Dell™ OptiPlex™ GX50 Systems

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Hints, Notices, and Cautions

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

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

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

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Before You Begin

Dell™ OptiPlex™ GX50 Systems

- Getting Started
- Precautionary Measures

Getting Started

This section provides procedures for removing and replacing the components, assemblies, and subassemblies in the Dell™ OptiPlex™ GX50 computers. Unless otherwise noted, each procedure assumes that the following conditions exist:

- You have performed the steps in "Precautionary Measures."
- You have opened the computer cover.

Recommended Tools

The GX50 computer is primarily a tool-less one, but certain procedures (such as removing drive bracket rails and removing the control panel) require the use of one or more of the following tools:

- Small flat-blade screwdriver
- #1 and #2 Phillips-head screwdrivers
- An 8-inch, #2 Phillips-head screwdriver

Also, Dell recommends that you use a wrist-grounding strap as explained in "Precautionary Measures."

Precautionary Measures

Before you perform any procedure in this section, read the following caution for your personal safety and to prevent damage to the computer from electrostatic discharge (ESD).

⚠ **CAUTION: FOR YOUR PERSONAL SAFETY AND PROTECTION OF THE EQUIPMENT**

Before you start to work on the computer, perform the following steps in the sequence listed:

1. Turn off the computer and all attached devices.
2. Disconnect the computer and devices from their AC power sources. Also, disconnect any telephone or telecommunication lines from the computer. Doing so reduces the potential for personal injury or shock.

   If you are disconnecting a device from the computer or are removing a component from the system board, wait 15 to 30 seconds after disconnecting the computer from AC power before disconnecting the device or removing the component to avoid possible damage to the system board.

   Verify that the auxiliary power light on the system board is not on. If it is on, you may need to wait 15 to 30 seconds for it to go out (see "System Board Components" for the location of this light).
3. Wear a wrist-grounding strap, and clip it to an unpainted metal surface, such as the padlock ring on the back of the computer. If a wrist-grounding strap is not available, touch an unpainted metal surface on the computer, such as the power supply, to discharge static charge from your body before touching anything inside the computer. While you work, periodically touch an unpainted metal surface on the computer to dissipate static electricity that might harm internal components.

In addition, take note of the following safety guideline when appropriate:

- Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by it edges or by its metal mounting bracket. Hold a component such as a microprocessor by its edges, not by its pins.

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Computer Cover

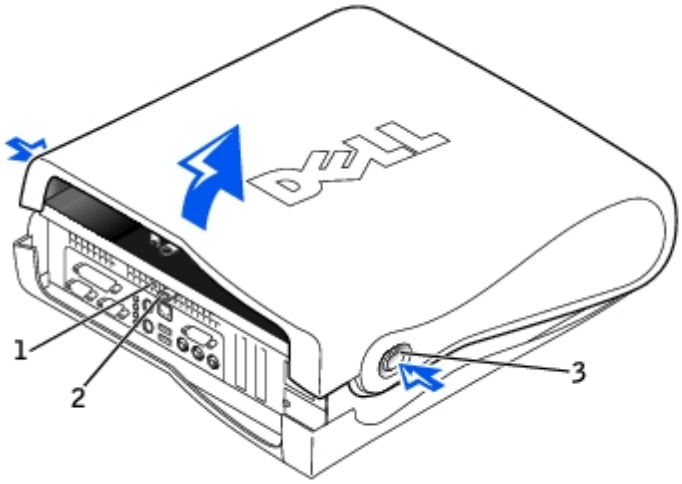
Dell™ OptiPlex™ GX50 Systems

- Opening the Computer Cover
- Closing the Computer Cover

Opening the Computer Cover

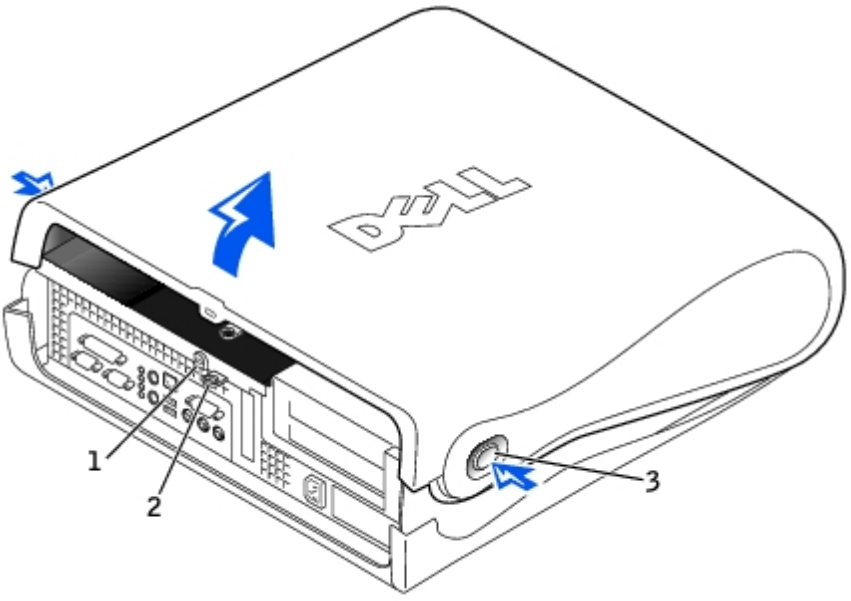
NOTE: If your computer is on a stand, remove the stand before you open the computer cover.

Small Form-Factor Computer



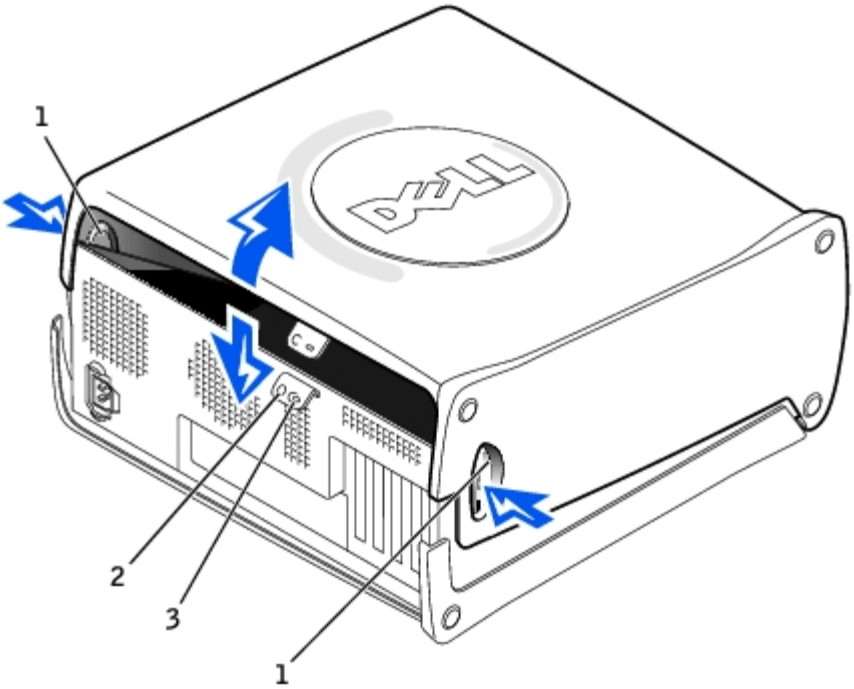
1	Security cable slot
2	Padlock ring
3	Release buttons (one on each side)

Small Desktop Computer



1	Security cable slot
2	Padlock ring
3	Release buttons (one on each side)

Small Mini-Tower Computer



1	Release buttons (one on each side)
2	Padlock ring
3	Security cable slot

1. Remove the padlock from the padlock ring, if present.

NOTICE: Do not open the cover if the computer is on the edge of a desk or table. Doing so may cause the computer to tip over and fall. Make sure that the computer is situated so that there is at least 12 inches of desk- or table-top for the cover to rest on.

2. Press in on the two securing buttons until the cover is free to swing up.

3. On the small mini-tower computer, press the release button on the right side of the computer with one hand while pulling up on the top of the cover with the other hand. Then, press the release button on the left side of the computer with one hand while pulling up on the top of the cover with the other hand. Hold the bottom of the computer with one hand, and then pull open the cover with the other hand.

Closing the Computer Cover

1. Check all cable connections, especially those that might have come loose during your work. Fold cables out of the way so that they do not catch on the computer cover. Make sure cables are not routed over the drive cage—they will prevent the cover from closing properly.
2. Check to see that no tools or extra parts (including screws) are left inside the computer.
3. Close the computer cover by pivoting the cover down toward the back of the computer and into position. Press on the right side of the cover until it closes securely. Then, press on the left side of the cover until it closes securely.
4. Replace the padlock, if required.

NOTE: After you open and close the cover, the chassis intrusion detector causes the following message to be displayed at the next computer start-up:

```
ALERT! Cover was previously removed.
```

See "Resetting the Chassis Intrusion Detector" for instructions.

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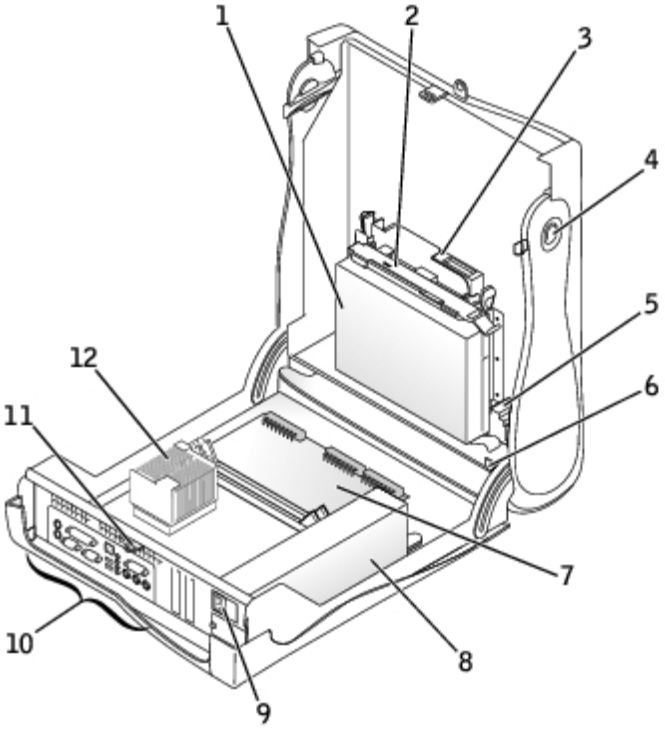
Inside the Computer

Dell™ OptiPlex™ GX50 Systems

- Key Components
- Computer Cables

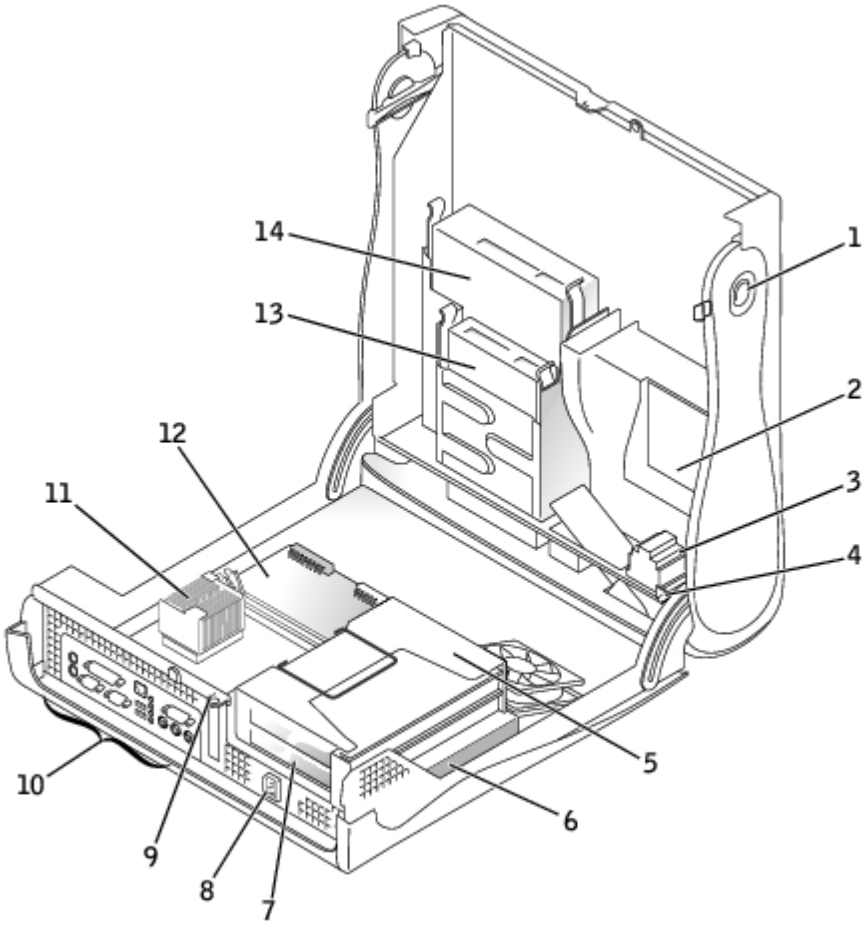
Key Components

Inside the Small Form-Factor Computer



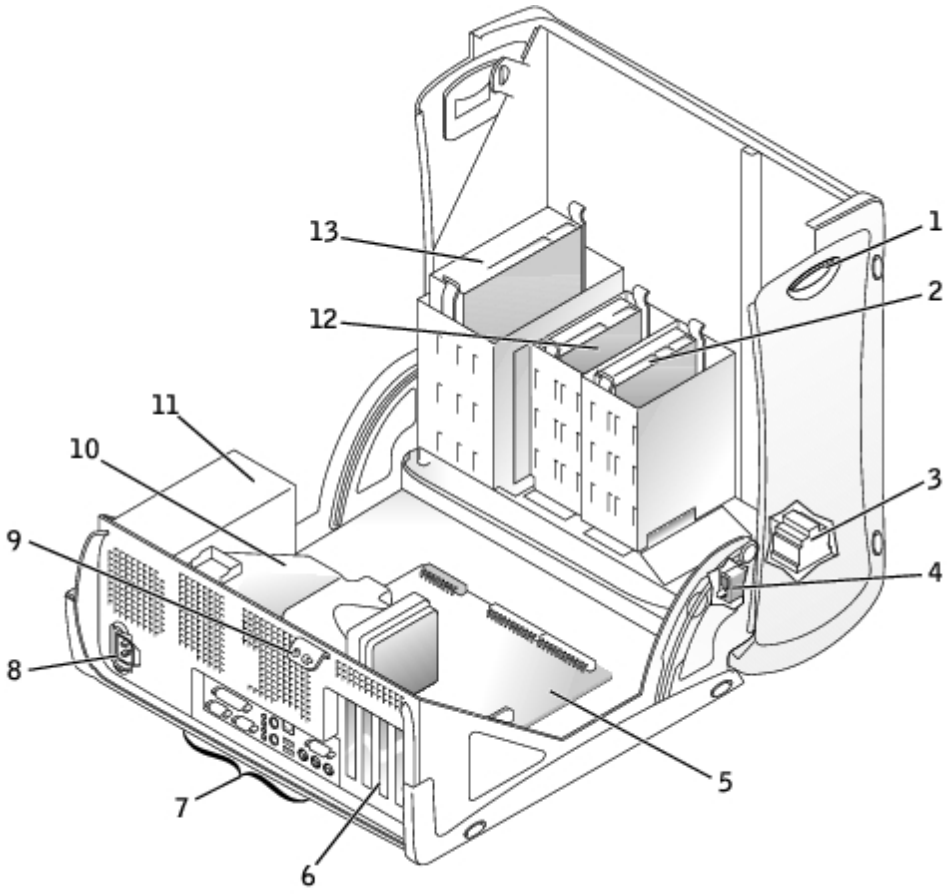
1	Hard drive	7	System board
2	3.5-inch floppy drive	8	Power supply
3	CD drive	9	AC power connector
4	Cover release buttons (2)	10	I/O ports and connectors
5	Internal speaker	11	Padlock ring
6	Chassis intrusion switch	12	Heat sink assembly

Inside the Small Desktop Computer



1	Cover release buttons (2)	8	AC power connector
2	Hard drive	9	Padlock ring
3	Internal speaker	10	I/O ports and connectors
4	Chassis intrusion switch	11	Heat sink assembly
5	Expansion-card cage	12	System board
6	Power supply	13	3.5-inch floppy drive
7	Expansion-card slots	14	CD drive

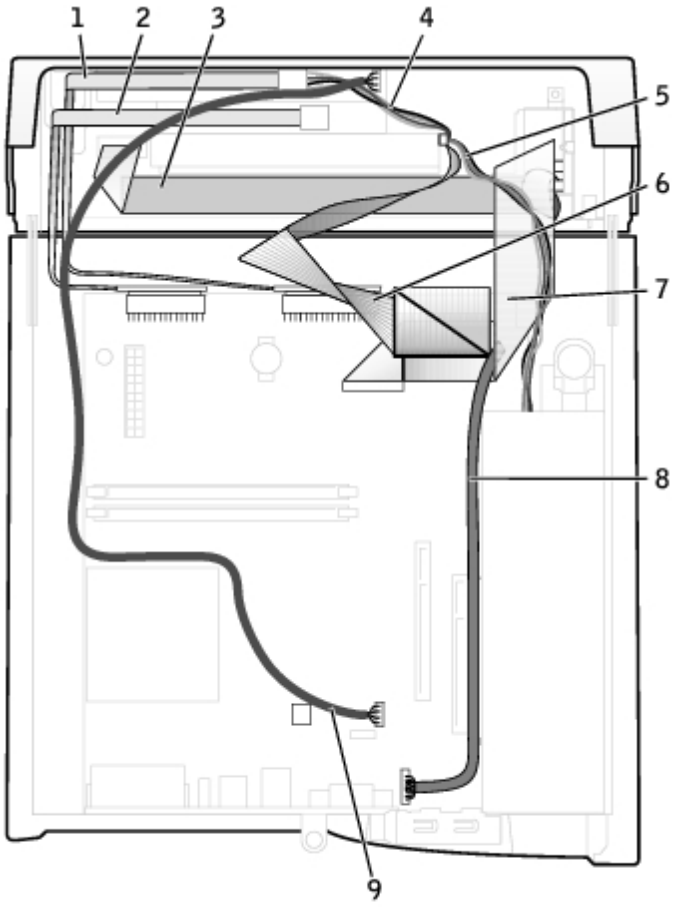
Inside the Small Mini-Tower Computer



1	Cover release buttons (2)	8	AC power connector
2	Hard drive	9	Padlock ring
3	Internal speaker	10	Microprocessor and airflow shroud
4	Chassis intrusion switch	11	Power supply
5	System board	12	3.5-inch floppy drive
6	Expansion-card slots	13	CD drive
7	I/O ports and connectors		

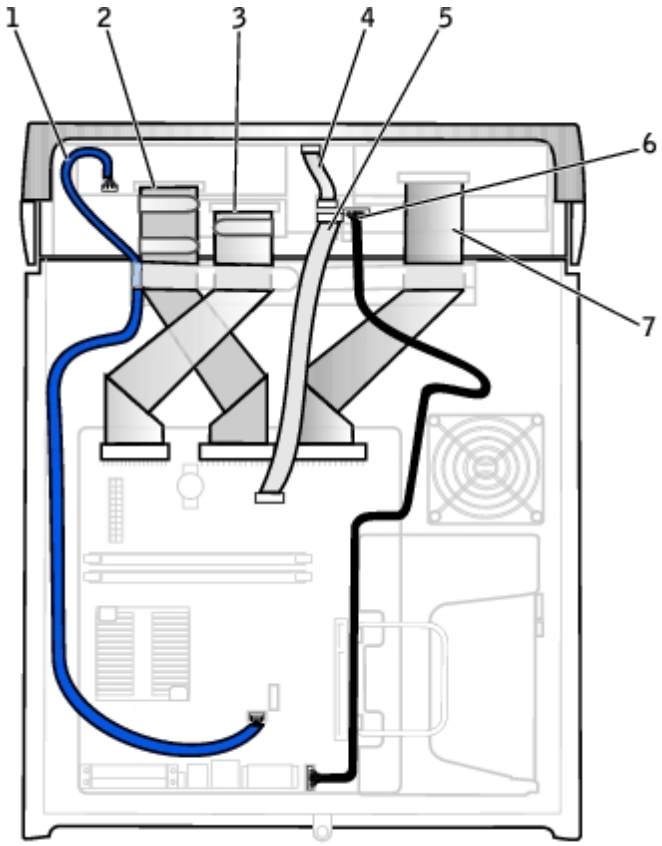
Computer Cables

Small Form-Factor Computer



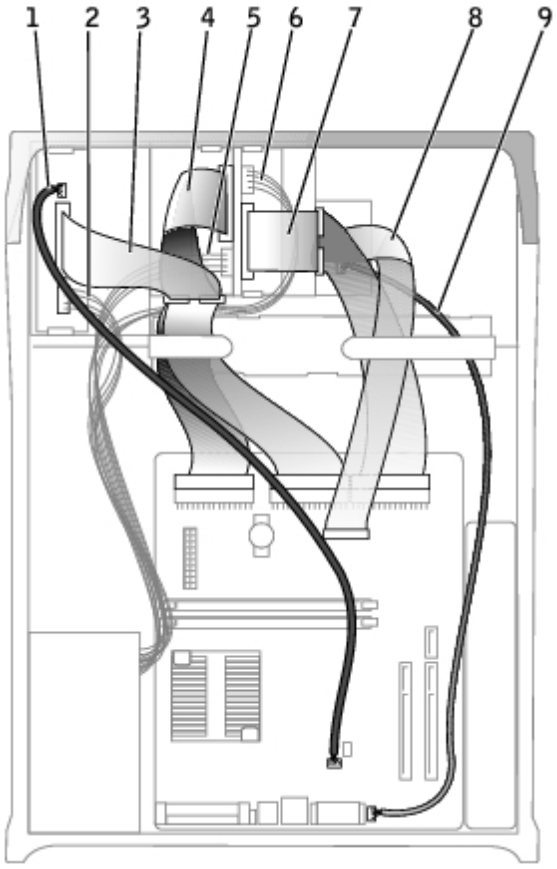
1	CD drive data cable	**6**	IDE data cable (hard drive)
2	Floppy drive data cable	**7**	Input/output cable
3	Control panel cable	**8**	Input/output audio cable
4	CD drive power cable	**9**	CD audio cable
5	IDE drive power cable (hard drive)		

Small Desktop Computer



1	CD drive audio cable	5	Front I/O cable
2	CD drive data cable	6	Front I/O audio cable
3	3.5-inch floppy drive data cable	7	EIDE interface cable (hard drive)
4	Control panel cable		

Small Mini-Tower Computer



1	CD drive audio cable	6	Hard drive power cable
2	CD drive power cable	7	Hard drive data cable
3	CD drive data cable	8	Front I/O cable
4	Floppy drive data cable	9	Front I/O audio cable
5	Floppy drive power cable		

Cable Colors

Hard drive	Blue pull tab
Floppy drive	Black pull tab
CD drive	Orange pull tab
ATA or IDE	Gray
Control panel	Gray
CD audio	Blue
Computer audio	Black

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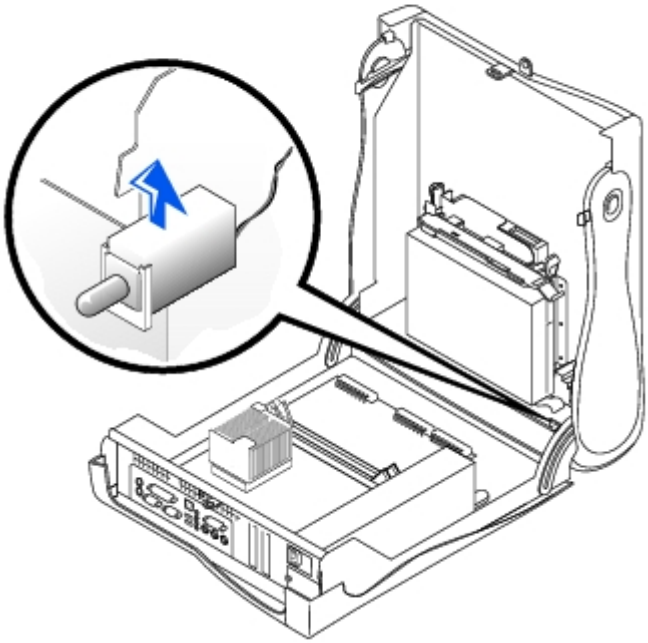
Chassis Intrusion Switch

Dell™ OptiPlex™ GX50 Systems

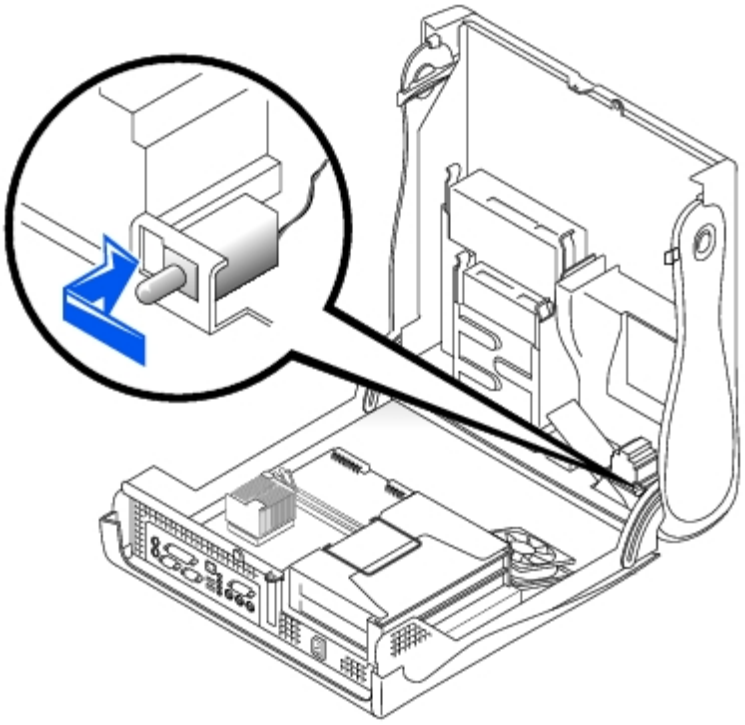
- Removing the Chassis Intrusion Switch
- Replacing the Chassis Intrusion Switch
- Resetting the Chassis Intrusion Detector

Removing the Chassis Intrusion Switch

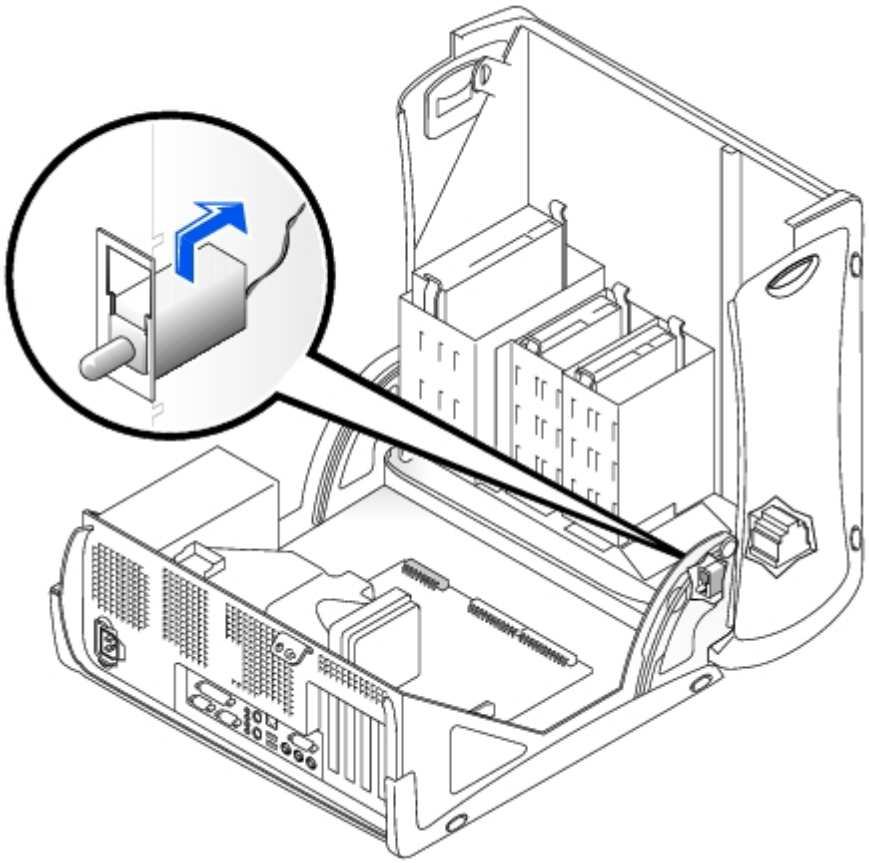
Small Form-Factor Computer



Small Desktop Computer



Small Mini-Tower Computer



1. Disconnect the chassis intrusion switch cable connector from the front I/O panel.

   Note the routing of the chassis intrusion cable as you remove it from the chassis. Chassis hooks may hold the cable in place inside the chassis.

2. Slide the chassis intrusion switch out of its slot and remove the switch and its attached cable from the chassis.

Replacing the Chassis Intrusion Switch

To replace the chassis intrusion switch, follow the "Removing the Chassis Intrusion Switch" procedures in reverse order.

Resetting the Chassis Intrusion Detector

1. Enter system setup by pressing <F2> during the computer's POST.

   NOTE: For instructions on using system setup, see the *User's Guide*.

2. Under the **System Security** tab, reset the **Chassis Intrusion** option by pressing the left- or right-arrow key to select **Reset**. Change the setting to **Enabled**, **Enabled-Silent**, or **Disabled**.

   NOTE: The default is **Enabled-Silent**.

   NOTE: If a setup password has been assigned by someone else, contact the network administrator for information on resetting the chassis intrusion detector.

3. Press <Alt><B> to restart the computer and implement your changes.

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Front-Panel Inserts

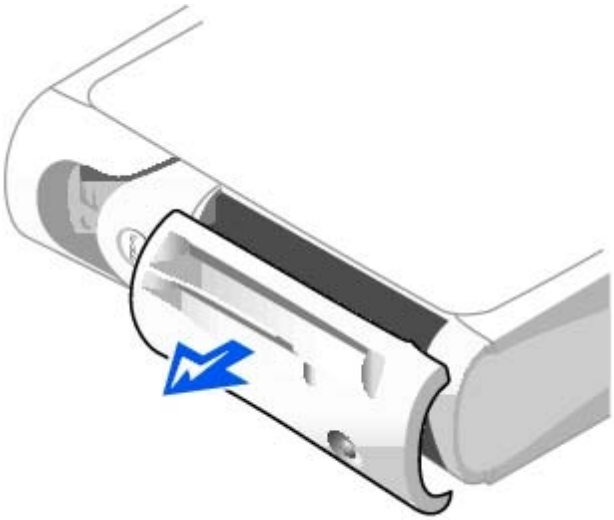
Dell™ OptiPlex™ GX50 Systems

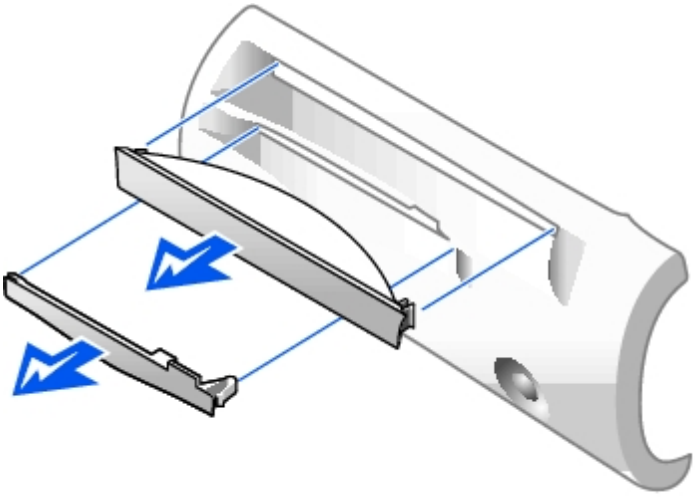
- Removing Front-Panel Inserts
- Replacing Front-Panel Inserts

Removing Front-Panel Inserts

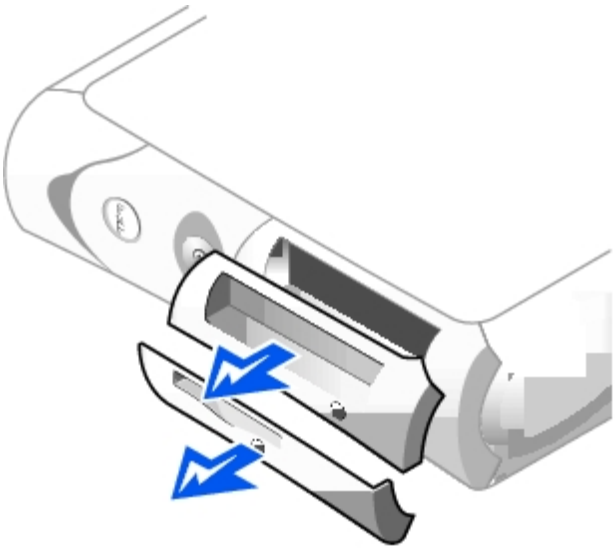
1. On the small form-factor and small desktop computers, perform the following steps:
    a. Face the front of the computer and use your fingers to remove the front-panel cover.
    b. Press on the insert until it pops free of the front-panel cover.
2. On the small mini-tower computer, perform the following steps:
    a. Open the computer cover and release the insert tabs from inside the chassis.
    b. Press on the insert until it pops free of the front-panel cover.

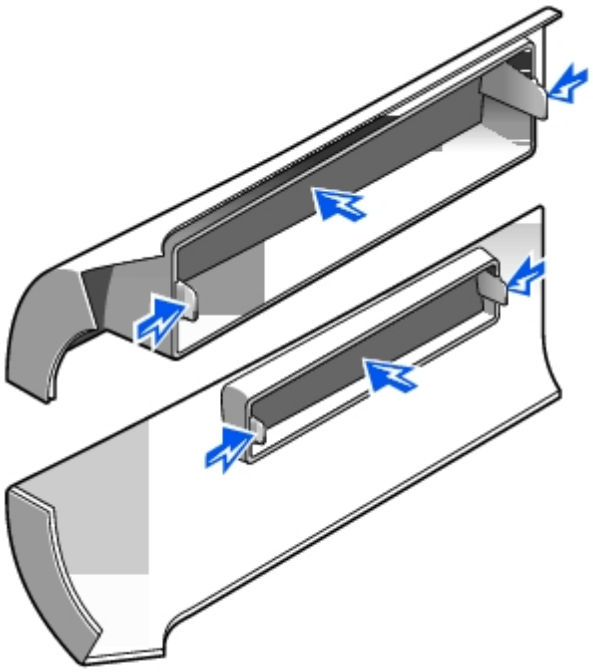
Small Form-Factor Computer



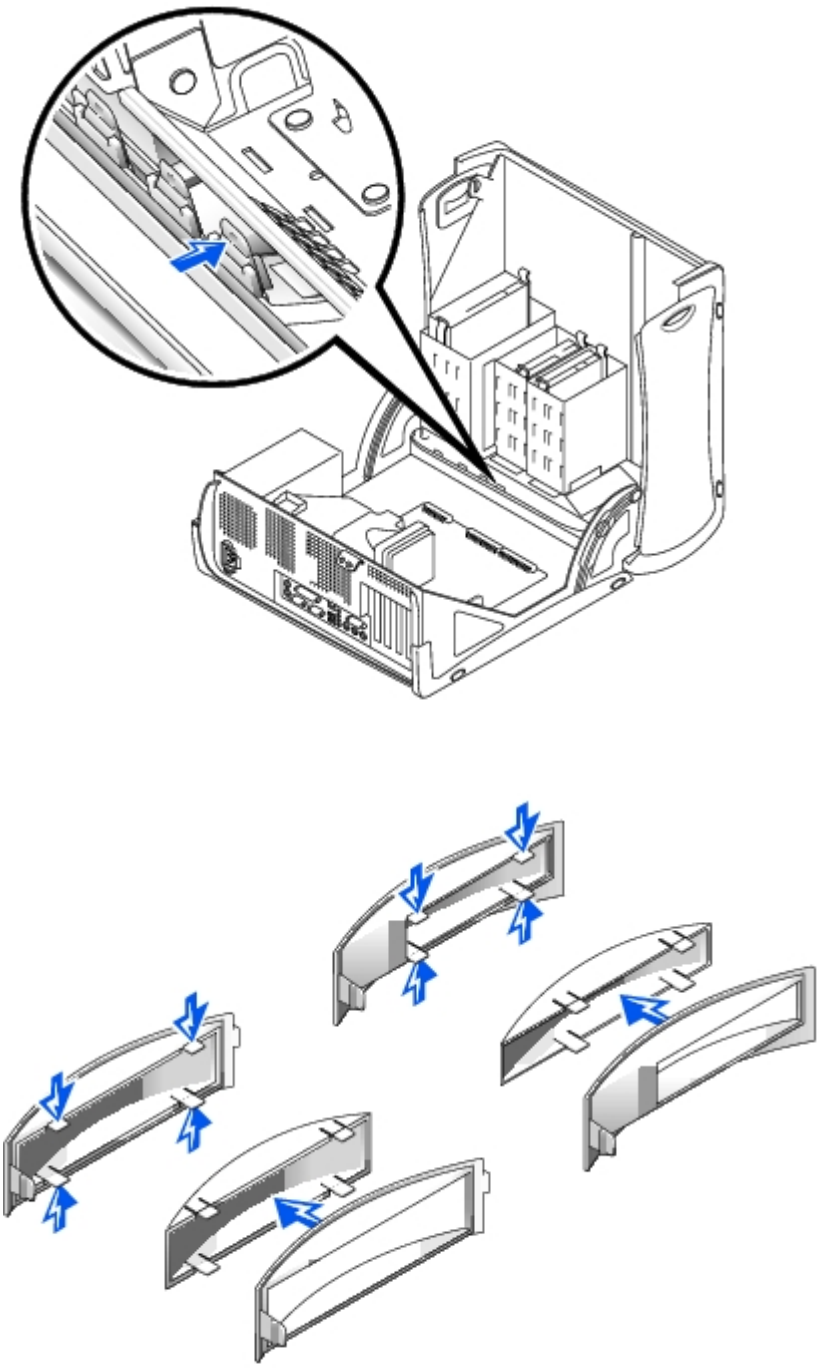


Small Desktop Computer





Small Mini-Tower Computer



Replacing Front-Panel Inserts

To replace a front-panel insert, follow the appropriate procedure, in reverse, in "Removing Front-Panel Inserts."

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Control Panel and Badge

Dell™ OptiPlex™ GX50 Systems

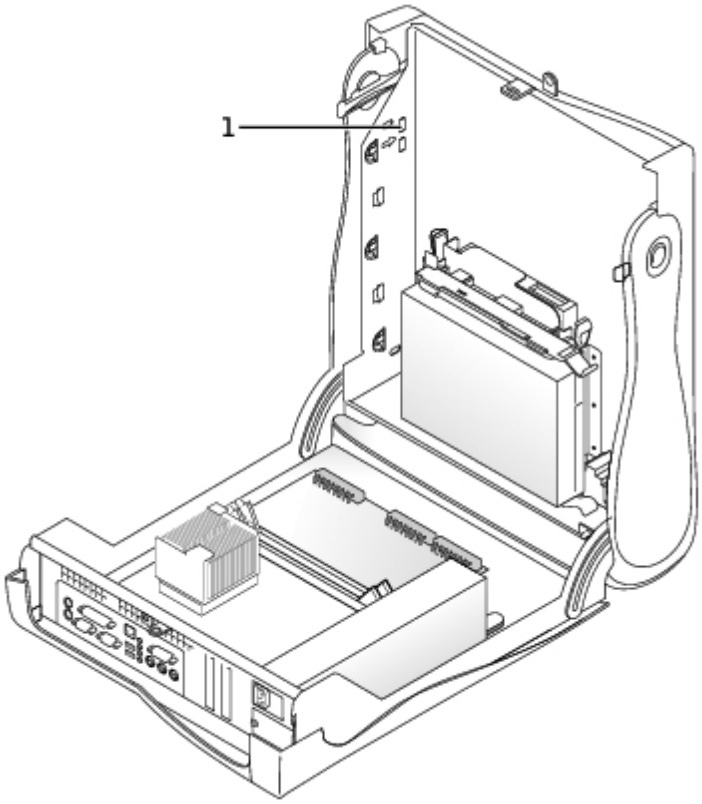
- Removing the Control Panel and Badge
- Replacing the Control Panel and Badge

Removing the Control Panel and Badge

Small Form-Factor Desktop Computer

1. Open the computer cover.
2. Using a flat-blade screwdriver, release the tabs from the inside of the computer and remove the plastic computer cover from the metal component.

Releasing the Tabs—Small Form-Factor Computer

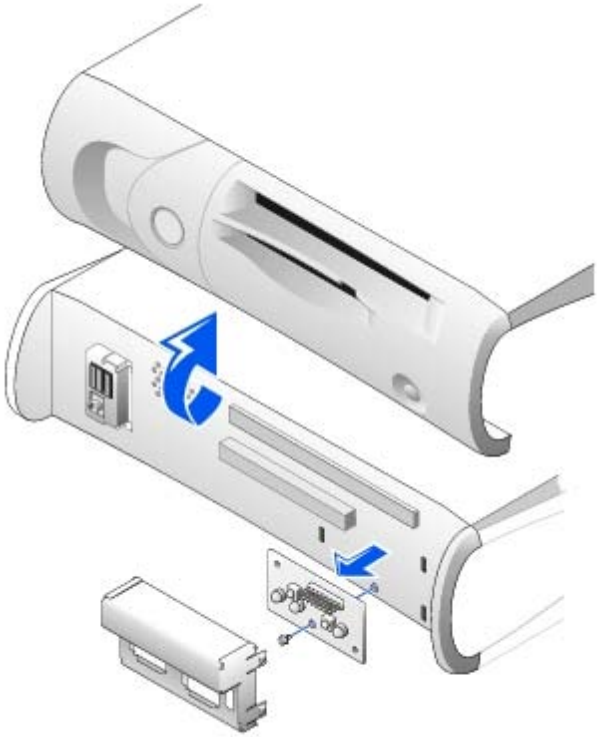


1	Tabs (2 on each side)

3. To remove the badge, remove the accent door by pressing the middle of the door while lifting away the sides of the door.
    a. From inside the front bezel, push in on the two tabs on either side of the badge to release the badge.
    b. Press on the badge until it is freed.

4. To remove the control panel, perform the following steps:

Removing the Control Panel—Small Form-Factor Computer



   a. Remove the metal control-panel shield.

   b. Remove the screw that holds the control panel to the computer.

Small Desktop Computer

1. To remove the badge, open the front USB door.

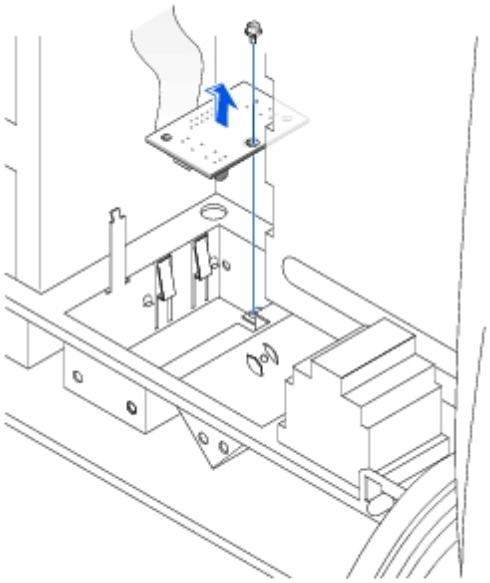
   a. From inside the door, push in the two tabs on either side of the badge to release the badge.

   b. Press on the badge until it is freed.

2. To remove the control panel, perform the following steps:

   a. Remove the front I/O panel.

Removing the Control Panel—Small Desktop Computer



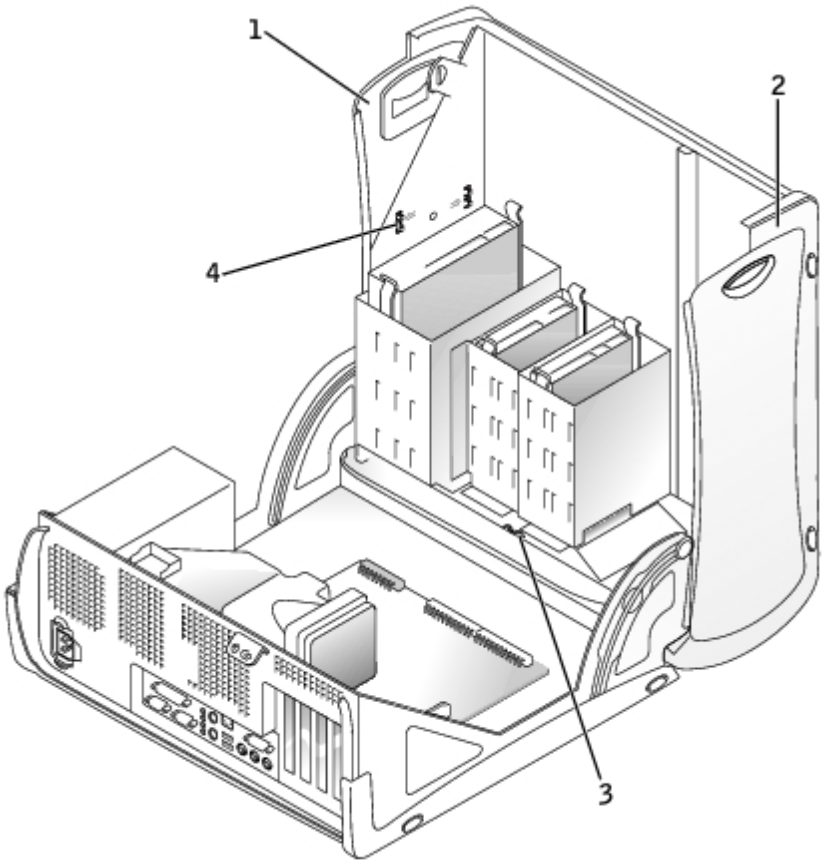
b. Using an 8-inch #2 Phillips screwdriver, remove the screw holding the control panel to the computer, and pull the panel up and away from the computer.

Small Mini-Tower Computer

1. To remove the badge, open the front USB door.
   a. From inside the door, push in the two tabs on either side of the badge to release the badge.
   b. Press on the badge until it is freed.
2. To remove the control panel, perform the following steps:
   a. Lay the computer on its right side and open the cover.
   b. Remove the top and bottom panels of the computer by releasing the eight tabs on each panel.
   c. Remove the front bezel by releasing the three tabs located on the front bezel: one tab is located by the CD drive, and two tabs are located by the I/O panel.

NOTE: This view of the small mini-tower chassis shows the CD drive data cable removed.

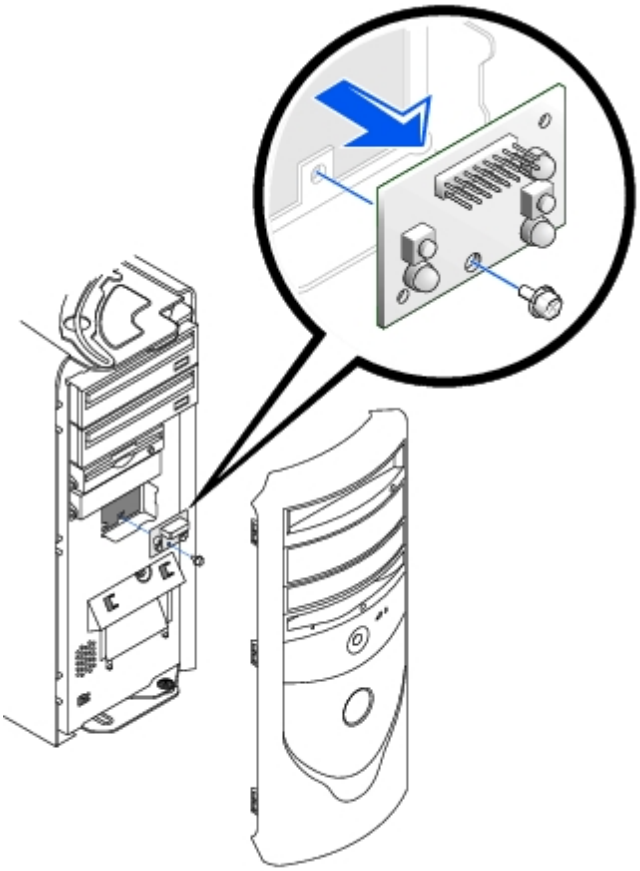
Front Bezel Tabs—Small Mini-Tower Computer



1	Top panel
2	Bottom panel
3	Front-panel tabs (3)
4	Top-panel tabs (8)

d. Close the cover and remove the front bezel.

Control-Panel Removal



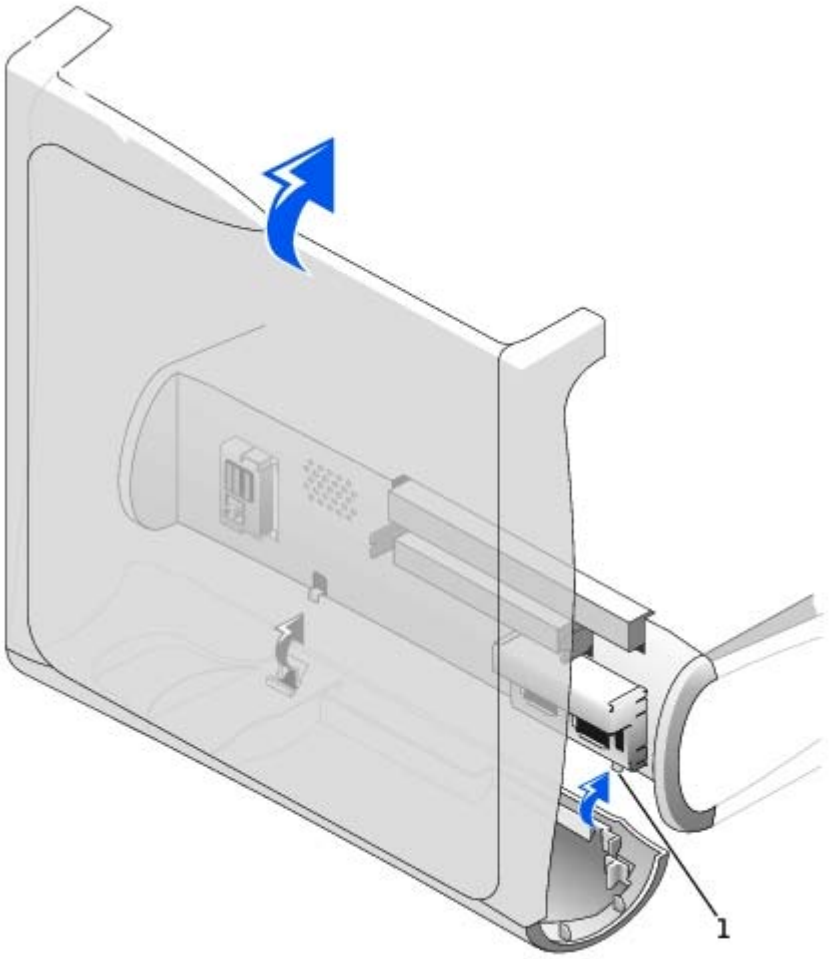
e. Remove the screw holding the control panel to the chassis, and pull the panel up and away from the chassis.

Replacing the Control Panel and Badge

Small Form-Factor Desktop Computer

1. Replace the control panel and the control-panel shield.
2. Replace the plastic computer cover. Make sure that the two metal hooks and tabs are securely in place.

Replacing the Plastic Computer Cover—Small Form-Factor Computer



1	Metal hooks (2)

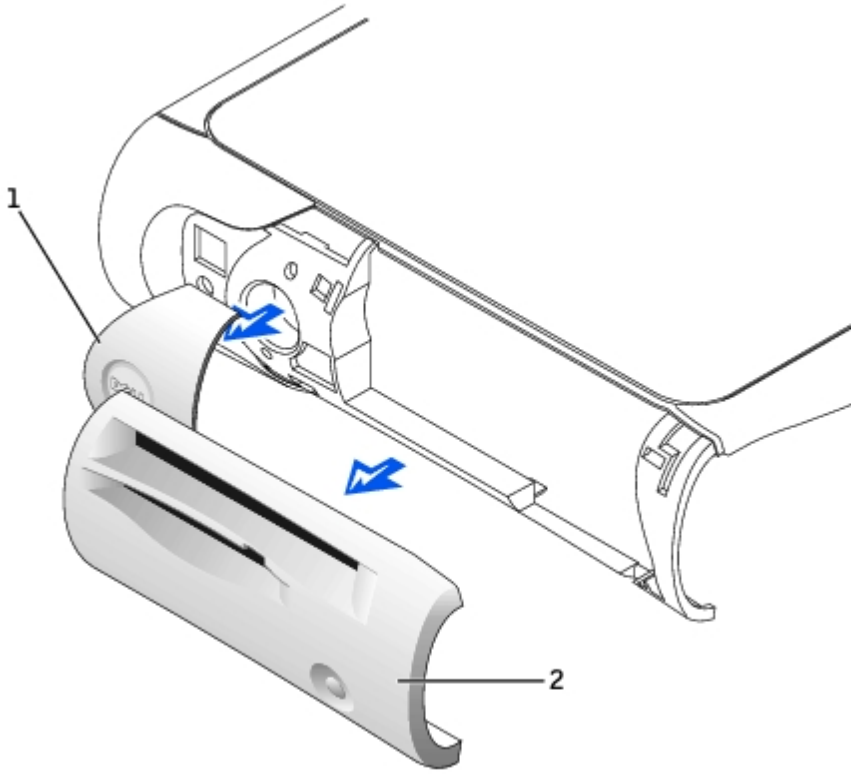
To help replace the plastic computer cover, remove the accent door and front mask from the plastic computer cover:

a. Remove the front mask by releasing the tabs on the inside of the plastic computer cover.

b. Remove the accent door by pressing the middle of the door while lifting away the sides of the door.

c. After replacing the plastic computer cover, snap the front mask and accent door into place.

Removing the Front Mask and Accent Door—Small Form-Factor Computer



1	Accent door
2	Front mask

3. Replace the badge by following, in reverse order, the procedures in "Removing the Control Panel and Badge" for the small form-factor desktop computer.

Small Desktop Computer

1. Replace the control panel and secure it to the computer by replacing the screw you removed in step 2 of the removal procedure.
2. Replace the front I/O panel.
3. Replace the badge by following, in reverse order, the procedures in "Removing the Control Panel and Badge" for the small desktop computer.

Small Mini-Tower Computer

1. Replace the control panel by following the "Removing the Control Panel and Badge" procedure in reverse, ensuring that the tabs on the top panel, bottom panel, and front panel are secure.
2. Replace the badge by following, in reverse order, the procedures in "Removing the Control Panel and Badge" for the small mini-tower computer.

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I/O Panel

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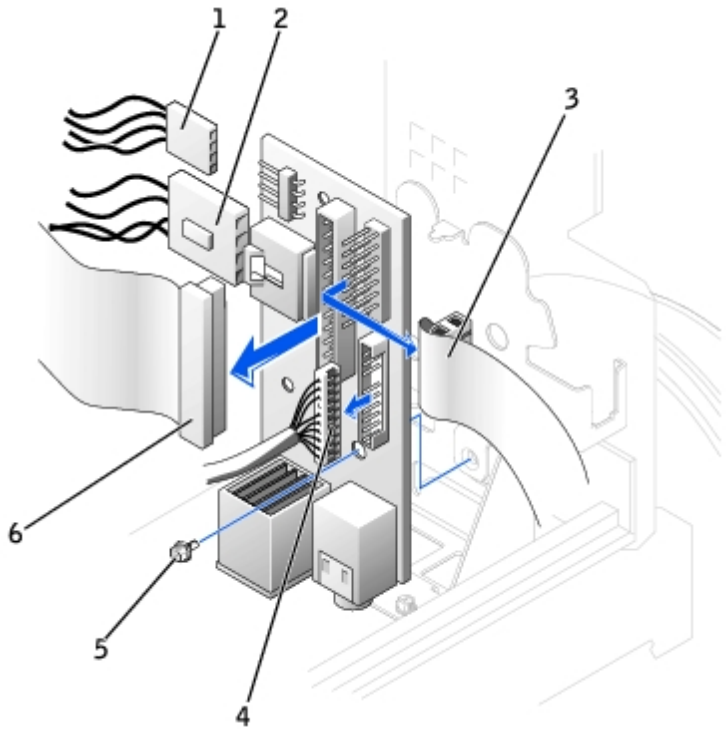
- Removing the I/O Panel
- Replacing the I/O Panel

Removing the I/O Panel

Small Form-Factor Desktop Computer

1. To access the screw that holds the I/O panel to the computer, remove the hard drive.

I/O Panel Removal—Small Form-Factor Computer



1	Internal speaker cable
2	Chassis intrusion switch cable
3	Control-panel cable
4	Front audio cable
5	Mounting screw
6	I/O cable

2. Disconnect the control-panel cable from the control-panel connector on the I/O panel. Disconnect the I/O cable from the I/O panel.

3. Remove all cables that are connected to the I/O panel, such as the chassis intrusion switch and internal speaker cables.

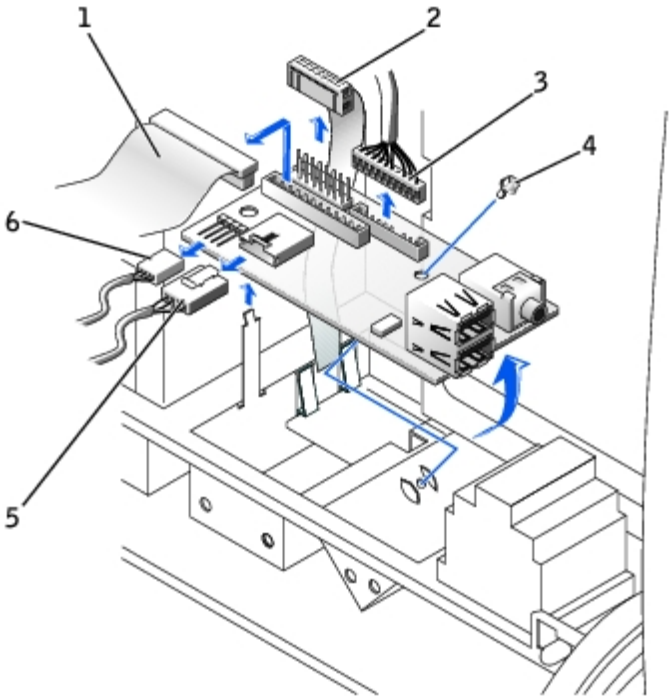
4. From inside the computer cover, remove the mounting screw that secures the I/O panel to the computer.
5. Remove the I/O panel from the computer.

Small Desktop Computer

1. Remove the hard-drive shroud.
2. Disconnect the hard-drive data cable.
3. Disconnect the control-panel cable from the control-panel connector on the I/O panel. Disconnect the I/O cable from the I/O panel.

Note the routing of the control-panel cable as you remove it from the computer so that you can replace it correctly.

I/O Panel Removal—Small Desktop Computer

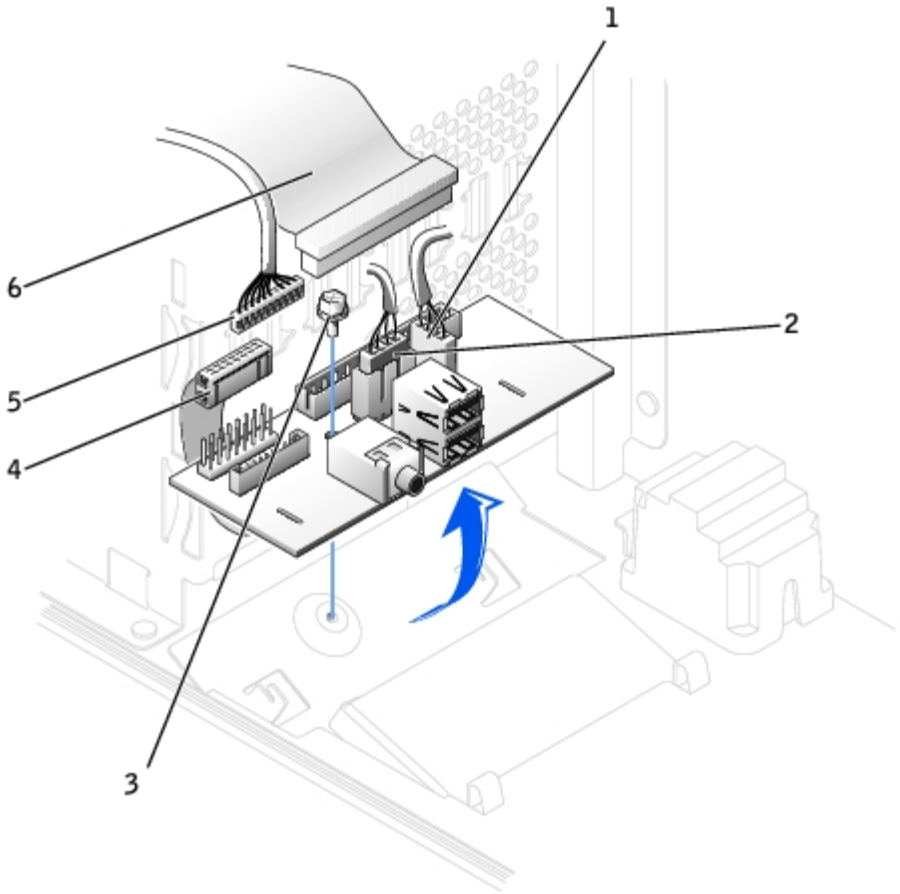


1	I/O cable
2	Control-panel cable
3	Front audio cable
4	Mounting screw
5	Chassis intrusion switch cable
6	Internal speaker cable

4. Remove all cables that are connected to the I/O panel, such as the chassis intrusion switch and internal speaker cables.
5. Remove the mounting screw that secures the I/O panel to the computer.
6. Remove the I/O panel from the computer.

Small Mini-Tower Computer

I/O Panel Removal—Small Mini-Tower Computer



1	Internal speaker cable
2	Chassis intrusion switch cable
3	Mounting screw
4	Control-panel cable
5	Front audio cable
6	I/O cable

1. Disconnect the control-panel cable from the control-panel connector on the I/O panel. Disconnect the I/O cable from the I/O panel.

   Note the routing of the control-panel cable as you remove it from the computer so that you can replace it correctly.

2. Remove all cables that are connected to the I/O panel, such as the chassis intrusion switch and internal speaker cables.

3. From inside the chassis cover, remove the mounting screw that secures the I/O panel to the chassis.

4. Remove the I/O panel from the chassis.

Replacing the I/O Panel

To replace the I/O panel, follow the removal procedures in reverse.

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Drives

Dell™ OptiPlex™ GX50 Systems

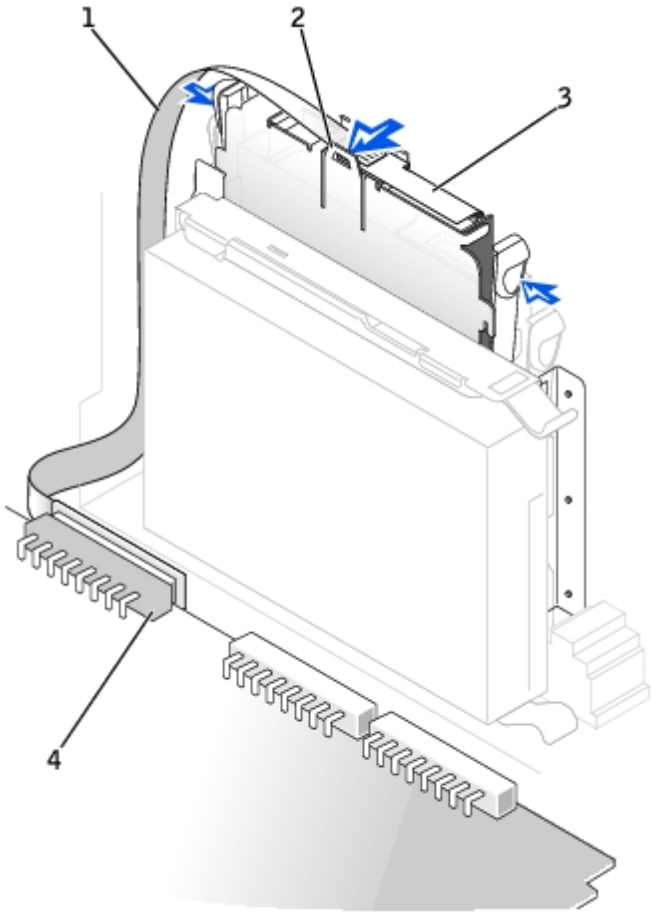
- Floppy Drive Removal
- Floppy Drive Replacement
- CD Drive Removal
- CD Drive Replacement
- Hard Drive Removal
- Hard Drive Replacement

Floppy Drive Removal

Small Form-Factor Desktop Computer

1. Disconnect the floppy-drive cable from the system board.
2. Remove the power cable from the interposer board.
3. Remove or raise the drive by pressing on the green tabs on either side of the drive and lifting the drive up.
4. Remove the floppy-drive cable from the floppy drive.
    a. Remove the interposer board from the floppy drive by pressing on the tab and rotating the interposer board.

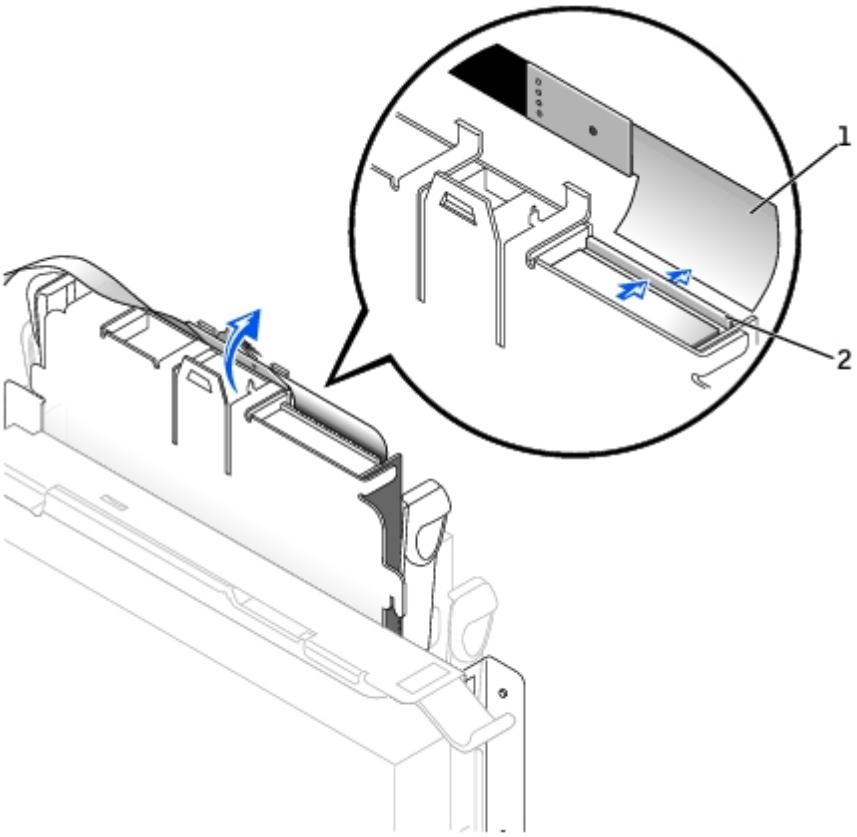
Removing the Interposer Board—Small Form-Factor Computer



1	Floppy-drive cable
2	Tab
3	Interposer board
4	System board floppy-drive connector (DSKT)

b. To release the floppy-drive cable from the connector, slide the lever until it is fully extended, and then lift the cable away.

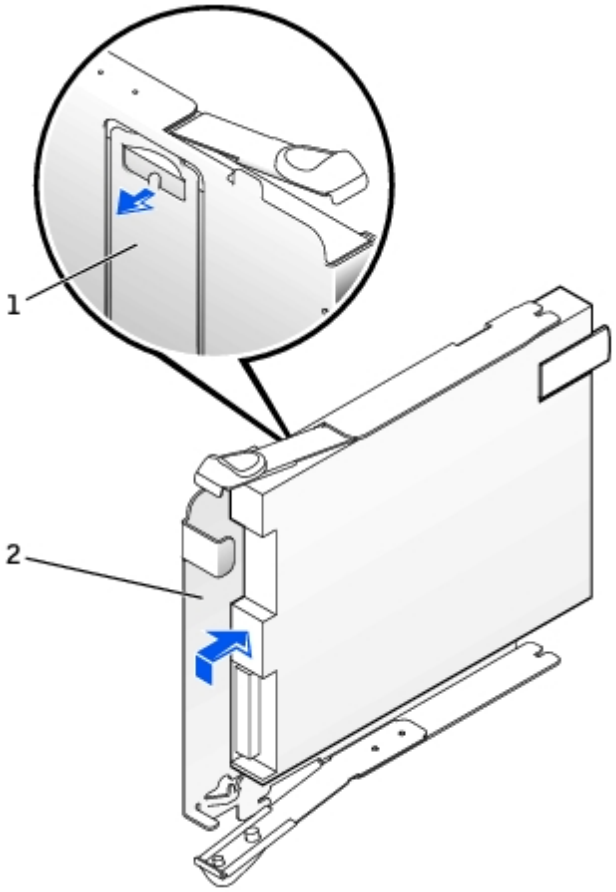
Removing the Floppy-Drive Cable



1	Floppy-drive cable
2	Lever

5. Remove the floppy drive from its sled by pulling the sled tab out while pushing the drive up and then sliding the drive out of the sled.

Removing the Floppy Drive—Small Form-Factor Computer

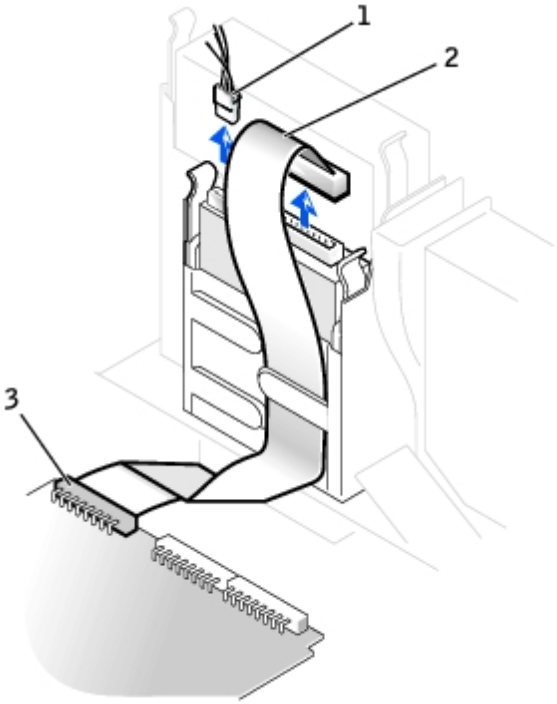


1	Sled tab
2	Sled

Small Desktop and Small Mini-Tower Computers

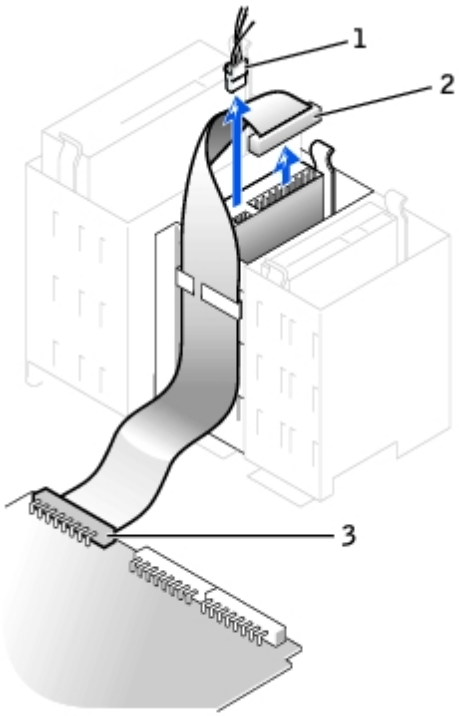
1. Disconnect the cables from the floppy drive and system board.

Small Desktop Computer



1	Power cable
2	Floppy-drive cable
3	Floppy-drive system board connector

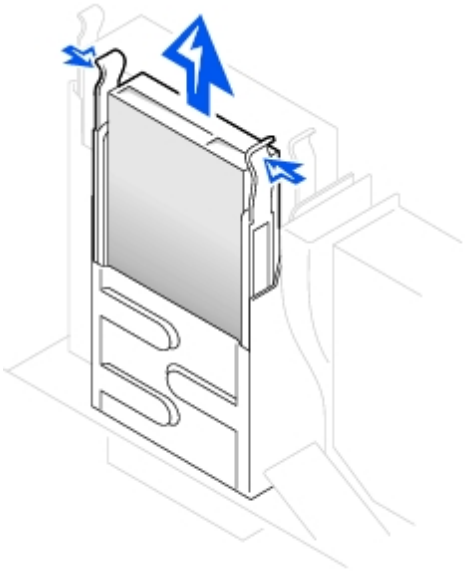
Small Mini-Tower Computer



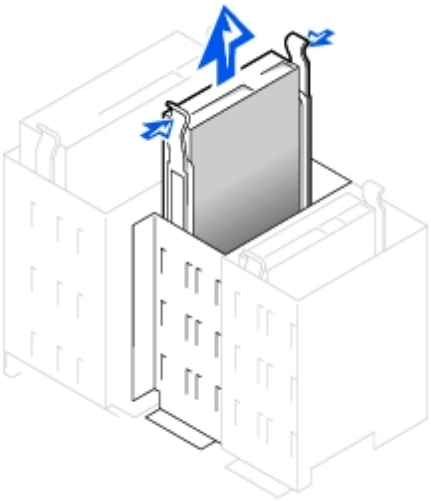
1	Power cable
2	Floppy-drive cable
3	Floppy-drive system board connector

2. Press inward on the two tabs on the sides of the drive bay to disengage the drive from the computer.
3. Slide the drive upward and remove it from the computer.

Small Desktop Computer



Small Mini-Tower Computer



Floppy Drive Replacement

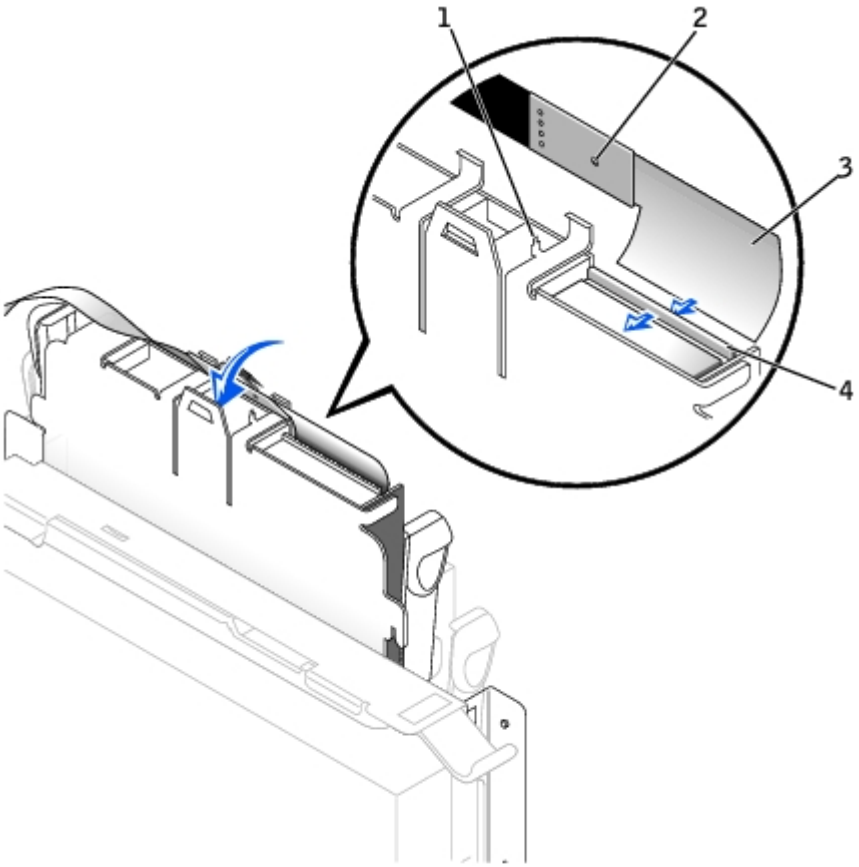
Small Form-Factor Desktop Computer

1. Snap the replacement drive into the sled and ensure that it is secure in the sled.
2. Connect the interposer board to the floppy drive.
    a. Slide the floppy-drive cable into the connector.
    b. Close the lever so that the cable is secure in the connector.

c. Line up the hole on the bottom of the interposer board with the notch on the connector, and snap the interposer board onto the drive.

3. Gently slide the drive into the computer until the tabs securely click into position.

Attaching the Floppy-Drive Data Cable



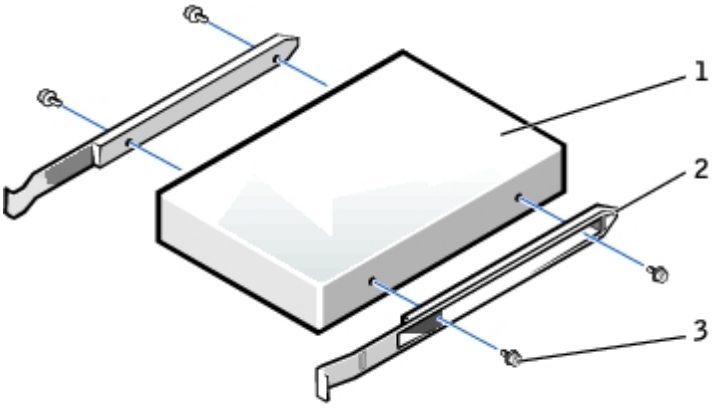
1	Connector notch
2	Interposer board alignment hole
3	Floppy-drive cable
4	Lever

4. Attach the power cable to the interposer board on the floppy drive.
5. Connect the strip cable to the DSKT connector on the system board.
6. Check all cable connections, and fold cables out of the way to provide airflow for the fan and cooling vents.
7. Close the computer cover, reconnect your computer and devices to their electrical outlets, and turn them on.
8. Enter system setup and update the appropriate **Diskette Drive A** option to reflect the size and capacity of your new floppy drive.
9. Verify that your computer works correctly by running the Dell Diagnostics.

Small Desktop and Mini-Tower Computers

1. If the replacement drive does not have the bracket rails attached, remove the rails from the old drive by removing the two screws that secure each rail to the drive. Attach the bracket to the new drive by aligning the screw holes on the drive with the screw holes on the bracket rails and tightening all four screws (two screws on each rail).

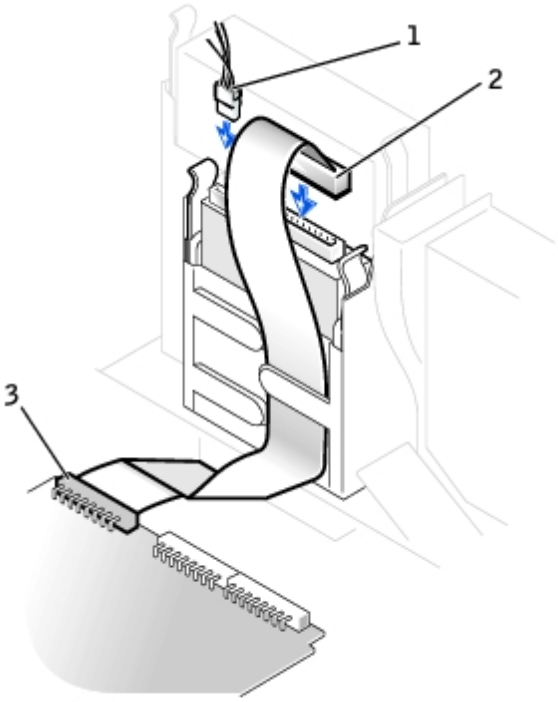
Floppy Drive Bracket Rails



1	Drive
2	Bracket rails (2)
3	Screws (4)

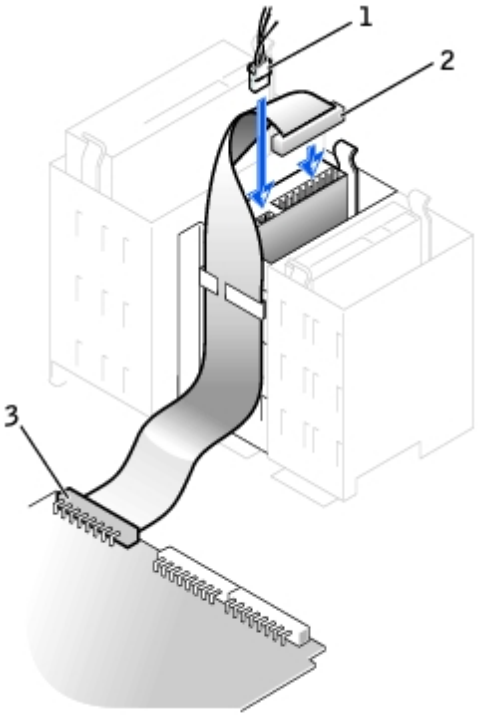
2. Gently slide the drive into place until the tabs securely click into position.
3. Attach the power and data cables to the floppy drive, and connect the other end of the data cable to the connector labeled "DSKT" on the system board.

Small Desktop Computer



1	Power cable
2	Floppy-drive cable
3	Floppy-drive system board connector

Small Mini-Tower Computer



1	Power cable
2	Floppy-drive cable
3	Floppy-drive system board connector

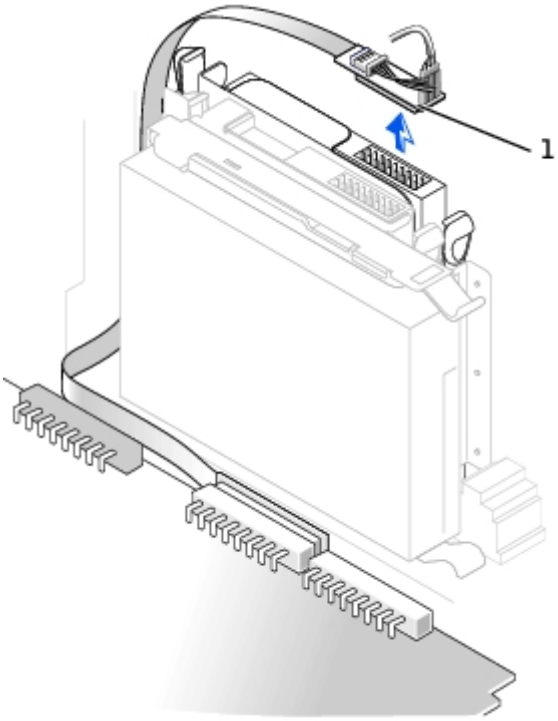
4. Check all cable connections, and fold cables out of the way to provide airflow for the fan and cooling vents.
5. Close the computer cover, reconnect your computer and devices to their electrical outlets, and turn them on.
6. Enter system setup and update the appropriate **Diskette Drive A** option to reflect the size and capacity of your new floppy drive.
7. Verify that your computer works correctly by running the Dell Diagnostics.

CD Drive Removal

Small Form-Factor Desktop Computer

1. Remove the interposer board from the CD drive.

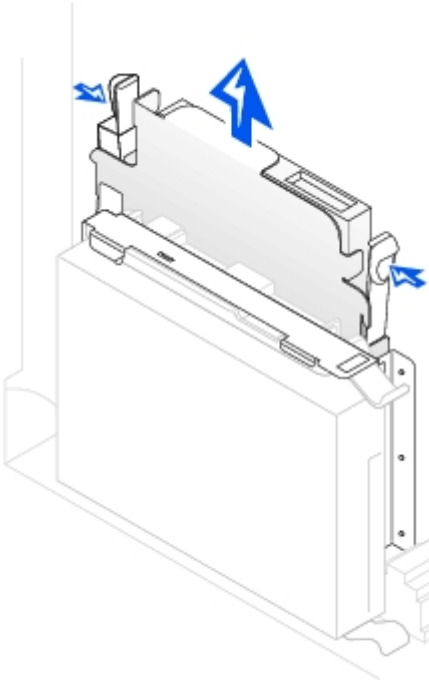
Removing the Interposer Board—Small Form-Factor Computer



1	Interposer board

2. Press inward on the two tabs on the sides of the drive to disengage the drive from the computer.

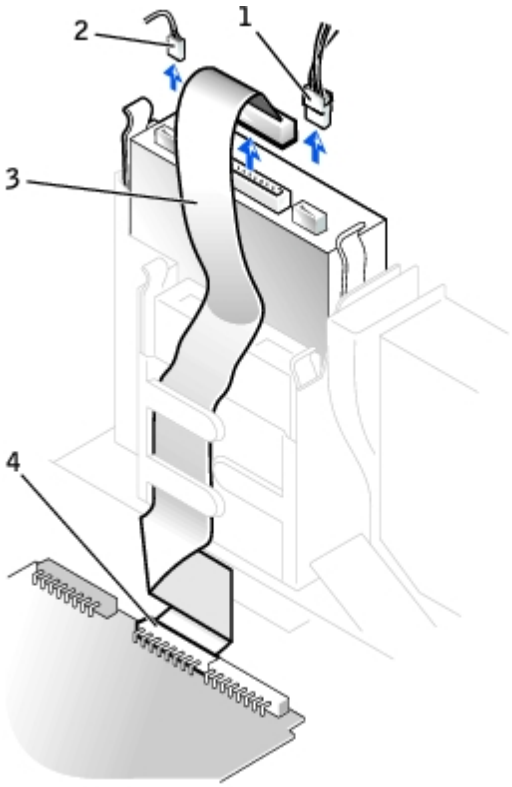
Removing the CD Drive—Small Form-Factor Computer



Small Desktop and Small Mini-Tower Computers

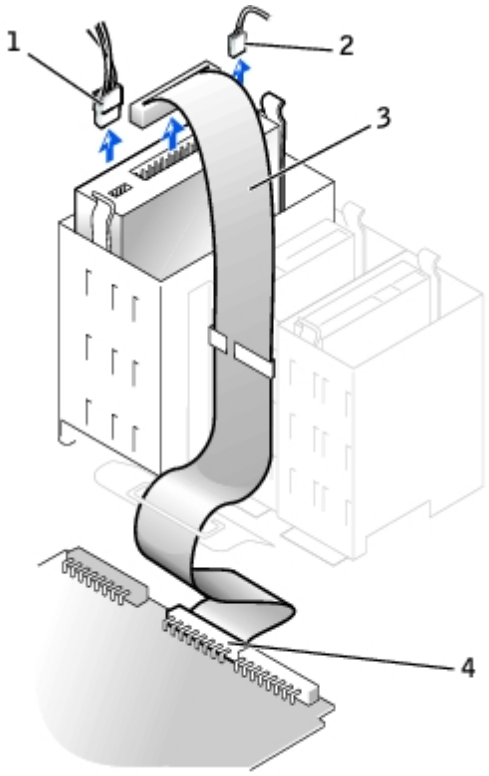
1. Remove the data, power, and audio cables from the drive.

Removing Cables—Small Desktop Computer



1	Power cable
2	Audio cable
3	CD drive cable
4	CD drive connector

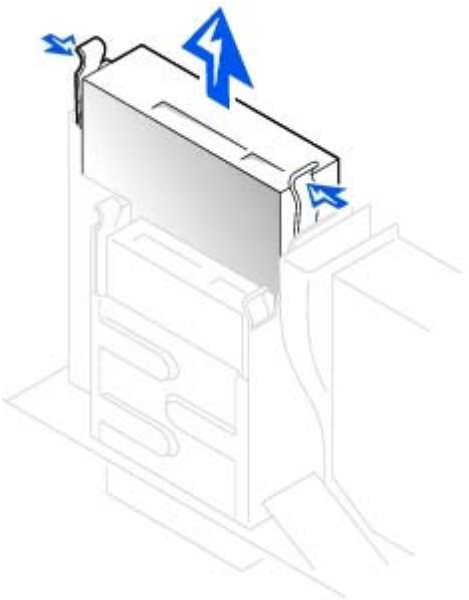
Removing Cables—Small Mini-Tower Computer



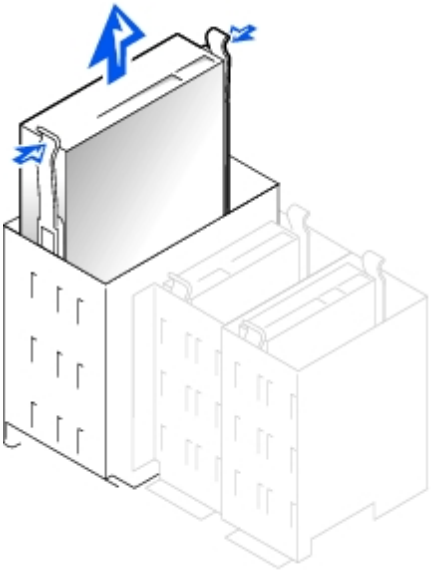
1	Power cable
2	Audio cable
3	CD drive cable
4	CD drive connector

2. Press inward on the two tabs on the sides of the drive bay to disengage the drive from the computer.
3. Slide the drive upward and remove it from the computer.

Removing the CD Drive—Small Desktop Computer



Removing the CD Drive—Small Mini-Tower Computer

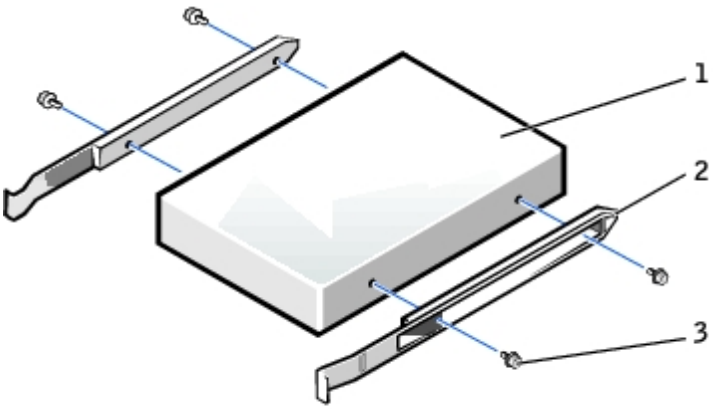


CD Drive Replacement

1. If you are replacing a drive that does not have the bracket rails attached, remove the rails from the old drive by removing the two screws that secure each rail to the drive. Attach the bracket to the new drive by aligning the screw holes on the drive with the screw holes on the bracket rails and tightening all four screws (two screws for each rail).
2. If you are installing a new drive, connect it to the set of rails that are attached to the inside of the cover.

   If a set of rails is not attached to the inside of the cover, contact Dell.

CD Drive Bracket Rails



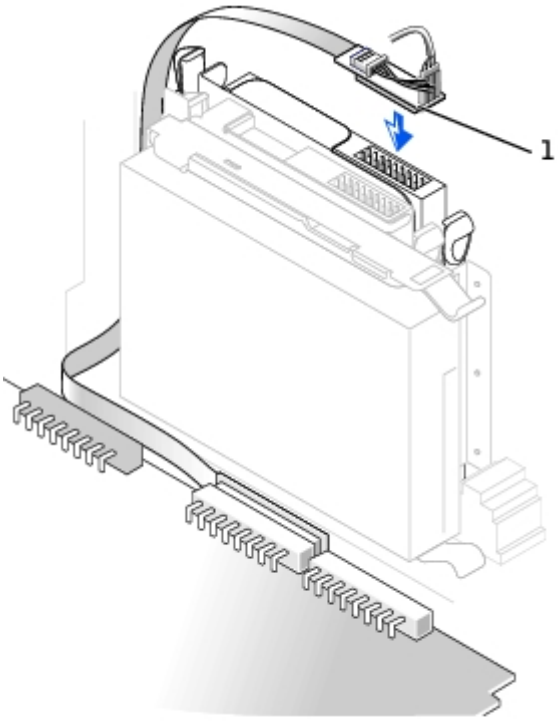
1	Drive
2	Bracket rails (2)
3	Screws (4)

Small Form-Factor Desktop Computer

1. Gently slide the drive into place until the tabs securely click into position.

2. Connect the interposer board to the CD drive, ensuring that the data, power, and audio cables are attached to the interposer board.

Connecting the Interposer Board—Small Form-Factor Computer

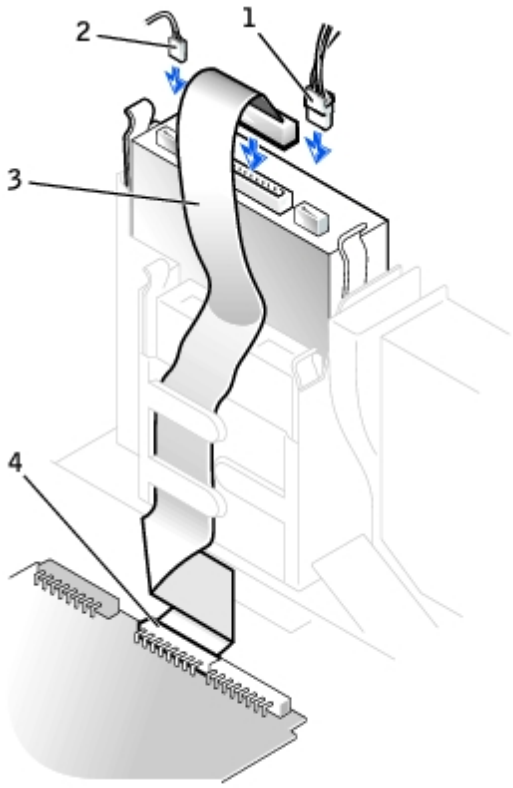


1	Interposer board

Small Desktop and Small Mini-Tower Computers

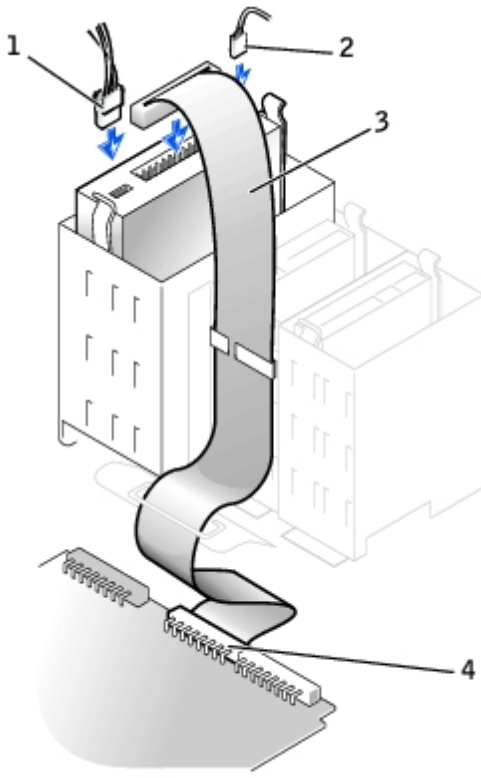
1. Gently slide the drive into place until the tabs securely click into position.
2. If you are installing a drive that has its own controller card, install the controller card in an expansion slot.
3. Connect the drive, power, and audio cables to the drive.

Connecting Cables—Small Desktop Computer



1	Power cable
2	Audio cable
3	CD drive cable
4	CD drive connector

Small Mini-Tower Computer



1	Power cable
2	Audio cable
3	CD drive cable
4	CD drive connector

If your computer came with an IDE CD drive, use the spare connector on the existing interface cable. Otherwise, use the IDE interface cable provided in the drive kit.

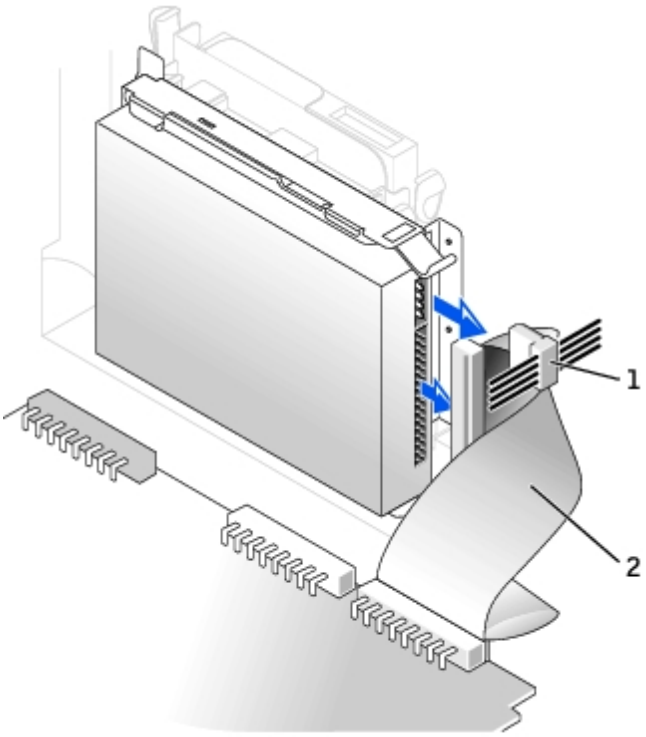
4. If you are installing a drive that has its own controller card, install the controller card in an expansion slot.

Hard Drive Removal

Small Form-Factor Desktop Computer

1. Disconnect the power and hard-drive data cables from the drive.

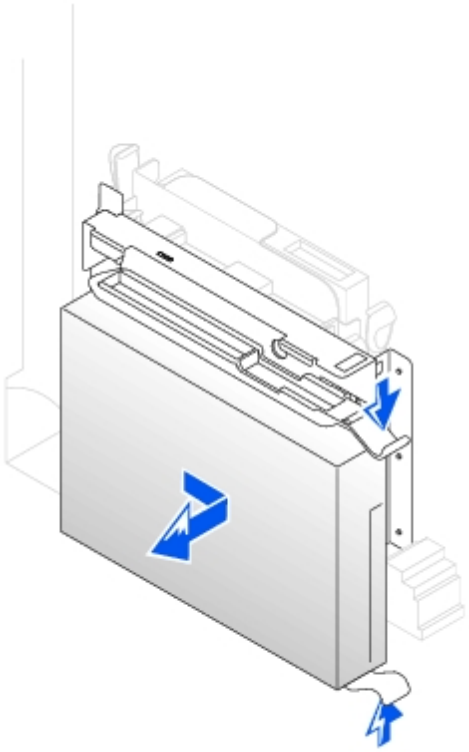
Removing Cables—Small Form-Factor Computer



1	Power cable
2	Hard-drive cable

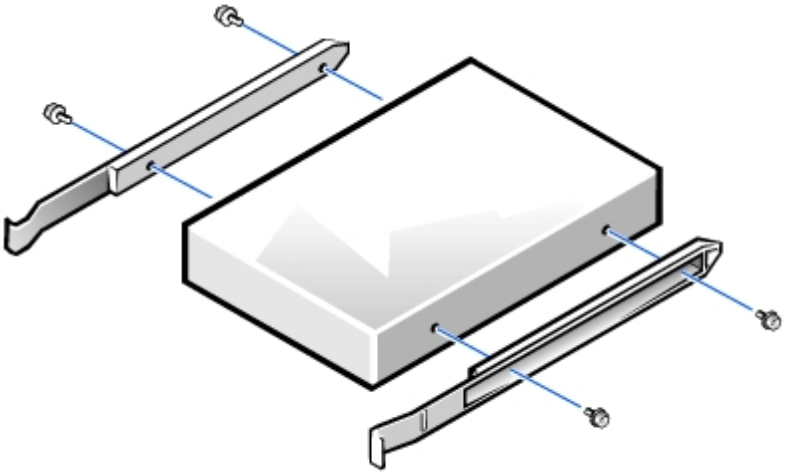
2. Press in on the tabs on each side of the drive and slide the drive toward the I/O panel and remove it from the computer.

Removing the Hard Drive—Small Form-Factor Computer



3. If the replacement drive does not have the bracket rails attached, remove the rails from the old drive by removing the two screws that secure each rail to the drive.

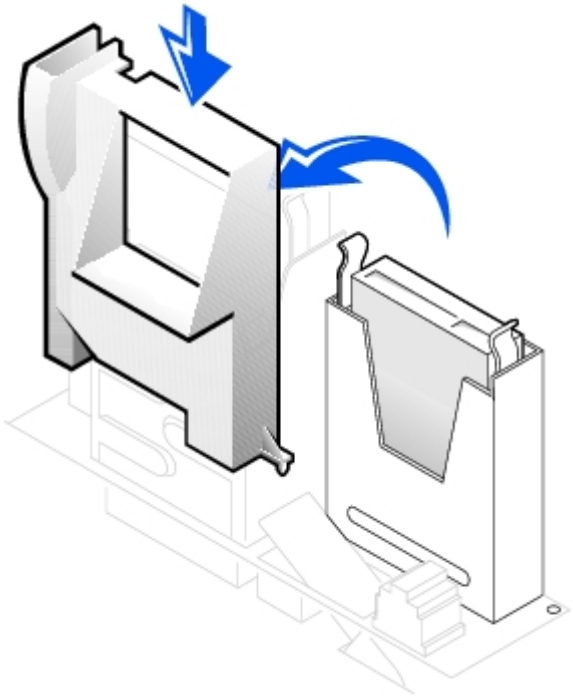
Drive Brackets Rails



Small Desktop Computer

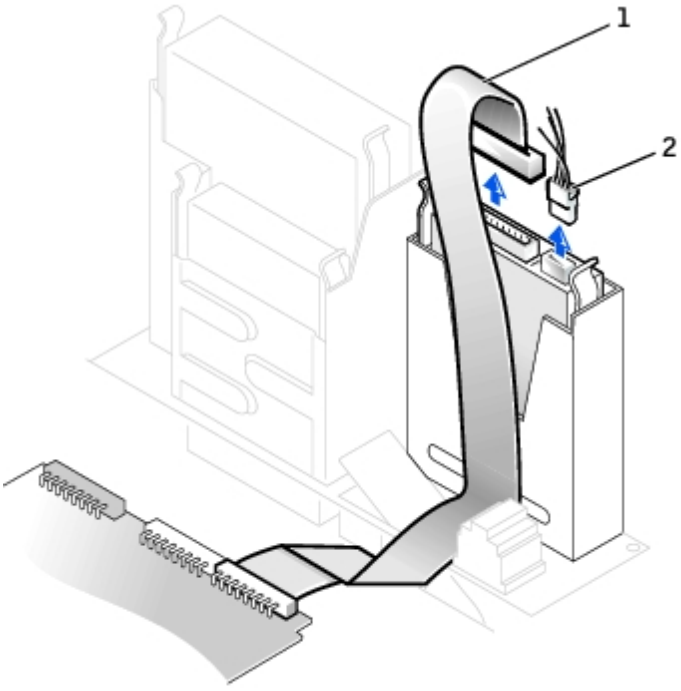
1. Remove the plastic shroud covering the hard drive by pressing in on the indented tab at the top of the shroud and lifting the shroud away.

Removing the Shroud—Small Desktop Computer



2. Disconnect the power and hard-drive data cables from the drive.

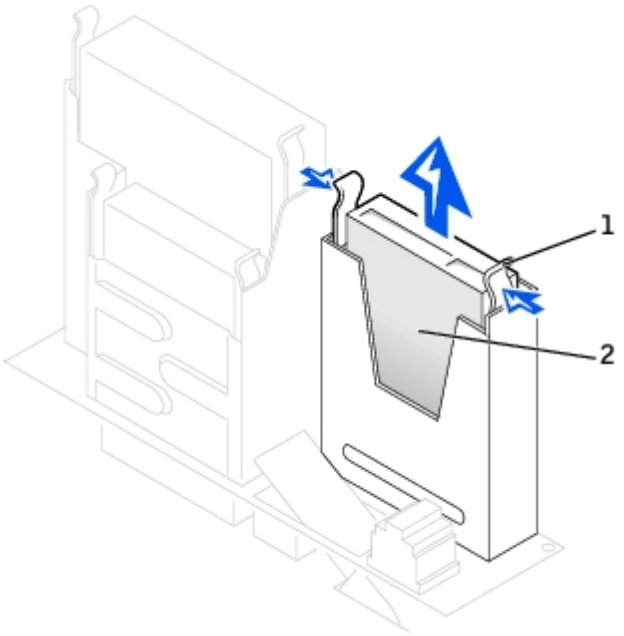
Removing Cables—Small Desktop Computer



1	Hard-drive cable
2	Power cable

3. Press in on the tabs on each side of the drive and slide it up and out.

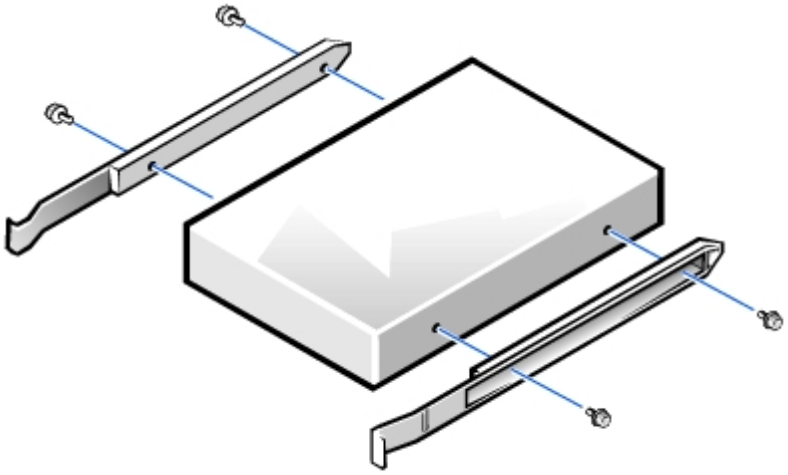
Removing the Hard Drive—Small Desktop Computer



1	Tabs (2)
2	Hard drive

4. If the replacement drive does not have the bracket rails attached, remove the rails from the old drive by removing the two screws that secure each rail to the drive.

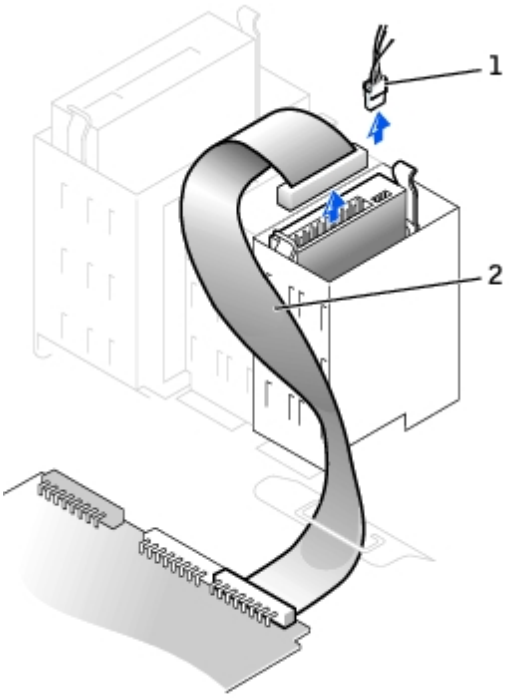
Drive Brackets Rails



Small Mini-Tower Computer

1. Disconnect the power and hard-drive data cables from the drive.

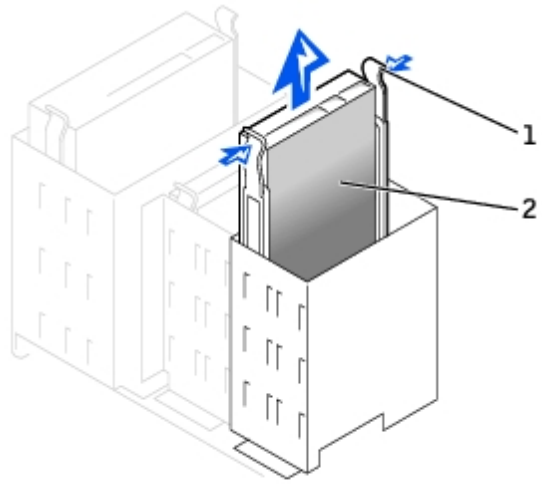
Removing Cables—Small Mini-Tower Computer



1	Power cable
2	Hard-drive cable

2. Press in on the tabs on each side of the drive and slide it up and out.

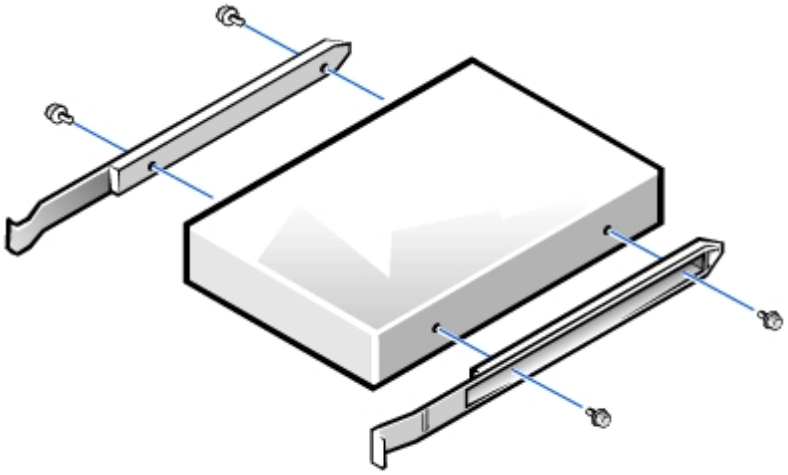
Removing the Hard Drive—Small Mini-Tower Computer



1	Tabs (2)
2	Hard drive

3. If the replacement drive does not have the bracket rails attached, remove the rails from the old drive by removing the two screws that secure each rail to the drive.

Drive Brackets Rails



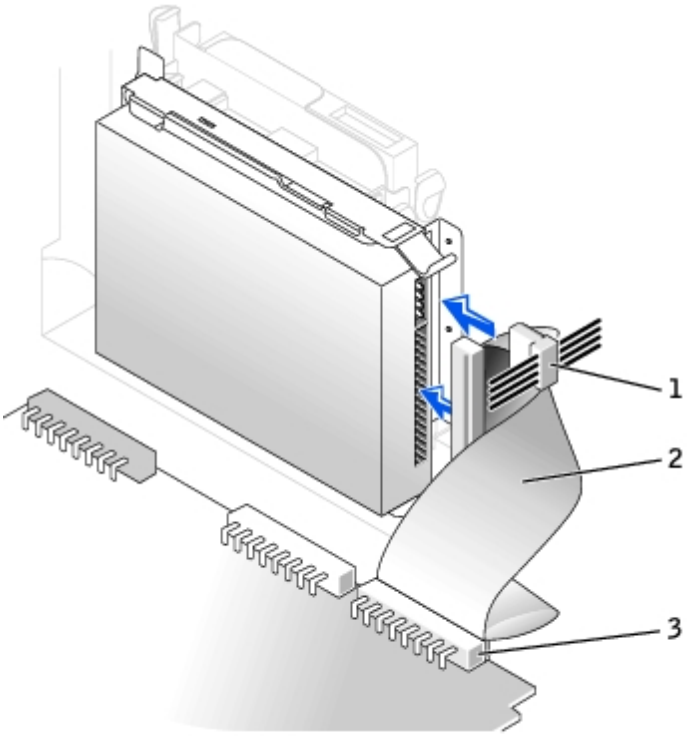
Hard Drive Replacement

NOTICE: To avoid possibly damaging the drive by ESD, ground yourself by touching an unpainted metal surface on the back of the computer.

NOTICE: When you unpack the drive, do not set it on a hard surface, which may damage the drive. Instead, set the drive on a surface, such as a foam pad, that will sufficiently cushion it.

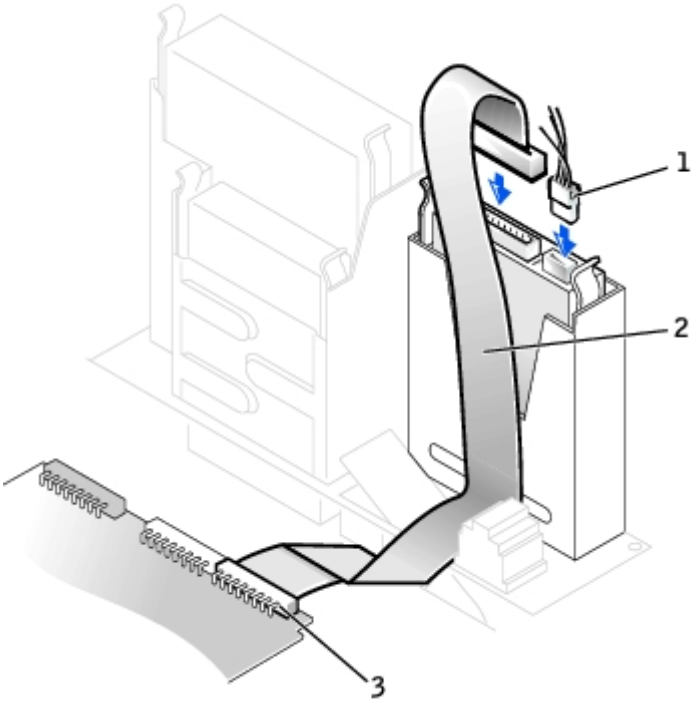
1. If the replacement drive does not have the bracket rails attached, remove the rails from the old drive by removing the two screws that secure each rail to the drive.
2. Reinstall the hard drive in the computer by gently sliding the drive into place until you hear it securely click.
3. Connect the power and hard-drive data cables to the drive.
4. On the small desktop computer, replace the hard-drive shroud by inserting the two tabs on the bottom into the holes in the computer and snapping the top into place.

Connecting Cables—Small Form-Factor Computer



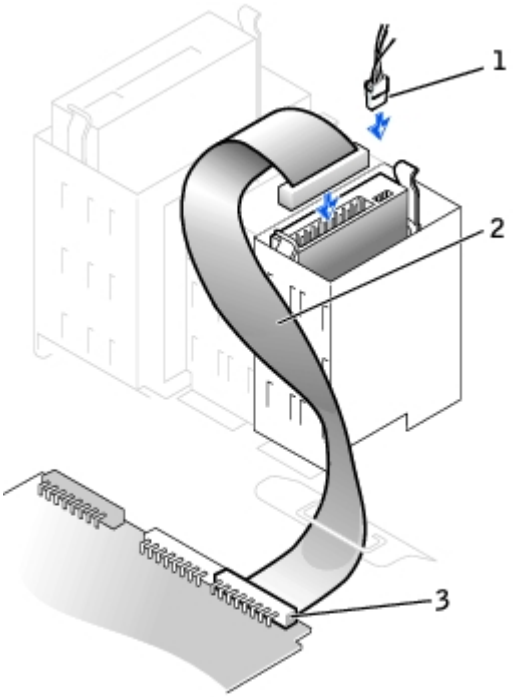
1	Power cable
2	IDE cable
3	IDE1 connector

Connecting Cables—Small Desktop Computer



1	Power cable
2	IDE cable
3	IDE1 connector

Connecting Cables—Small Mini-Tower Computer



1	Power cable
2	IDE cable
3	IDE1 connector

5. Check all connectors to be certain that they are properly cabled and firmly seated.

NOTICE: To avoid possible damage to the computer, you must match the colored stripe on the hard-drive data cable with pin 1 on the hard-drive (IDE1) connector and with the system board interface connector (IDE1).

To locate the system board interface connector (IDE1), see "System Board Components."

6. If the drive you just installed is the primary drive, insert a bootable floppy disk into the floppy drive.
7. Turn on the computer.
8. Enter system setup and update the appropriate **Primary Drive** option, **0** or **1**.

See the *User's Guide* for complete information on system setup.

9. Reset the chassis intrusion detector.
10. Restart the computer.
11. Partition and logically format the computer's hard drive before proceeding to the next step.

For partition and format instructions, refer to the documentation that came with the operating system.

NOTE: On Windows NT computers with hard drives larger than 2 GB, create a primary partition of 2 GB and divide the remaining capacity into partitions of 2 GB or less. For example, a computer with a 2.5-GB hard drive would have a primary partition of 2 GB (drive C) and a second partition of 500 MB (drive D).

12. Test the hard drive by running the Dell Diagnostics.

See "Solving Problems" in the *User's Guide* for complete information.

13. If the drive you just installed is the primary drive, install the operating system on the hard drive.

    For instructions, refer to the documentation that came with the operating system.

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Expansion-Card Cage (Small Desktop Computer Only)

Dell™ OptiPlex™ GX50 Systems

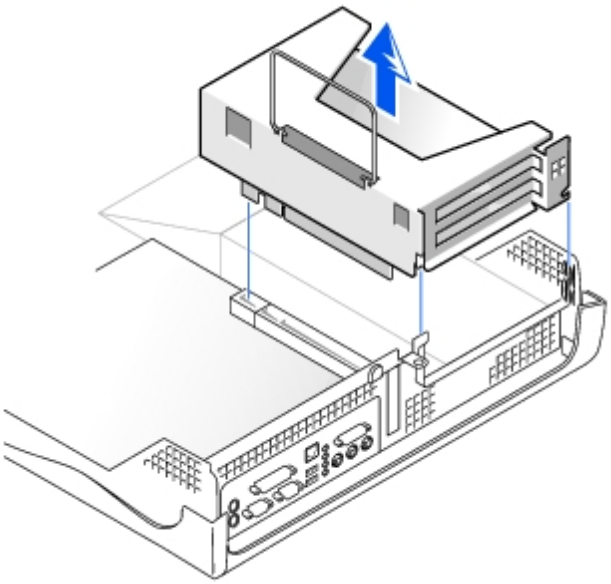
- Removing the Expansion-Card Cage
- Replacing the Expansion-Card Cage
- Removing the PCI Riser Board
- Replacing the PCI Riser Board

Removing the Expansion-Card Cage

⚠ **CAUTION: Use a wrist-grounding strap as explained in "Precautionary Measures."**

1. Examine any cables connected to expansion cards through the back- panel openings, and disconnect any cables that will not extend to where the cage must be placed when it is removed from the computer.
2. Remove any cables connected to the expansion card.
3. Gently pull on the handle and lift the expansion-card cage up and away from the computer.

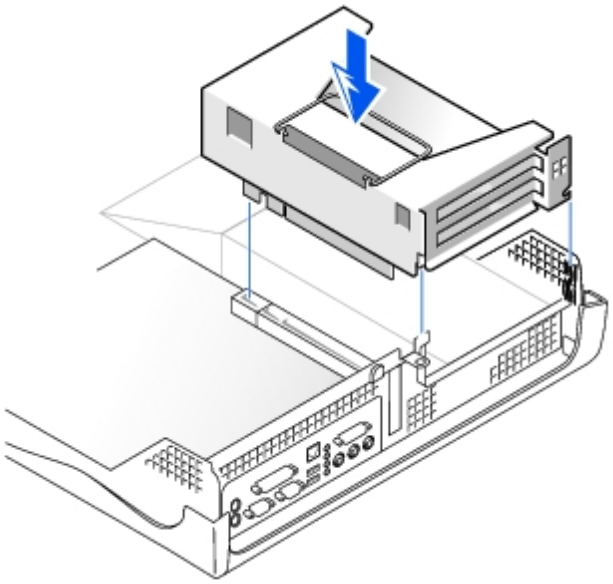
Removing the Expansion-Card Cage



Replacing the Expansion-Card Cage

1. Align the expansion-card cage slots with the tabs in the computer opening for the expansion-card cage. Slide the expansion-card cage into place.
2. Make sure that the riser board is fully seated in the RISER connector on the system board.

Replacing the Expansion-Card Cage



3. Reconnect any cables you removed in steps 1 and 2 of the previous procedure.

Removing the PCI Riser Board

NOTICE: To avoid damage to the expansion cards or the system board by ESD, ground yourself by touching an unpainted metal surface on the back of the computer.

CAUTION: Use a wrist grounding strap as explained in "Precautionary Measures."

1. Remove the expansion-card cage.
2. Remove the expansion cards installed in the slots.
3. Remove the two screws that attach the riser board to the expansion- card cage.

Replacing the PCI Riser Board

Follow the "Removing the PCI Riser Board" procedures in reverse order.

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Expansion Card

Dell™ OptiPlex™ GX50 Systems

- Removing an Expansion Card
- Replacing an Expansion Card

Your computer provides expansion slots for the following cards:

- In the small form-factor computer, one low-profile, 32-bit, 33-MHz PCI card.
- In the small desktop computer, up to two 32-bit, 33-MHz PCI cards.
- In the small mini-tower computer, up to four 32-bit, 33-MHz PCI cards.

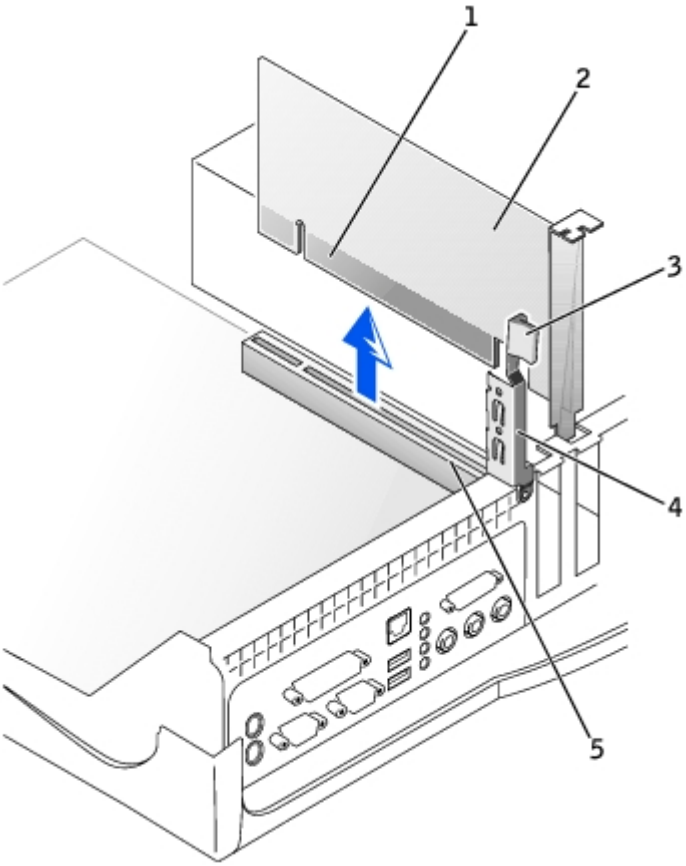
NOTE: Before disconnecting a device from the computer or removing a component from the system board, verify that the auxiliary power light on the system board is off. For the location of this light, see "System Board Components."

Removing an Expansion Card

CAUTION: Use a wrist-grounding strap as explained in "Precautionary Measures."

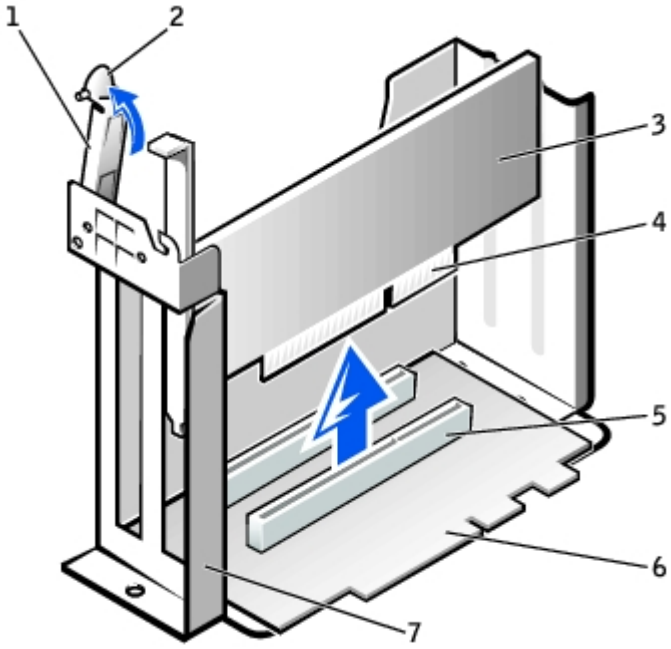
1. If necessary, disconnect any cables connected to the card.
2. On the small desktop computer, remove the expansion-card cage.
3. Press the hinged lever on the expansion card retention arm and raise the retention arm.
4. Grasp the card by its outside corners and ease it out of its connector on the riser board.
5. If you are removing the card permanently, install a metal filler bracket over the empty card-slot opening.

Small Form-Factor Computer



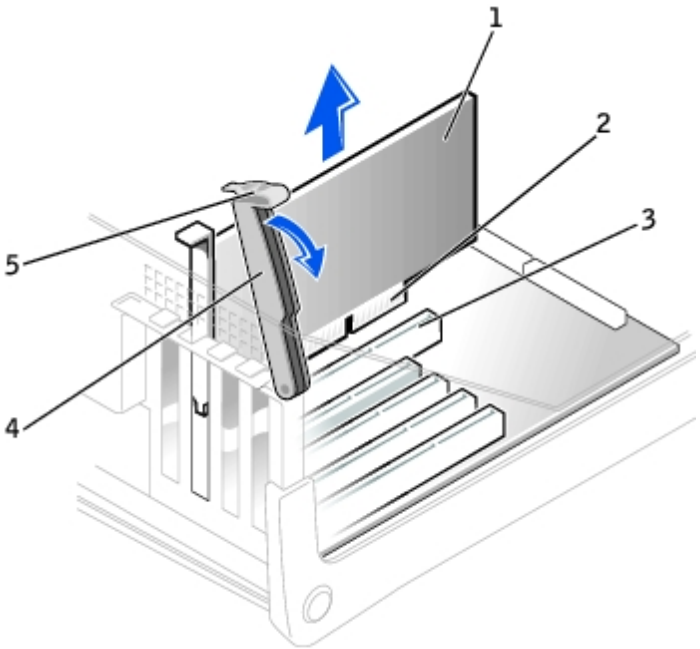
1	Card-edge connector
2	Expansion card
3	Hinged lever
4	Retention arm
5	Expansion-card connector

Small Desktop Computer



1	Retention arm	**5**	Expansion-card connector
2	Lever	**6**	Riser board
3	Expansion card	**7**	Expansion-card cage
4	Card-edge connector		

Small Mini-Tower Computer



1	Expansion card
2	Card-edge connector
3	Expansion-card connector
4	Retention arm

5	Lever

Replacing an Expansion Card

CAUTION: Use a wrist-grounding strap as explained in "Precautionary Measures."

CAUTION: Some network cards automatically start the computer when they are connected. To guard against electrical shock, be sure to unplug the computer from its electrical outlet before installing any expansion cards.

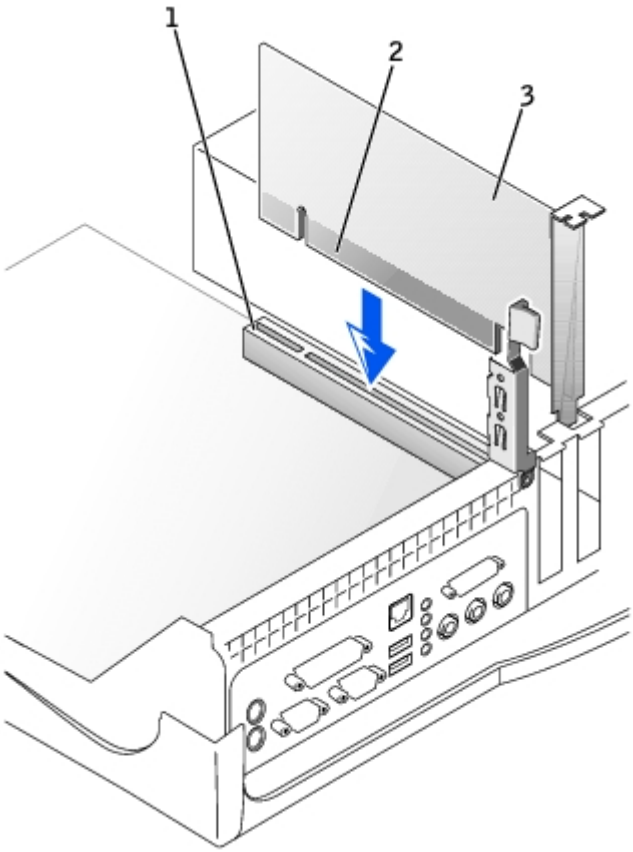
1. Prepare the expansion card for installation.

   See the documentation that came with the expansion card for information on configuring the card, making internal connections, or otherwise customizing it for your computer.

2. Raise the lever that covers the card-slot opening on the back of the computer.

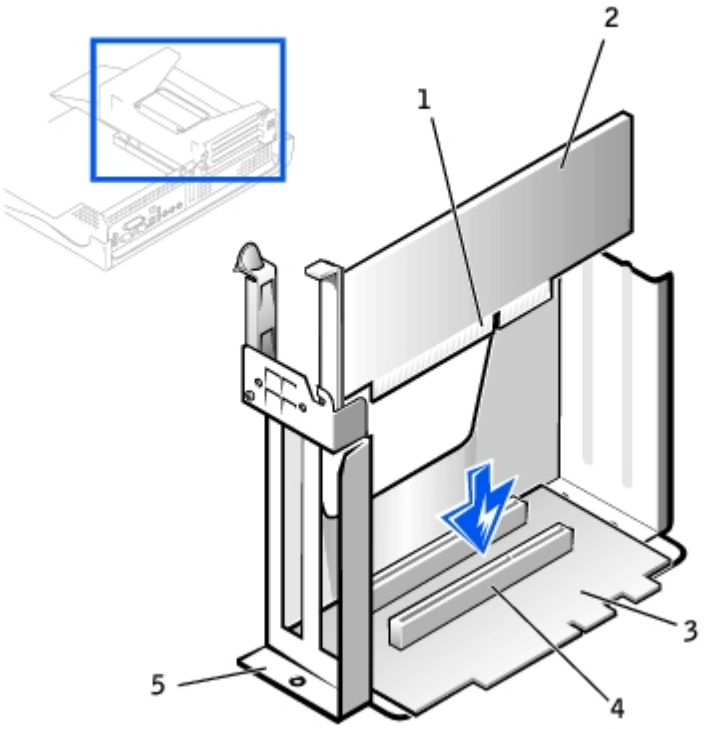
3. If there is a filler bracket, remove the filler bracket by raising the hinged lever and sliding the bracket up.

Replacing an Expansion Card—Small Form-Factor Computer



1	Expansion-card connector
2	Card-edge connector
3	Expansion card

Replacing an Expansion Card—Small Desktop Computer

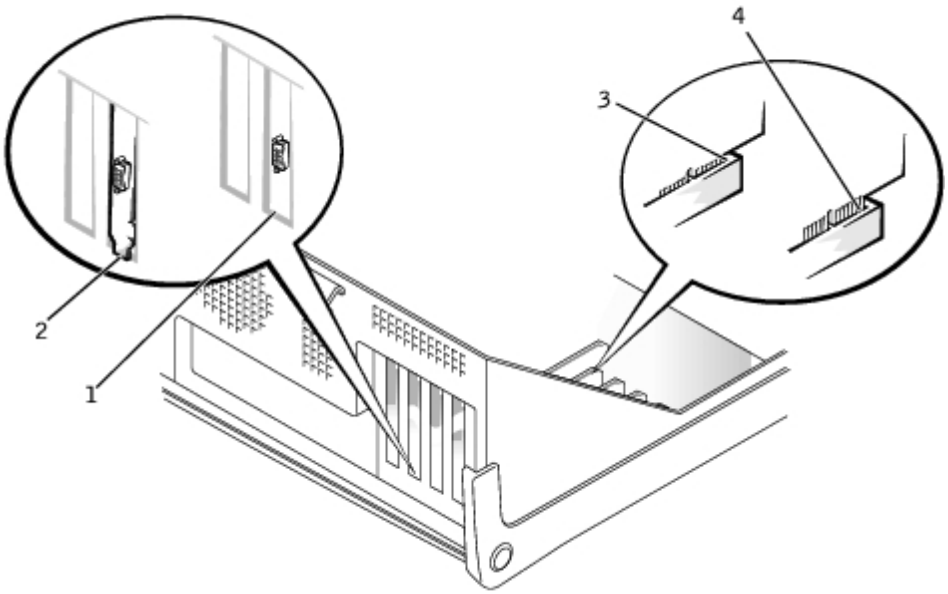


1	Card-edge connector
2	Expansion card
3	Riser board
4	Expansion-card connector
5	Expansion-card cage

4. Place the expansion card on the connector and press down firmly. Make sure that the card is fully seated in the slot.

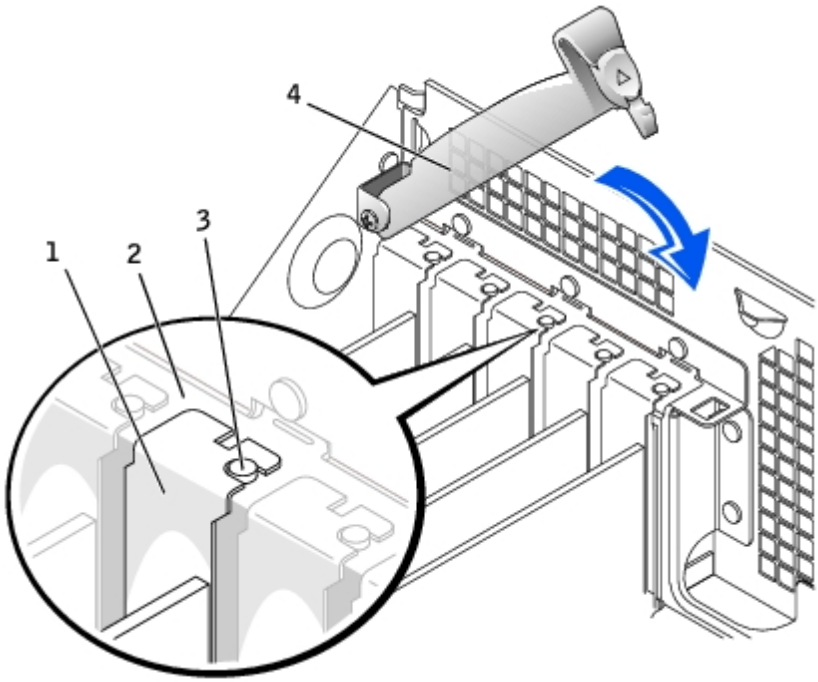
   If the expansion card is full-length, insert the end of the card into the expansion-card guide bracket as you lower the card toward its connector on the system board. Insert the card firmly into the expansion-card connector on the system board.

Expansion Card Connection



1	Bracket within slot
2	Bracket caught outside of slot
3	Fully seated card
4	Not fully seated card

Replacing an Expansion Card—Small Mini-Tower Computer



1	Filler bracket
2	Alignment bar
3	Alignment guide
4	Retention arm

5. Before lowering the retention arm, make sure of the following:

    - Tops of all expansion cards and filler brackets are flush with the alignment bar.
    - Notch in the top of the card or filler bracket fits around the alignment guide.

    Press the arm into place, securing the expansion card(s) in the computer.

6. Connect any cables that should be attached to the card.
7. In the small desktop computer, replace the expansion-card cage.
8. Reconnect the computer and devices to their electrical outlets and turn them on.
9. After you open and close the cover, the chassis intrusion detector causes the following message to be displayed at the next computer start-up:

    ```
    ALERT! Cover was previously removed.
    ```

    See "Resetting the Chassis Intrusion Detector" for instructions.

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Memory

Dell™ OptiPlex™ GX50 Systems

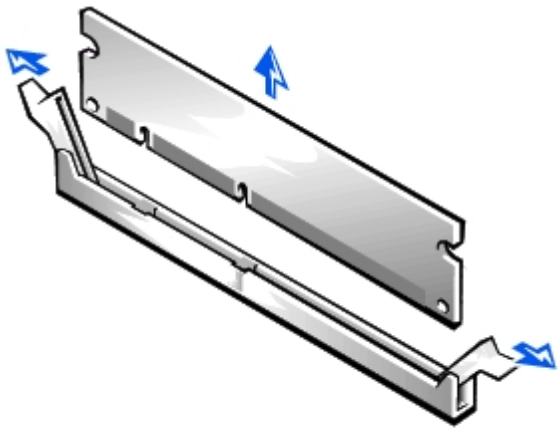
- Removing a Memory Module
- Replacing a Memory Module

Removing a Memory Module

CAUTION: Use a wrist-grounding strap as explained in "Precautionary Measures."

1. Press the securing clips outward simultaneously until the memory module disengages and pops out slightly from the socket.

Removing the Memory Module



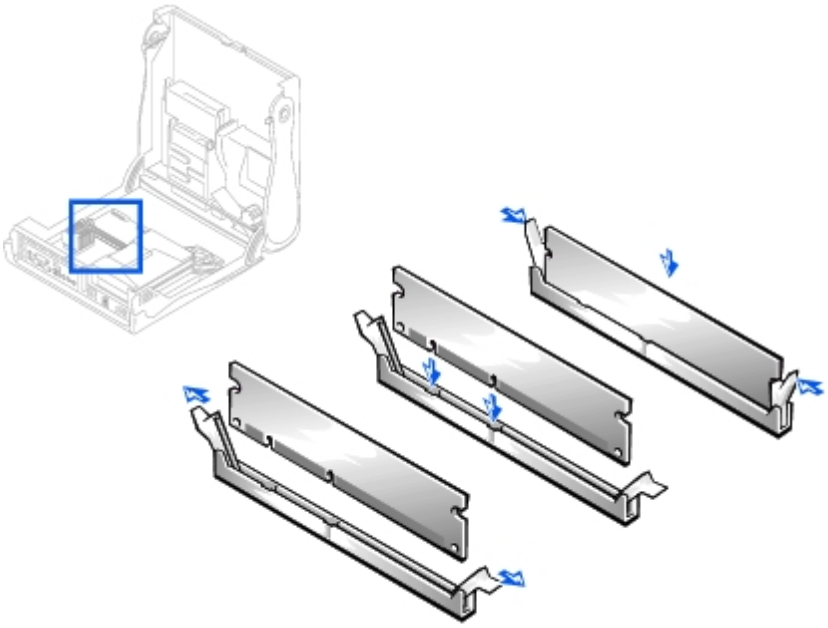
2. Lift the module away from the socket.

Replacing a Memory Module

NOTICE: To avoid damage to the memory module, press the module straight down into the socket with equal force applied at each end of the module.

1. Insert the module straight down into the connector, ensuring that it fits into the vertical guides at each end of the connector. Press firmly on the ends of the module until it snaps into place.

Replacing a Memory Module



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Microprocessor

Dell™ OptiPlex™ GX50 Systems

- Removing the Microprocessor and Cooling Fan/Heat-Sink Assembly
- Replacing the Microprocessor and Cooling Fan/Heat-Sink Assembly

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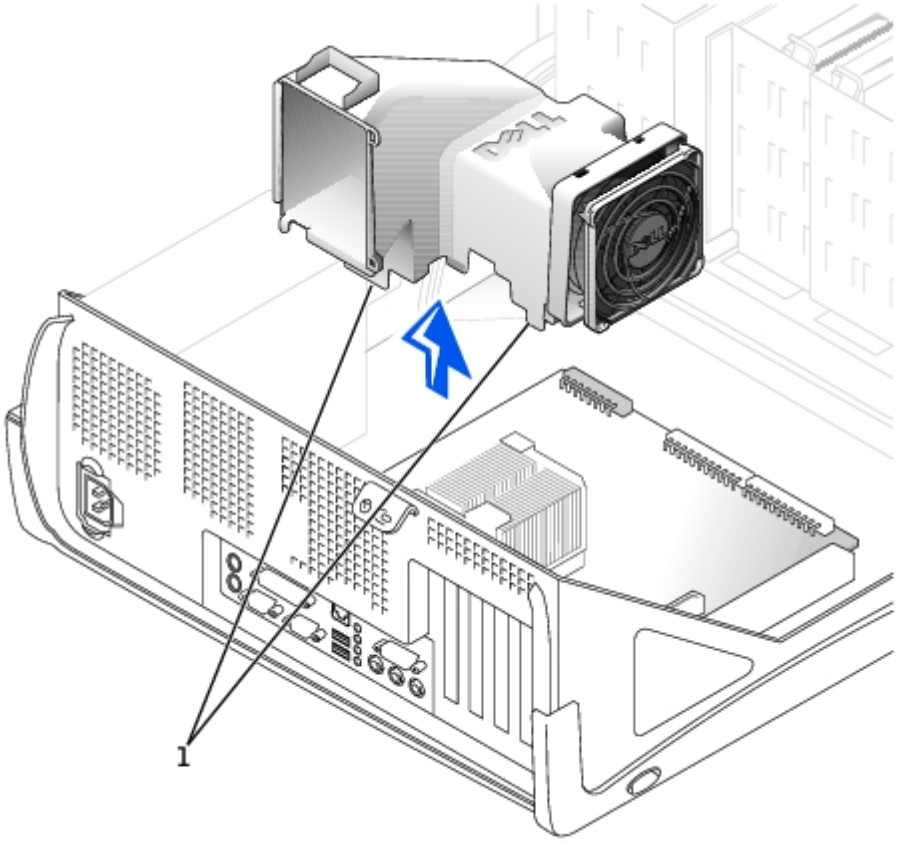
Removing the Microprocessor and Cooling Fan/Heat-Sink Assembly

⚠ **CAUTION: Use a wrist-grounding strap as explained in "Precautionary Measures."**

⚠ **CAUTION: The microprocessor and heat-sink assembly can get extremely hot. To avoid burns, be sure both have had sufficient time to cool before you touch them.**

1. Disconnect the cooling fan power cable from the FAN connector on the system board.
2. On the small mini-tower computer, remove the airflow shroud as shown in the following illustration.

Airflow Shroud Removal—Small Mini-Tower Computer



1	Anchor tabs

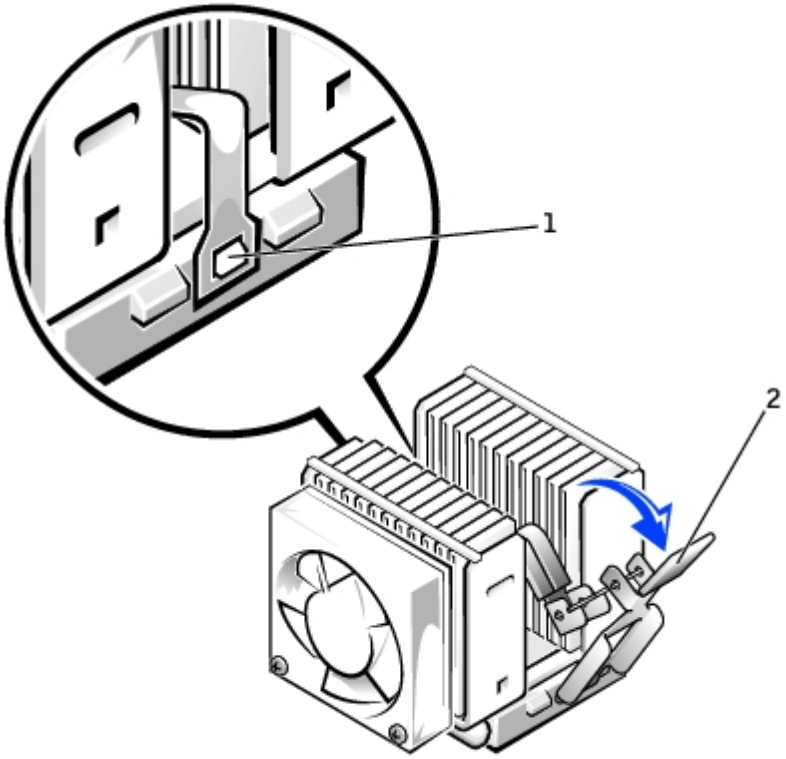
3. Remove the cooling fan/heat-sink assembly.

a. Remove the memory module closest to the heat-sink assembly.

b. Pull down on the toggle clip lever until you can unhook the ends of the clip from the tabs on each side of the ZIF socket.

c. Remove the clip from the socket, and then lift the heat sink from the microprocessor.

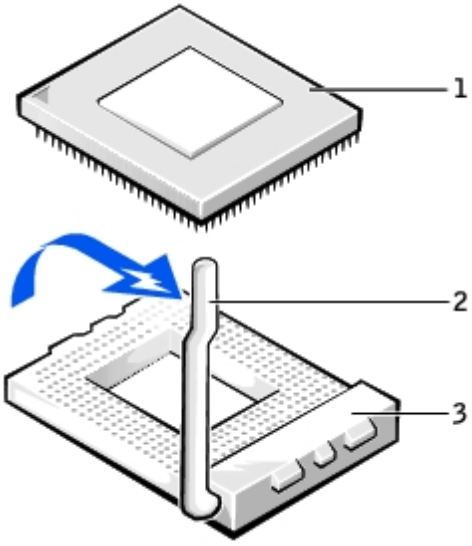
Removing the Securing Clip



1	ZIF socket tab
2	Toggle lever

4. Remove the microprocessor chip from the socket.

Removing the Microprocessor Chip



1	Microprocessor chip
2	Release lever
3	Microprocessor socket

NOTICE: Be careful not to bend any of the pins when you remove the microprocessor from the ZIF socket. Bending the pins can permanently damage the microprocessor.

The ZIF socket has a lever-type handle that secures and releases the microprocessor from the ZIF socket.

5. Pull the socket release lever straight up until the microprocessor releases.
6. Remove the microprocessor from the socket.
7. Leave the release lever extended so that the socket is ready for the new microprocessor.

Replacing the Microprocessor and Cooling Fan/Heat-Sink Assembly

CAUTION: Use a wrist-grounding strap as explained in "Precautionary Measures."

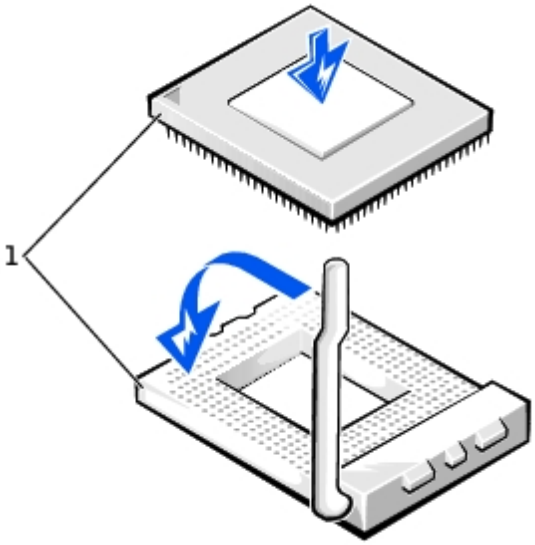
NOTICE: Be careful not to bend any of the pins when you unpack the microprocessor. Bending the pins can permanently damage the microprocessor.

NOTICE: You must position the microprocessor correctly in the ZIF socket to avoid permanent damage to the microprocessor and the computer when you turn on the system.

1. Install the microprocessor in the ZIF socket.

   If the release lever on the ZIF socket is not all the way out, move it to that position now.
2. Align pin-1 (the corner marked with a triangle) of the microprocessor and pin-1 of the ZIF socket.

Installing the Microprocessor Chip



1	Pin-1 corners of chip and socket aligned

3. Set the microprocessor lightly in the socket, making sure that all pins are aligned with the correct holes.

   Because the system uses a ZIF socket, there is no need to use force (which could bend the pins if the microprocessor is misaligned).

4. When the microprocessor is positioned correctly, press it with minimal pressure to fully seat it in the ZIF socket.

5. When the microprocessor is fully seated, pivot the release lever back toward the system board until it snaps into place, securing the microprocessor.

NOTICE: Ground yourself by touching an unpainted metal surface on the back of the computer.

6. Replace the fan/heat-sink assembly.

NOTICE: On the new heat sink, remove the plastic tab covering the thermal grease before placing the assembly on the microprocessor.

   a. Place the heat-sink assembly on top of the microprocessor.

   b. Orient the metal retaining clip as shown in "Removing the Securing Clip," and hook the unhinged end of the clip over the tab on the top edge of the ZIF socket.

   c. Rotate the lever upward until it snaps into place.

   d. Replace the memory module that you removed in step 3 of the previous procedure.

NOTE: If you are installing a microprocessor replacement kit from Dell, return the original heat- sink assembly and microprocessor to Dell in the same package in which your replacement kit was sent. Your microprocessor replacement kit should include a replacement microprocessor heat sink. You need to reuse the original securing clip.

7. Reconnect the cooling fan power cable to the FAN connector on the system board.

8. As the system boots, it detects the presence of the new microprocessor and automatically changes the system configuration information in system setup.

9. After you open and close the cover, the chassis intrusion detector causes the following message to be displayed at the next system start- up:

ALERT! Cover was previously removed.

10. Enter system setup and confirm that the system data area correctly identifies the type of installed microprocessor.

    For instructions on using system setup, see the *User's Guide*.

11. While in system setup, reset the **Chassis Intrusion** option by pressing the left- or right-arrow key to select **Reset** and then choosing **Enabled**, **Enabled-Silent**, or **Disabled**.

    See the *User's Guide* for information on the chassis intrusion detector.

NOTE: If a setup password has been assigned by someone else, contact the network administrator for information on resetting the chassis intrusion detector.

12. Run the Dell Diagnostics to verify that the new processor is operating correctly.

    See the *User's Guide* for information on Dell Diagnostics.

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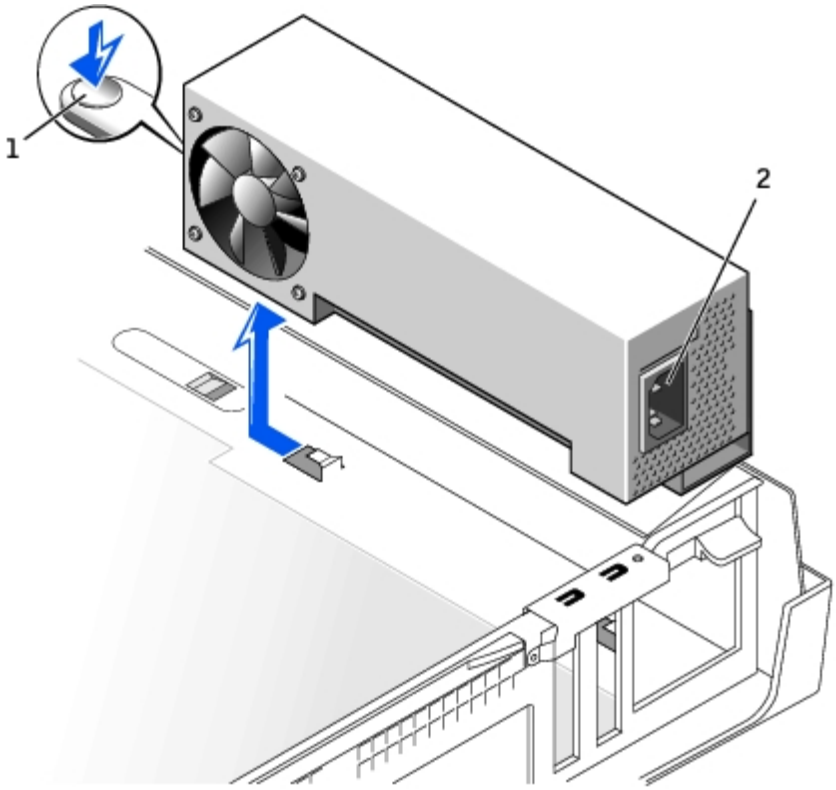
Power Supply

Dell™ OptiPlex™ GX50 Systems

- Removing the Power Supply
- Replacing the Power Supply

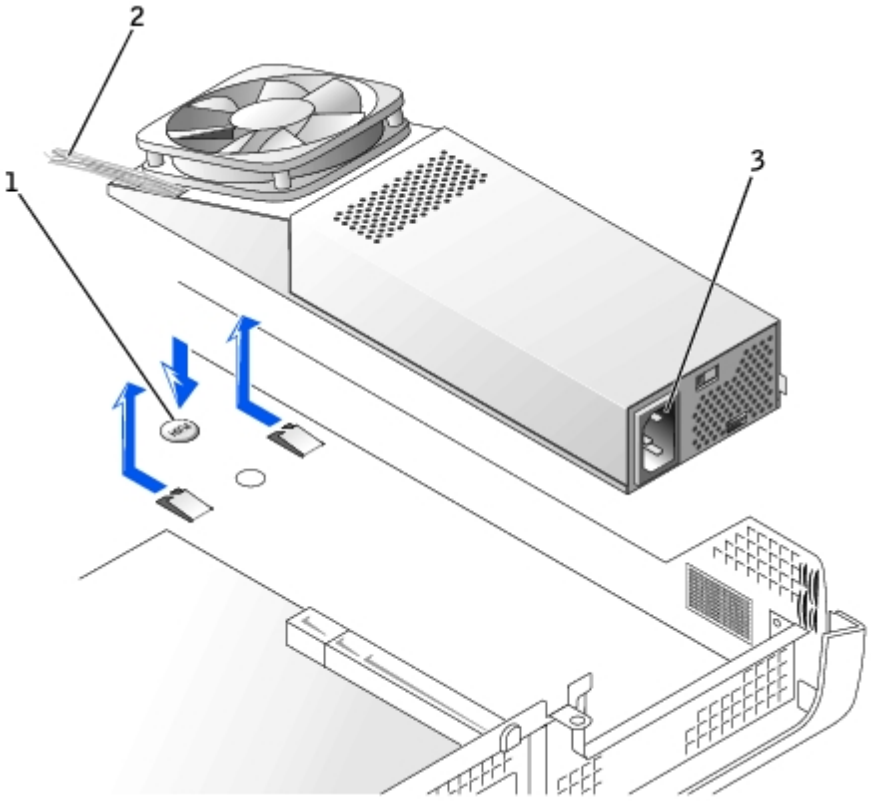
Removing the Power Supply

Small Form-Factor Computer



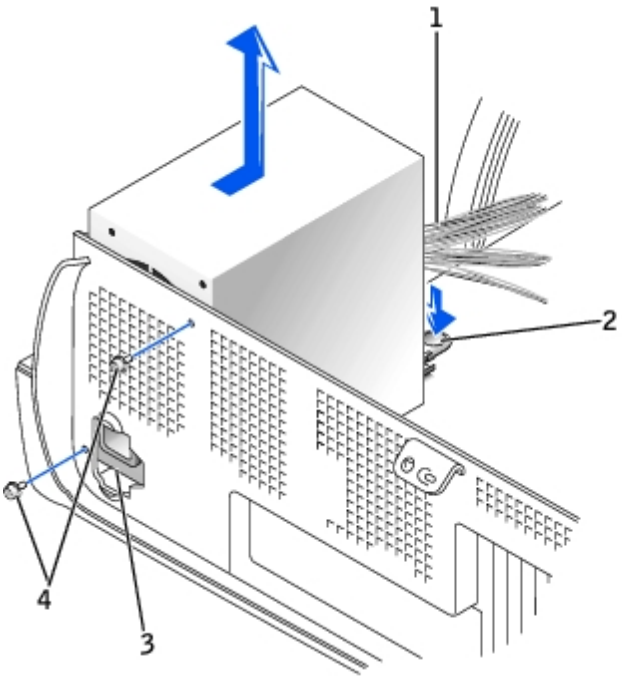
1	Release button
2	AC power connector

Small Desktop Computer



1	Push button
2	DC power cable
3	AC power connector

Small Mini-Tower Computer



1	Push button
2	DC power cable
3	AC power connector

4	Screws (2)

1. Disconnect the AC power cable from the back of the power supply.
2. Disconnect the DC power cables from the system board and the drives.

   Note the routing of the DC power cables underneath the clips in the computer as you remove them from the system board and drives. It is important to route these cables properly when you replace them to prevent them from being pinched or crimped.
3. On the small desktop computer, remove the expansion-card cage and remove the power cables from the side of the hard drive. To remove the power cables, use the cables as leverage and pull away from the clips while simultaneously pulling on the metal clips with your fingers.
4. On the small mini-tower computer, remove the two screws that attach the power supply to the rear wall.
5. Press the push button.
6. Slide the power supply toward the front of the computer approximately 1 inch.
7. Lift the power supply up and out of the computer.

Replacing the Power Supply

1. Slide the power supply into place.
2. Reconnect the DC power cables.
3. Connect the AC power cable to the connector.
4. On the small desktop computer, reattach the power cables to the side of the hard drive and replace the expansion-card cage.
5. On the small mini-tower computer, replace the two screws to attach the power supply to the rear wall.
6. Run the cables underneath the clips.
7. Press the clips to close them over the cables.

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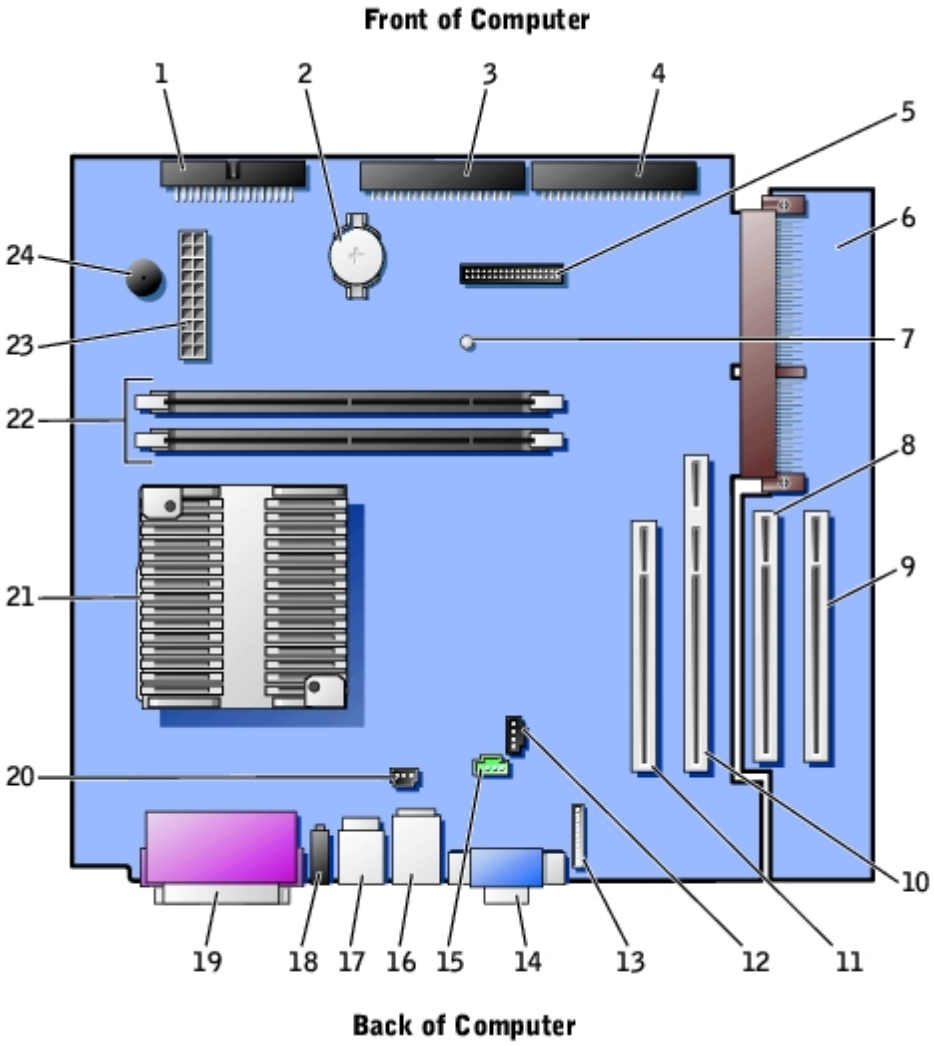
System Board

Dell™ OptiPlex™ GX50 Systems

- System Board Components
- Removing the System Board
- Replacing the System Board

System Board Components



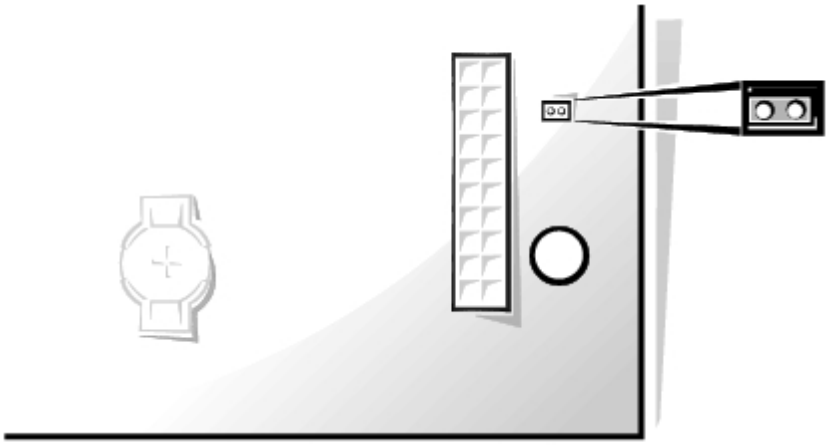
1	Floppy drive connector	**13**	Front-panel audio connector
2	Battery	**14**	Video connector (upper) and audio connectors (lower)
3	EIDE2 connector	**15**	Modem connector
4	EIDE1 connector	**16**	Network connector (upper) and USB connectors (2) (lower)
5	Front panel connector	**17**	Keyboard (lower) and mouse (upper) connectors
6	PCI riser board (small mini-tower computer only)	**18**	Diagnostic lights

7	Standby power light	**19**	Parallel port (upper) and serial port (2)(lower) connectors
8	PCI3 connector	**20**	Fan connector
9	PCI4 connector	**21**	Microprocessor and heat sink
10	PCI2 connector	**22**	Memory module (DIMM) connectors
11	PCI1 connector	**23**	DC power connector
12	CD audio connector	**24**	System board speaker

System Board Labels

Connector or Socket	Description
AUDIO	Line-in, line-out, and microphone jacks
AUX_PWR	Standby power light
BATTERY	Battery socket
CD_IN	CD drive audio cable connector
DIAG_LED	Diagnostic lights
DIMM_A and DIMM_B	Dual in-line memory module (DIMM) sockets
DSKT	Floppy drive interface connector
FAN	Microprocessor fan connector
FRONTAUDIO	Front-panel audio connector for onboard audio
FRONTPANEL	Front-panel cable connector
IDE1	Primary IDE interface connector
IDE2	Secondary IDE interface connector
KYBD_MOUSE	Keyboard and mouse connectors
MICROPROCESSOR	Microprocessor connector
MODEM	Telephony connector
MONITOR	Video connector
NIC_USB	Integrated network adapter connector and USB connectors
PAR_SER1_SER2	Parallel and serial connectors
PCI1, PCI2, PCI3, and PCI4	PCI expansion card connectors
POWER	Main power input connector
PSWD	Password jumper
H_RISER	Horizontal riser board connector; vertical PCI cards
V_RISER	Vertical riser board connector; horizontal PCI cards
SPEAKER	Internal speaker

System Board Jumper



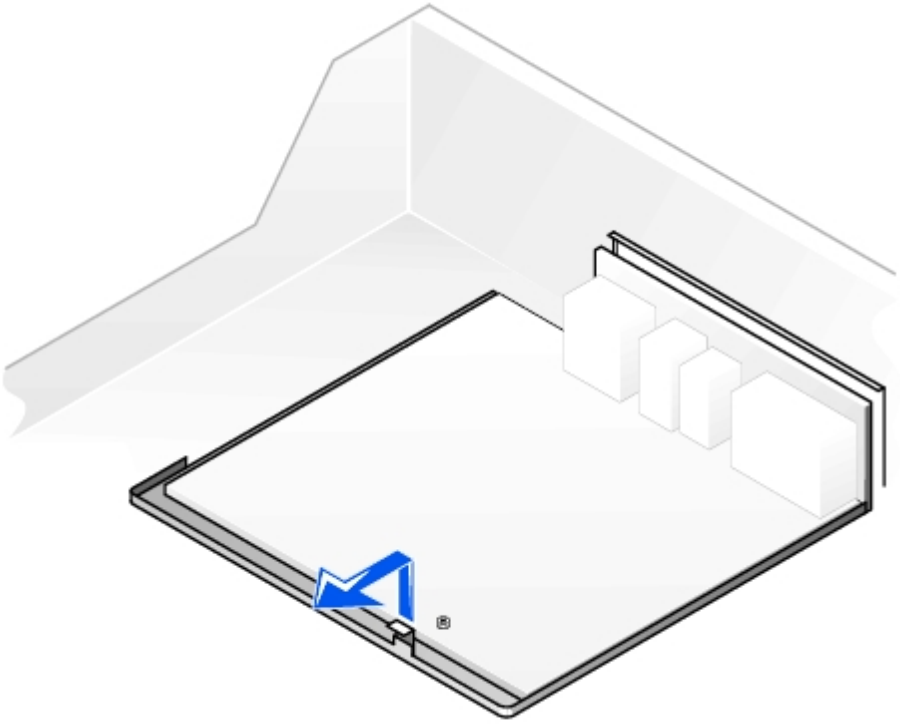
Removing the System Board

CAUTION: Before you remove any component from the system board, read the steps in "Precautionary Measures."

NOTE: The system board and metal tray are attached and are removed as one piece.

1. Remove any components that restrict access to the system board.
2. Disconnect all cables from the system board.
3. Before you remove the existing system board, visually compare the replacement system board to the existing system board to make sure that you have the correct part.
4. Pull up on the tab and slide the system board toward the front of the computer; lift it up and away.

Removing the System Board



5. Place the system board that you just removed next to the replacement system board.

Replacing the System Board

1. Transfer components from the existing system board to the replacement system board.
2. Remove the memory modules and install them on the replacement board.

CAUTION: The microprocessor package and heat-sink assembly can get hot. To avoid burns, be sure that the package and assembly have had sufficient time to cool before you touch them.

3. Remove the cooling fan/heat-sink assembly and microprocessor from the existing system board and transfer them to the replacement system board.
4. Configure the settings of the replacement system board.
5. Set the jumper on the replacement system board so it is identical to the one on the existing board.

NOTE: Some components and connectors on the replacement system board may be in different locations than the corresponding connectors on the existing system board.

6. Orient the replacement board by aligning the notches on the bottom to the tabs on the computer floor.
7. Slide the board toward the back of the computer until it clicks into place.
8. Replace any components and cables that you removed from the system board.
9. Reconnect all cables to their connectors at the back of the computer, close the computer cover, and reconnect the computer and devices to their power sources and turn them on.
10. After you close the cover, the chassis intrusion detector causes the following message to be displayed at the next computer start-up:

```
ALERT! Cover was previously removed.
```

11. Reset the chassis intrusion detector.

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