886C-090DE463D52B
Status	Released

Procedure

1 Remove the six screws (Step type M3x5.6) that secure the front bezel to the display panel.

2 Turn the display panel over.

3 Release the front bezel from the edges and lift it off the display panel.



Identifier	GUID-60F23EC0-94F6-45C6-B6CD-17F914DA5206
Status	Released

Replacing the front bezel

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 www.dell.com/regulatory_compliance.

Identifier	GUID-A6F03D6C-870F-433B-AEF4-1FF9E16CEB76
Status	Released

Procedure

1. Place the front bezel on the display panel and snap it into place.
2. Replace the six screws (Step type M3x5.6) that secure the front bezel to the display panel.

Identifier	GUID-5BE3AE14-06F3-4D93-8158-E706F91E6665
Status	Released

Post-requisites

1. Replace the inner frame.
2. Replace the stand.
3. Replace the back cover.

Identifier	GUID-8463F48A-CCD9-49E5-BB12-65A95A85DBFF
Status	Released

Removing the media-card reader

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 www.dell.com/regulatory_compliance.

Identifier	GUID-F35C996A-766A-42C4-AF15-BDAAFABE98EB
Status	Released

Prerequisites

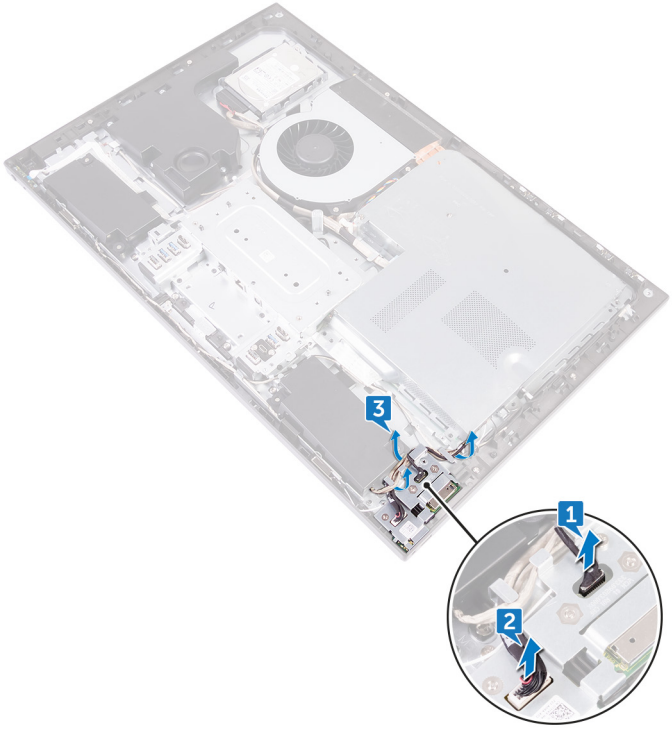
1. Remove the back cover.
2. Remove the stand.
3. Remove the inner frame.

Identifier	GUID-1BFAB869-4A35-42A0-8D4A-9D469D55FB9A
Status	Released

Procedure

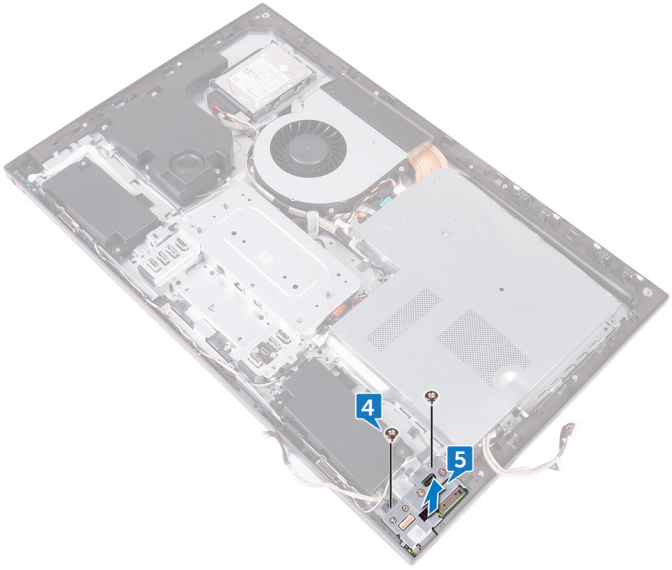
1. Disconnect the media-card reader cable (SDRDC1) from the media-card reader.
2. Disconnect the side I/O-board cable (MB-SUSBC) from the side I/O-board.

3 Note the routing of the side I/O-board cable (MB-SUSBC) and remove it from the routing guides on the middle frame.



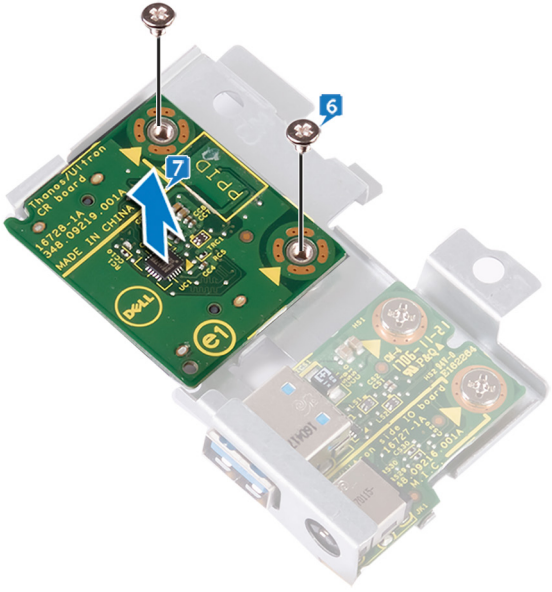
4 Remove two screws (M3x5) that secure the side I/O-board bracket to the middle frame.

5 Lift the side I/O-board bracket off the middle frame.



6 Remove the two screws (M3x5) that secure the media-card reader to the side I/O-board bracket.

7 Lift the media-card reader off the side I/O-board bracket.



Identifier	GUID-5B4BA881-7BC3-40C6-8E48-8B01E3134AE5
Status	Released

Replacing the media-card reader

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 www.dell.com/regulatory_compliance.

Identifier	GUID-5AD24448-7899-480B-A992-9CA22F8AE710
Status	Released

Procedure

1. Align the screw holes on the media-card reader to the screw holes on the side I/O-board bracket.
2. Replace the two screws (M3x5) that secure the media-card reader to the side I/O-board bracket.
3. Using the alignment post, place the side-I/O bracket on the middle frame.
4. Align the screw holes on the side I/O-board bracket to the screw holes on the middle frame.
5. Replace the two screws (M3x5) that secure the side I/O-board bracket to the middle frame.
6. Connect the side I/O-board cable (MB-SUSBC) to the side I/O-board.
7. Connect the media-card reader cable (SDRDC1) to the media-card reader.

Identifier	GUID-5BE3AE14-06F3-4D93-8158-E706F91E6665
Status	Released

Post-requisites

1. Replace the inner frame.

2 Replace the stand.

3 Replace the back cover.

Identifier	GUID-7A647C13-3614-4248-8625-5BB2EBA6CAE1
Status	Released

Removing the side I/O-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 www.dell.com/regulatory_compliance.

Identifier	GUID-C1B22190-D142-414D-9D17-9F1986FA860F
Status	Released

Prerequisites

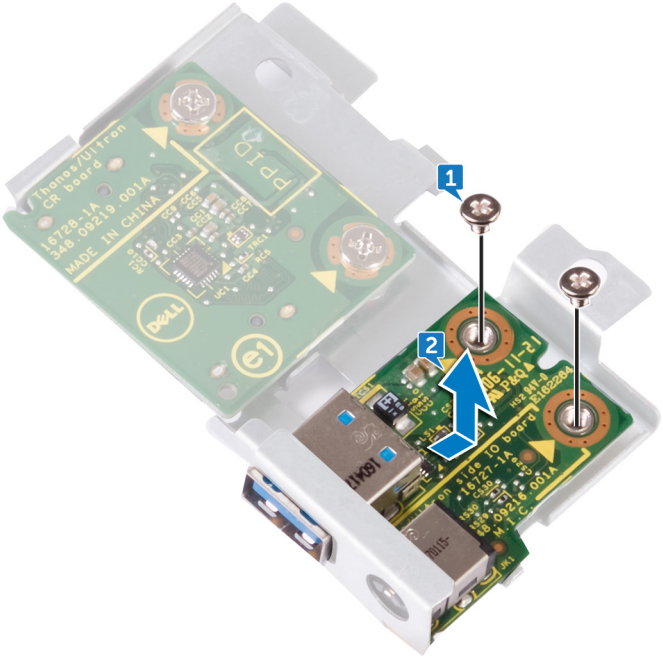
1. Remove the back cover.
2. Remove the stand.
3. Remove the inner frame.
4. Follow the procedure from step 1 to step 6 in "Removing the media-card reader".

Identifier	GUID-EAE6DC54-4D55-4FC0-88EB-850BC2FF56DC
Status	Released

Procedure

1. Remove two screws (M3x5) that secure the side I/O-board to the side I/O-board bracket.

2 Slide and lift the side I/O-board off the side I/O-board bracket.



Identifier	GUID-2EFE7E92-337F-4710-A2AB-08FF9D39DEFF
Status	Released

Replacing the side I/O-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 www.dell.com/regulatory_compliance.

Identifier	GUID-97B32948-FA94-4179-B78C-59C73C00409E
Status	Released

Procedure

1. Slide the side I/O-board into the slots on the side I/O-board bracket.
2. Align the screw holes on the side I/O-board with the screw holes on the side I/O-board bracket.
3. Replace the two screws (M3x5) that secure the side I/O-board to the side I/O-board bracket.

Identifier	GUID-E12874A0-3312-443D-9D5A-7BB5A10BD261
Status	Released

Post-requisites

1. Follow the procedure from step 3 to step 7 in "Replacing the media-card reader".
2. Replace the inner frame.
3. Replace the stand.
4. Replace the back cover.

Identifier	GUID-342B5CBF-63A8-4038-B670-4F7C53E1E5DE
Status	Released

Removing the system-board shield

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 www.dell.com/regulatory_compliance.

Identifier	GUID-67F8B481-ACBA-47A0-BCAF-357C6042B18E
Status	Released

Prerequisites

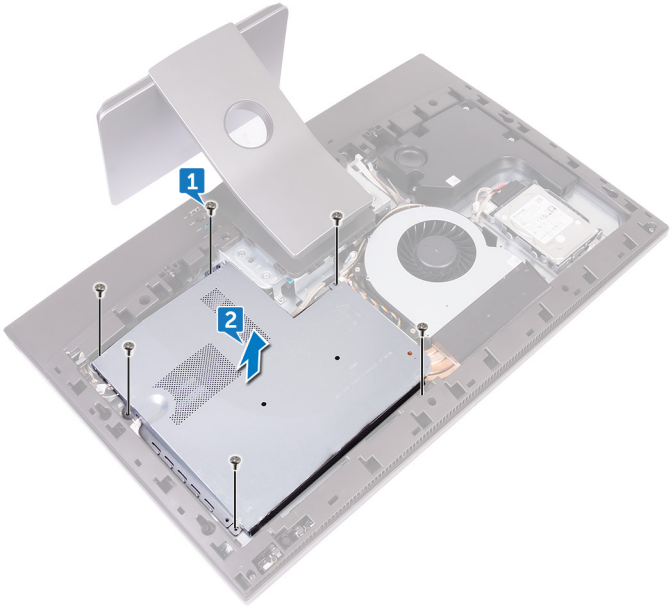
Remove the back cover.

Identifier	GUID-7A23643F-66BC-46AC-ABF5-D65B4593759E
Status	Released

Procedure

1 Remove the six screws (M3x5) that secure the system-board shield to the middle frame.

2 Lift the system-board shield off the middle frame.



Identifier	GUID-5274B19C-AEEA-4EF8-952E-C1CDE89980E4
Status	Released

Replacing the system-board shield

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 www.dell.com/regulatory_compliance.

Identifier	GUID-E911E8F4-494F-4F6F-8C5D-ACFDBC8D7FF8
Status	Released

Procedure

1. Align the screw holes on the system-board shield with the screw holes on the middle frame.
2. Replace the six screws (M3x5) that secure the system-board shield to the middle frame.

Identifier	GUID-6C2AFA20-3736-4FA0-82F0-ADE9E9240AD7
Status	Released

Post-requisites

Replace the back cover.

Identifier	GUID-FAA962E5-AD4D-4E85-BCA3-D99993D9AFD2
Status	Released

Removing the fan

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 www.dell.com/regulatory_compliance.

Identifier	GUID-80B6901A-84B9-4E89-AECE-A1BD484B2AEF
Status	Released

Prerequisites

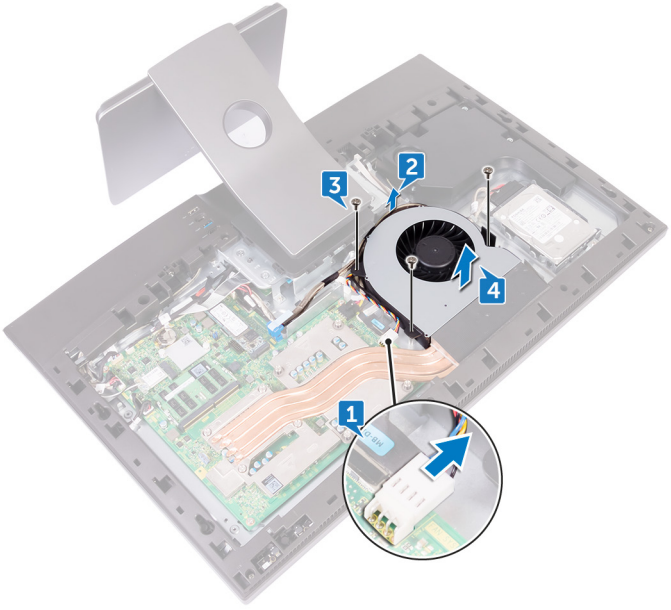
1. Remove the back cover.
2. Remove the system-board shield.

Identifier	GUID-C794653C-5FEF-4E2A-930E-906EB4783424
Status	Released

Procedure

1. Disconnect the fan-power cable (FAN_SYS) from the system board.
2. Remove the fan-power cable (FAN_SYS) from the routing guides.
3. Remove the three screws (M3x5) that secure the fan to the middle frame.

4 Lift the fan along with its cable off the computer.



Identifier	GUID-2596AFC0-F1E8-4A0E-A603-7D2CFE582ECE
Status	Released

Replacing the fan

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 www.dell.com/regulatory_compliance.

Identifier	GUID-7B11D1ED-F1B2-47FA-A1A0-7D0C898AEB6C
Status	Released

Procedure

1. Align the screw holes on the fan with the screw holes on the middle frame.
2. Replace the three screws (M3x5) that secure the fan to the middle frame.
3. Route the fan-power cable (FAN_SYS) through the routing guides.
4. Connect the fan-power cable (FAN_SYS) to the system board.

Identifier	GUID-352452C2-A4B4-43B4-9917-C72AF18BDA02
Status	Released

Post-requisites

1. Replace the system-board shield.
2. Replace the back cover.

Identifier	GUID-BF7F1ECA-BC62-4949-B1BE-EC64E351719E
Status	Released

Removing the speakers

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 www.dell.com/regulatory_compliance.

Identifier	GUID-B921E997-CD1E-4A7D-96D6-723B6E2D1F99
Status	Released

Prerequisites

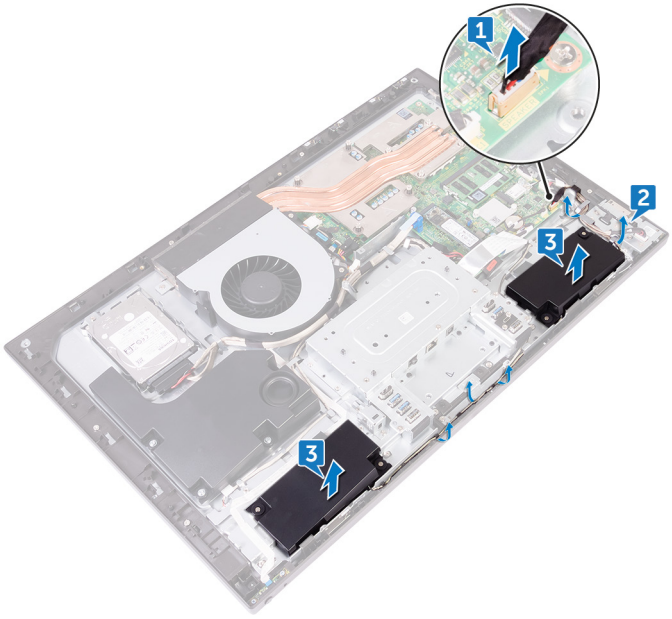
1. Remove the back cover.
2. Remove the stand.
3. Remove the inner frame.
4. Remove the system-board shield.

Identifier	GUID-2FEE0461-9059-4610-8C44-212EE2656605
Status	Released

Procedure

1. Disconnect the speaker cable (SPEAKER) from the system board.
2. Remove the speaker cable (SPEAKER) from the routing guides on the middle frame and note the position of the rubber grommets on the middle frame.

3 Lift the speakers along with the cable off the middle frame.



Identifier	GUID-40DC76F7-B3EC-450A-848E-632D68C352E2
Status	Released

Replacing the speakers

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 www.dell.com/regulatory_compliance.

Identifier	GUID-69BB84A3-C667-4201-98E5-A71B89E4C12A
Status	Released

Procedure

1. Using the alignment posts and rubber grommets on the middle frame, place the speakers on the middle frame.
2. Route the speaker cable (SPEAKER) through the routing guides on middle frame.
3. Connect the speaker cable (SPEAKER) to the system board.

Identifier	GUID-FC905C12-5D10-4857-AB3A-4AD62CEE2D88
Status	Released

Post-requisites

1. Replace the system-board shield.
2. Replace the inner frame.
3. Replace the stand.
4. Replace the back cover.

Identifier	GUID-CCE0D2B8-1FAA-48F5-9D85-1746B662EC00
Status	Released

Removing the subwoofer

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 www.dell.com/regulatory_compliance.

Identifier	GUID-E9F75395-8D8F-47EE-8EBF-2190420E483A
Status	Released

Prerequisites

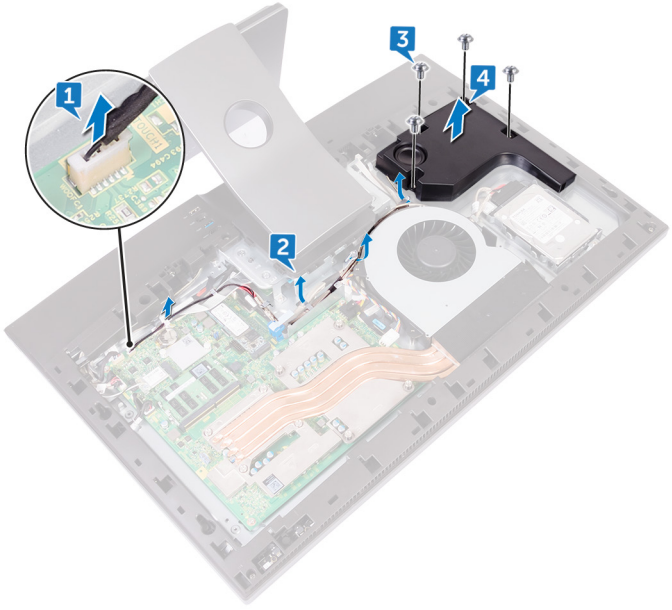
1. Remove the back cover.
2. Remove the system-board shield.

Identifier	GUID-6567F1A9-396C-4F48-A6EE-60CC7A581C93
Status	Released

Procedure

1. Disconnect the subwoofer cable (WOOFC1) from the system board.
2. Remove the subwoofer cable (WOOFC1) from the routing guides on the middle frame.
3. Remove the four screws (Washer type M3x4) that secure the subwoofer to the middle frame.

4 Lift the subwoofer along with the cable off the middle frame.



Identifier	GUID-843C6FE2-25D0-48C6-8EB2-9829A89CC1C8
Status	Released

Replacing the subwoofer

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 www.dell.com/regulatory_compliance.

Identifier	GUID-BE616652-3985-4843-8F35-549F91910D72
Status	Released

Procedure

1. Align the screw holes on the subwoofer with the screw holes on the middle frame.
2. Replace the four screws (Washer type M3x4) that secure the subwoofer to the middle frame.
3. Route the subwoofer cable (WOOFC1) through the routing guides on middle frame and connect it to the system board.

Identifier	GUID-EB349C56-69A8-4386-A37B-EB408439BE62
Status	Released

Post-requisites

1. Replace the system-board shield.
2. Replace the back cover.

Identifier	GUID-30EEBC49-DE3E-4C3F-8226-86CE5F32F388
Status	Released

Removing the coin-cell battery

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 www.dell.com/regulatory_compliance.

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.

Identifier	GUID-80B6901A-84B9-4E89-AECE-A1BD484B2AEF
Status	Released

Prerequisites

1. Remove the back cover.
2. Remove the system-board shield.

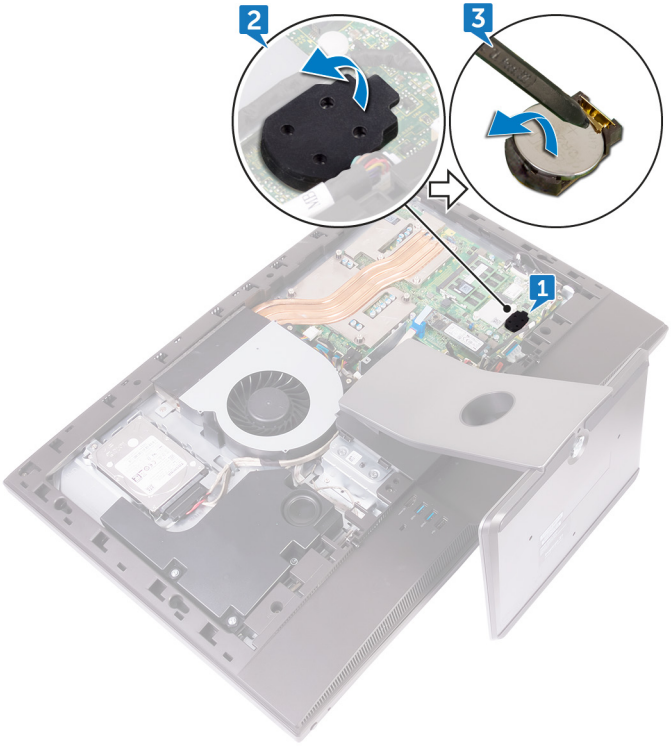
Identifier	GUID-01EC65AE-C2F6-4D81-A440-D5D6CA144EAF
Status	Released

Procedure

1. Locate the coin-cell battery on the system board.
2. Peel the rubber coin-cell holder from the system board.

3 Using a plastic scribe, press the coin-cell battery holder until the coin-cell battery pops up.

NOTE: Take note of the location of the coin cell on the rubber coin-cell holder.



Identifier	GUID-5E22F4A0-F01F-4522-8155-BE22A8CA6E5F
Status	Released

Replacing the coin-cell battery

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 www.dell.com/regulatory_compliance.

Identifier	GUID-19E2FB26-FB4F-4D3E-AB6C-C20F7D611BAD
Status	Released

Procedure

1. Insert the coin-cell battery into the battery socket on the system board with the positive-side facing up.
2. Adhere the rubber coin-cell holder to the coin-cell battery.

Identifier	GUID-352452C2-A4B4-43B4-9917-C72AF18BDA02
Status	Released

Post-requisites

1. Replace the system-board shield.
2. Replace the back cover.

Identifier	GUID-AAC0DC5A-1680-492D-804F-52F812D409C2
Status	Released

Removing the memory modules

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 www.dell.com/regulatory_compliance.

Identifier	GUID-80B6901A-84B9-4E89-AECE-A1BD484B2AEF
Status	Released

Prerequisites

1. Remove the back cover.
2. Remove the system-board shield.

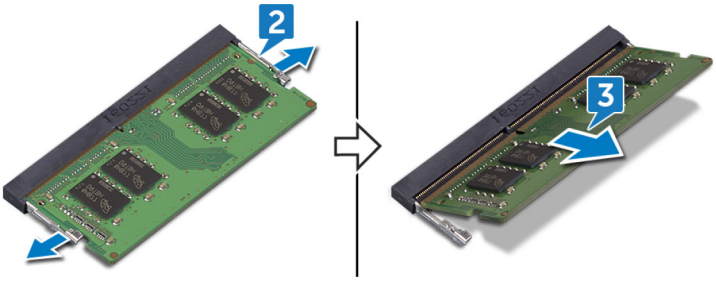
Identifier	GUID-4D91EF9F-1C7D-44E4-B636-96D7AAA7DFE3
Status	Released

Procedure

1 Locate the memory modules on the system board.

2 Using your fingertips, gently spread apart the securing clips at each end of the memory-module slot until the memory module pops up.

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



Identifier	GUID-1F5023F5-9868-4AAF-A9F5-BFB400CD890A
Status	Released

Replacing the memory modules

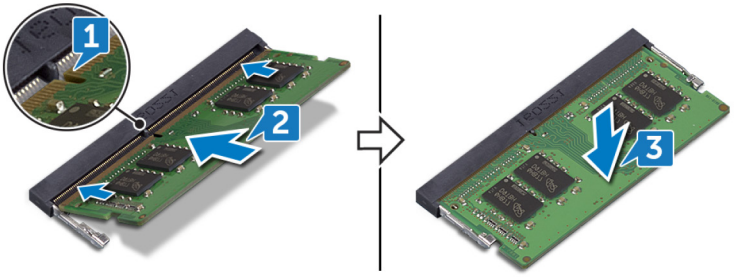
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in Before working inside your computer. After working inside your computer, follow the instructions in After working inside your computer. For more safety best practices, see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

Identifier	GUID-B16B0287-A249-42BB-BCAC-B17FA278CE3A
Status	Released

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.
3. 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.



Identifier	GUID-352452C2-A4B4-43B4-9917-C72AF18BDA02
Status	Released

Post-requisites

1. Replace the system-board shield.
2. Replace the back cover.

Identifier	GUID-1C25F362-25CF-40CD-8A9B-2B98FB94F5FC
Status	Released

Removing the solid-state drive

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 www.dell.com/regulatory_compliance.

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

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

Identifier	GUID-80B6901A-84B9-4E89-AECE-A1BD484B2AEF
Status	Released

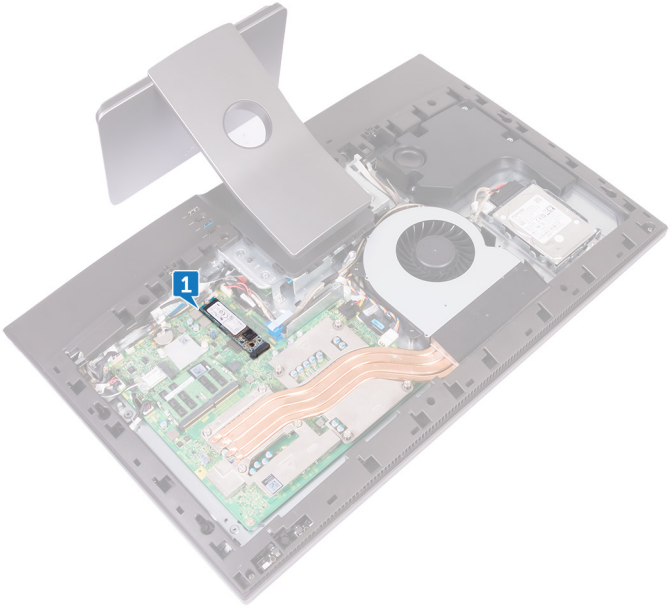
Prerequisites

1. Remove the back cover.
2. Remove the system-board shield.

Identifier	GUID-42D53C65-E4EC-4D23-8E57-0591692982E6
Status	Released

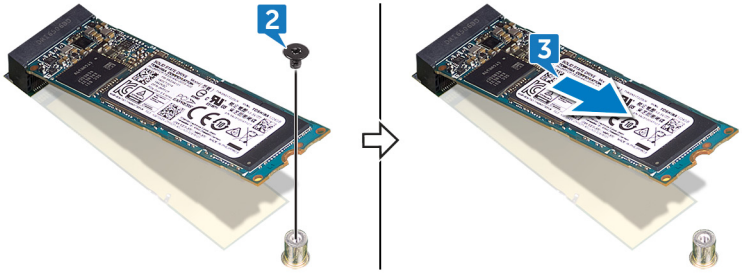
Procedure

1 Locate the solid-state drive slot on the system board.



2 Remove the screw (M2x3.5) that secures the solid-state drive to the system board.

3 Slide and remove the solid-state drive from the solid-state drive slot.



Identifier	GUID-792E5316-8EFA-4894-AE68-995416D3FD47
Status	Released

Replacing the solid-state drive

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 www.dell.com/regulatory_compliance.

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

Identifier	GUID-F8758C16-5A46-469F-B8E6-09FD3F798B17
Status	Released

Procedure

1. Align the notch on the solid-state drive with the tab on the solid-state drive slot.
2. Slide the solid-state drive into the solid-state drive slot.
3. Replace the screw (M2x3.5) that secures the solid-state drive to the system board.

Identifier	GUID-352452C2-A4B4-43B4-9917-C72AF18BDA02
Status	Released

Post-requisites

1. Replace the system-board shield.
2. Replace the back cover.

Identifier	GUID-4AF7A7F4-79DC-43F4-A4DF-63362F890FB6
Status	Released

Removing the wireless card

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 www.dell.com/regulatory_compliance.

Identifier	GUID-80B6901A-84B9-4E89-AECE-A1BD484B2AEF
Status	Released

Prerequisites

1. Remove the back cover.
2. Remove the system-board shield.

Identifier	GUID-7B564BCC-296F-47A5-B6DA-E0E3B445E3F9
Status	Released

Procedure

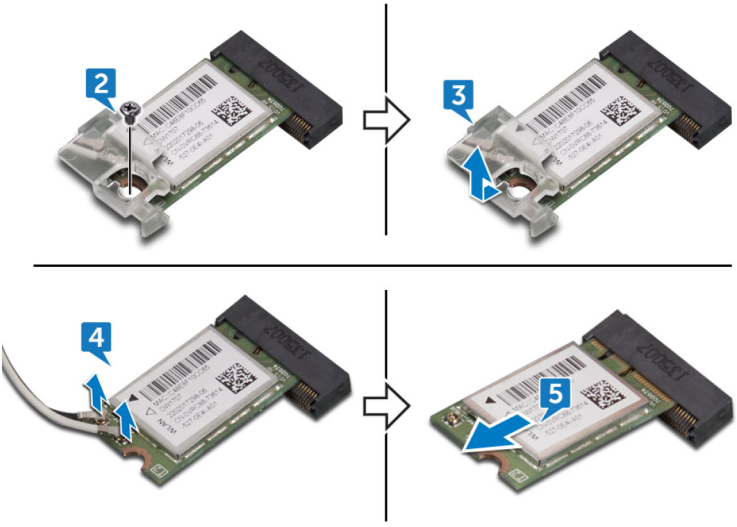
1 Locate the wireless card on the system board.

2 Remove the screw (M2x3.5) that secures the wireless-card bracket and the wireless card to the system board.

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 out of the wireless-card slot.



Identifier	GUID-94E88AEC-6F12-4B0E-AA6A-B28D8E200225
Status	Released

Replacing the wireless card

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 www.dell.com/regulatory_compliance.

Identifier	GUID-C59E343D-43EF-4D6D-BA39-3810CAE72B81
Status	Released

Procedure

CAUTION: To avoid damaging 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 and slide the wireless card into the wireless-card slot.
2. Connect the antenna cables to the wireless card.

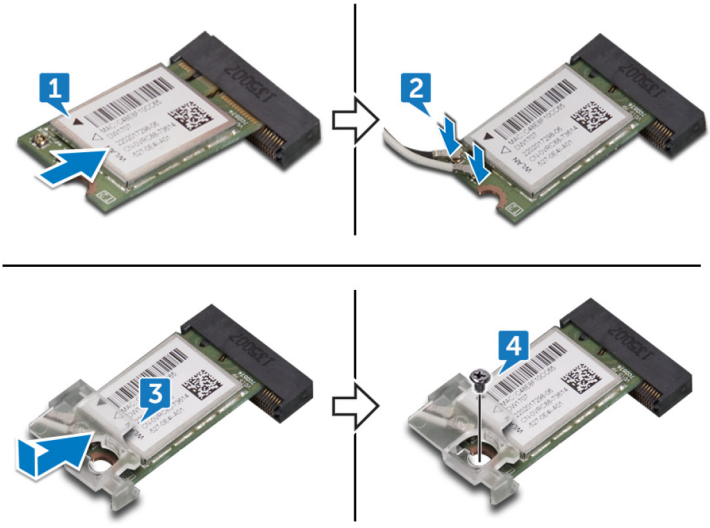
   The following table provides the antenna-cable color scheme for the wireless card supported by your computer.

   Table 2. Wireless card colour scheme

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

3. Press down the other end of the wireless card and align the screw hole on the wireless-card bracket and wireless card with the screw hole on the system board.

4 Replace the screw (M2x3.5) that secures the wireless-card bracket and the wireless card to the system board.



Identifier	GUID-352452C2-A4B4-43B4-9917-C72AF18BDA02
Status	Released

Post-requisites

1 Replace the system-board shield.
2 Replace the back cover.

Identifier	GUID-3AE08A92-614C-4411-90FB-8693F1DE2634
Status	Released

Removing the heat sink

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 www.dell.com/regulatory_compliance.

WARNING: The heat sink may become hot during normal operation. Allow sufficient time for the heat sink to cool before you touch it.

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.

Identifier	GUID-710F4BF8-A339-4E77-A6E3-F24702772160
Status	Released

Prerequisites

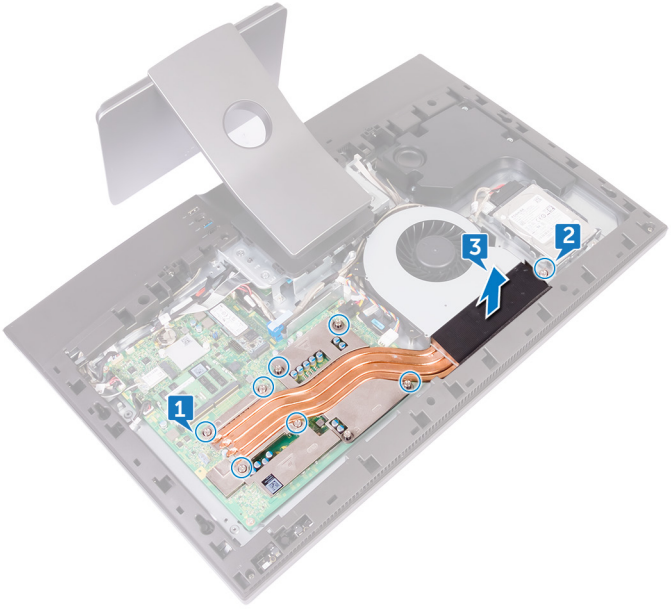
1. Remove the back cover.
2. Remove the system-board shield.

Identifier	GUID-4B58CED2-DF39-45A9-83DF-7179C0FCDDCB
Status	Released

Procedure

1. In sequential order (indicated on the heat sink), loosen the captive screws that secure the heat sink to the system board.
2. Remove the screw (M3x5) that secures the heat sink to the middle frame.

3 Lift the heat sink off the system board.



Identifier	GUID-69332260-F504-4C70-A535-1E11124CC185
Status	Released

Replacing the heat sink

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 www.dell.com/regulatory_compliance.

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

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

Identifier	GUID-A463AB2B-EF38-4591-8266-AF011E78DF23
Status	Released

Procedure

1. Align the captive screws on the heat sink with the screw holes on the system board.
2. In sequential order (indicated on the heat sink), tighten the captive screws that secure the heat sink to the system board.
3. Replace the screw (M3x5) that secures the heat sink to the middle frame.

Identifier	GUID-A1EEE406-0EEB-4DD1-B70B-97B0904A2B57
Status	Released

Post-requisites

1. Replace the system-board shield.

2 Replace the back cover.

Identifier	GUID-54026723-901E-49A7-9E20-7404ECA98BFB
Status	Released

Removing the processor

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 www.dell.com/regulatory_compliance.

Identifier	GUID-0E3CB592-87B6-4C61-8846-77D46BC6DEC5
Status	Released

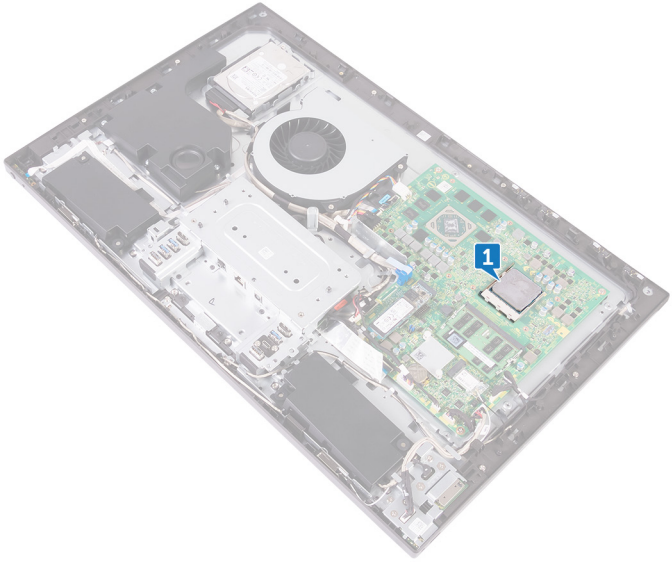
Prerequisites

1. Remove the back cover.
2. Remove the system-board shield.
3. Remove the heat sink.

Identifier	GUID-BD95F2E4-9CBB-4317-989F-1FE9502D8800
Status	Released

Procedure

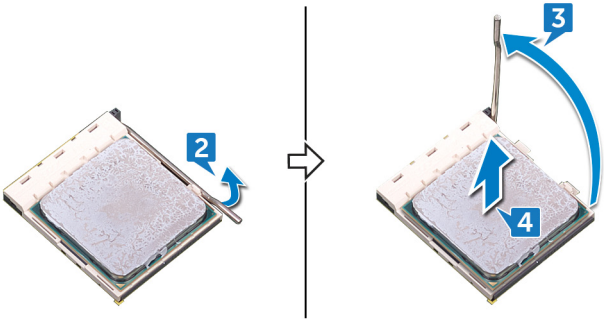
1 Locate the processor on the system board.



2 Press the release-lever down and then pull it outwards to release it from the securing tab.

3 Extend the release-lever completely to open the processor cover.

4 Gently lift the processor and remove it from the processor socket.



Identifier	GUID-08EA64DA-0940-45B5-9DEF-7609F5E6BB53
Status	Released

Replacing the processor

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 www.dell.com/regulatory_compliance.

CAUTION: If either the processor or the heat sink is replaced, use the thermal grease provided in the kit to ensure that thermal conductivity is achieved.

NOTE: A new processor ships with a thermal pad in the package. In some cases, the processor may ship with the thermal pad attached to it.

Identifier	GUID-EF7AC922-A25C-4BE5-BB21-6C6CBE2DEFBE
Status	Released

Procedure

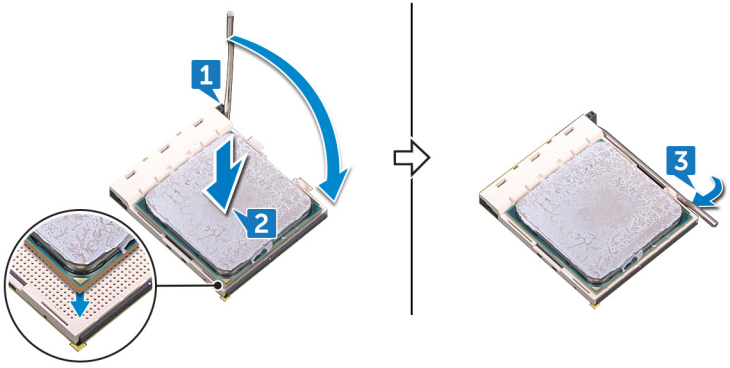
1 Ensure that the release lever on the processor socket is fully extended in the open position.

CAUTION: The pin-1 corner of the processor has a triangle that aligns with the triangle on the pin-1 corner on the processor socket. When the processor is properly seated, all four corners are aligned at the same height. If one or more corners of the processor are higher than the others, the processor is not seated properly.

2 Align the notches on the processor with the tabs on the processor socket and place the processor in the processor socket.

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

3 When the processor is fully seated in the socket, pivot the release-lever down and place it under the tab on the processor cover.



Identifier	GUID-F0F27228-EA0F-47D4-9052-352393854768
Status	Released

Post-requisites

1 Replace the heat-sink.
2 Replace the system-board shield.
3 Replace the back cover.

Identifier	GUID-4EB11C22-0492-4F16-83CE-A64092ACEB01
Status	Released

Removing the I/O bracket

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 www.dell.com/regulatory_compliance.

Identifier	GUID-B921E997-CD1E-4A7D-96D6-723B6E2D1F99
Status	Released

Prerequisites

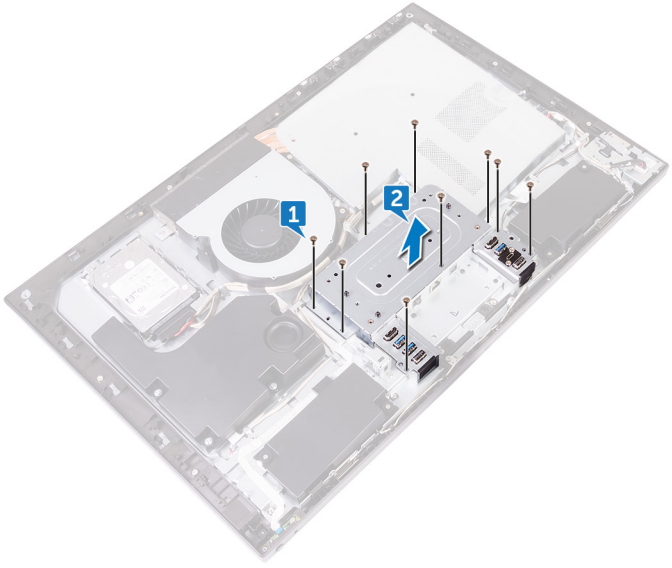
1. Remove the back cover.
2. Remove the stand.
3. Remove the inner frame.
4. Remove the system-board shield.

Identifier	GUID-915A57AD-90C0-4B2C-A9DA-C801411908C9
Status	Released

Procedure

1. Remove the nine screws (M3x5) that secure the I/O bracket to the middle frame.

2 Lift the I/O bracket off the middle frame.



Identifier	GUID-95E4D169-600E-4E8D-9A1E-709C6727D43A
Status	Released

Replacing the I/O bracket

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 www.dell.com/regulatory_compliance.

Identifier	GUID-987AC29C-D294-41DC-B6AF-C2212B5B8DF3
Status	Released

Procedure

1. Align the screw holes on the I/O bracket with the screw holes on the middle frame.
2. Replace the nine screws (M3x5) that secure the I/O bracket to the middle frame.

Identifier	GUID-FC905C12-5D10-4857-AB3A-4AD62CEE2D88
Status	Released

Post-requisites

1. Replace the system-board shield.
2. Replace the inner frame.
3. Replace the stand.
4. Replace the back cover.

Identifier	GUID-DC61C8F1-86D0-49DE-B8D8-229750E714D6
Status	Released

Removing the I/O 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 www.dell.com/regulatory_compliance.

Identifier	GUID-03ED21C7-4AD2-4963-A530-1EBCCE89AEBC
Status	Released

Prerequisites

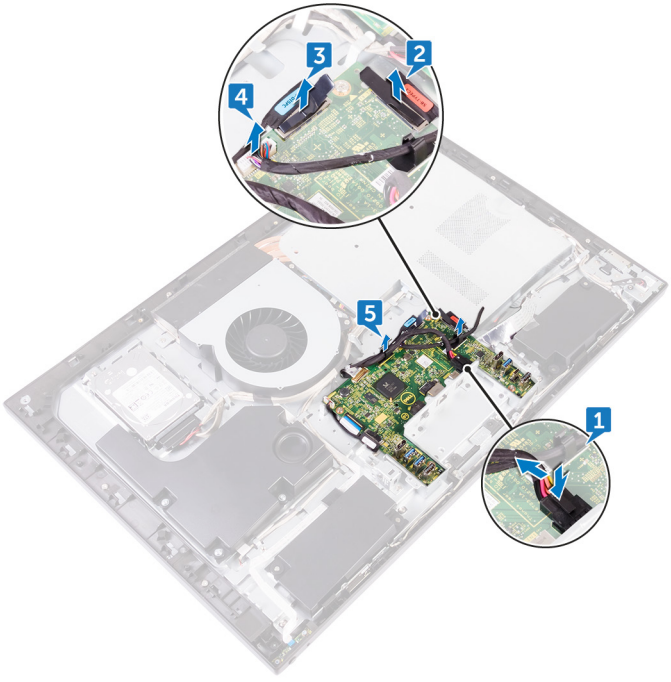
1. Remove the back cover.
2. Remove the stand.
3. Remove the inner frame.
4. Remove the I/O board bracket.

Identifier	GUID-B0E1BEBE-F10D-4240-A7FD-315377D7D3B0
Status	Released

Procedure

1. Press down the latch on the power-cable connector and pull the connector to disconnect the power cable (SB-DCPWR) from the I/O board.
2. Using the pull tab, disconnect the USB Type-C cable (SB-TYPEC1) from the I/O board.
3. Using the pull tab, disconnect the display cable (SB-DISPC) from the I/O board.
4. Disconnect the I/O-board power cable (RPWRC1) from the I/O board.

5 Take note of the cable routing and remove the cables from the routing guide on the I/O board.

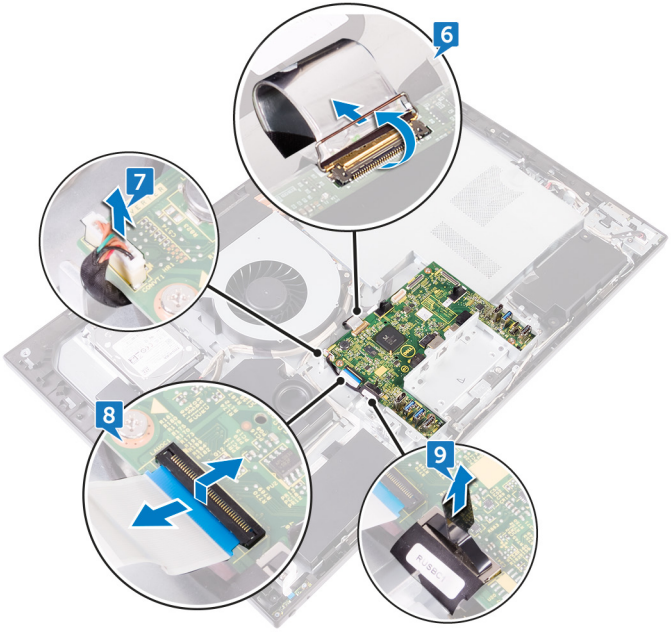


6 Open the latch and disconnect display-panel cable (EDPCN1) from the I/O board.

7 Disconnect the display converter cable (CONVERTER) from the I/O board.

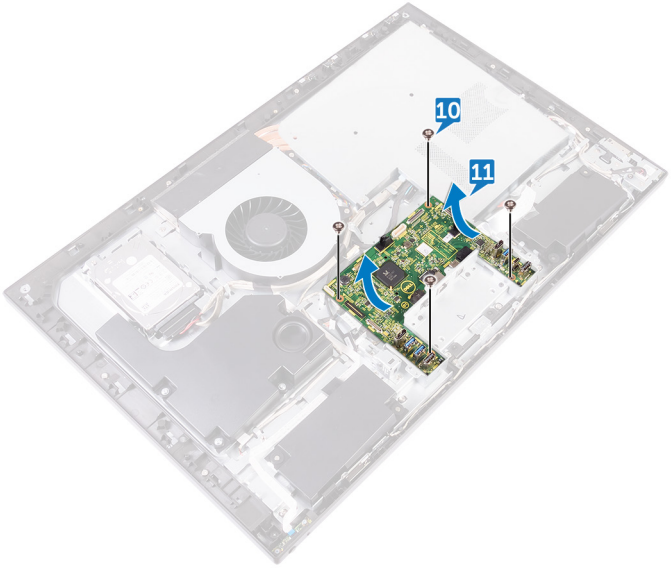
8 Open the latch and disconnect the I/O-board cable (LAUOC1) from the I/O board.

9 Using the pull tab, disconnect the I/O cable (RUSBC1) from the I/O board.



10 Remove the four screws (M3x5) that secure the I/O board to the middle frame.

11 Lift the I/O board off the middle frame.



Identifier	GUID-98F27B1C-9F09-48EC-83D7-FC85C825E6A4
Status	Released

Replacing the I/O 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 www.dell.com/regulatory_compliance.

Identifier	GUID-90BE0D63-C5F7-44E2-831D-84F72D876966
Status	Released

Procedure

1. Align the screw holes on the I/O board with the screw holes on the middle frame.
2. Replace the four screws (M3x5) that secure the I/O board to the middle frame.
3. Connect the I/O cable (RUSBC1), the I/O-board cable (LAUOC1), the display converter cable (CONVERTER), and the display-panel cable (EDPCN1) to the I/O board.
4. Route the I/O-board power cable (RPWRC1) and the power cable (SB-DCPWR) through the routing guides on the I/O board.
5. Connect the I/O-board power cable (RPWRC1), the display cable (SB-DISPC), the USB Type-C cable (SB-TYPEC1), and the power cable (SB-DCPWR) to the I/O board.

Identifier	GUID-04DFACAA-7548-4A84-A079-897E8D472E03
Status	Released

Post-requisites

1. Replace the I/O bracket.

2 Replace the inner frame.
3 Replace the stand.
4 Replace the back cover.

Identifier	GUID-B54497E8-5AD5-4FF9-AD4A-F32FDBEDE1E8
Status	Released

Removing 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 www.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 appropriate changes again after you replace the system board.

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

Identifier	GUID-FBBF0EEB-05FB-46DE-8B76-119C4EF76D05
Status	Released

Prerequisites

1. Remove the back cover.
2. Remove the system-board shield.
3. Remove the memory modules.
4. Remove the solid-state drive.
5. Remove the wireless card.
6. Remove the heat sink.
7. Remove the processor.

Identifier	GUID-C9EC8FC9-094E-4BAA-A0F1-891C28994FE3
Status	Released

Procedure

NOTE: To avoid any potential damage to the cables, ensure to release them from the routing guides.

1. Disconnect the fan-power cable (FAN_SYS) from the system board.
2. Using the pull tab, disconnect the display cable (MB-DISPC) from the system board.
3. Open the latch and disconnect the power-button board cable (0SDC1) from the system board.
4. Press down the latch and disconnect the power cable (MB-DCPWR) from the system board.
5. Using the pull tab, disconnect the hard-drive data cable (SATA0) from the system board.

6 Using the pull tab, disconnect the I/O cable (RUSBC1) from the system board.

7 Disconnect the hard-drive power cable (SATA_PWR1) from the system board.

8 Using the pull tab, disconnect the USB Type-C cable (MB-TYPEC1) from the system board.

9 Open the latch and disconnect the I/O-board cable (LAUOC1) from the system board.

10 Disconnect the I/O-board power cable (RPWRC1) from the system board.

11 Disconnect the subwoofer cable (WOOFC1) from the system board.

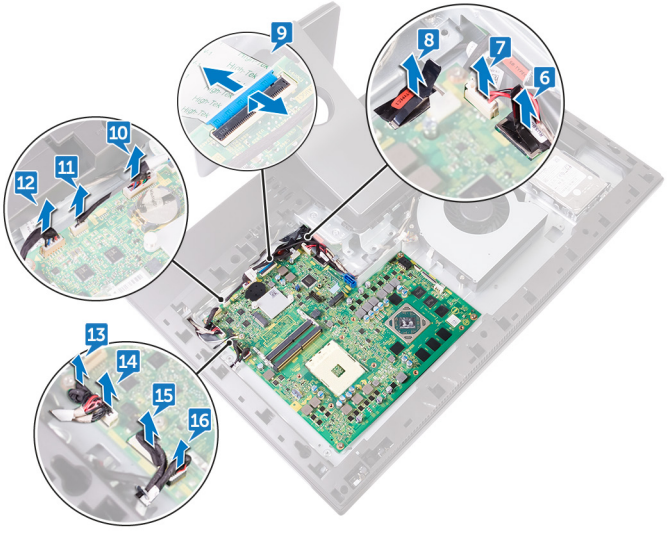
12 Disconnect the speaker cable (SPEAKER) from the system board.

13 Disconnect the media-card reader cable (SDRDC1) from the system board.

14 Disconnect the side I/O-board cable (MB-SUSBC) from the system board.

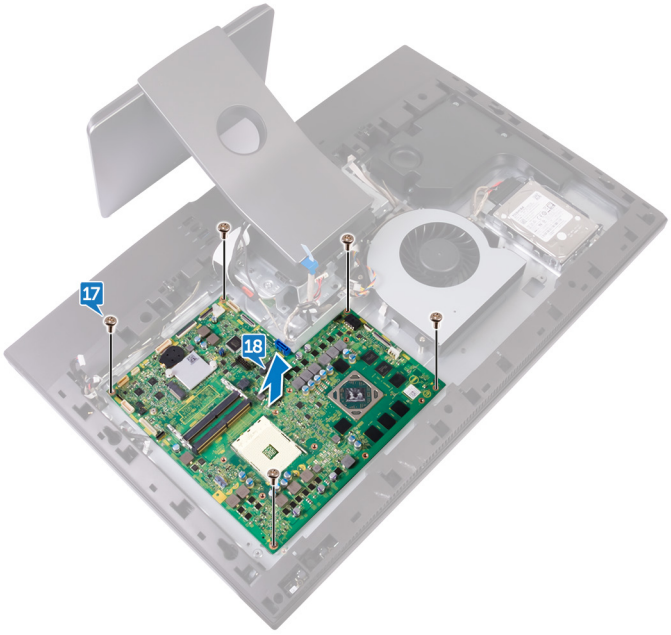
15 Disconnect the camera cable (WEBCAM) from the system board.

16 Disconnect the microphone cable (DMIC1) from the system board.



17 Remove the five screws (M3x5) that secure the system board to the middle frame.

18 Lift the system board off the middle frame.



Identifier	GUID-67274E98-E2F1-4B7B-A903-F38BA6B62028
Status	Released

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 www.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 appropriate changes again after you replace the system board.

Identifier	GUID-59236587-A9A6-45D3-925C-26710640D4A7
Status	Released

Procedure

1. Align the screw holes on the system board with the screw holes on the middle frame.
2. Replace the five screws (M3x5) that secure the system board to the middle frame.
3. Connect the microphone cable (DMIC1), camera cable (WEBCAM), side I/O-board cable (MB-SUSBC), media-card reader cable (SDRDC1), speaker cable (SPEAKER), subwoofer cable (WOOFC1), I/O-board power cable (RPWRC1), I/O-board cable (LAUOC1), USB Type-C cable (MB-TYPEC1), hard-drive power cable (SATA_PWR1), and I/O cable (RUSBC1) to their respective connectors on the system board.

4 Connect the hard-drive data cable (SATA0), power cable (MB-DCPWR), power-button board cable (0SDC1), display cable (MB-DISPC) and fan-power cable (FAN_SYS) to their respective connectors on the system board.

Identifier	GUID-68C785A0-BB0C-4F07-8EC6-F0CA8FEAAE7D
Status	Released

Post-requisites

1 Replace the processor.
2 Replace the heat-sink.
3 Replace the wireless card.
4 Replace the solid-state drive.
5 Replace the memory modules.
6 Replace the system-board shield.
7 Replace the back cover.

Identifier	GUID-665E66D0-54D4-403E-91DA-E6669EC906EC
Status	Released

Removing the middle frame

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 www.dell.com/regulatory_compliance.

Identifier	GUID-94960FC8-6C10-44FA-9A0D-1DC9BEF34BCA
Status	Released

Prerequisites

1. Remove the back cover.
2. Remove the stand.
3. Remove the hard drive.
4. Remove the inner frame.
5. Remove the camera.
6. Remove the microphones.
7. Remove the power-button board.
8. Remove the front bezel.
9. Remove the media-card reader.
10. Remove the side I/O-board.
11. Remove the system-board shield.
12. Remove the fan.
13. Remove the speakers.
14. Remove the subwoofer.
15. Remove the wireless card.
16. Remove the heat sink.

17 Remove the I/O bracket.

18 Remove the I/O board.

19 Remove the system board.

Identifier	GUID-56B10331-AC3C-4D2D-AF01-1AA0736B381B
Status	Released

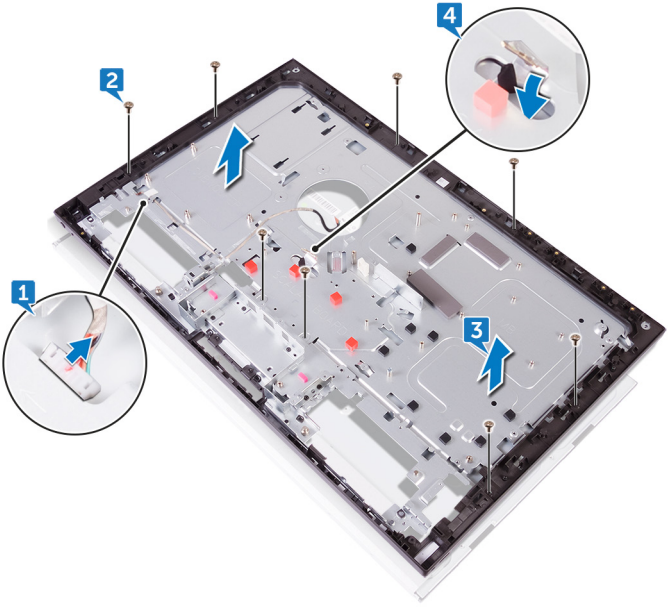
Procedure

1 Press the tabs on the display converter cable (CONVERTER) and disconnect the cable from the display panel through its slot on the middle frame.

2 Remove the eight screws (M3x5) that secure the middle frame to display panel.

3 Gently lift the middle frame off the display panel at an angle.

4 Push the display-panel cable (EDPCN1) through the slot on the middle frame.



Identifier	GUID-27CA34A0-72DA-4F52-8342-74BFFC6F3B92
Status	Released

Replacing the middle frame

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 www.dell.com/regulatory_compliance.

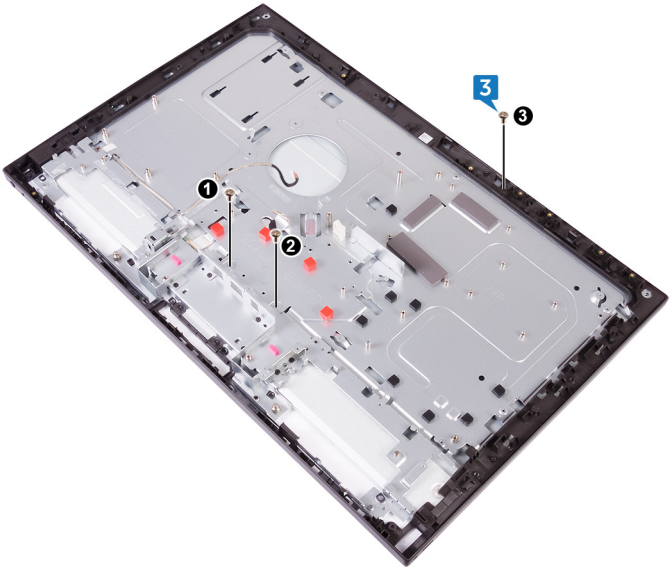
Identifier	GUID-99C0D53C-243F-4DFC-BBD6-CEE094BA3063
Status	Released

Procedure

1 Push the display-panel cable (EDPCN1) through the slot on the middle frame.

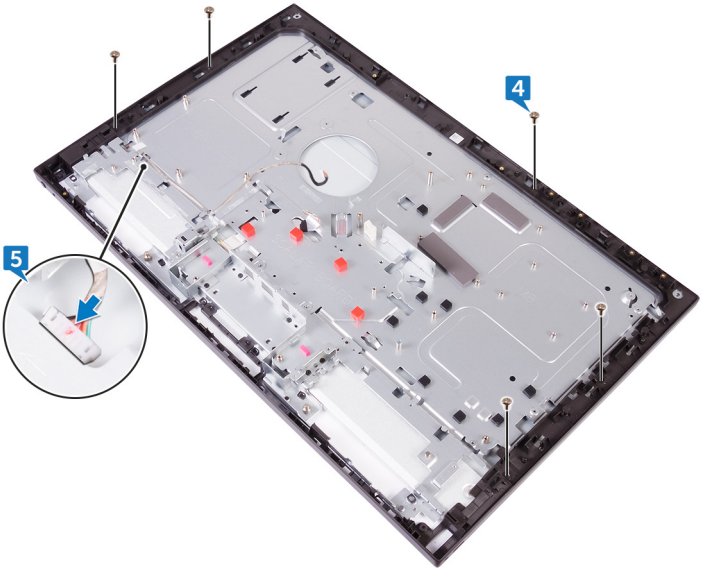
2 Aligning the display panel to the slot on the middle frame, slide the display panel into the slot on the middle frame.

3 In sequential order replace the three screws (M3x5) that secure the middle frame to display panel.



4 Replace the remaining five screws (M3x5) that secure the middle frame to display panel.

5 Connect the display converter cable (CONVERTER) to the display panel through its slot on the middle frame.



Identifier	GUID-641FC849-B90A-4BED-AB13-348129937435
Status	Released

Post-requisites

1 Replace the system board.
2 Replace the I/O board.
3 Replace the I/O bracket.
4 Replace the heat-sink.
5 Replace the wireless card.
6 Replace the subwoofer.
7 Replace the speakers.
8 Replace the fan.
9 Replace the system-board shield.
10 Replace the side I/O-board.
11 Replace the media-card reader.

12 Replace the front bezel.
13 Replace the power-button board.
14 Replace the microphones.
15 Replace the camera.
16 Replace the inner frame.
17 Replace the hard drive.
18 Replace the stand.
19 Replace the back cover.

Identifier	GUID-7D2CEA1B-1FC0-4606-86EB-F51C5DFB6E52
Status	Released

Removing the display panel

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 www.dell.com/regulatory_compliance.

Identifier	GUID-66FB536D-A711-477F-97B7-D0589873EB39
Status	Released

Prerequisites

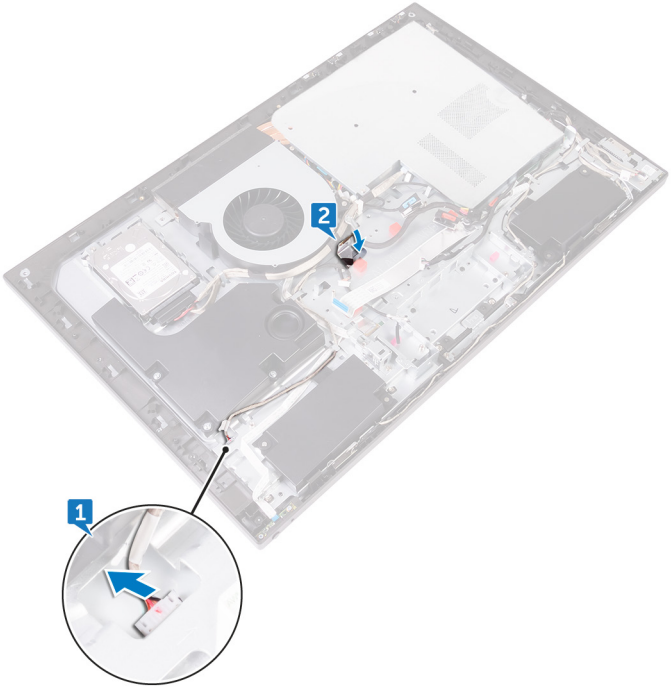
1. Remove the back cover.
2. Remove the stand.
3. Remove the inner frame.
4. Remove the I/O bracket.
5. Remove the I/O board.

Identifier	GUID-A0DB5C07-9728-4F25-8D2F-21E76157C9D7
Status	Released

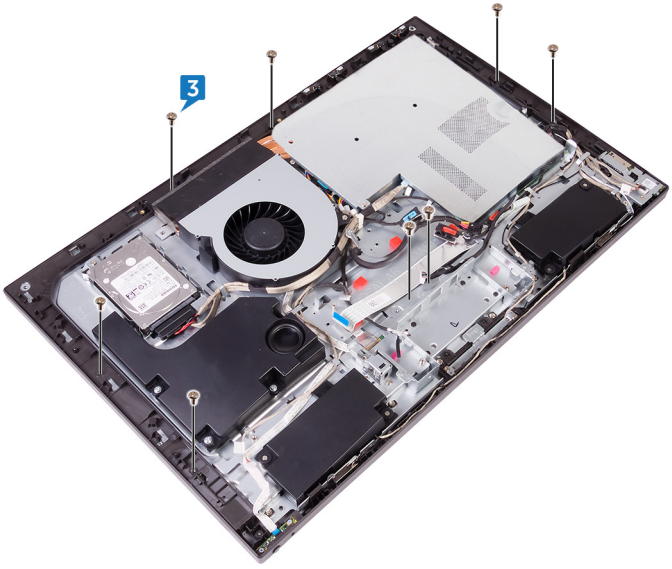
Procedure

1. Disconnect the display converter cable (CONVERTER) from the display panel.

2 Push the display-panel cable (EDPCN1) into the routing channel on the middle frame.



3 Remove the eight screws (M3x5) that secure the middle frame to the display panel.



4 Lift the middle-frame assembly at an angle from the top.

5 Slide and lift the middle-frame assembly off the display panel.

Identifier	GUID-6FD32244-34F4-4843-983D-B6C14903EFC9
Status	Released

Replacing the display panel

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 www.dell.com/regulatory_compliance.

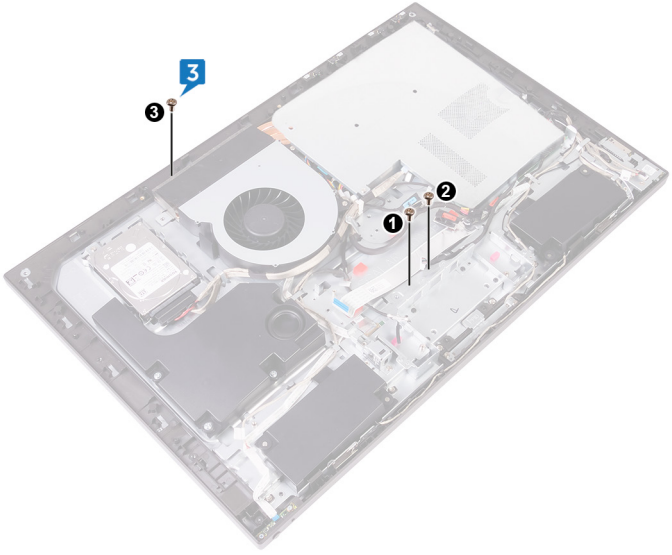
Identifier	GUID-2AAF7505-55E0-49D7-A187-2C3183472C53
Status	Released

Procedure

1 Place the display panel on the middle-frame assembly and route the display cable through the routing channel on the middle frame.

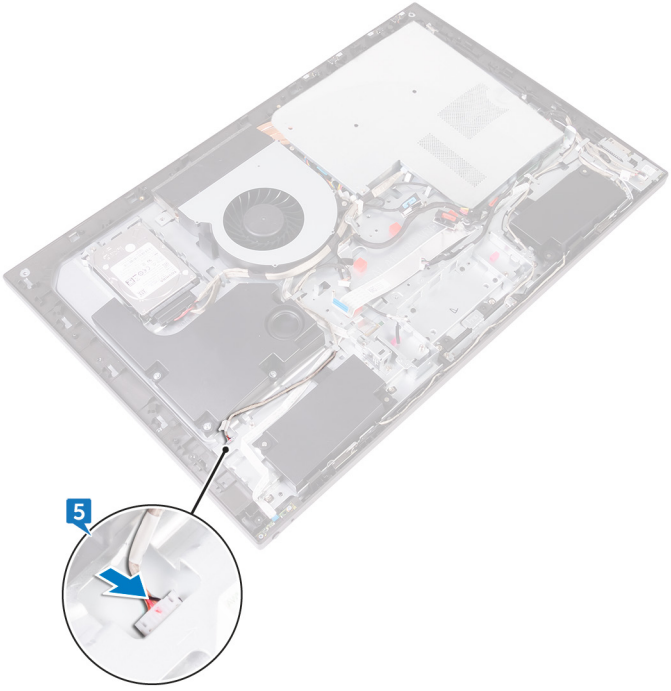
2 Slide the display-panel cable (EDPCN1) into the middle-frame assembly.

3 In sequential order (indicated on the image), replace the three screws (M3x5) that secure the middle frame to the display panel.



4 Replace the five screws (M3x5) that secure the middle frame to the display panel.

5 Connect the display converter cable (CONVERTER) to the display panel.



Identifier	GUID-31483C4A-9A3D-4E75-A678-77C9C6D724FC
Status	Released

Post-requisites

1 Replace the I/O board.
2 Replace the I/O bracket.
3 Replace the inner frame.
4 Replace the stand.
5 Replace the back cover.

Identifier	GUID-F5899359-C2E1-41C0-9663-4C79969506EB
Status	Released

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 your computer.
2. Go to www.dell.com/support.
3. Click **Product support**, enter the Service Tag of your computer, and then 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** → **Find it myself**.
5. Select the operating system installed on your computer.
6. Scroll down the page and expand **BIOS**.
7. Click **Download** to download the latest version of the BIOS for your computer.
8. After 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.

Identifier	GUID-7C4079DF-9FF4-48AC-A162-4A939A8B2557
Status	Released

BIOS setup program

Identifier	GUID-E8E05C46-BC9D-4CF1-AC84-34B87FDCCFB7
Status	Released

BIOS 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 the BIOS Setup program for the following purposes:

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

Identifier	GUID-1432A924-49E9-4080-961D-2AFBDAF42039
Status	Released

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 is 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 desktop. Then, turn off your computer and try again.

Identifier	GUID-8E9DCAE8-A494-4678-BBCD-588ACE1C43EE
Status	Released

System setup options

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

Table 3. System information

Main—System Information	
System Time	Displays the current time in hh:mm:ss format.
System Date	Displays the current date in mm/dd/yyyy format.
BIOS Version	Displays the BIOS version number.
Product Name	Displays the computer model.
Service Tag	Displays the Service Tag of the computer.
Asset Tag	Displays the asset tag of the computer when the asset tag is present.
CPU Type	Displays the CPU type.
CPU Speed	Displays the CPU speed.
CPU ID	Displays the CPU identification code.
CPU Cache	
L1 Cache	Displays the CPU L1 cache size.
L2 Cache	Displays the CPU L2 cache size.
L3 Cache	Displays the CPU L3 cache size.

Main—System Information	
First HDD	Displays the hard drive type and capacity connected to the SATA 1 connector.
Second HDD	Displays the hard drive type and capacity connected to the SATA 2 connector.
AC Adapter Type	Displays the power adapter type.
System Memory	Displays the system memory.
Memory Speed	Displays the memory speed in MHz.

Table 4. Processor Configuration

Advanced—Processor Configuration	
PowerNow | Enable	Enable PowerNow feature for the processor. Default: Enabled.
Virtualization	Specify whether a Virtual Machine Monitor (VMM) can utilize the additional hardware capabilities provided by Intel Virtualization Technology. Default: Enabled.
Integrated NIC	Controls the on-board LAN controller. Default: Enabled.
SATA Operation	Configures operating mode of the integrated SATA hard drive controller. Default: AHCI.
Adapter warnings	Enable or disable adapter warnings. Default: Enabled.

Table 5. Miscellaneous Devices

Advanced—Miscellaneous Devices	
BIOS Recovery from Hard Drive	Enable you to recover from certain corrupted BIOS conditions from a recovery file on the user primary hard drive. Default: Enabled.
BIOS Auto-Recovery	Enable or disable BIOS auto-recovery from certain corrupted BIOS conditions. Default: Disabled.

Advanced—Miscellaneous Devices	
Always Perform Integrity Check	Enable or disable the integrity check function. Default: Disabled.

Table 6. USB Configuration

Advanced—USB Configuration	
Rear USB Ports	Enable or disable the USB ports at the back of your computer. Default: Enabled.
Side USB Ports	Enable or disable the USB ports at the side of your computer. Default: Enabled.
USB debug	Enable or disable the USB debug feature. Default: Disabled.

Table 7. Power options

Advanced—Power Option	
Wake Up by Integrated LAN/ WLAN	If enabled, wakes the system using a network message. Default: Disabled. **NOTE: This option can be enabled only if the Deep Sleep Mode is set to Disabled.**
AC Recovery	Select the action the computer takes when power is restored. Default: Power off.
Deep Sleep Control	Configure the Deep Sleep support mode. Default: Enable in S4 and S5.
USB Wake Support	Enable the USB devices to wake the computer from Standby. Default: Disabled.
USB PowerShare in S4/S5 State	Enable or disable USB PowerShare in S4/S5 State. Default: Disabled.
USB PowerShare in Sleep State	Enable or disable USB PowerShare in sleep state. Default: Normal.
Auto Power On	Enable or disable the computer from turning on automatically. Default: Disabled.

Advanced—Power Option	
Auto Power On Mode	Set the computer to turn on automatically every day or on a preselected date. **NOTE: This option can be configured only if the Auto Power On mode is set to Enabled Everyday .or Selected Day (Selected Day by default).**
Auto Power On Date	Set the date on which the computer must turn on automatically. **NOTE: This option can be configured only if the Auto Power On mode is set to Enabled 1 to 31 (15 by default).**
Numlock Key	Enable or disable the Numlock key. Default: Enabled.

Table 8. SupportAssist System Resolution

Advanced—SupportAssist System Resolution	
Auto OS Recovery Threshold	Control the automatic boot flow for SupportAssist System Resolution Console and for Dell OS Recovery tool. Default: 2.
SupportAssist OS Recovery	Enable or disable the boot flow for SupportAssist OS recovery tool. Default: Disabled.

Table 9. Security options

Security	
Admin Password	Displays the admin password.
System Password	Displays the system password.
HDD1 Password	Displays the HDD1 password.
Service Tag	Set, change, or delete the Service Tag.
Asset Tag	Set, change, or delete the Asset Tag.
Admin Password	Set, change, or clear the admin password.
System Password	Set, change, or clear the system password.

Security	
HDD1 Password	Set, change, or clear the HDD1 password.
Password Change	Enable or disable changes to the System and Hard Disk passwords when an administrator password is set. Default: Permitted.
Computrace	Enable or disable the BIOS module interface of the optional Computrace Service from Absolute Software. Default: Deactivate.
Firmware TPM	Enable or disable Firmware TPM function. Default: Disabled.
UEFI Firmware Capsule Updates	Enable or disable BIOS updates through UEFI capsule update packages. Default: Enabled.

Table 10. Boot options

Boot	
Secure Boot Control	Enable or disable the secure boot control. Default: Disabled. **NOTE: To enable this feature, the computer must be in the UEFI boot mode.**
Legacy Option ROMs	Enable or disable the Legacy Option ROMs. Default: Enabled.
Boot List Option	Displays the available boot options.
Attempt Legacy Boot	Enable or disable the attemp legacy boot function. Default: Disabled.

Table 11. LEGACY BOOT

Boot—LEGACY BOOT	
Diskette Drive	Displays the boot sequence of the diskette drive.
Hard Drive	Displays the boot sequence of the hard drive.
USB Storage Drive	Displays the boot sequence of the USB storage drive.

Boot—LEGACY BOOT	
CD/DVD/CD-RW Drive	Displays the boot sequence of the optical drive.
Network	Displays the boot sequence of the network drive.

Table 12. Exit options

Exit	
Exit Saving Changes	Exit system setup and save your changes.
Save Change Without Exit	Save your changes.
Exit Discarding Changes	Exit system setup and load previous values for all system setup options.
Load Optimal Defaults	Load default values for all system setup options.
Discard Changes	Load previous values for all system setup options.

Identifier	GUID-185C8B9A-D728-4477-99FC-D9276DAD3A15
Status	Released

Clearing forgotten passwords

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 www.dell.com/regulatory_compliance.

Identifier	GUID-80B6901A-84B9-4E89-AECE-A1BD484B2AEF
Status	Released

Prerequisites

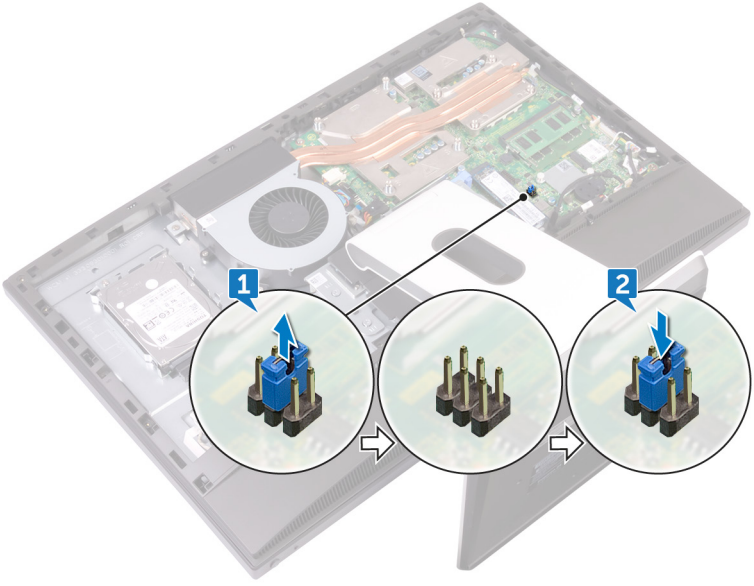
1. Remove the back cover.
2. Remove the system-board shield.

Identifier	GUID-E37E55C4-1964-4ABA-952C-7B58A4FA17B1
Status	Released

Procedure

NOTE: For the location of the jumper, see "System-board components".

1. Remove the jumper plug from the password jumper pins.
2. Wait for five seconds, and then replace the jumper plug to its original location.



Identifier	GUID-352452C2-A4B4-43B4-9917-C72AF18BDA02
Status	Released

Post-requisites

1. Replace the system-board shield.
2. Replace the back cover.

Identifier	GUID-85E904E9-9739-40E9-B16E-44C3F6C759A5
Status	Released

Clearing CMOS settings

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 www.dell.com/regulatory_compliance.

Identifier	GUID-80B6901A-84B9-4E89-AECE-A1BD484B2AEF
Status	Released

Prerequisites

1. Remove the back cover.
2. Remove the system-board shield.

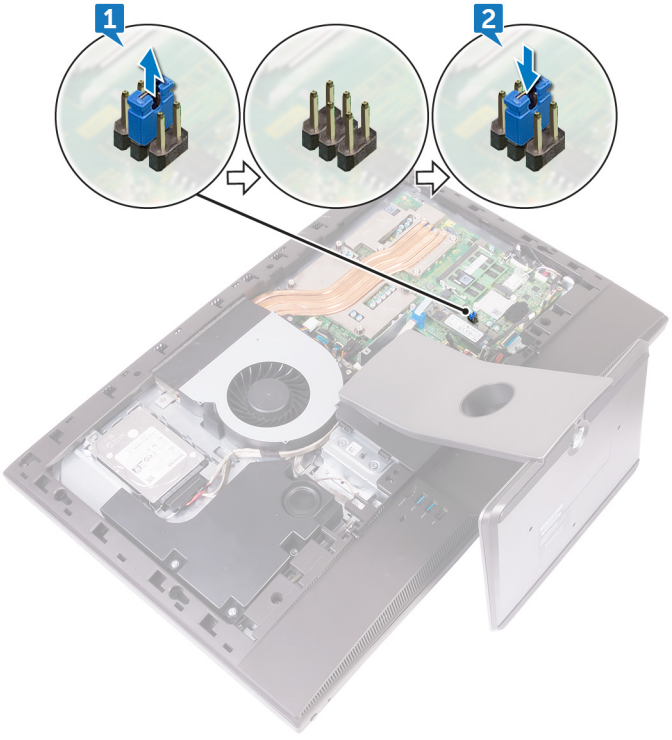
Identifier	GUID-C7BAECA4-7AAA-4060-8F52-F412C70D591D
Status	Released

Procedure

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

1. Remove the jumper plug from the password jumper-pins and connect it to the CMOS jumper pins.

2 Wait for five seconds, and replace the jumper plug to its original location.



Identifier	GUID-352452C2-A4B4-43B4-9917-C72AF18BDA02
Status	Released

Post-requisites

1 Replace the system-board shield.

2 Replace the back cover.

Identifier	GUID-A88CF4BC-F775-4FAF-97B9-77C8D75E67A3
Status	Released

Diagnostics

Power status light: Indicates the power status.

Solid Amber – The computer is unable to boot to the operating system. This indicates that the power supply or another device in the computer is failing.

Blinking Amber – The computer is unable to boot to the operating system. This indicates that the power supply is normal but another device in the computer is failing or not installed properly.

NOTE: See the light patterns to determine the device that is failing.

Off – Computer is in hibernation or turned off.

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

For example, the power status light blinks amber two times followed by a pause, and then blinks white three times followed by a pause. This 2,3 pattern continues until the computer is turned off indicating the Recovery image is not found.

The following table shows different light patterns and what they indicate:

Table 13. System diagnostic lights

Light pattern	Problem description
1	System board, BIOS corruption, or ROM error
3	System board, Chipset error, Clock failure, Gate A20 failure, Super I/O failure, or Keyboard controller failure
4	Memory or RAM failure
5	Coin-cell battery failure
6	GPU failure
7	CPU failure
8	Display failure
3,6	BIOS recovery image not found

Light pattern	Problem description
3,7	BIOS recovery image found but invalid

The computer may emit a series of beeps during start-up if the errors or problems cannot be displayed. The repetitive beep codes help the user troubleshoot problems with the computer.

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

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

Identifier	GUID-AF18382F-D265-43C2-85DA-28FFB5875F37
Status	Released

Getting help and contacting Dell

Self-help resources

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

Table 14. Self-help resources

Information about Dell products and services	www.dell.com
Dell Help & Support app	
Get started app	
Accessing help	In Windows search, type `Help and Support`, and press Enter.
Online help for operating system	www.dell.com/support/windows www.dell.com/support/linux
Troubleshooting information, user manuals, setup instructions, product specifications, technical help blogs, drivers, software updates, and so on.	www.dell.com/support
Learn about your operating system, setting up and using your computer, data backup, diagnostics, and so on.	See *Me and My Dell* at www.dell.com/support/manuals.

Contacting Dell

To contact Dell for sales, technical support, or customer service issues, see www.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.