



Hardware Reference Guide

HP TouchSmart 9300 Elite Business PC

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Hardware Reference Guide


HP TouchSmart 9300 Elite Business PC


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About This Book

This guide provides basic information for upgrading this computer model.

 **WARNING!** Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.

 **CAUTION:** Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.


 **NOTE:** Text set off in this manner provides important supplemental information.

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1 Product Features

Overview

Figure 1-1 HP TouchSmart 9300 Elite Business PC



 **NOTE:** The wireless keyboard and mouse shown above are optional accessories.

The HP TouchSmart 9300 Elite Business PC offers the following features:

- Integrated All-in-One form factor
- 23-inch diagonal widescreen WLED backlit BrightView LCD
- Multitouch panel
- Swivel pad and VESA mounting bracket under base of stand
- Adjustable reclining stand
- Intel® 2nd Generation Core™ i7, i5, or i3 processor
- Intel H67 chipset
- Genuine Windows 7 Professional Edition operating system
- Integrated Intel HD Graphics, or discrete MXM graphics
- Integrated Gigabit Network Connection (10/100/1000 NIC)
- Optional wireless connectivity:
 - Integrated 802.11 a/b/g/n or b/g/n wireless LAN module
 - Bluetooth® 3.0
- Optional TV Tuner

- Four SODIMM slots with up to 16 GB of DDR3 SDRAM memory and dual channel support
- Up to 1 TB hard drive, or up to 300 GB Solid State Drive
- HP SuperMulti DVD Writer or HP SuperMulti DVD Writer Drive
- 6-in-1 Media Card Reader
- 7 USB ports
- DisplayPort
- Integrated Full HD webcam, dual microphone array, and premium stereo speakers
- Volume control and mute buttons
- Security lock slot and rear port security cover
- Removable panels on the back of the chassis allow administrators to easily and efficiently service the PC
- HP TouchSmart software suite for instant access to calendar, Internet, notes, and multimedia content
- ENERGY STAR® qualified, EPEAT® Gold registered, and offers 90-percent energy-efficient power
- Choice of wired or wireless keyboard and mouse

Front Components

Figure 1-2 Front Components



Table 1-1 Front Components

No.	Component	No.	Component
1	58.4 cm (23-inch) diagonal, 16:9 widescreen, touch-enabled, full HD, white LED backlit LCD display	4	Dual wireless antenna

Table 1-1 Front Components (continued)

No.	Component	No.	Component
2	Dual microphone array (optional)	5	High-performance stereo speakers
3	Webcam (optional)	6	IR Receiver (select models only)

Side Components

Figure 1-3 Side Components

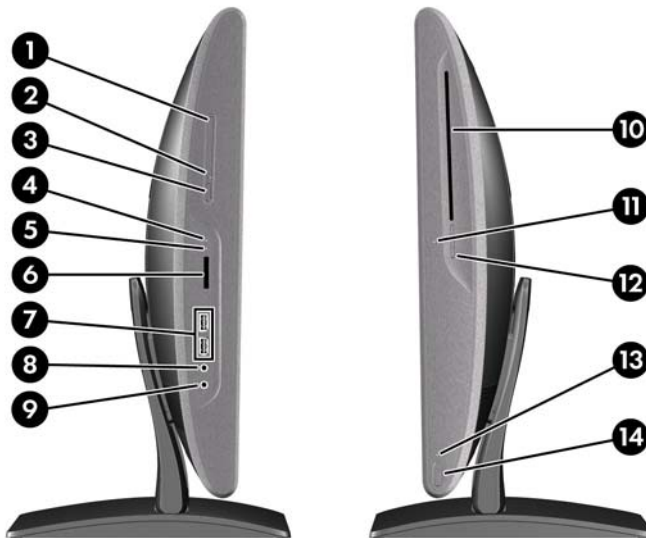


Table 1-2 Side Components

No.	Component	No.	Component
1	Volume up button	8	Microphone/line in jack
2	Volume down button	9	Headphone jack
3	Mute button	10	Slot-load optical drive (optional)
4	Hard drive activity LED	11	Optical drive eject button
5	Media card reader activity LED	12	Optical drive activity LED
6	Media card reader	13	Power LED
7	(2) USB 2.0 ports	14	Power button

Rear Components

Figure 1-4 Rear Components

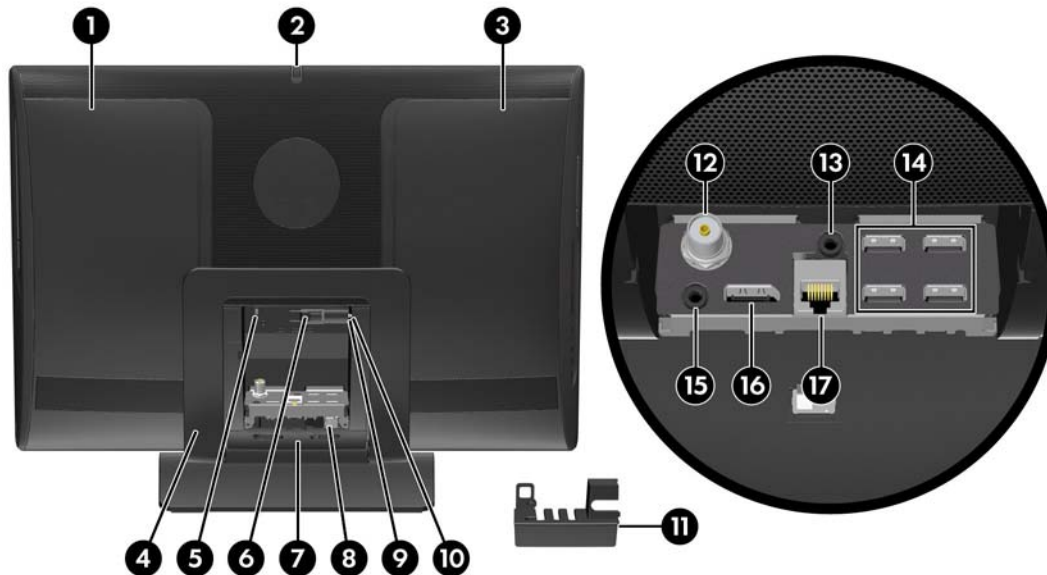


Table 1-3 Rear Components

No.	Component	No.	Component
1	Drive access panel	10	Power indicator light
2	Webcam adjustment wheel	11	Rear port security cover
3	Memory access panel	12	TV coax in (optional)
4	Adjustable reclining stand	13	IR Emitter (Blaster) output (optional)
5	Security lock slot	14	(4) USB 2.0 ports
6	Power connector release latch	15	Audio line out
7	Rear port access door	16	DisplayPort
8	USB port for optional wireless keyboard/mouse receiver	17	RJ-45 Gigabit Ethernet port
9	Power connector		

Keyboard Features

Figure 1-5 Keyboard Features

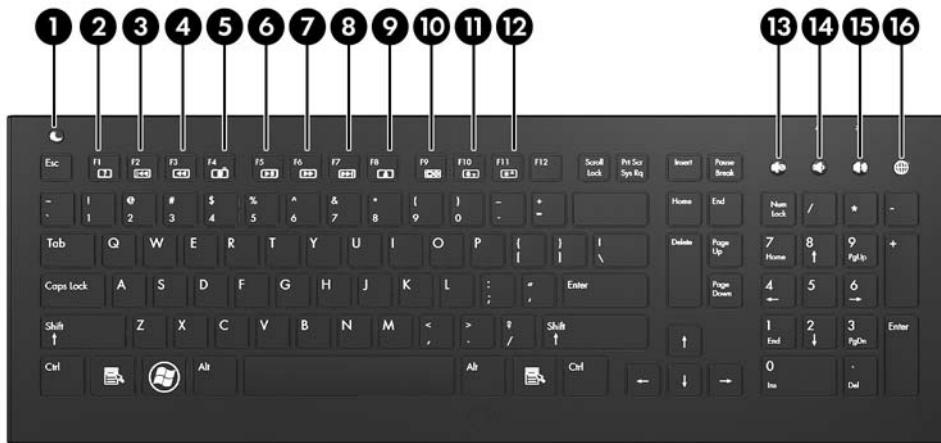


Table 1-4 Keyboard Features

No.	Component	No.	Component
1	Sleep	9	Eject (F8)
2	Windows Help (F1)	10	Display On/Off (F9)
3	Replay (F2)	11	Decrease Brightness (F10)
4	Rewind (F3)	12	Increase Brightness (F11)
5	Stop (F4)	13	Mute Volume
6	Play/Pause (F5)	14	Decrease Volume
7	Fast Forward (F6)	15	Increase Volume
8	Skip (F7)	16	Internet

Remote Control Features


 **NOTE:** A remote control is included with select models only.

Figure 1-6 Remote Control Features

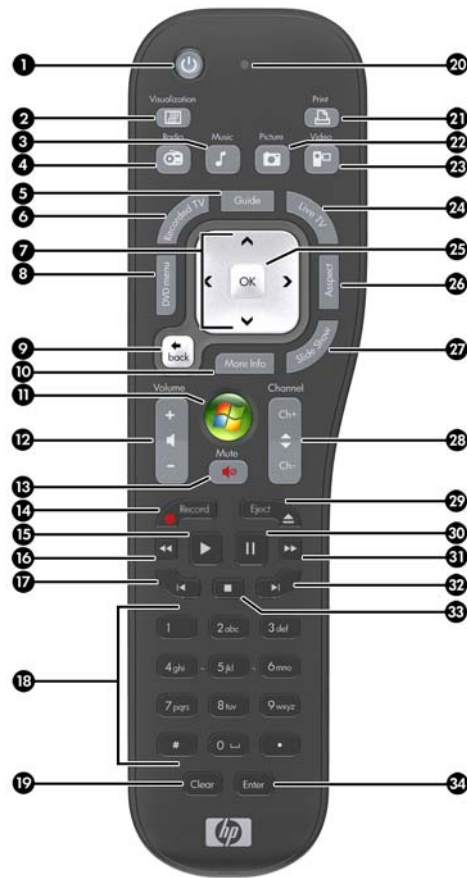


Table 1-5 Remote Control Features

No.	Button	Function
1	On/Off	Puts the computer into and out of a power-reduced Sleep mode. It does not turn the computer off.
2	Visualization	Displays visual imagery synchronized to the sound of the music tracks.
3	Music	(Windows Media Center only) Opens the Music Library window in Windows Media Center.
4	Radio	(Windows Media Center only) Opens the FM Radio window in Windows Media Center.
5	Guide	(Windows Media Center only) Opens the Television Program Guide.
6	Recorded TV	(Windows Media Center only) Opens the recorded TV window where recorded TV programs are displayed.
7	Arrows	Move the cursor to navigate and select actions.
8	DVD Menu	Opens the Play DVD window in Windows Media Center or opens the main menu of a DVD movie, if available.
9	Back	Returns to the previous window.
10	More Info	Displays available information about a selected media file and displays other menus.

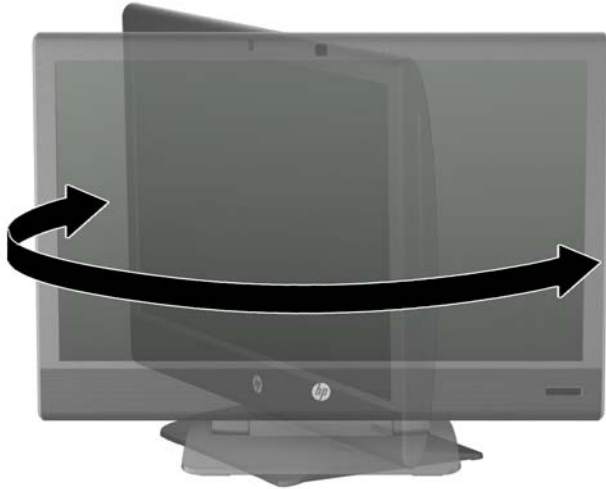
Table 1-5 Remote Control Features (continued)

No.	Button	Function
11	Start	Opens Windows Media Center main menu.
12	Volume	Increases (+) or decreases (-) volume.
13	Mute	Turns computer sound off. The word "Mute" displays onscreen when Mute is turned on.
14	Record	Records a selected television program and stores it on the hard disk drive.
15	Play	Plays the selected media.
16	Rewind	Moves the media backward at three speeds.
17	Skip Backward	Moves media backward 7 seconds or to the beginning of a music track or a DVD chapter.
18	0 through 9, *, ., #	Enters text and numbers into a search or text box. Pressing a number button repeatedly toggles through the characters on that button. Press Enter to select a character.
19	Clear	Deletes the last character entered.
20	LED	Activity indicator light. The LED tells you that the remote control is emitting a signal when you press a button.
21	Print	Prints the selected item.
22	Picture	(Windows Media Center only) Opens the Pictures Library window.
23	Video	(Windows Media Center only) Opens the Videos Library window.
24	Live TV	(Windows Media Center only) Displays the full-screen view of live TV. Moves a TV program forward to the end of the pause buffer and resumes playing live TV.
25	OK	Selects the desired action or window option and acts as the Enter key.
26	Aspect	Changes the aspect ratio of the display. Zooms in on the picture three times, and then returns to the full-screen aspect ratio.
27	Slide Show	(Windows Media Center only) Plays a slide show of all the pictures on the hard disk drive.
28	Ch+ and Ch-	Changes the TV channels or moves pages up and down, depending on available options. Moves to the next DVD chapter.
29	Eject	Ejects a CD or DVD.
30	Pause	Pauses audio and video tracks and live or recorded TV programs.
31	Fast Forward	Moves the media forward at three speeds.
32	Skip Forward	Moves the media forward 30 seconds in videos and live TV, one music track, or one DVD chapter.
33	Stop	Stops the media currently playing.
34	Enter	Selects the desired action, menu, or window option.

Adjusting the Swivel

The computer has a swivel wheel on the underside of the base that allows you to swivel the computer left or right for the best viewing angle.

Figure 1-7 Adjusting Swivel



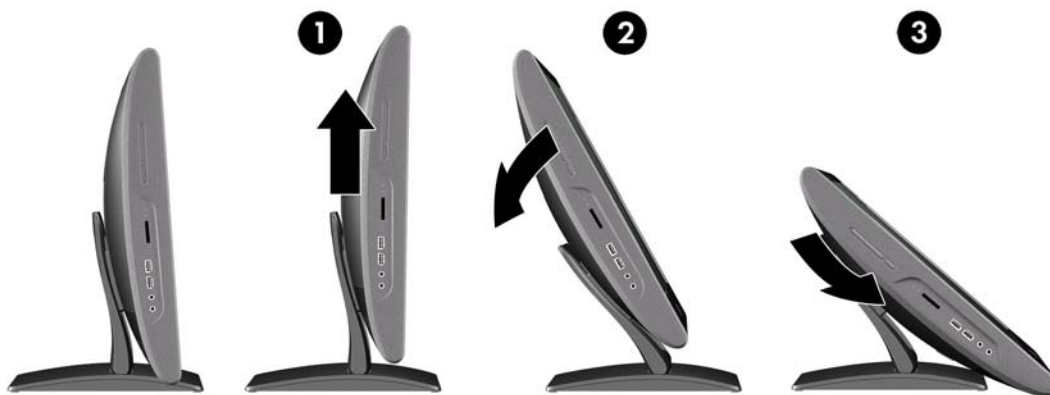
Adjusting the Height, Tilt, and Slope

To adjust the height, slide the display head up (1) or down.

To adjust the tilt, slide the display head to the highest position (1) and tilt the display head back to the desired position (2).

To adjust the slope, slide the display head to the highest position (1), tilt the display head back to the full tilt position (2), then slide the display head down to the desired position (3). The fully sloped position is convenient for operating the touch screen.

Figure 1-8 Adjusting Height, Tilt, and Slope



2 Hardware Upgrades

Warnings and Cautions

Before performing upgrades be sure to carefully read all of the applicable instructions, cautions, and warnings in this guide.

⚠ WARNING! To reduce the risk of personal injury from electrical shock, hot surfaces, or fire:

Disconnect the power cord from the wall outlet and allow the internal system components to cool before touching.

Do not plug telecommunications or telephone connectors into the network interface controller (NIC) receptacles.

Do not disable the power cord grounding plug. The grounding plug is an important safety feature.

Plug the power cord in a grounded (earthed) outlet that is easily accessible at all times.

For your safety, do not place anything on power cords or cables. Arrange them so that no one may accidentally step on or trip over them. Do not pull on a cord or cable. When unplugging from the electrical outlet, grasp the cord by the plug.

To reduce the risk of serious injury, read the *Safety & Comfort Guide*. It describes proper workstation, setup, posture, and health and work habits for computer users, and provides important electrical and mechanical safety information. This guide is located on the Web at <http://www.hp.com/ergo>.

⚠ WARNING! Computers that are inappropriately situated on dressers, bookcases, shelves, desks, speakers, chests, or carts may fall over and cause personal injury.

Care should be taken to route all cords and cables connected to the computer so that they can not be pulled, grabbed, or tripped over.

⚠ WARNING! Energized and moving parts inside.

Disconnect power to the equipment before removing any access panels.

Replace and secure all access panels before re-energizing the equipment.

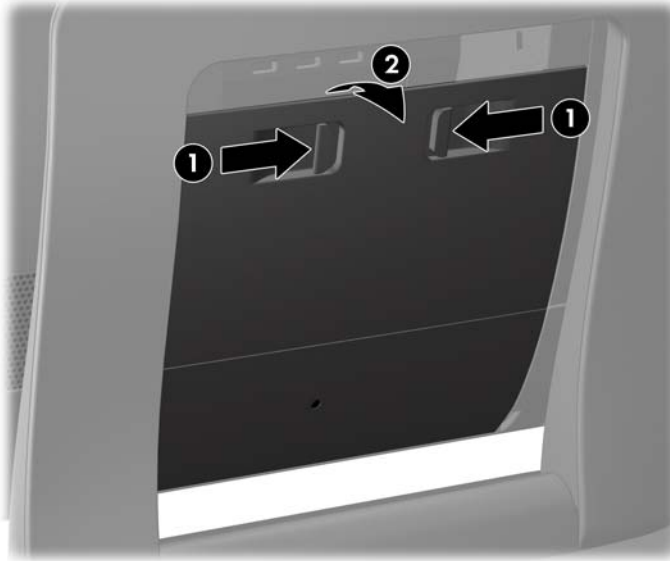
⚠ CAUTION: Static electricity can damage the electrical components of the computer or optional equipment. Before beginning these procedures, ensure that you are discharged of static electricity by briefly touching a grounded metal object. See [Electrostatic Discharge on page 36](#) for more information.

When the computer is plugged into an AC power source, voltage is always applied to the system board. You must disconnect the power cord from the power source before opening the computer to prevent damage to internal components.

Connecting Power

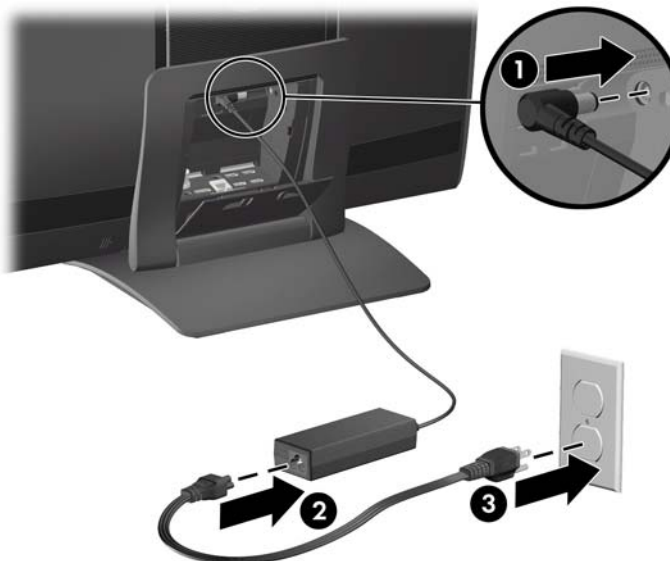
1. Squeeze the two tabs on the rear port access door at the back of the computer (1) and pull the door open (2).

Figure 2-1 Opening the Rear Port Access Door



2. Reach into the rear cavity framed by the computer stand and plug the power cord into the power connection at the top right corner (1).
3. Plug the three-pronged power plug into the power brick (2) and a power outlet (3).

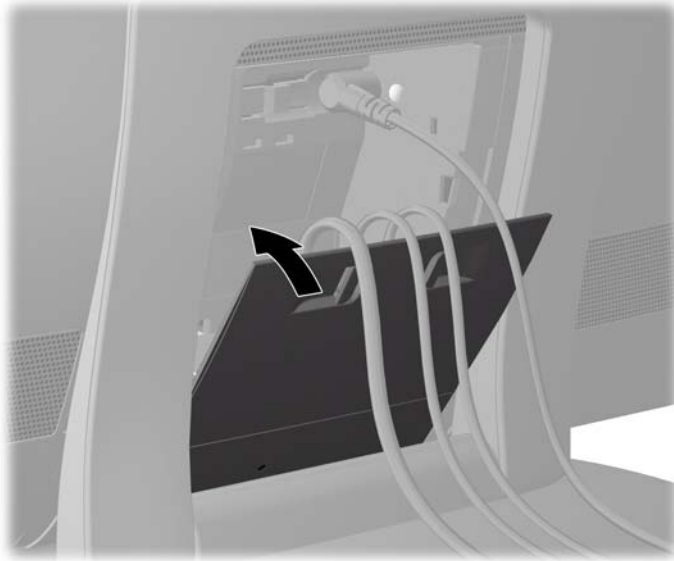
Figure 2-2 Connecting Power



4. Plug all peripheral cables into the appropriate ports as needed.

5. Close the rear port access door.

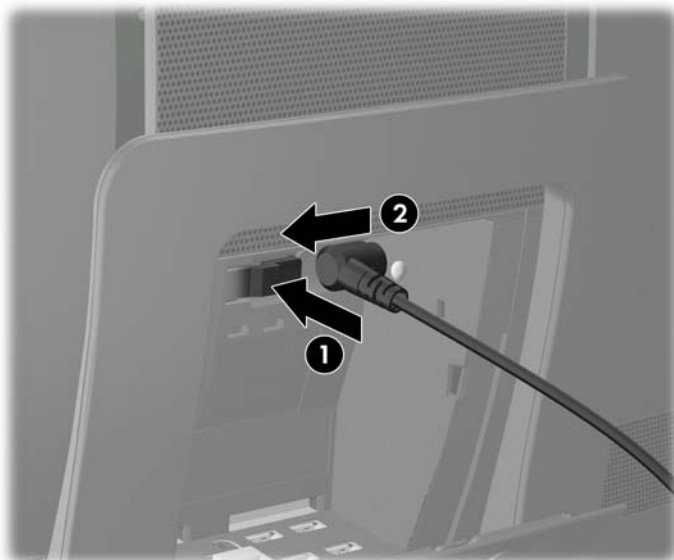
Figure 2-3 Closing the Rear Port Access Door



Disconnecting Power

1. Remove all removable media, such as compact discs or USB flash drives, from the computer.
2. Turn off the computer properly through the operating system, then turn off any external devices.
3. If a security lock is installed on the rear of the computer, remove the lock.
4. If the rear port security cover is installed, remove the cover.
5. Open the rear port access door.
6. Press on the power cord release latch (1) and pull the power cord connector from the port (2).

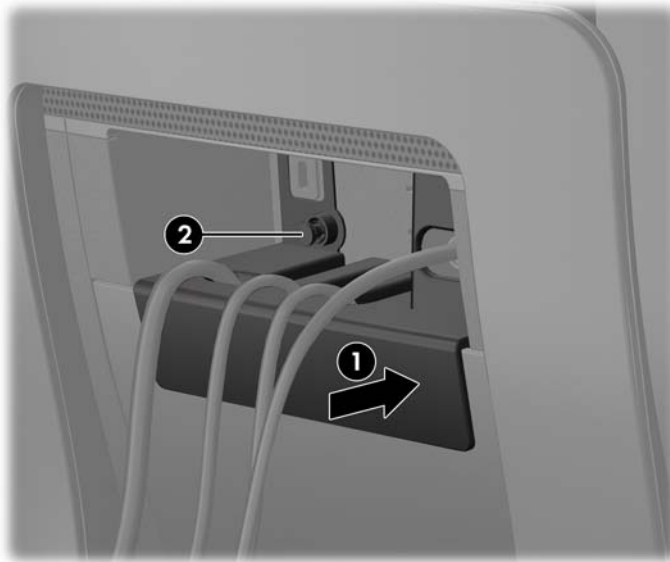
Figure 2-4 Disconnecting Power



Installing the Rear Port Security Cover

1. Ensure that all cables are connected and the rear port access door is closed.
2. Tilt the display head to its most forward position and slide it down to its lowest position so that the stand does not cover any of the center cavity.
3. Place the port security cover into the cavity ensuring that the cables are fitted into the slots on the security cover (1) and tighten the captive screw (2).

Figure 2-5 Installing the Rear Port Security Cover



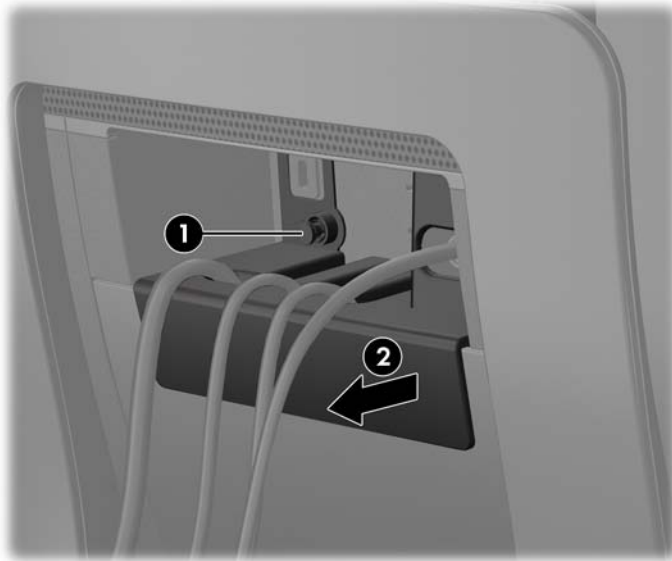
NOTE: You can further secure the rear ports by installing a security lock into the slot just above the captive screw on the rear port security cover. Refer to [Installing a Security Lock on page 28](#).

Removing the Rear Port Security Cover

1. Tilt the display head to its most forward position and slide it down to its lowest position so that the stand does not interfere with removing the port security cover.
2. If a security lock is installed on the rear of the unit, remove the lock.

3. Loosen the captive screw (1) and slide the security cover out of the center cavity (2).

Figure 2-6 Removing the Rear Port Security Cover



Installing Memory

The computer comes with double data rate 3 synchronous dynamic random access memory (DDR3-SDRAM) small outline dual inline memory modules (SODIMMs).

DDR3-SDRAM SODIMMs

For proper system operation, the SODIMMs must be:

- industry-standard 204-pin
- unbuffered non-ECC PC3-10600 DDR3-1333 MHz-compliant
- 1.5 volt DDR3-SDRAM SODIMMs

The DDR3-SDRAM SODIMMs must also:

- support CAS latency 9 DDR3 1333 MHz (9-9-9 timing)
- contain the mandatory Joint Electronic Device Engineering Council (JEDEC) specification

In addition, the computer supports:

- 512-Mbit, 1-Gbit, and 2-Gbit non-ECC memory technologies
- single-sided and double-sided SODIMMs
- SODIMMs constructed with x8 and x16 devices; SODIMMs constructed with x4 SDRAM are not supported



NOTE: The system will not operate properly if you install unsupported SODIMMs.

Populating SODIMM Sockets

The memory sockets on the system board can be populated with up to four industry-standard SODIMMs. These memory sockets are populated with at least one preinstalled SODIMM. To achieve the maximum memory support, you can populate the system board with up to 16 GB of memory.

There are four SODIMM sockets on the system board, with two sockets per channel. The sockets are labeled DIMM1, DIMM2, DIMM3, and DIMM4. Sockets DIMM1 and DIMM2 operate in memory channel A. Sockets DIMM3 and DIMM4 operate in memory channel B.

Figure 2-7 SODIMM Socket Locations

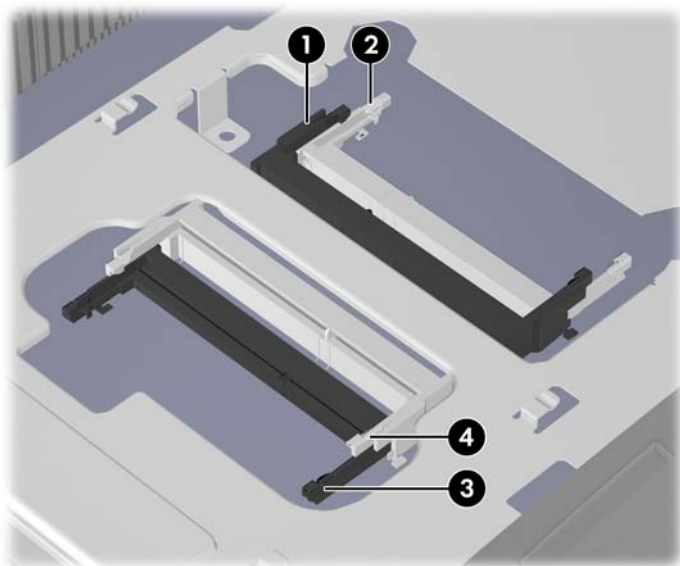


Table 2-1 SODIMM Socket Locations

Item	Description	Socket Color
1	DIMM1 socket, Channel A (populate first)	black
2	DIMM2 socket, Channel A (populate third)	white
3	DIMM3 socket, Channel B (populate second)	black
4	DIMM4 socket, Channel B (populate fourth)	white

NOTE: A SODIMM must occupy the black DIMM1 socket. Otherwise, the system will display a POST error message indicating that a memory module is installed in the wrong socket

The system will automatically operate in single channel mode, dual channel mode, or flex mode, depending on how the SODIMMs are installed.

- The system will operate in single channel mode if the SODIMM sockets are populated in one channel only.
- The system will operate in a higher-performing dual channel mode if the total memory capacity of the SODIMMs in Channel A is equal to the total memory capacity of the SODIMMs in Channel B. The technology and device width can vary between the channels. For example, if Channel A is populated with two 1 GB SODIMMs and Channel B is populated with one 2 GB SODIMM, the system will operate in dual channel mode.
- The system will operate in flex mode if the total memory capacity of the SODIMMs in Channel A is not equal to the total memory capacity of the SODIMMs in Channel B. In flex mode, the channel populated with the least amount of memory describes the total amount of memory assigned to dual channel and the remainder is assigned to single channel. For optimal speed, the channels should be balanced so that the largest amount of memory is spread between the two channels. If one channel will have more memory than the other, the larger amount should be assigned to Channel A. For example, if you are populating the sockets with one 2 GB SODIMM, and three 1 GB SODIMMs, Channel A should be populated with the 2 GB SODIMM and one 1 GB SODIMM, and Channel B should be populated with the other two 1 GB SODIMMs. With this configuration, 4 GB will run as dual channel and 1 GB will run as single channel.

Installing SODIMMS

When facing the rear of the computer, there are four memory sockets located behind the large access panel on the right. You must remove this panel to remove or install memory.

⚠ CAUTION: Static electricity can damage the electronic components of the computer. Before beginning these procedures, ensure that you are discharged of static electricity by briefly touching a grounded metal object. For more information, refer to [Electrostatic Discharge on page 36](#).

When handling a memory module, be careful not to touch any of the contacts. Doing so may damage the module.

To remove or install memory modules:

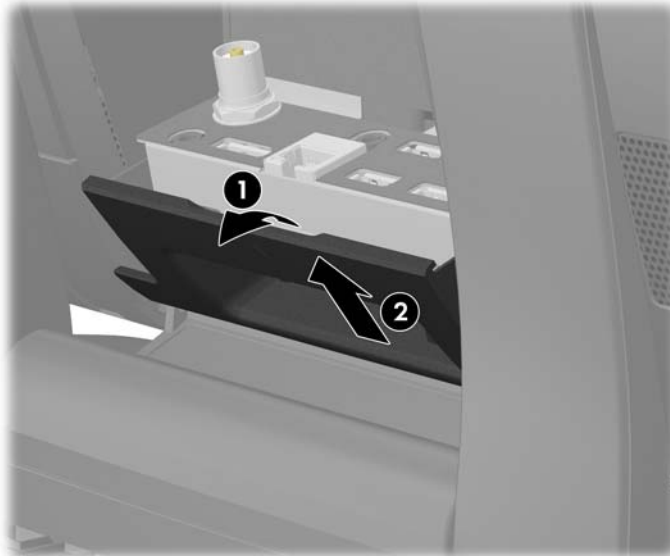
1. Remove all removable media, such as compact discs or USB flash drives, from the computer.
2. Turn off the computer properly through the operating system, then turn off any external devices.
3. Disconnect the power cord from the power outlet and disconnect any external devices.

⚠ CAUTION: You must disconnect the power cord and wait approximately 30 seconds for the power to drain before adding or removing memory modules. Regardless of the power-on state, voltage is always supplied to the memory modules as long as the computer is plugged into an active AC outlet. Adding or removing memory modules while voltage is present may cause irreparable damage to the memory modules or system board.

4. If a security lock is installed on the rear of the computer, remove the lock.
5. If the rear port security cover is installed, remove the cover.
6. Open the rear port access door.
7. Disconnect all cables from the rear ports.
8. Place the computer face down on a soft flat surface. HP recommends that you set down a blanket, towel, or other soft cloth to protect the screen surface from scratches or other damage.

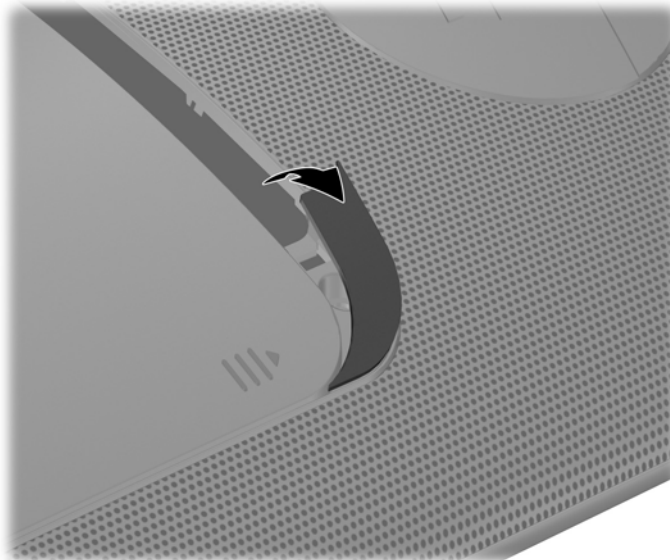
9. Remove the small center panel below the rear ports by pulling out the top of the panel (1) then lifting the panel off the computer (2).

Figure 2-8 Removing the Center Panel



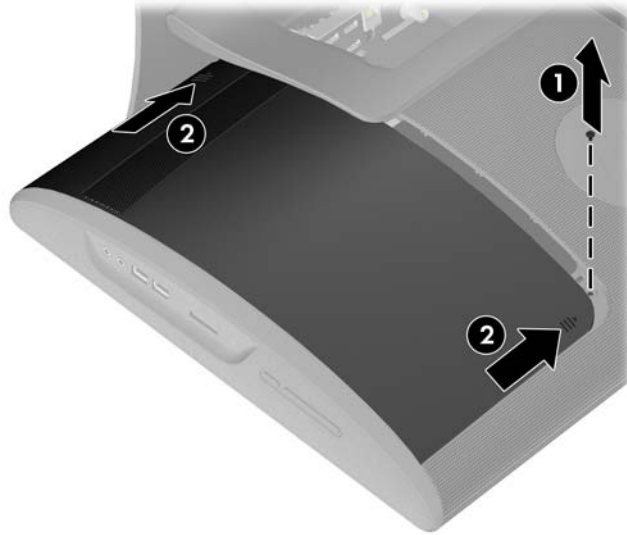
10. Before removing the memory access panel, you must remove the small cover plate that hides the screw used to secure the panel to the chassis. Lift up on the bottom of the cover plate located next to the upper inside corner of the access panel and lift the cover plate off the rear of the computer.

Figure 2-9 Removing the Access Panel Screw Cover Plate



11. Remove the screw beneath the cover plate (1) and slide the memory access panel toward the center of the computer until it stops (approximately 5 mm or 1/5 inch) (2). Use the raised grip areas on the top and bottom inside corners of the access panel to slide the panel toward the center of the computer.

Figure 2-10 Releasing the Memory Access Panel



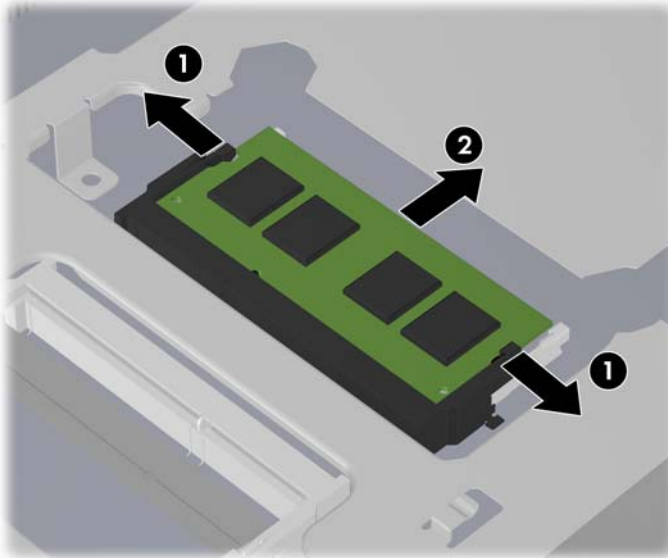
12. Lift up the outside edge of the panel approximately 2.5 cm (1 inch) (1) and slide the panel toward the outside edge of the computer (2) to remove it.

Figure 2-11 Removing the Memory Access Panel



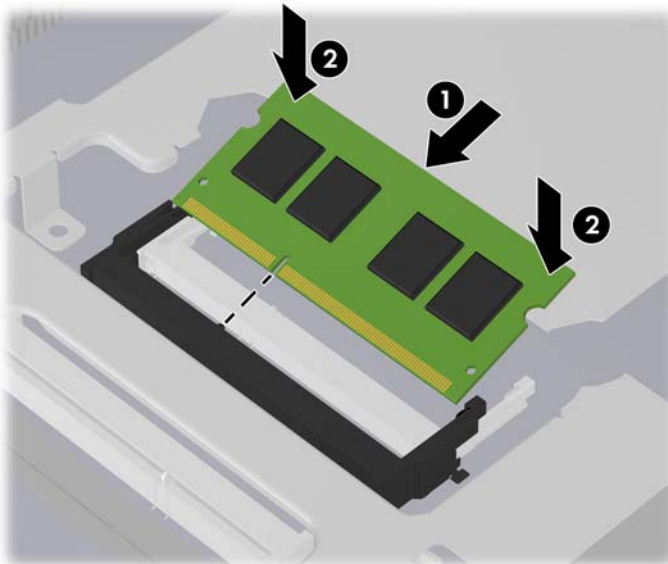
13. To remove a SODIMM, press outward on the two latches on each side of the SODIMM (1) then pull the SODIMM out of the socket (2).


Figure 2-12 Removing a Memory Module



14. To install a SODIMM, slide the new SODIMM into the socket at approximately a 30° angle (1) then press the SODIMM down (2) so that the latches lock it in place.

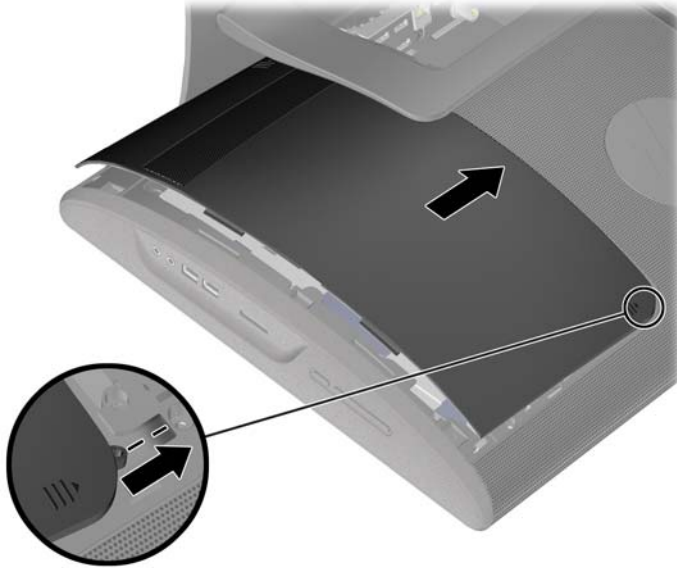
Figure 2-13 Installing a Memory Module



 **NOTE:** A memory module can be installed in only one way. Match the notch on the module with the tab on the memory socket.

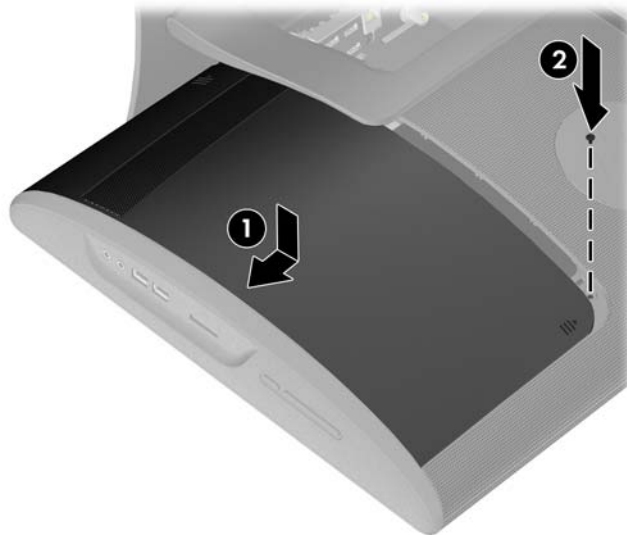
15. To replace the memory access panel, hold the panel at a slight angle with the inside edge of the panel lower than the outside edge, then slide the screw hole tab on the top inside corner of the panel into the slot on the rear of the computer.

Figure 2-14 Replacing the Memory Access Panel



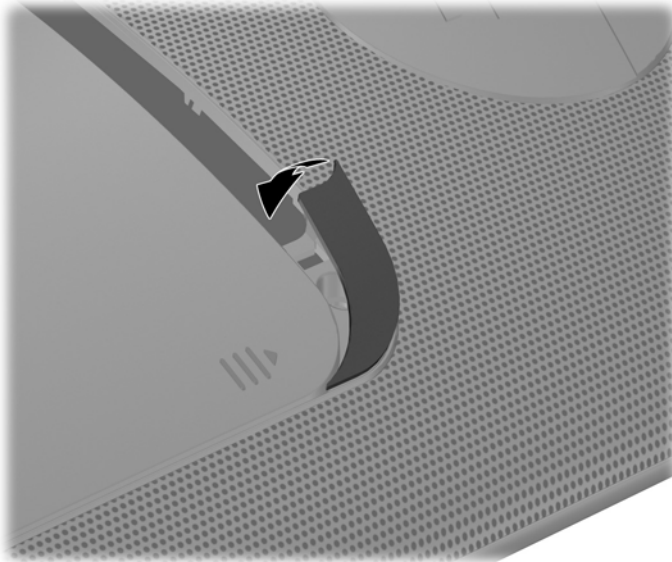
16. Lower the outside edge of the panel onto the computer then slide the panel towards the outside of the computer (1) and install the screw (2) to secure the panel in place.

Figure 2-15 Replacing the Memory Access Panel



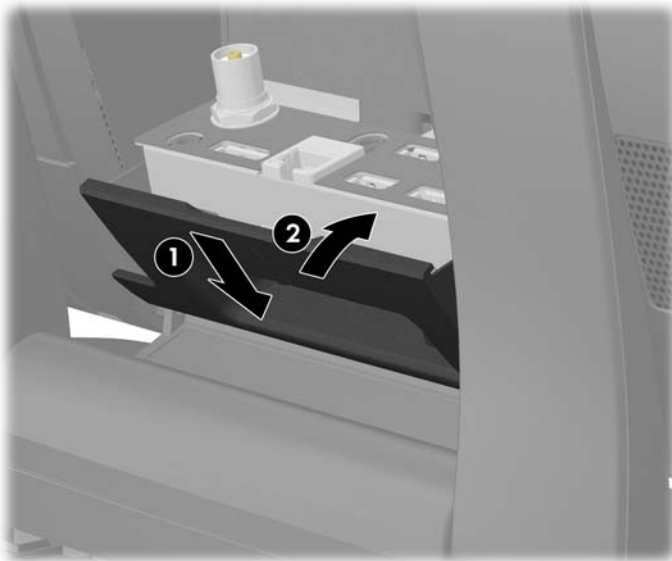
17. Replace the screw cover plate, pressing the top of the cover plate in position first then pressing the bottom of the cover plate in position.

Figure 2-16 Replacing the Access Panel Screw Cover Plate



18. Replace the small center panel below the rear ports by inserting the bottom of the panel into position first (1) then rotating the top of the panel onto the computer so that it snaps in place (2).

Figure 2-17 Replacing the Center Panel



19. Reconnect all cables that were removed from the rear ports.
20. Close the rear port access door.
21. If the rear port security cover was removed, replace the cover.
22. If a security lock was installed on the rear of the computer, replace the lock.
23. Reconnect the power cord into the wall outlet and turn on the computer. The computer automatically recognizes the additional memory when you turn on the computer.

Replacing the Hard Drive

The hard drive is located under the drive access panel on the left side of the computer (when viewed from behind). The drive is secured with one captive screw and is housed in a removable cage.

⚠ CAUTION: Static electricity can damage the electronic components of the computer. Before beginning these procedures, ensure that you are discharged of static electricity by briefly touching a grounded metal object. For more information, refer to [Electrostatic Discharge on page 36](#).

📝 NOTE: Depending on your computer configuration, the hard drive may be a 2.5-inch drive or a 3.5-inch drive. The 2.5-inch drive is installed in a housing that is the same size as 3.5-inch drive. Therefore, either drive will fit into the existing hard drive cage.

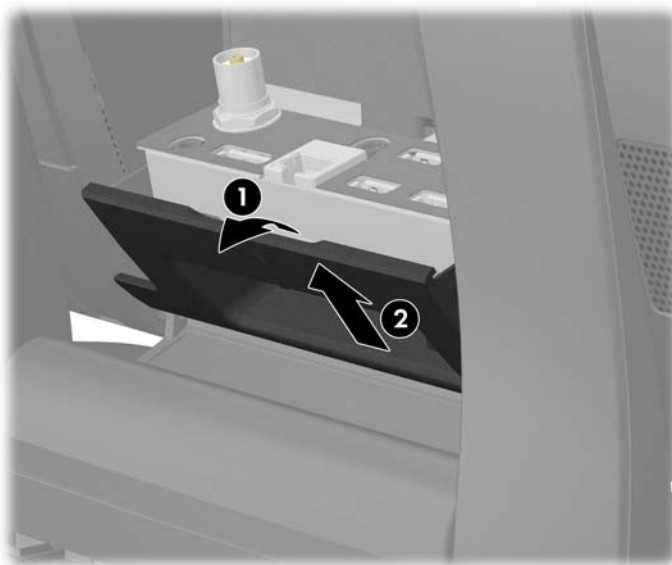
To replace the hard drive:

1. Remove all removable media, such as compact discs or USB flash drives, from the computer.
2. Turn off the computer properly through the operating system, then turn off any external devices.
3. Disconnect the power cord from the power outlet and disconnect any external devices.

⚠ CAUTION: Regardless of the power-on state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must disconnect the power cord to avoid damage to the internal components of the computer.

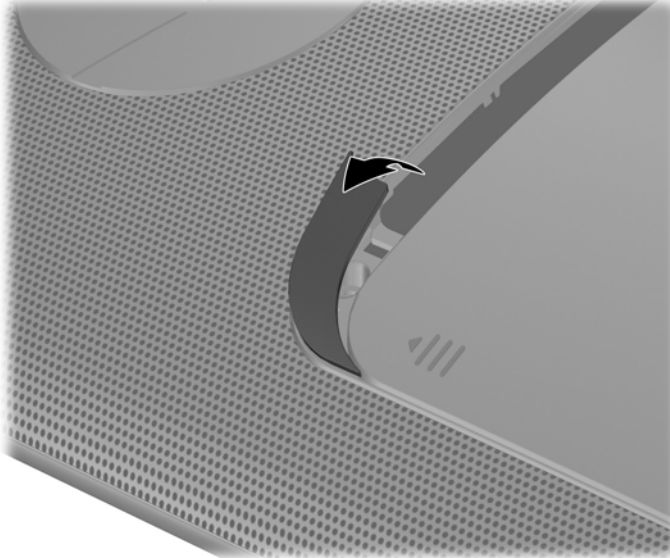
4. If a security lock is installed on the rear of the computer, remove the lock.
5. If the rear port security cover is installed, remove the cover.
6. Open the rear port access door.
7. Disconnect all cables from the rear ports.
8. Place the computer face down on a soft flat surface. HP recommends that you set down a blanket, towel, or other soft cloth to protect the screen surface from scratches or other damage.
9. Remove the small center panel below the rear ports by pulling out the top of the panel (1) then lifting the panel off the computer (2).

Figure 2-18 Removing the Center Panel



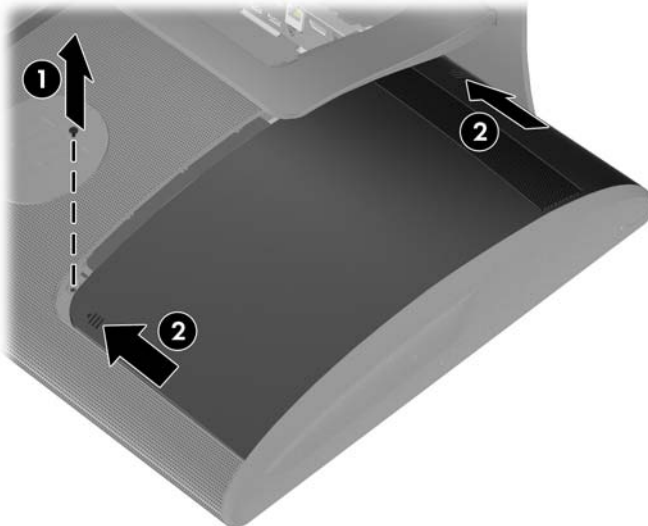
10. Before removing the drive access panel, you must remove the small cover plate that hides the screw used to secure the panel to the chassis. Lift up on the bottom of the cover plate located next to the upper inside corner of the access panel and lift the cover plate off the rear of the computer.

Figure 2-19 Removing the Access Panel Screw Cover Plate



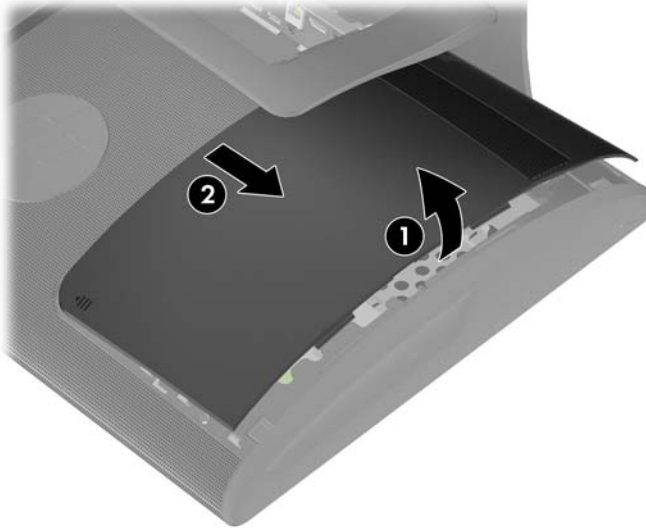
11. Remove the screw beneath the cover plate (1) and slide the drive access panel toward the center of the computer until it stops (approximately 5 mm or 1/5 inch) (2). Use the raised grip areas on the top and bottom inside corners of the access panel to slide the panel toward the center of the computer.

Figure 2-20 Releasing the Drive Access Panel



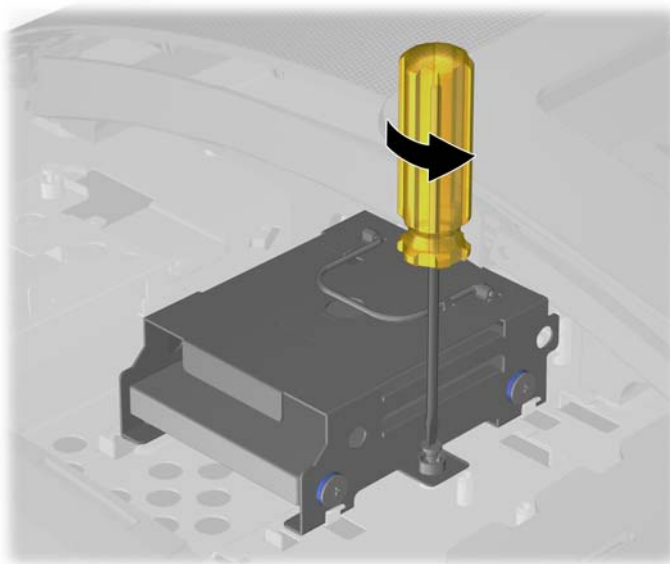
12. Lift up the outside edge of the panel approximately 2.5 cm (1 inch) (1) and slide the panel toward the outside edge of the computer (2) to remove it.

Figure 2-21 Removing the Drive Access Panel



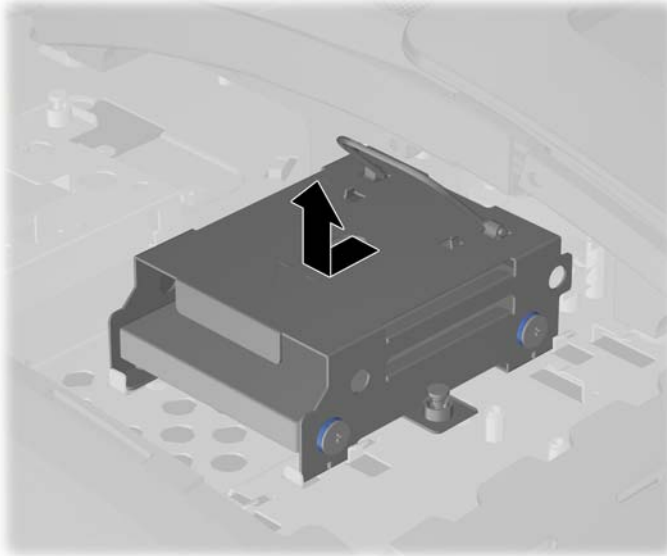
13. Loosen the captive screw on the side of the hard drive cage that secures the cage to the computer.

Figure 2-22 Loosening the Hard Drive Cage Screw



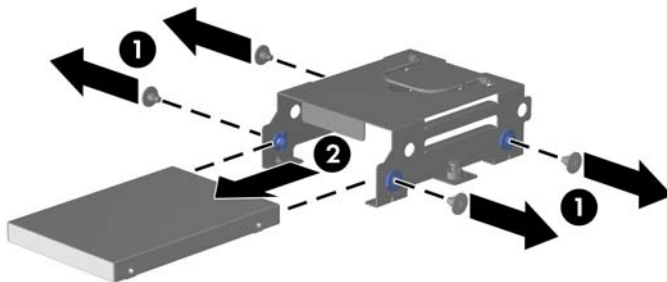
14. Grasp the handle on top of the hard drive cage and slide the cage toward the outer edge of the computer, then lift the cage out of the computer.

Figure 2-23 Removing the Hard Drive Cage



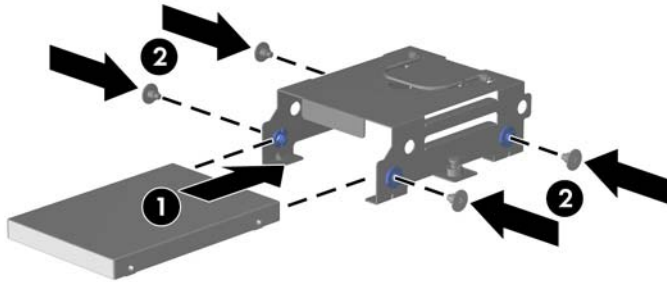
15. To remove the hard drive from the hard drive cage, remove the four screws on the sides of the cage that secure the drive to the cage (1), and then slide the drive out of the cage (2).

Figure 2-24 Removing the Hard Drive from the Cage



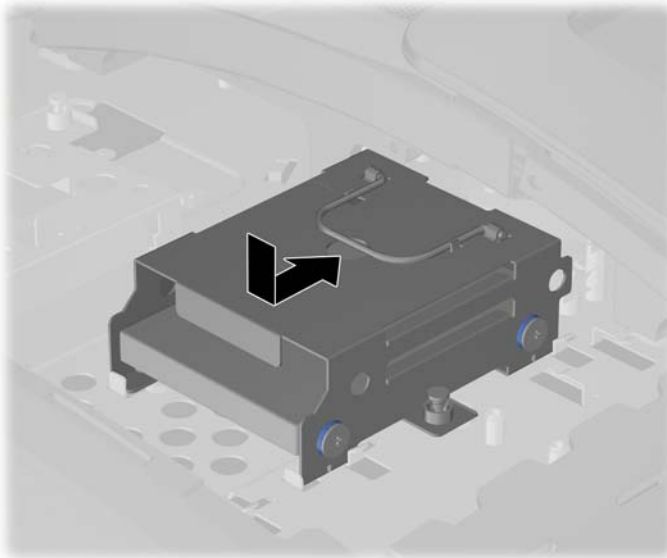
- Slide the new hard drive into the hard drive cage (1) making sure that the connectors on the hard drive are on the same end of the cage as the handle, and then install the four screws that secure the drive to the cage (2).

Figure 2-25 Installing the Hard Drive in the Cage



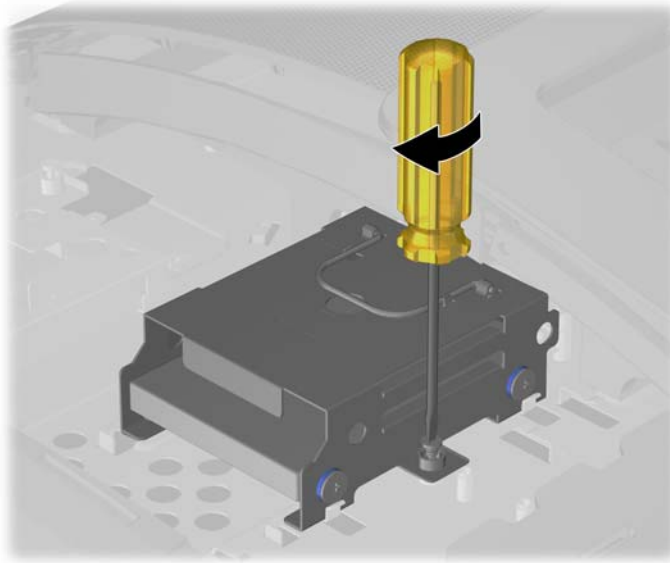
- Set the hard drive cage down into the bay, aligning the tabs on the bottom of the cage with the tabs on the chassis, then slide the drive back toward the center of the computer until it stops, ensuring that the connector on the end of the drive is properly seated.

Figure 2-26 Installing the Hard Drive Cage



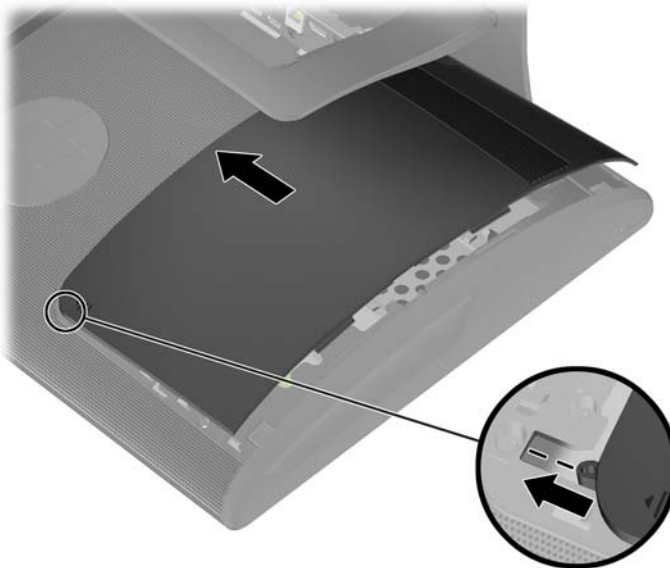
18. Tighten the captive screw to secure the hard drive cage in place.

Figure 2-27 Tightening the Hard Drive Cage Screw



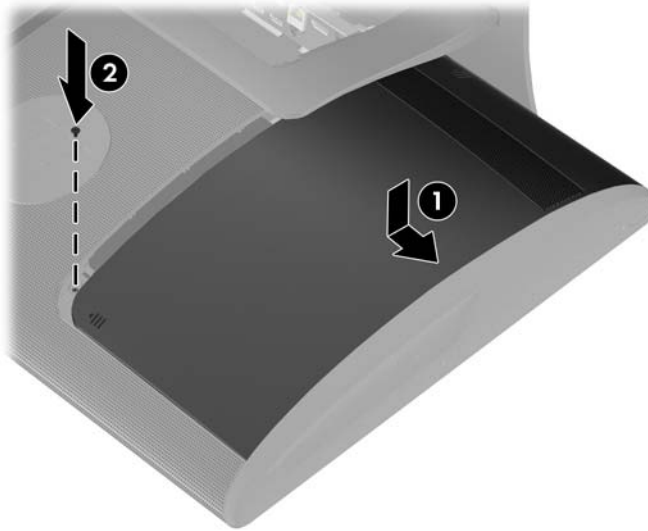
19. To replace the drive access panel, hold the panel at a slight angle with the inside edge of the panel lower than the outside edge, then slide the screw hole tab on the top inside corner of the panel into the slot on the rear of the computer.

Figure 2-28 Replacing the Drive Access Panel



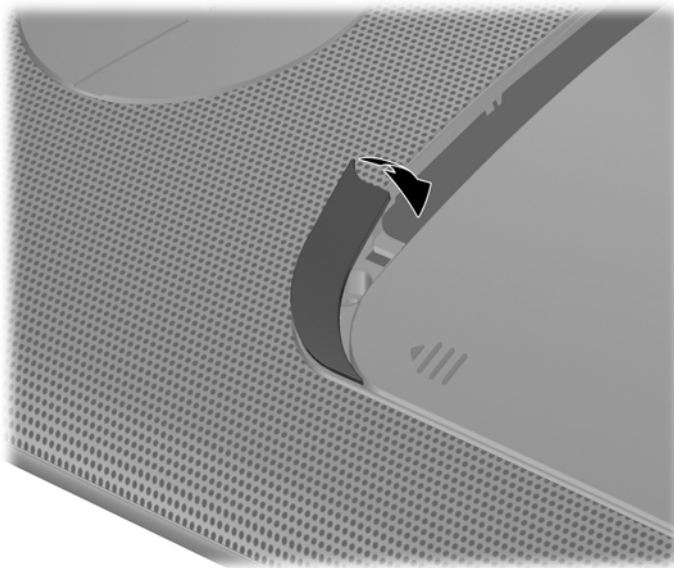
20. Lower the outside edge of the panel onto the computer then slide the panel towards the outside of the computer (1) and install the screw (2) to secure the panel in place.

Figure 2-29 Replacing the Drive Access Panel



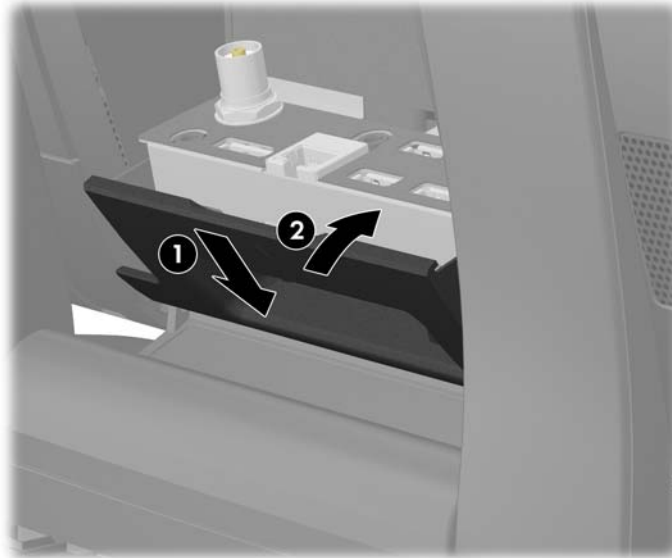
21. Replace the screw cover plate, pressing the top of the cover plate in position first then pressing the bottom of the cover plate in position.

Figure 2-30 Replacing the Access Panel Screw Cover Plate



22. Replace the small center panel below the rear ports by inserting the bottom of the panel into position first (1) then rotating the top of the panel onto the computer so that it snaps in place (2).

Figure 2-31 Replacing the Center Panel



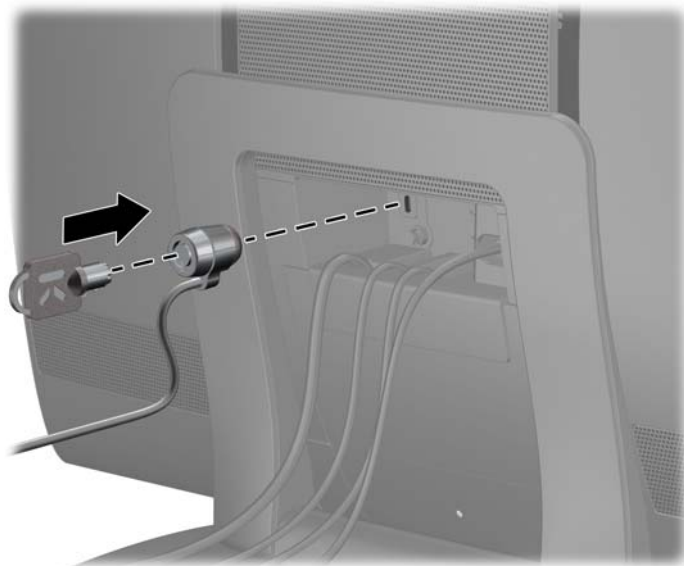
23. Reconnect all cables that were removed from the rear ports.
24. Close the rear port access door.
25. If the rear port security cover was removed, replace the cover.
26. If a security lock was installed on the rear of the computer, replace the lock.
27. Reconnect the power cord into the wall outlet and turn on the computer.

Installing a Security Lock

A security lock (sold separately) enables you to secure your computer from access to the rear ports (when a rear port security cover is installed) and theft. A security lock is a key lock device that has a

wire cable attached. You attach one end of the cable to your desk (or other stationary object) and the other end of the cable to the security slot on the computer. Secure the security lock with the key.

Figure 2-32 Installing a Security Lock



Attaching the Computer to a Mounting Fixture

You can remove the computer from the stand and install it on a wall, monitor arm, or other mounting fixture. There is a VESA adapter plate attached to the underside of the computer stand that is used for mounting the computer.

Table 2-2 Mounting Specifications


Computer Dimensions (without stand)		
Height	405.2 mm	15.953 inches
Width	584.5 mm	23.012 inches
Depth	86 mm	3.78 inches
Computer Weight (without stand, with VESA adapter plate)		
Integrated Graphics	8.75 kg	19.29 lbs
Discrete Graphics	9.05 kg	19.95 lbs
VESA standard adapter plate hole patterns (height x width)		
	100 mm x 100 mm	3.937 in x 3.937 in
	100 mm x 200 mm	3.937 in x 7.874 in

For instructions on mounting the computer, refer to the *Wall-Mounting your HP TouchSmart User Guide*.

Synchronizing the Optional Wireless Keyboard or Mouse

The optional wireless keyboard and mouse are easy to set up. Just remove the battery tabs on both the keyboard and the mouse. Also, make sure the Power switch on the bottom of the mouse is in the

On position (the keyboard does not have a Power switch). Then, turn on the computer. If you have trouble using the keyboard and mouse, manually synchronize them as described below.

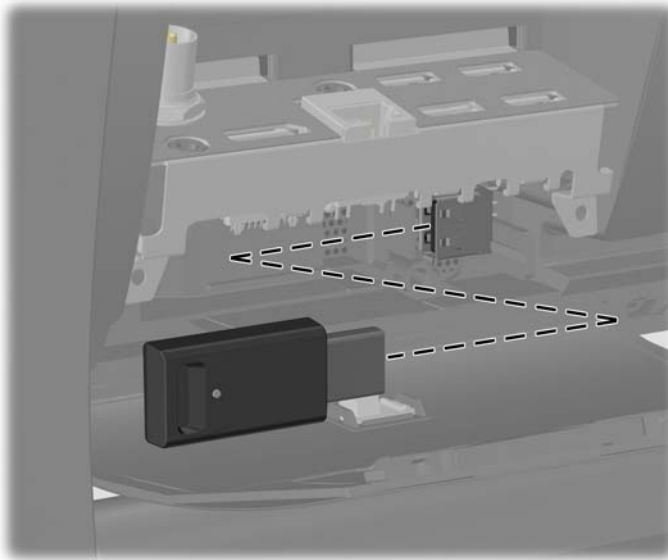
 **NOTE:** For better mouse battery life and performance, avoid using your mouse on a dark or high-gloss surface, and turn mouse power off when not in use.

The wireless keyboard and mouse are pre-synchronized to work with your computer. The keyboard and mouse should work immediately after you first pull the battery tabs to activate the preinstalled batteries, and then turn on the mouse.

You may need to manually synchronize the wireless keyboard or mouse if they are not functioning. To synchronize them:

1. Make sure the keyboard and mouse are next to the computer, within 30 cm (1 foot) and away from interference from other devices.
2. Turn on the computer.
3. Open the rear port access door.
4. Insert the wireless receiver into the designated wireless receiver USB port on the computer located below the other rear ports.

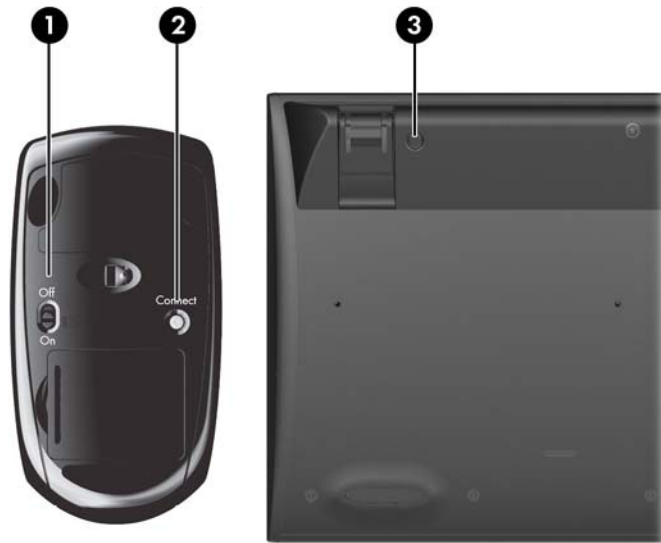
Figure 2-33 Installing the Wireless Receiver




5. Make sure the Power switch on the bottom of the mouse is in the On position (1).
6. Press the Connect button on the bottom of the mouse (2) for five seconds. The blue activity LED from the wireless receiver illuminates when the synchronization command has been received and turns off when synchronization is complete.

7. Press the Connect button on the bottom of the keyboard (3) for five seconds. The blue activity LED from the wireless receiver illuminates when the synchronization command has been received and turns off when synchronization is complete.


Figure 2-34 Synchronizing the Wireless Keyboard and Mouse



8. Close the rear port access door.

 **NOTE:** If the procedure does not work, remove and then re-insert the wireless keyboard and mouse receiver from the back of the computer and then synchronize the keyboard and mouse again.

Connecting the Computer to a Cable TV Source

 **NOTE:** A TV tuner is included with select models only.

To connect the computer to a cable TV source:

1. Turn off power to the computer and the set-top box.
2. Open the rear port access door on the computer.
3. Connect a coaxial cable between the coaxial connector on the rear of the computer (1) and the set-top box (2).

To use the remote control with a set-top box:

1. To use the remote control so that the signal is received by the computer, connect an IR emitter (blaster) cable to the IR Out connector on the computer (3), remove the paper from the backing tape on the end of the IR emitter cable (4), and then press the end of the cable over the remote IR sensor (receiver) window on the set-top box (5).


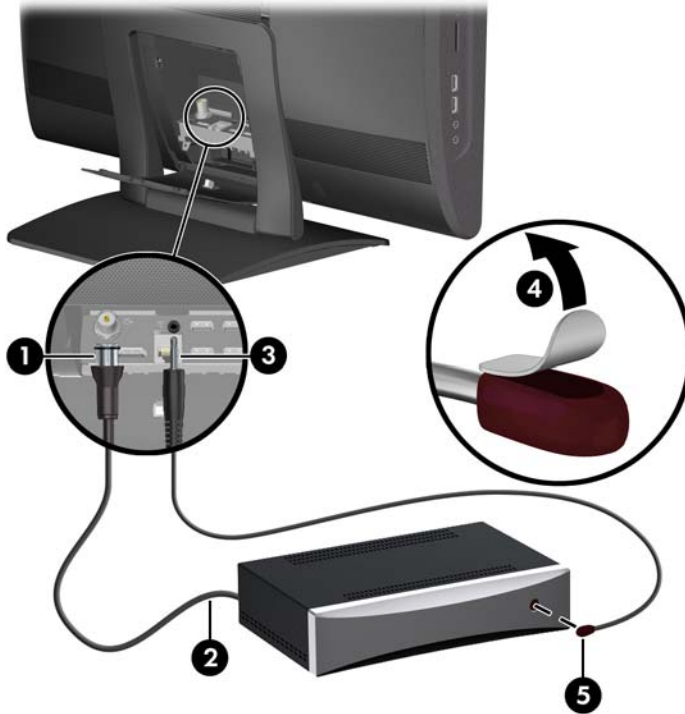
 **NOTE:** The IR emitter cable is a remote control sensing device that connects to the computer and covers the remote sensor on a set-top box. When you are selecting TV channels, it enables the remote control to work with your set-top box.

Figure 2-35 Connecting the Computer to a Set-Top Box



2. Close the rear port access door on the computer.
3. Turn on power to the computer and the set-top box.

4. When you use the remote control, point it at the front of the computer, not at the set-top box.

Figure 2-36 Using the Remote Control



Connecting a Second Display

The DisplayPort on the rear of the computer allows you to connect a second display, such as a monitor or TV, to the computer.

If you are adding a second display that has a DisplayPort, then no DisplayPort video adapter is required. If you are adding a second display that does not have a DisplayPort, you can purchase a DisplayPort video adaptor from HP for your configuration.

DisplayPort adapters and video cables are purchased separately. HP offers the following adapters:

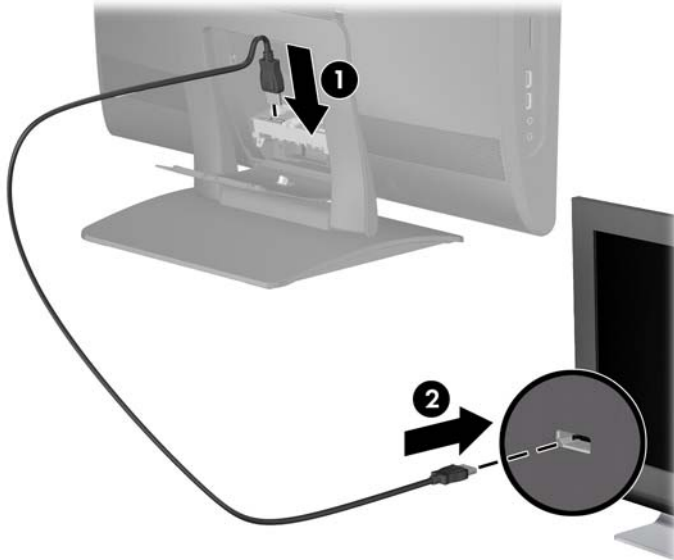
- DisplayPort to VGA adapter
- DisplayPort to DVI adapter
- DisplayPort to HDMI adapter

To connect a second display:

1. Turn off power to the computer and the second display that you are connecting to the computer.
2. Open the rear port access door on the computer.

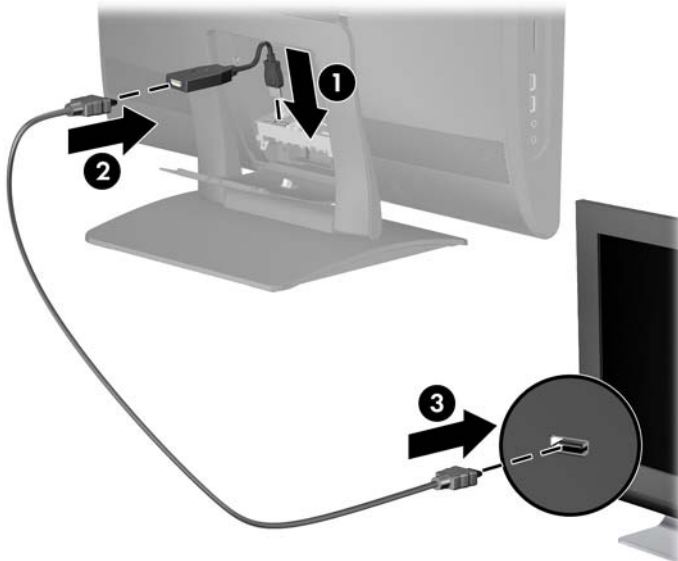
3. If your second display has a DisplayPort, connect a DisplayPort cable directly between the DisplayPort on the rear of the computer (1) and the DisplayPort on the second display (2).

Figure 2-37 Connecting a Second Display




4. If your second display does not have a DisplayPort, connect a DisplayPort video adapter to the DisplayPort on the rear I/O panel (1). Then connect a cable (VGA, DVI, or HDMI, depending on your application) between the adapter (2) and a second display (3).

Figure 2-38 Connecting a Second Display Using a DisplayPort Adapter



5. Close the rear port access door on the computer.
6. Turn on power to the computer and the second display.

 **NOTE:** Use the graphics card software or the Windows Display Settings to configure the second display as a mirrored image of the primary display or an extension of the primary display.

Additional Information

For more information on removing and replacing hardware components, desktop management, the Computer Setup utility, and troubleshooting, refer to the *Maintenance and Service Guide* (available in English only) for your computer model at <http://www.hp.com>.

A Electrostatic Discharge

A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

Preventing Electrostatic Damage

To prevent electrostatic damage, observe the following precautions:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Grounding Methods

There are several methods for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm +/- 10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
- Use heelstraps, toestraps, or bootstraps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, contact an HP authorized dealer, reseller, or service provider.



NOTE: For more information on static electricity, contact an HP authorized dealer, reseller, or service provider.

B Computer Operating Guidelines, Routine Care and Shipping Preparation

Computer Operating Guidelines and Routine Care


Follow these guidelines to properly set up and care for the computer:

- Keep the computer away from excessive moisture, direct sunlight, and extremes of heat and cold.
- Operate the computer on a sturdy, level surface. Leave a 10.2-cm (4-inch) clearance on all vented sides of the computer to permit the required airflow.
- Never restrict the airflow into the computer by blocking any vents or air intakes.
- Never operate the computer with any of the access panels removed.
- Do not place computers so near each other that they are subject to each other's re-circulated or preheated air.
- If the computer is to be operated within a separate enclosure, intake and exhaust ventilation must be provided on the enclosure, and the same operating guidelines listed above will still apply.
- Keep liquids away from the computer and keyboard.
- Never cover the ventilation slots with any type of material.
- Install or enable power management functions of the operating system or other software, including sleep states.
- When cleaning the computer turn off power to the computer and unplug the power cord before you do any of the following:
 - Wipe the exterior of the computer with a soft, damp cloth as needed. Using cleaning products may discolor or damage the finish.
 - Do not use cleaners that contain any petroleum based materials such as benzene, thinner, or any volatile substance to clean the screen or cabinet. These chemicals may damage the computer.
 - Wipe the screen with a soft, clean antistatic cloth. For more difficult cleaning situations, use a 50/50 mix of water and Isopropyl alcohol. Spray the cleaner onto a cloth and use the damp cloth to gently wipe the screen surface. Never spray the cleaner directly on the screen surface. It may run behind the bezel and damage the electronics.
 - Occasionally clean the air vents on all vented sides of the computer. Lint, dust, and other foreign matter can block the vents and limit the airflow.

Optical Drive Precautions

Be sure to observe the following guidelines while operating or cleaning the optical drive.

- Do not move the drive during operation. This may cause it to malfunction during reading.
- Avoid exposing the drive to sudden changes in temperature, as condensation may form inside the unit. If the temperature suddenly changes while the drive is on, wait at least one hour before you turn off the power. If you operate the unit immediately, it may malfunction while reading.
- Avoid placing the drive in a location that is subject to high humidity, extreme temperatures, mechanical vibration, or direct sunlight.

 **CAUTION:** If any object or liquid falls into the drive, immediately unplug the computer and have it checked by an authorized HP service provider.

Shipping Preparation

Follow these suggestions when preparing to ship the computer:

1. Back up the hard drive files on PD discs, tape cartridges, CDs, or USB flash drives. Be sure that the backup media is not exposed to electrical or magnetic impulses while stored or in transit.



NOTE: The hard drive locks automatically when the system power is turned off.

2. Remove and store all removable media.
3. Turn off the computer and external devices.
4. Disconnect the power cord from the electrical outlet, then from the computer.
5. Disconnect the system components and external devices from their power sources, then from the computer.



NOTE: Ensure that all boards are seated properly and secured in the board slots before shipping the computer.

6. Pack the system components and external devices in their original packing boxes or similar packaging with sufficient packing material to protect them.

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