

OCTANE™ PCI Module Installation Guide

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Introduction

This guide tells you how to install the optional PCI (Peripheral Component Interconnect) module in the OCTANE™ workstation. It also includes information on installing and removing PCI boards in the PCI module.

This guide is organized as follows:

- The introduction provides additional information about hardware, software and system administration, and product support information.
- Chapter 1 provides instructions for installing PCI boards and the PCI module, and instructions on placement of a regulatory label.
- Chapter 2 provides instructions for removing PCI boards.
- Chapter 3 provides cabling and configuration information.
- Appendix A provides an illustration of the rear of the workstation.
- Appendix B provides information about the care and cleaning of the compression connector.

It's always a good idea to back up your system before installing a new board. If you have not backed up your system recently, do so now. For instructions on backing up your system, see the online *Personal System Administration Guide*.

Additional Hardware Information

OCTANE Hardware Central is an online resource providing access to hardware movies and other information previously found only in your printed owner's guide, such as port pinout information, user tips, environmental information, and so on. Choose Toolchest > Selected > File QuickFind. When the window appears, type **insight**. When the IRIS InSight™ bookshelf appears, choose *OCTANE Hardware Central* from the SGI EndUser bookshelf. Or, access it through your Web browser. In the location window, type `file:/usr/share/Insight/library/SGI_bookshelves/SGI_EndUser/books/Octane_HWCnt1/index.html`

OCTANE Hardware Movies show option boards being installed and removed. The movies are found in *OCTANE Hardware Central*.

Software and System Administration Information

For complete information on installing software, see the online *Personal System Administration Guide*. To find it, choose Toolchest > Help > Online Books > SGI End User. For more advanced information, see the online *IRIX Admin: Software Installation and Licensing Guide*. For this book and other system administration information, see the SGI_Admin section of the online bookshelf (instead of SGI End User).

Product Support

The OCTANE workstation is designed so that you can maintain and repair it without the help of a trained technician. Contact your Silicon Graphics® subsidiary or authorized distributor for information about product support.

Silicon Graphics, Inc., provides a comprehensive range of product support for its products. If you are in North America and would like support for your Silicon Graphics products, contact the Technical Assistance Center at 1-800-800-4SGI or your authorized service provider. If you are outside North America, contact the Silicon Graphics subsidiary or authorized distributor in your country.

Installing PCI Boards and the PCI Module

The PCI module is an optional module of the OCTANE workstation. To install PCI boards in the OCTANE workstation, place them in the PCI module and install the module in the OCTANE workstation.

This chapter contains information on installing and removing PCI boards and the PCI module.

The following topics are covered in this chapter:

- “About the PCI Bus, Module, and Boards” on page 2
- “Unpacking the PCI Module” on page 4
- “PCI Module Installed” on page 14
- “Identifying PCI Slots” on page 13
- “Inserting a PCI Board in a PCI Module” on page 13
- “Installing the PCI Module” on page 26
- “Placement of a Regulatory Label” on page 35
- “Returning Parts” on page 36

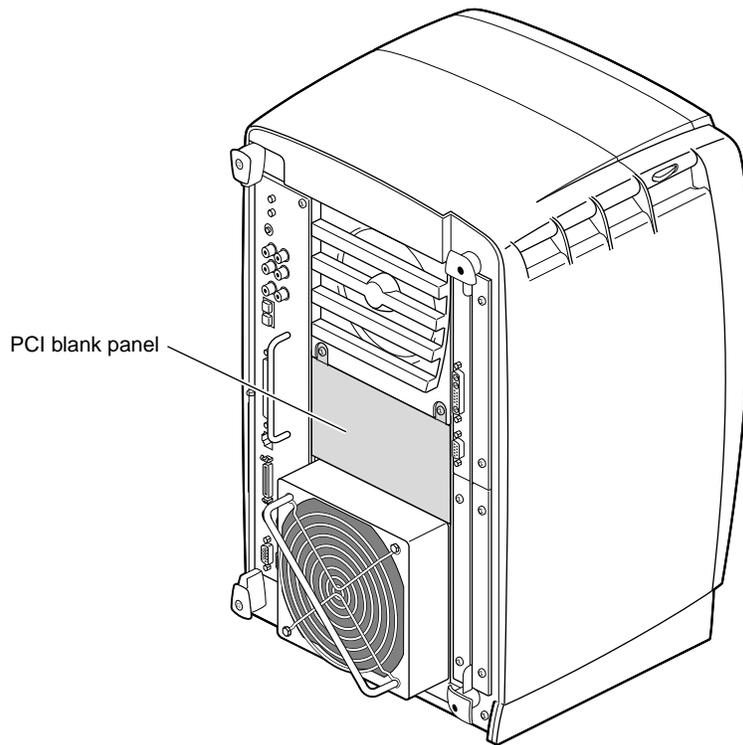


Figure 1-1 Workstation Without the Optional PCI Module

If your OCTANE workstation does not have a PCI module, a blank panel covers the opening for the PCI module.

About the PCI Bus, Module, and Boards

Peripheral Component Interconnect (PCI) is a bus specification. The PCI bus is a high-performance local bus used to connect peripherals to memory and a microprocessor. A wide range of vendors make devices that plug into the PCI bus.

PCI Board Size and Quantity

The PCI module supports full- or half-size boards. A maximum of three boards can be installed in the PCI module. The PCI module allows installation of PCI boards that have extra long I/O connectors. Possible board combinations are as follows:

- two full-size boards and one half-size board
- one full-size board and two half-size boards
- three half-size boards

PCI Module Power Specification

Total power for the PCI module (the sum of power for all boards from all power supply rails) must not exceed 45.0 W (average 15.0 W per board).

The OCTANE PCI module is a 5-volt system environment.

Table 1-1 PCI Module Power Specifications

Power Supply Rail	Maximum Current	Maximum Power
3.3 V	10.0 amp	33.0 W
5.0 V	9.0 amp	45.0 W
12.0 V	1.5 amp	12.0 W
-12.0 V	0.3 amp	3.6 W

Note: For additional information, see Section 4.3.4.1 in the chapter “Power Requirements,” in the *PCI Local Bus Specification*, Rev. 2.1, June 1995 (PCI Special Interest Group, Portland, OR).

Unpacking the PCI Module

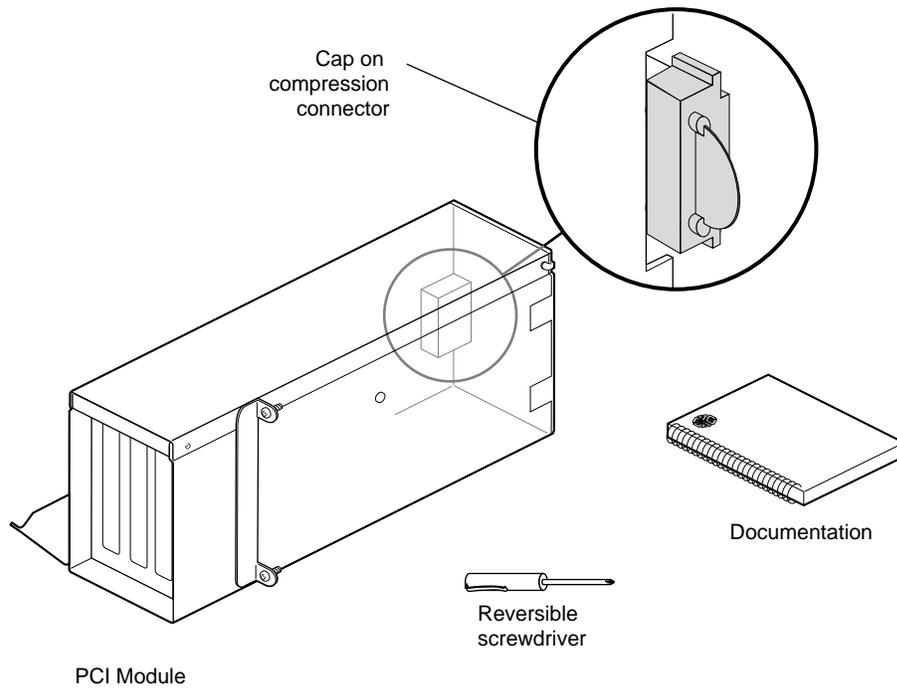


Figure 1-2 Checking Your Shipment

Check your shipment for the PCI module components.

1. Remove the PCI module, documentation, and screwdriver from the packing material.
2. Turn the module until you face the side with the compression connector cap.

Caution: Leave this cap on until you are ready to install the PCI module in the OCTANE workstation. The compression connector beneath the cap is very easily damaged. Removing the cap now, and then placing PCI boards in the PCI module, allows the compression connector to be subject to damage.

Starting the Installation

Table 1-2 Where to Start

If you have	Go to
A PCI module in the workstation	“Powering Off the OCTANE Workstation” on page 6
A PCI module out of the workstation	“Attaching the Wrist Strap” on page 12

If you are installing an empty PCI module, skip to “Installing the PCI Module” on page 26.

Powering Off the OCTANE Workstation

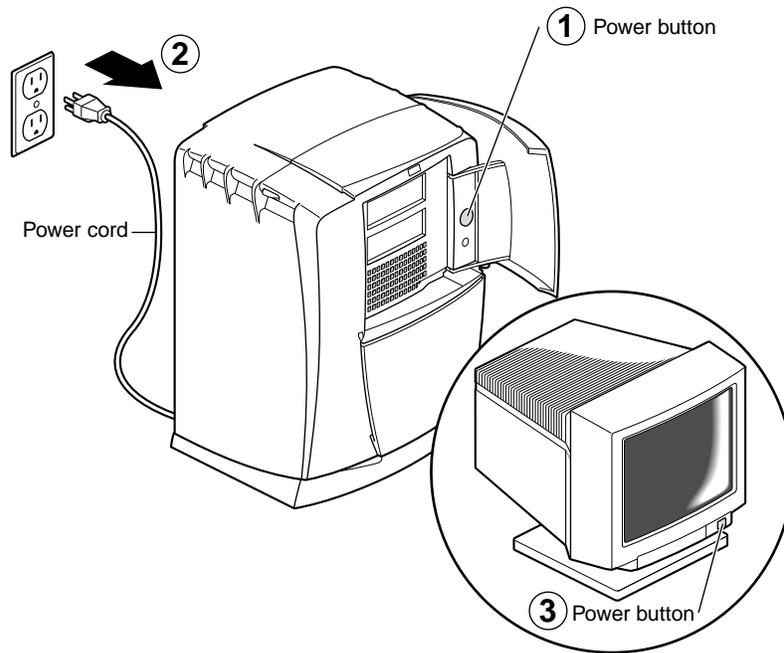


Figure 1-3 Powering Off the OCTANE Workstation

1. Open the cover and press the power button to power off the OCTANE workstation.
2. Unplug the power cord from the electrical outlet.
3. Press the monitor power button to turn off the monitor.
4. Face the rear of the workstation.

Removing the PCI Module

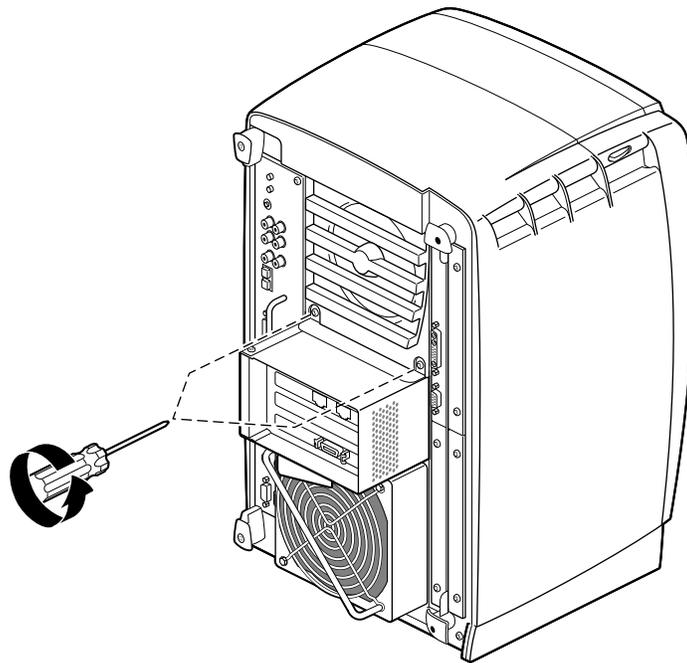


Figure 1-4 Loosening the Captive Screws

1. Loosen the two captive screws that secure the PCI module to the OCTANE workstation until they are disconnected from the chassis.

Note: For illustration purposes, two boards are shown in the PCI module.

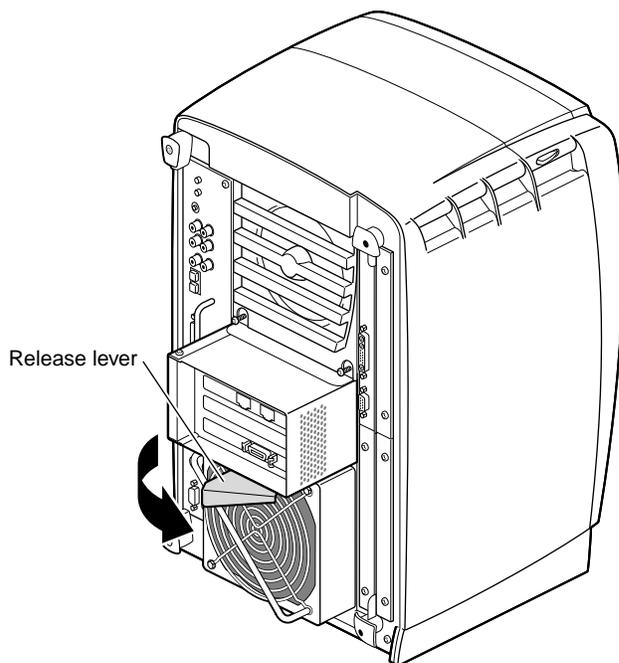


Figure 1-5 Opening the Release Lever

2. Pull the release lever toward you and to the right. You will feel resistance as you open the lever. Continue to pull until the lever is at the angle shown in Figure 1-5. The lever releases the locking mechanism that attaches the PCI module to the workstation.

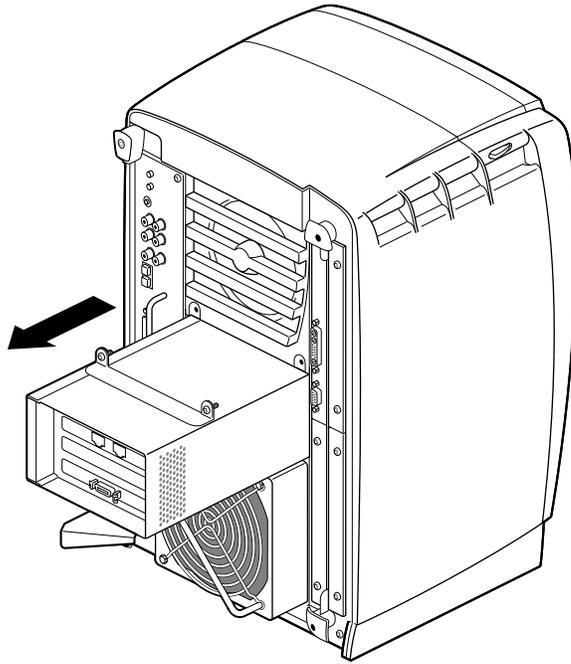


Figure 1-6 Sliding the PCI Module From the Chassis

3. Slide the PCI module from the chassis. Place it on a dry, antistatic surface such as your desktop.

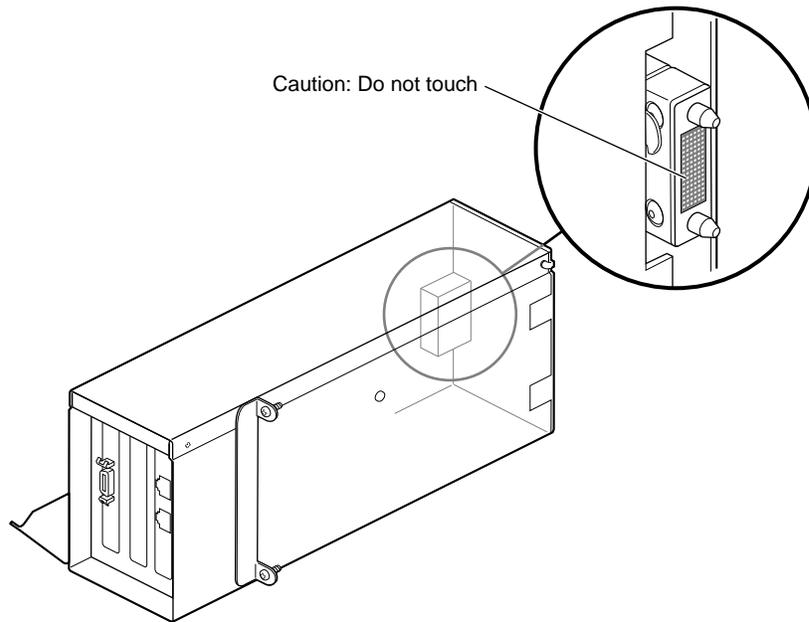


Figure 1-7 Identifying the Compression Connector on the PCI Module

Caution: The compression connector on the back of the PCI module is delicate and easily damaged. Do not touch or bump the gold area of the compression connector.

Note: The cap prevents damage to the gold (front) surface when the PCI module is removed from the OCTANE workstation. These caps are placed on the compression connector as soon as the PCI module is removed from the chassis, and then removed before placing the PCI module back in the chassis.

See Appendix B for information about and care of the compression connectors.

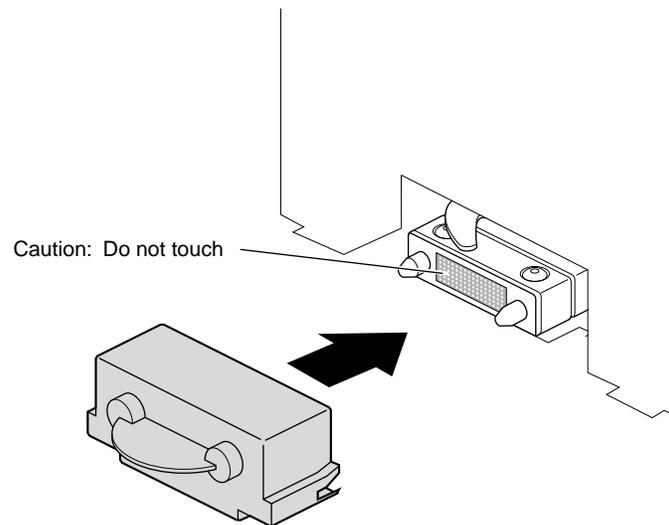


Figure 1-8 Installing a Cap on the Compression Connector

4. Place a cap on the compression connector on the back of the PCI module. (Extra compression connector caps came with the workstation.)

Attaching the Wrist Strap

The components inside the OCTANE workstation are extremely sensitive to static electricity; you must wear the wrist strap while replacing parts.

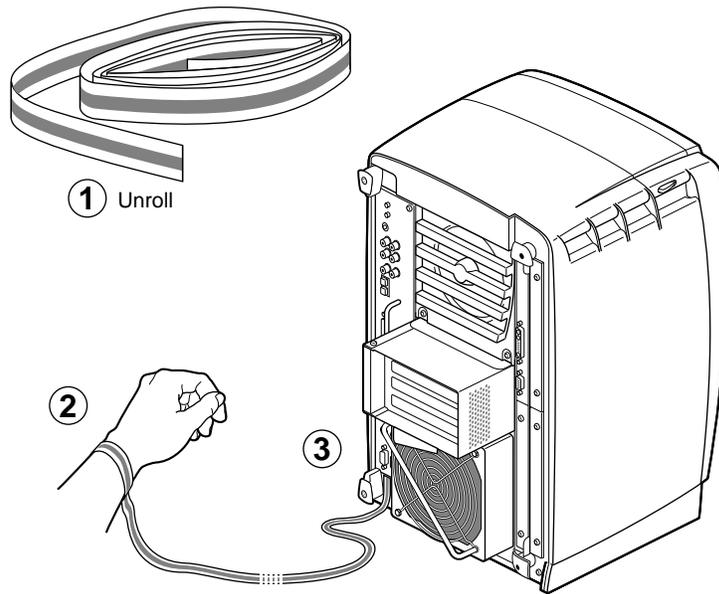


Figure 1-9 Attaching the Wrist Strap to the Chassis

1. Unwrap the first two folds of the band and wrap the exposed adhesive side firmly around your wrist.
2. Unroll the rest of the band and peel the liner from the copper foil at the opposite end.
3. Attach the copper foil to the PCI module, or use any convenient and exposed electrical ground, such as a metal part of the OCTANE workstation.

Identifying PCI Slots

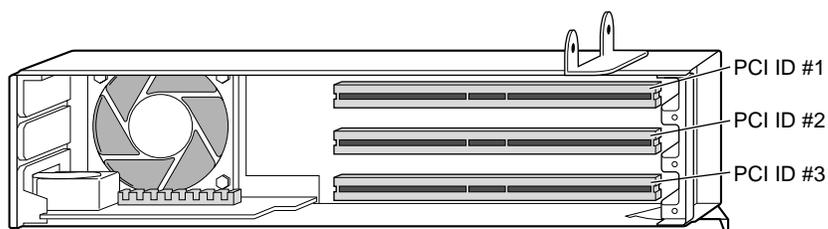


Figure 1-10 Identifying a PCI Slot

PCI physical slots and slots identified in software have the same designation:

- The top slot is PCI ID #1.
- The middle slot is PCI ID #2.
- The bottom (half-sized) slot is PCI ID #3.

Inserting a PCI Board in a PCI Module

PCI Module Not Installed

If you have not already done so, turn to “Powering Off the OCTANE Workstation” on page 6 and follow the instructions on that page. Then return here and go to step 1 on the next page for instructions on opening the PCI module and inserting a PCI board.

PCI Module Installed

If you are inserting a PCI board in a PCI module installed in the OCTANE workstation, turn to “Powering Off the OCTANE Workstation” on page 6 and follow the instructions through attaching the wrist strap. Then continue with step 1 below and follow the instructions for opening the PCI module and inserting a PCI board.

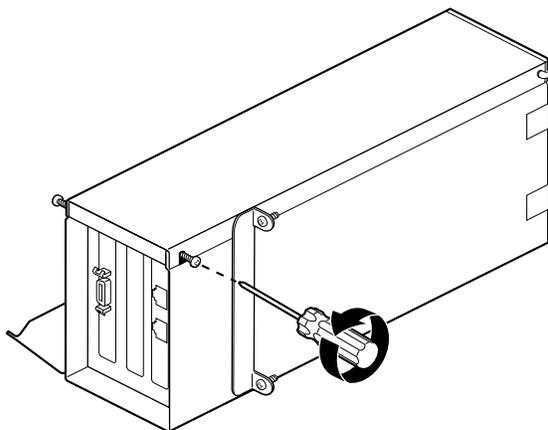


Figure 1-11 Loosening the Screws From the PCI Module

1. To begin installing PCI cards, turn the PCI module as shown in Figure 1-11.
2. Loosen the screws holding the PCI module door closed, but do not remove them. (The door lifts off.)

Note: For illustration purposes, two boards are shown installed.

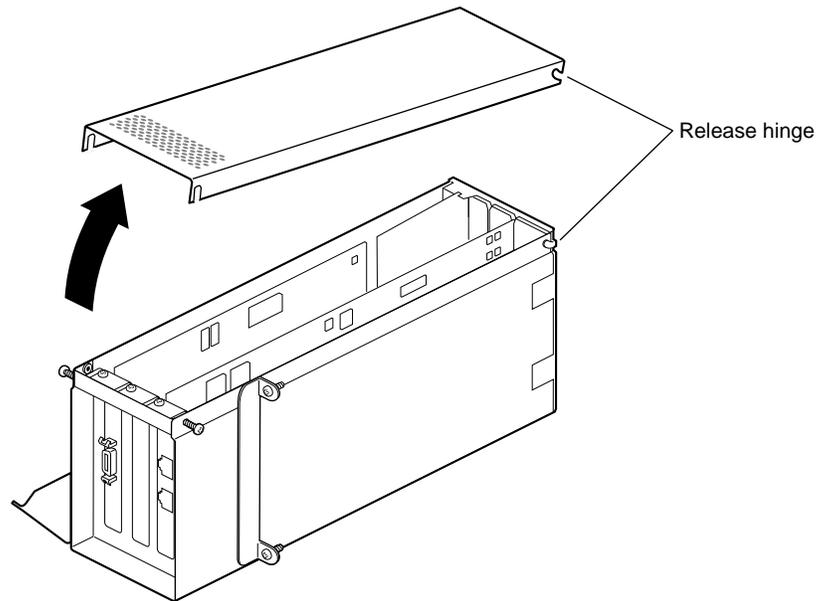


Figure 1-12 Opening the PCI Module Door

3. Pull the PCI module door up and off. The release hinge allows the module door to slide up and off.

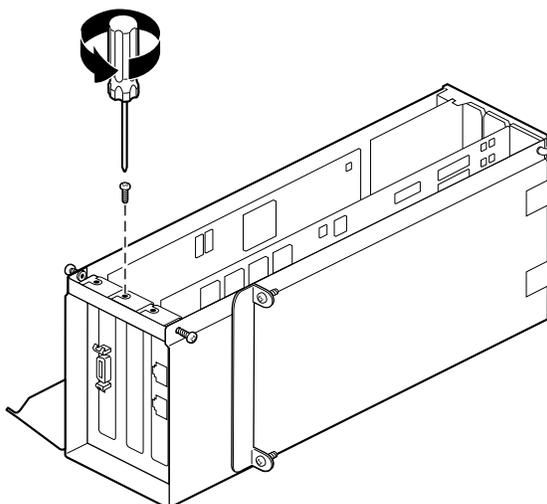


Figure 1-13 Removing the Blank I/O Panel Screw

Caution: The PCI module is extremely sensitive to static electricity: You must wear the wrist strap while removing or installing PCI boards. The wrist strap prevents the flow of static electricity, which could damage the PCI module.

4. Remove the screw from the I/O blank panel in the slot where you wish to install the PCI board.

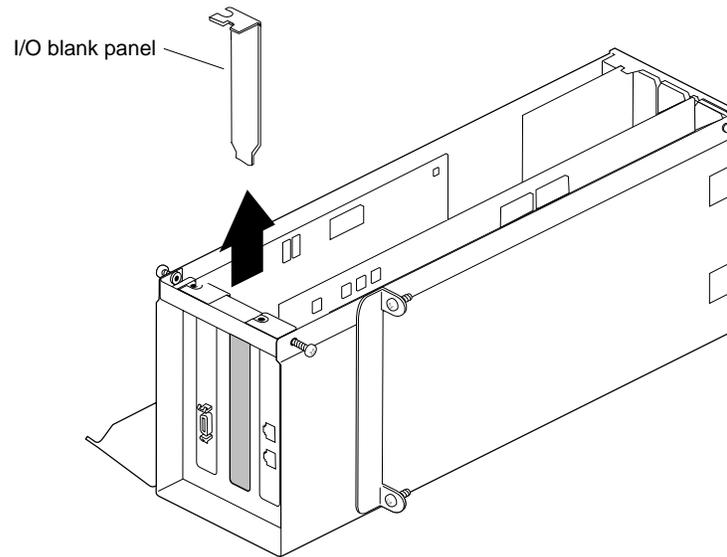


Figure 1-14 Removing the Blank I/O Panel

5. Remove the blank I/O panel by pulling it up.
6. Keep the I/O blank panel. If you later remove a PCI board and do not replace it, you must reinstall the blank panel.

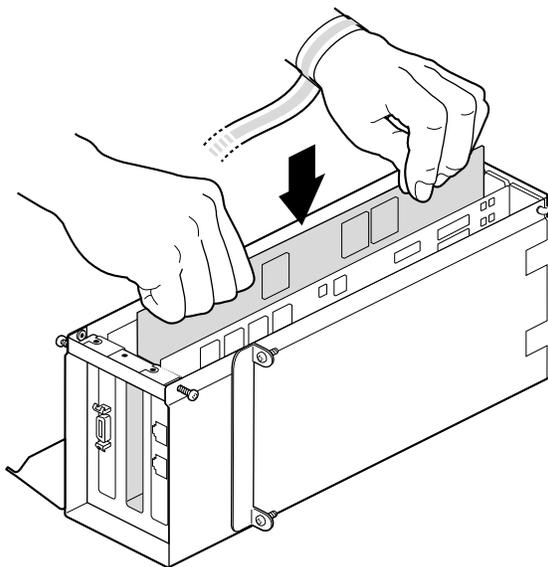


Figure 1-15 Inserting a PCI Board Into the PCI Module

7. Insert the PCI board into the connector in the PCI module. Push gently but firmly until the PCI board snaps into place. If you have a board with an extra-long connector which prevents you from inserting the board, skip to “Opening the I/O Door for Extra-Long Connectors” on page 19.
8. Skip to step 8 in “Opening the I/O Door for Extra-Long Connectors” to finish your task.

Opening the I/O Door for Extra-Long Connectors

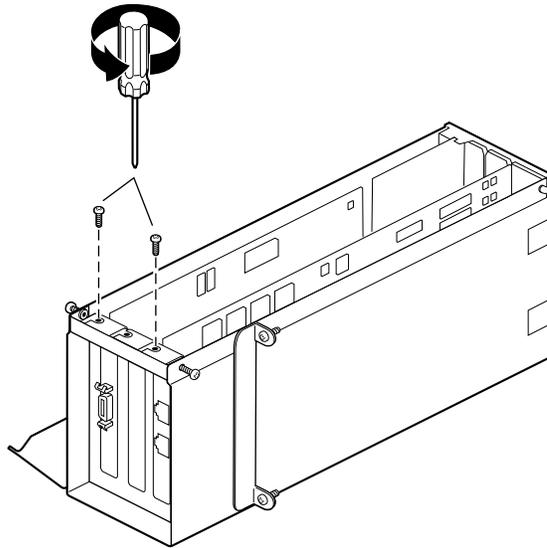


Figure 1-16 Removing the Screws Holding Other Boards to the I/O Door

1. If there are boards installed in the PCI module, and you want to open the I/O door, remove the screws holding the boards to the I/O to allow the door to open.

Note: Do not remove any blank I/O panels. They are directly attached to the door and open with it.

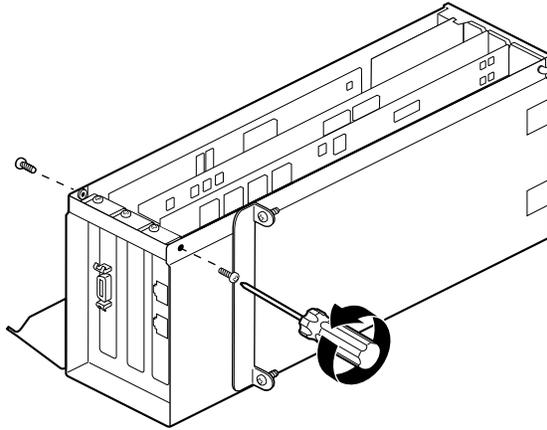


Figure 1-17 Removing the PCI Module Door Screws

2. If you have a board with an extra-long connector, completely remove the screws that hold the door to the PCI module.

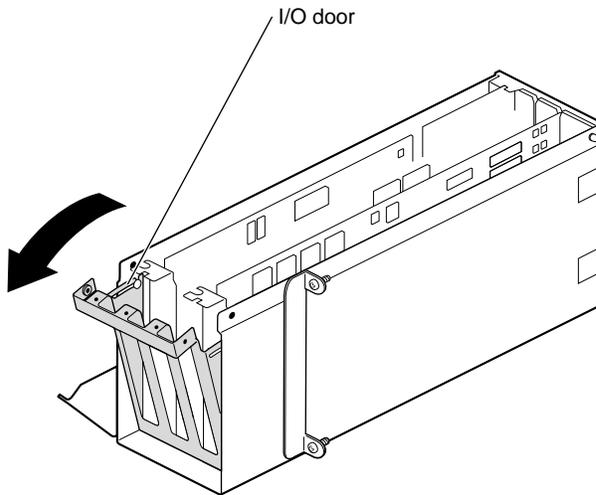


Figure 1-18 Opening the I/O Door

3. Slide the I/O door open.

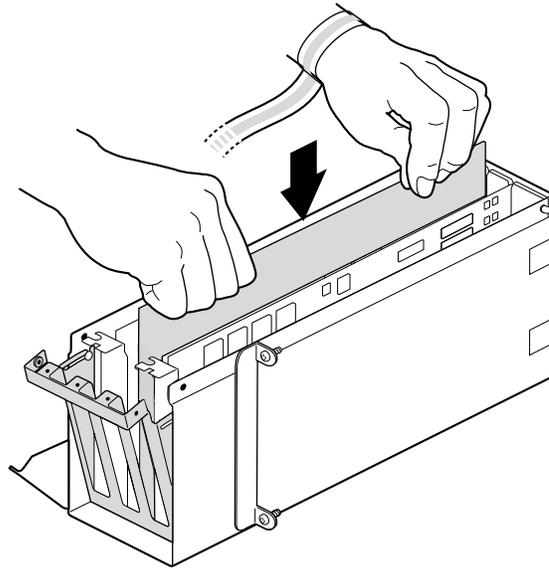


Figure 1-19 Inserting a PCI Board With an Extra-Long Connector

4. Insert the PCI board into the connector in the PCI module. Press gently but firmly until the board snaps into place.

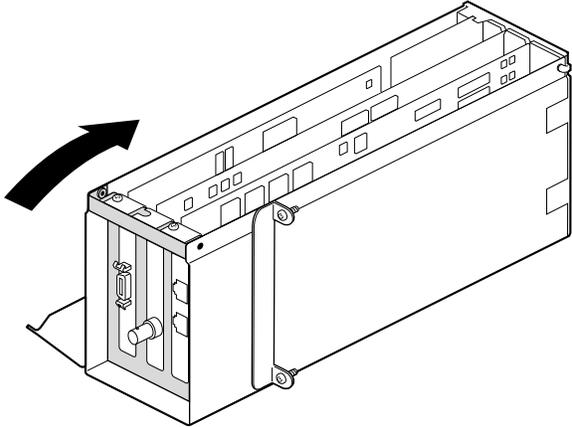


Figure 1-20 Closing the I/O Door

5. Close the I/O door.

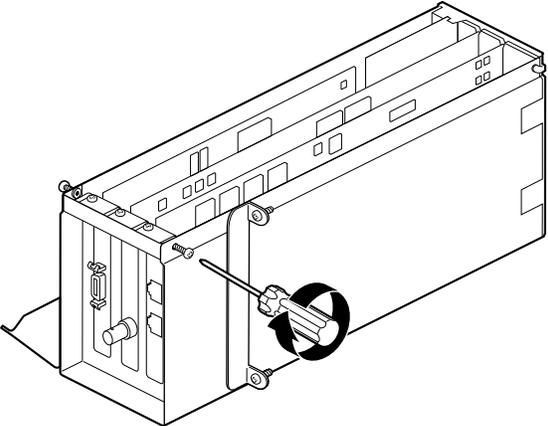


Figure 1-21 Inserting the I/O Door Screws

6. Insert the screws that hold on the PCI door.

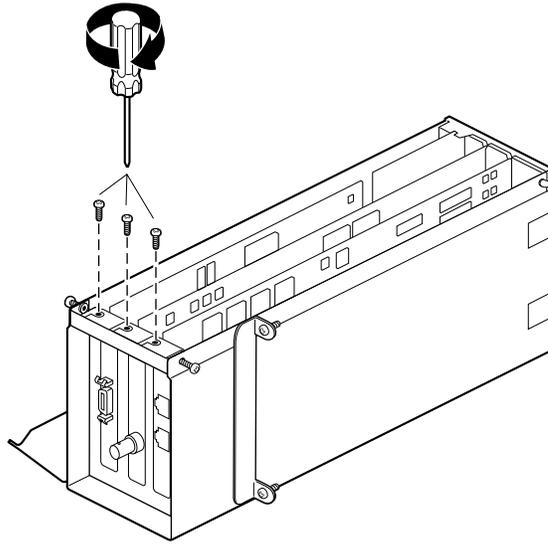


Figure 1-22 Replacing the I/O Panel Screw

7. Insert the screw that holds the PCI board to the I/O panel door. If you removed any other screws holding boards to the I/O door, replace them also.

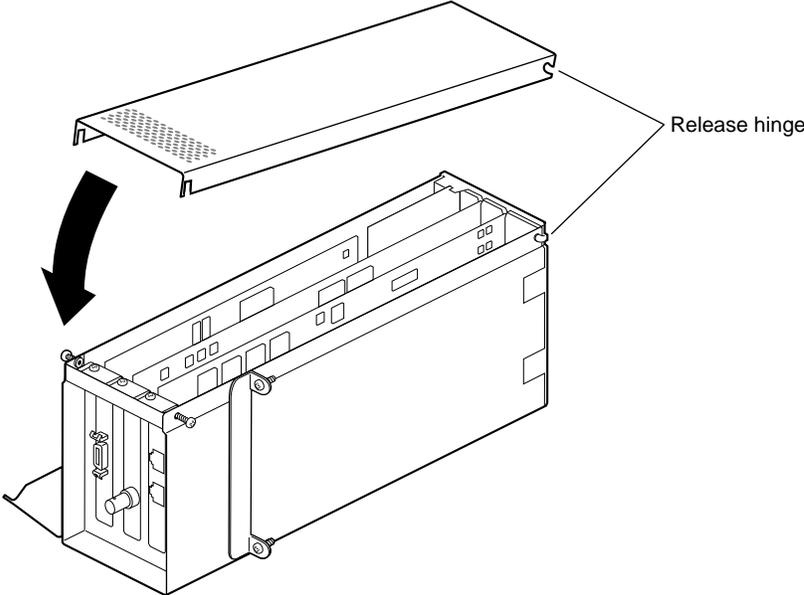


Figure 1-23 Reconnecting the PCI Module Door

- 8. Fit the hinged door to the PCI module.

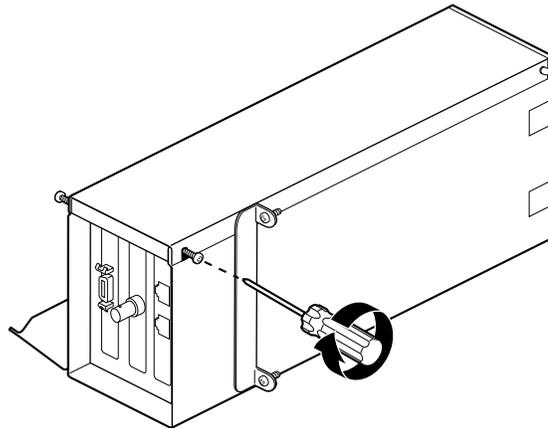


Figure 1-24 Replacing the Screws of the PCI Module Door

9. Tighten the module door screws.

Go to “Installing the PCI Module” on page 26.

Installing the PCI Module

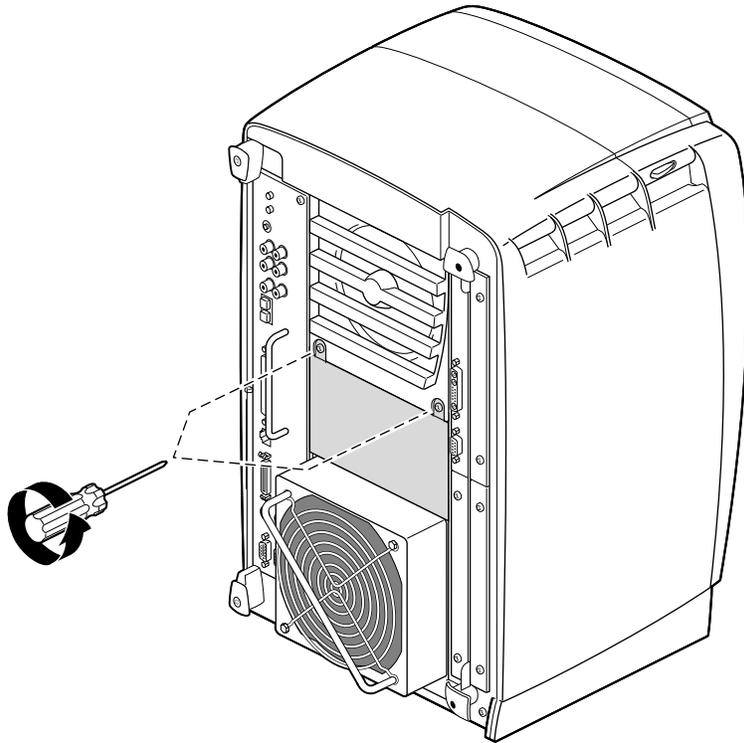


Figure 1-25 Removing the Screws From the Blank Panel

If you are installing a PCI module for the first time, you need to remove the blank panel. Go to step 1.

If you are not removing a blank panel, skip to step 4.

1. Using a Phillips screwdriver, remove the screws from the blank panel.

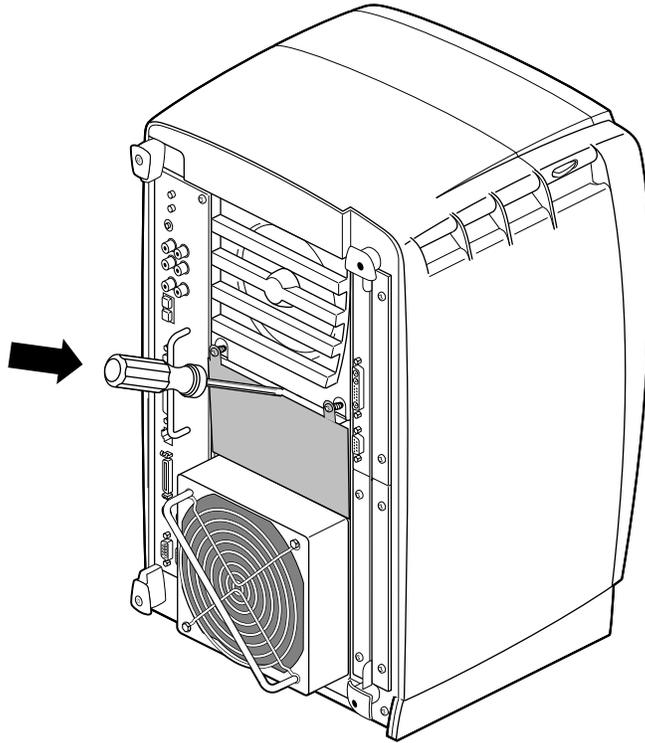


Figure 1-26 Removing the Blank Panel

2. Using a flat-head screwdriver, place the tip of the screwdriver in the slot at the top and middle of the blank panel.
3. Use the screwdriver to pull outward on the blank panel until the screw tabs are far enough away from the chassis to grasp with your fingers.

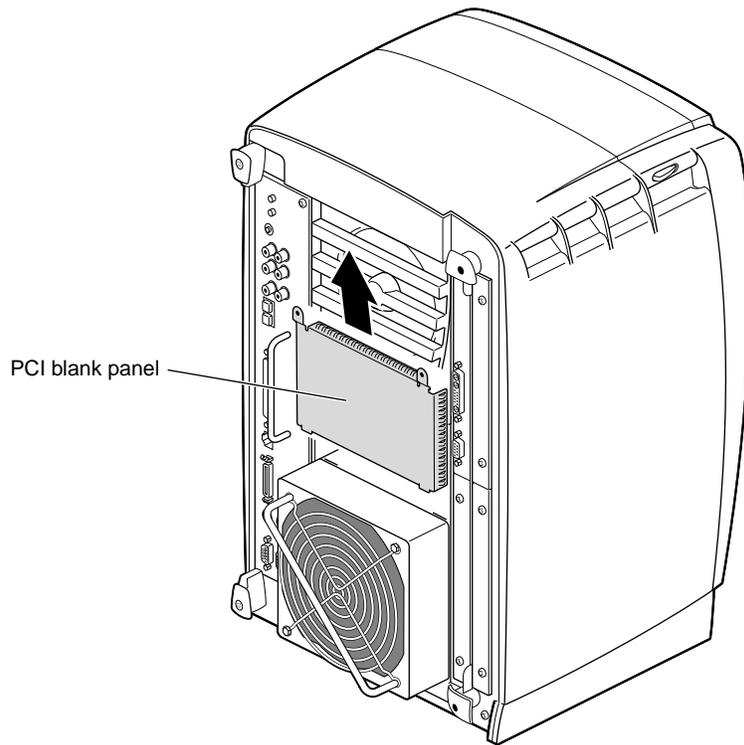


Figure 1-27 Removing the Blank Panel

4. Pull the panel outward and lift it up and out.

Save the blank panel for reuse, should you ever need to remove the PCI module. Either the PCI module or the blank panel must be in place at all times.

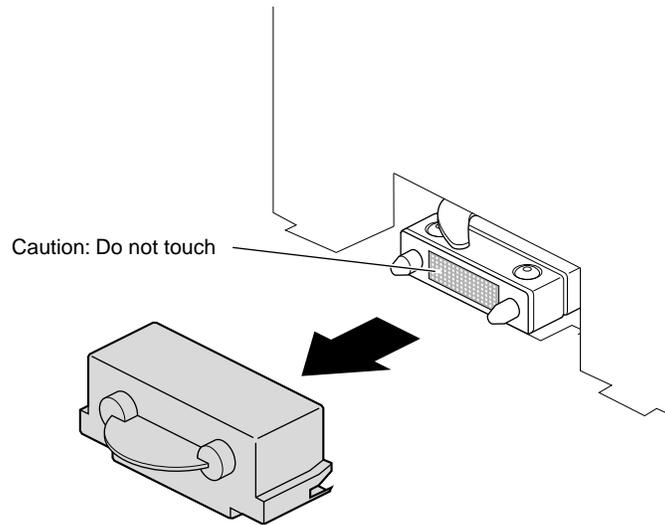


Figure 1-28 Removing the Cap From the Compression Connector

5. Remove the cap from the compression connector on the back of the PCI module, and save it for future use.

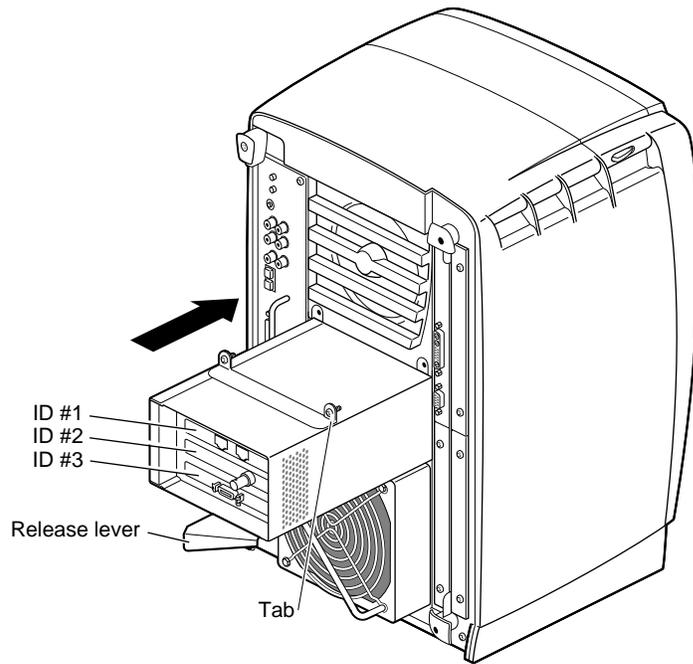


Figure 1-29 Replacing the PCI Module

Note: If the release lever is not pulled out as shown in Figure 1-29, pull it out. It must be out for the PCI module to lock to the workstation.

6. Place the PCI module in the chassis and push it in until the tabs are flush with the chassis.

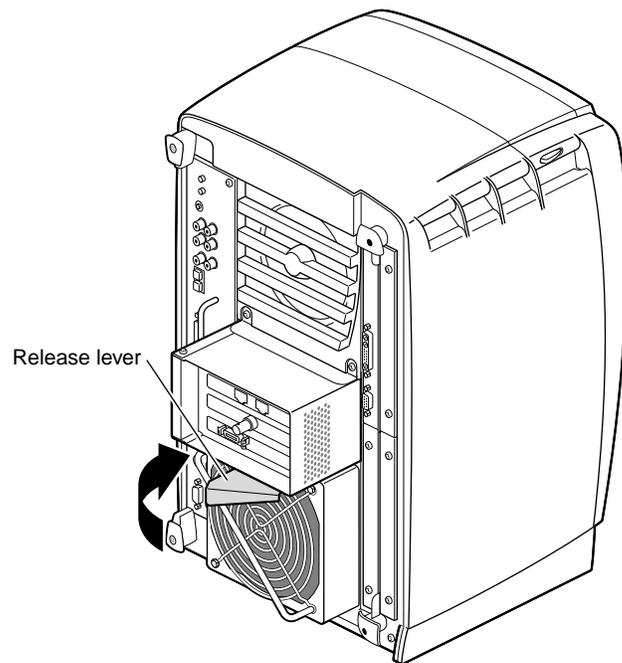


Figure 1-30 Closing the Release Lever

7. Close the release lever by pushing it to the left until it is parallel with the PCI module. You will feel some resistance as you close the lever.

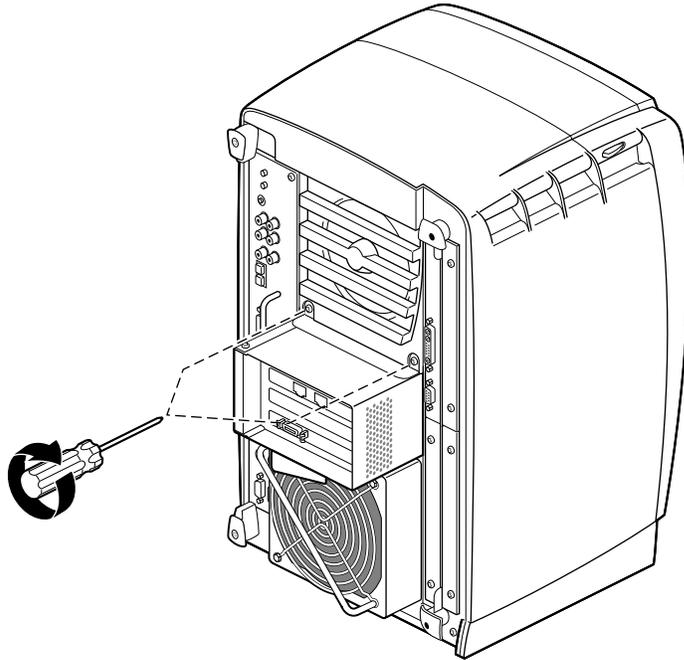


Figure 1-31 Tightening the Captive Screws

8. Tighten the captive screws that hold the PCI module to the chassis.

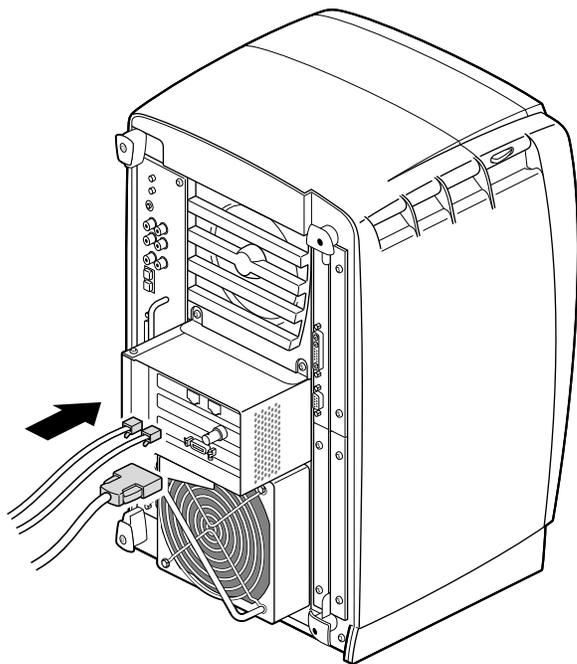


Figure 1-32 Replacing the PCI Cables

9. Connect any PCI cables to the PCI connectors.
10. Remove the wrist strap.

You have finished replacing the PCI module and are ready to power on the OCTANE workstation.

Go to “Powering On the OCTANE Workstation” on page 34.

Powering On the OCTANE Workstation

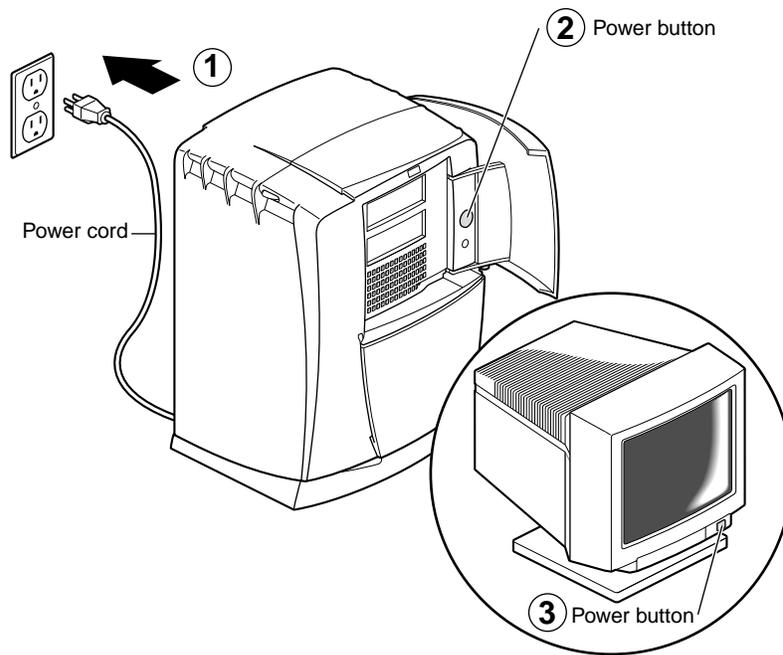


Figure 1-33 Replacing the Power Cord and Turning On the OCTANE Workstation

1. Connect the workstation's power cord to an electrical outlet.
2. Face the front of the workstation and press the power button to power on the OCTANE workstation.
3. Press the monitor power button to power on the monitor.

Placement of a Regulatory Label

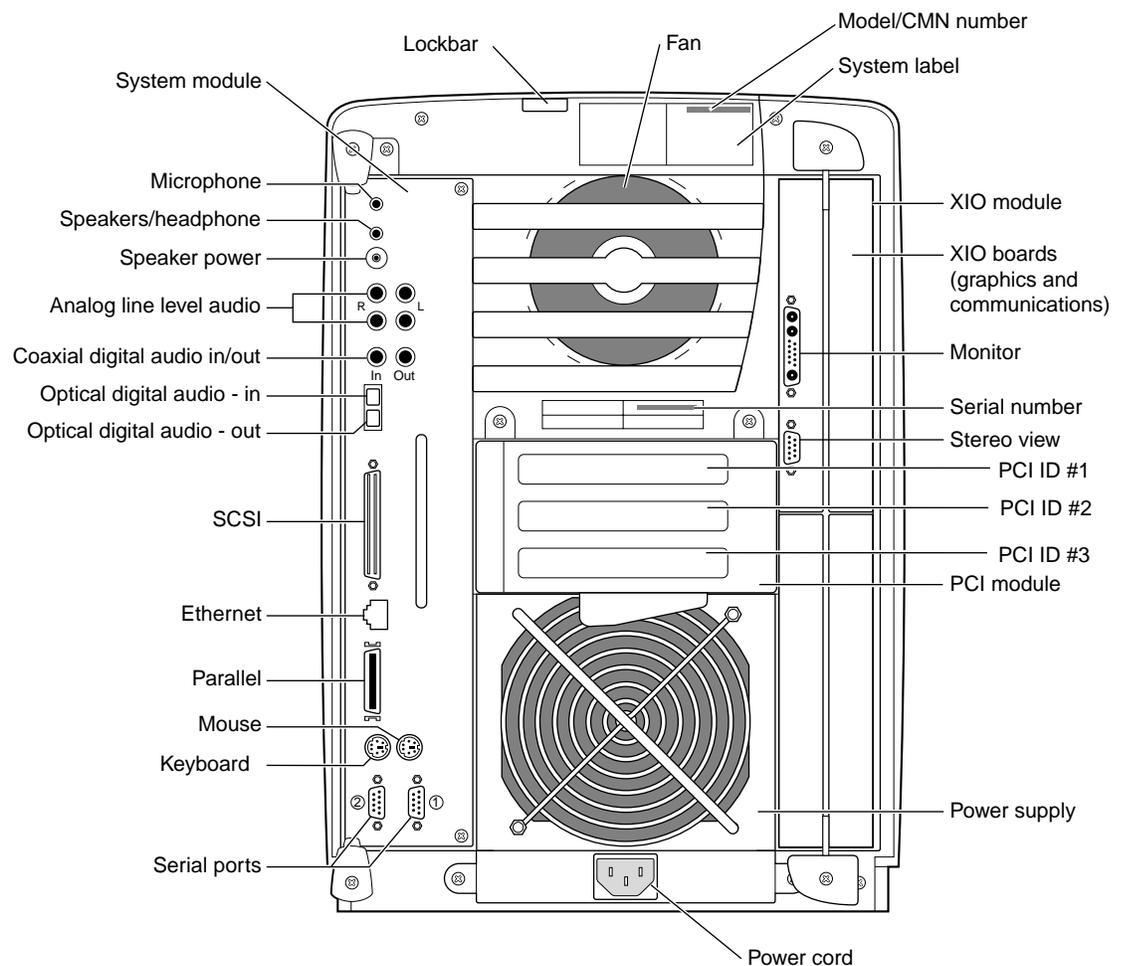


Figure 1-34 Locating the System Label

If you received a system upgrade label, place it on the system label.

1. Face the back of the OCTANE workstation. The system label (containing the model/CMN number) is located at the top center of the back of the workstation.
2. Place the label over the VCCI and CISPR 22 information.

Returning Parts

To return any part, use the packaging materials and box that came with your replacement part.

For product support information, see the introduction to this guide.

Removing the PCI Module and PCI Boards

If your OCTANE workstation has a PCI module installed, it protrudes from the rear of the workstation. You remove it to install or remove PCI boards. Follow the instructions in this chapter to power off the workstation and remove the PCI module and PCI boards.

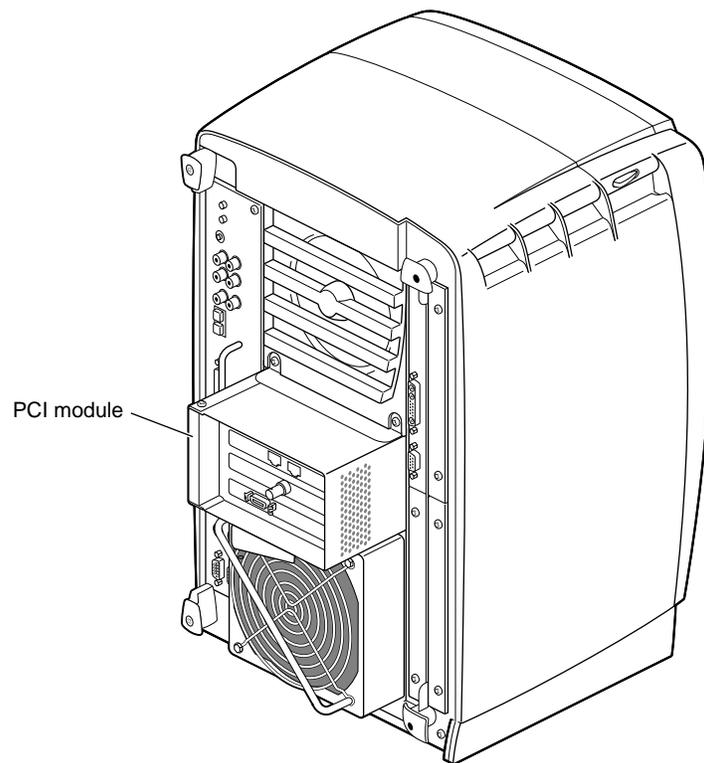


Figure 2-1 Identifying the PCI Module

Powering Off the OCTANE Workstation

Before you begin your task, power off the OCTANE workstation.

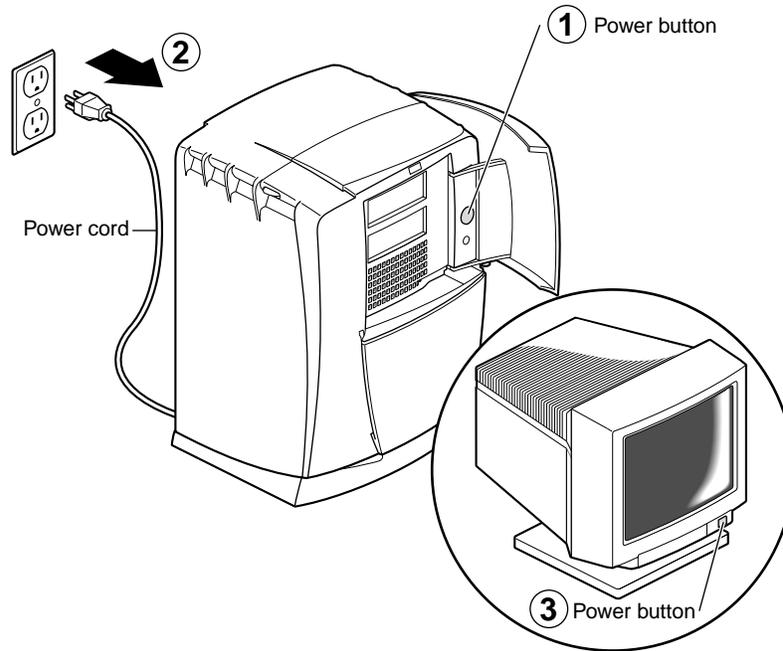


Figure 2-2 Powering Off the OCTANE Workstation

1. Open the cover and push the power button to power off the OCTANE workstation.
2. Unplug the power cord from the electrical outlet.
3. Press the monitor power button to turn off the monitor.
4. Face the rear of the workstation.

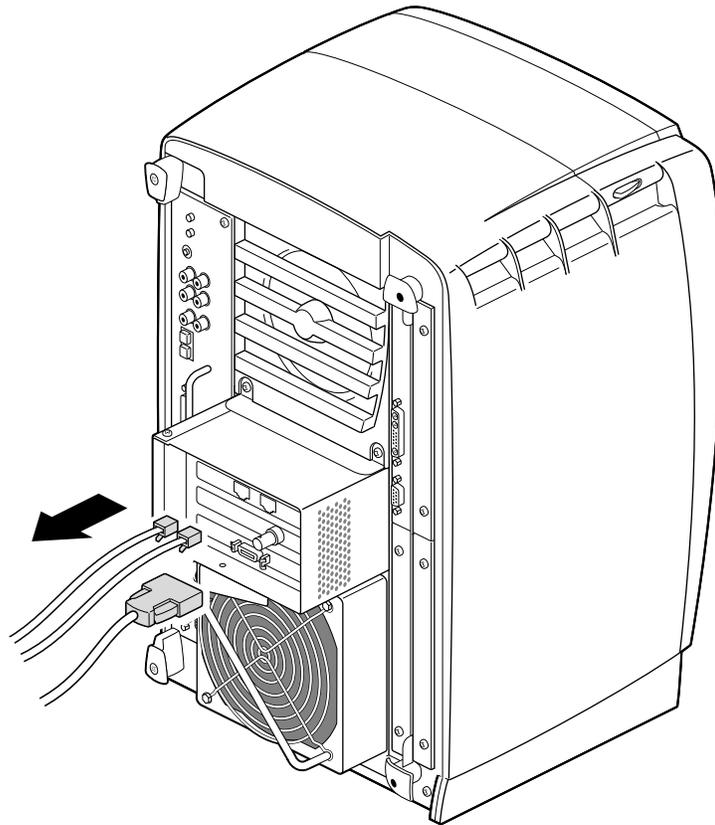


Figure 2-3 Removing the Cables From the PCI Module

1. Remove any cables from the PCI module.

Attaching the Wrist Strap

The components inside the OCTANE workstation are extremely sensitive to static electricity; you must wear the wrist strap while replacing parts.

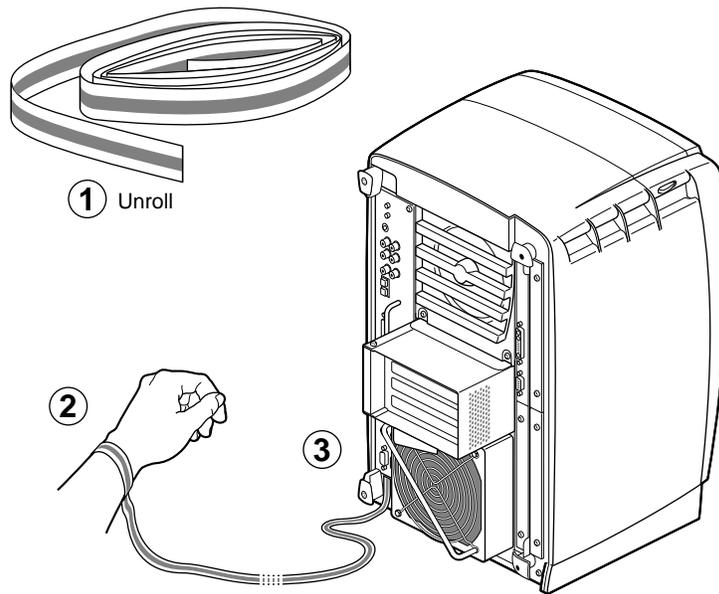


Figure 2-4 Attaching the Wrist Strap to the Chassis

1. Unwrap the first two folds of the band and wrap the exposed adhesive side firmly around your wrist.
2. Unroll the rest of the band and peel the liner from the copper foil at the opposite end.
3. Attach the copper foil to the PCI module. Otherwise, use any convenient and exposed electrical ground, such as a metal part of the OCTANE workstation.

Removing the PCI Module

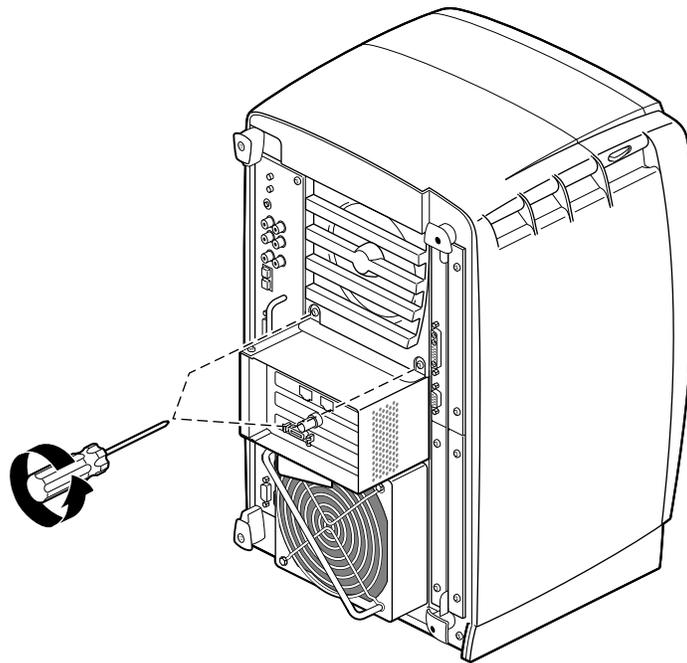


Figure 2-5 Loosening the Captive Screws

1. Loosen the two captive screws that secure the PCI module to the OCTANE workstation until they are disconnected from the chassis.

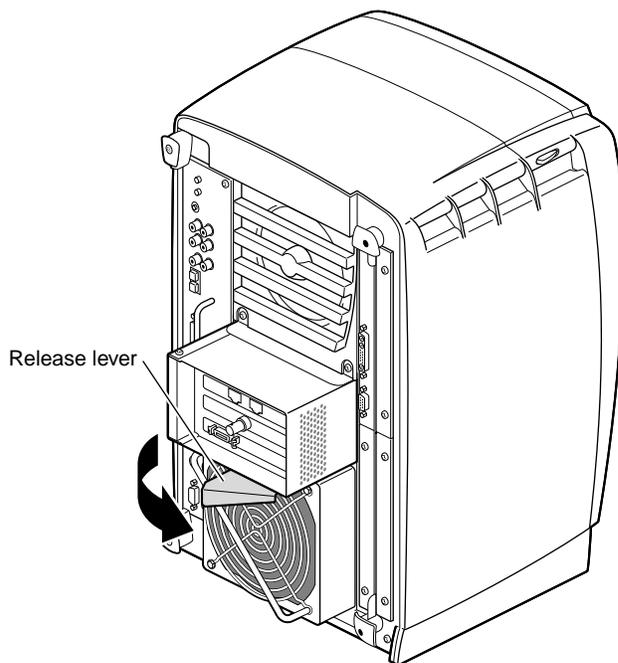


Figure 2-6 Opening the Release Lever

2. Pull the release lever toward you and to the right. You will feel resistance as you open the lever. Continue to pull until the lever is at the angle shown in Figure 2-6. The lever releases the locking mechanism that attaches the PCI module to the workstation.

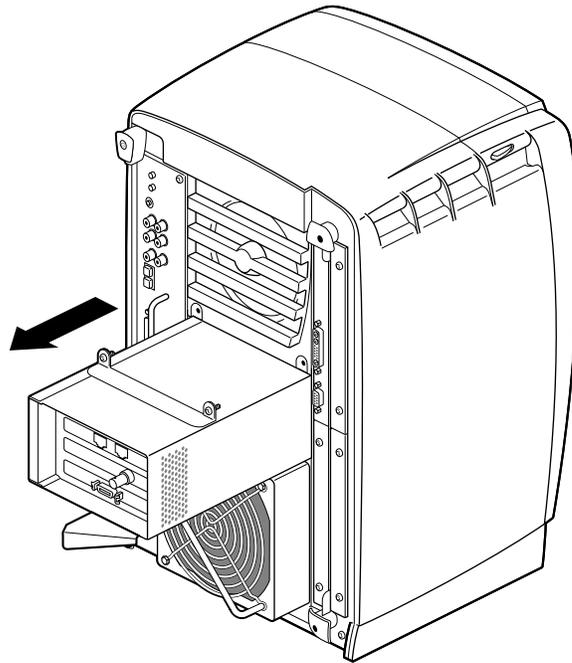


Figure 2-7 Sliding the PCI Module From the Chassis

3. Slide the PCI module from the chassis. Place it on a dry, antistatic surface such as your desktop.

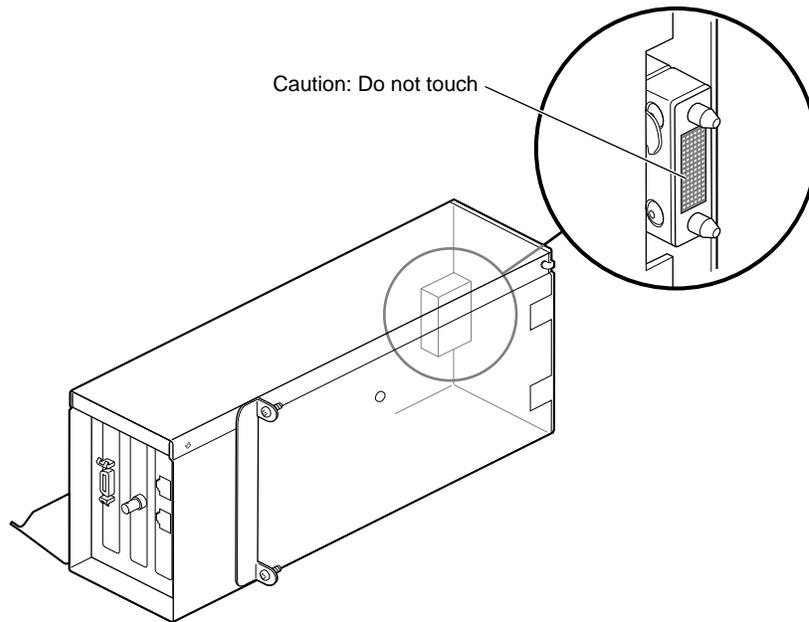


Figure 2-8 Identifying the Compression Connector on the PCI Module

Caution: The compression connector on the back of the PCI module is delicate and easily damaged. Do not touch or bump the gold area of the compression connector.

See Appendix B for information about and care of the compression connectors.

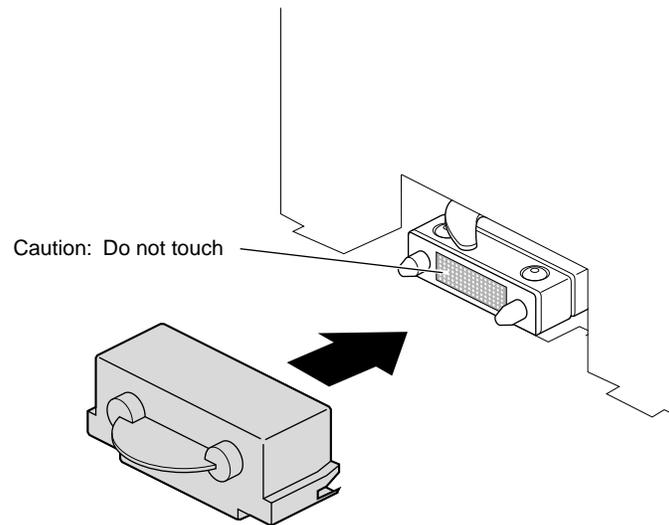


Figure 2-9 Installing a Cap on the Compression Connector

4. Place a cap on the compression connector on the back of the PCI module. (Extra compression connector caps came with the workstation.)

Opening the PCI Module

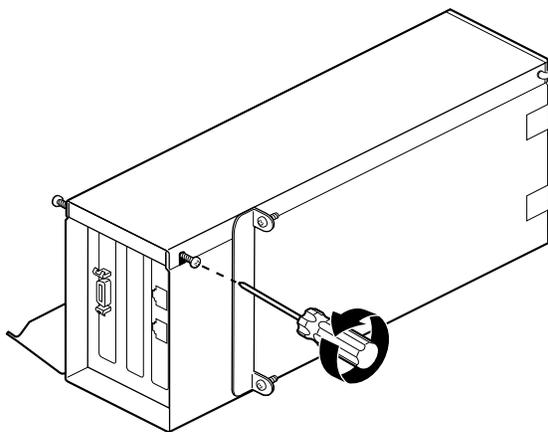


Figure 2-10 Loosening the Screws From the PCI Module

If you have not already done so, go to “Powering Off the OCTANE Workstation” on page 38 and follow the steps given there. Then return here. If you have already powered off the workstation and are ready to open the PCI module, follow these instructions:

1. To begin installing PCI cards, turn the PCI module as shown in Figure 2-10.
2. Loosen the screws holding the PCI module door closed, but do not remove them. (The door lifts off.)

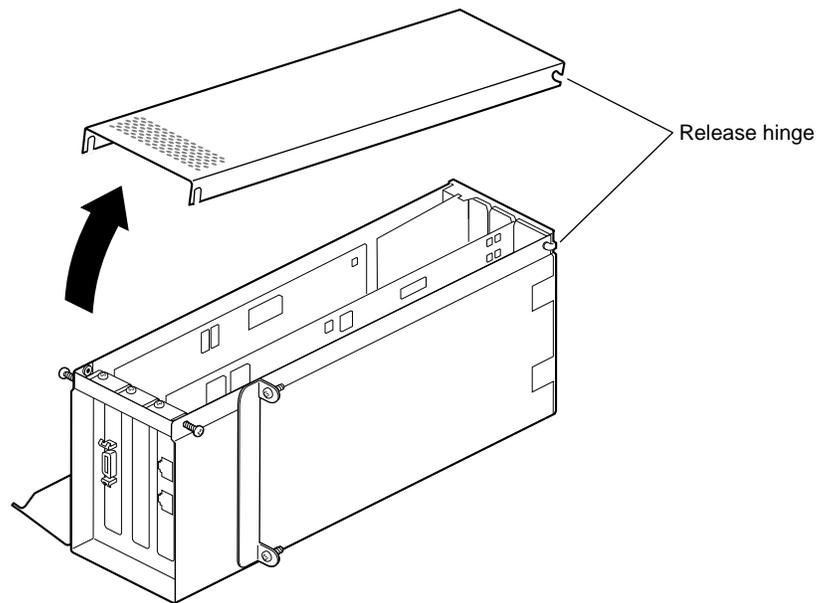


Figure 2-11 Opening the PCI Module Door

3. Pull the PCI module door up and off. The releasee hinge allows the module door to slide up and off.

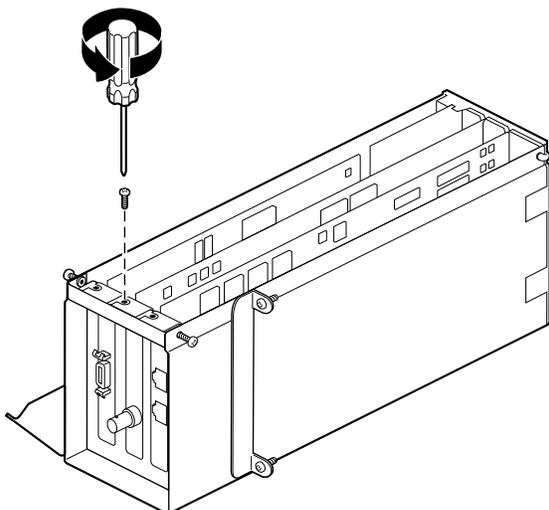


Figure 2-12 Removing the Screw

4. Remove the screw holding the PCI board to the module.

Go to “Extracting the PCI Board” on page 49. If you have a board with an extra-long connector, skip to step 3. Otherwise, go to step 1.

Extracting the PCI Board

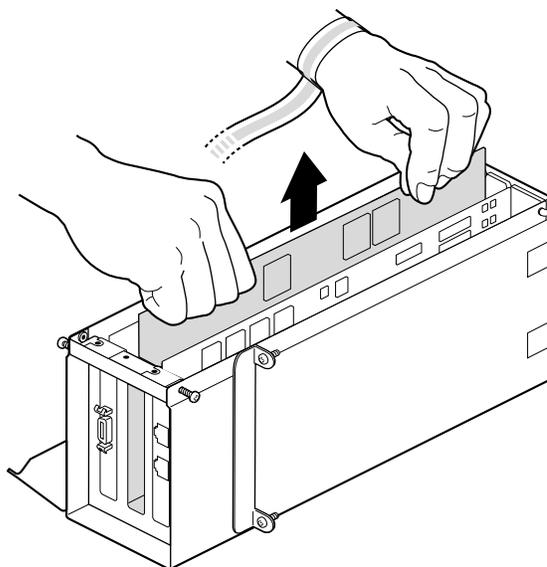


Figure 2-13 Removing the PCI Board

1. Grasp the PCI board on the top edge to extract it.
2. Pull up until the board releases. The board may be difficult to remove because it fits snugly into the connector in the PCI module.

Table 2-1 Directions to Task Help

Task	See instructions
To remove a board with an extra-long connector	Step 3, page 50
To insert a board	Chapter 1, page 13
To insert a blank I/O panel (instead of a board)	Step 10, page 55

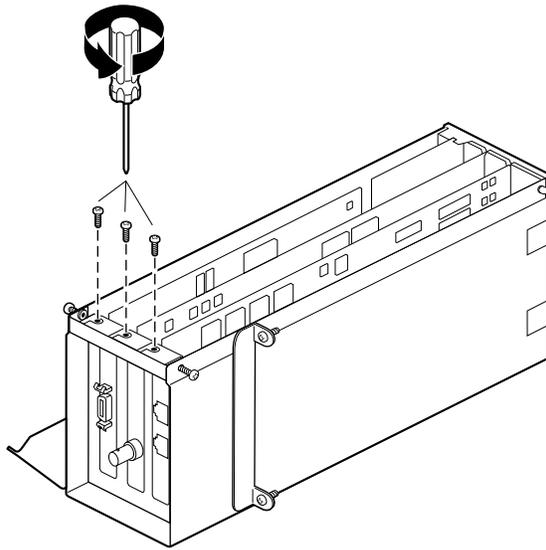


Figure 2-14 Opening the I/O Door

3. Remove the screws holding any other PCI boards to the module so that the I/O door can swing open.

Note: Do not remove any blank I/O panels. They are directly attached to the door and open with it.

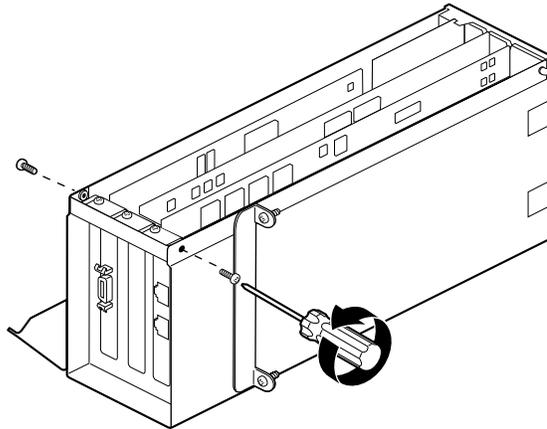


Figure 2-15 Removing the I/O Screws

4. Remove the screws that hold the I/O door closed.

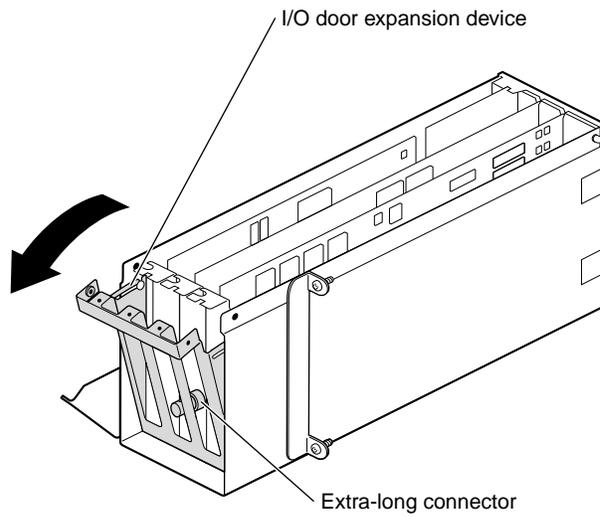


Figure 2-16 Sliding Open the I/O Door

5. Slide open the I/O door.

Opening the I/O door allows clearance for the I/O connector at the end of the PCI board. This allows you to remove the board easily. It also provides space for gripping the edges of the two boards (#1 and #3) that are close to the sides of the PCI module.

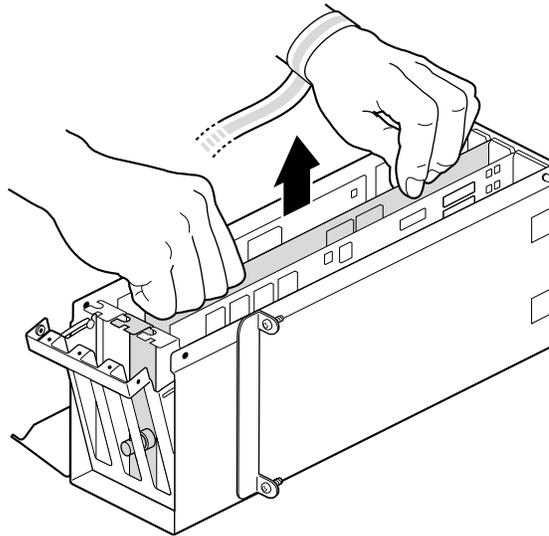


Figure 2-17 Removing a PCI Board With an Extra-Long Connector

6. Grasp the PCI board on the top edge to extract it.
7. Pull up until the board releases. The board may be difficult to remove because it fits snugly into the connector in the PCI module.

To insert a PCI board, go to “Inserting a PCI Board in a PCI Module” on page 13.

If you are not inserting another PCI board in the same slot, insert an I/O blank panel. Go to the next step.

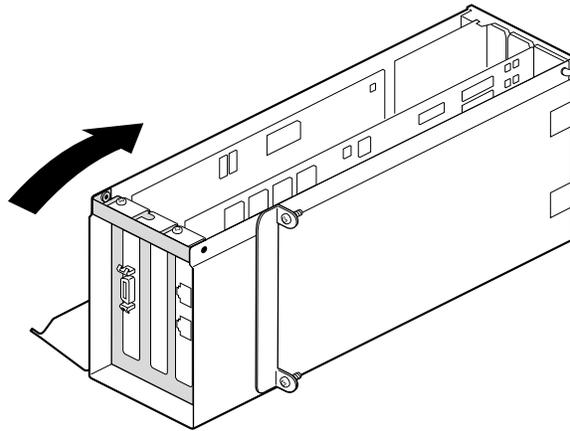


Figure 2-18 Closing the I/O Door

8. Close the I/O door.

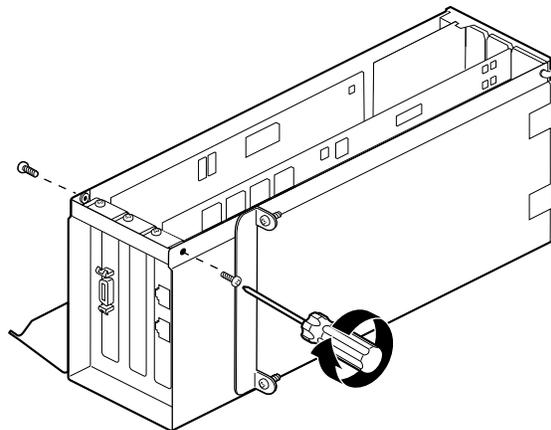


Figure 2-19 Inserting the Screws Holding the I/O Door Closed

9. Insert the screws holding the PCI door to the PCI module.

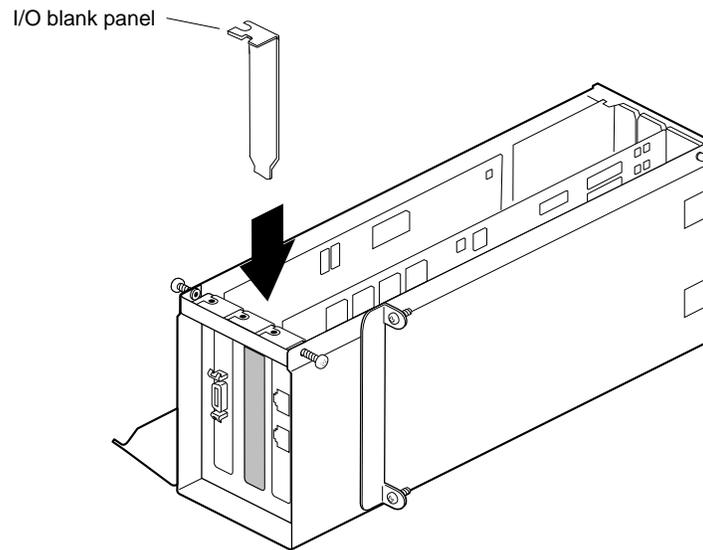


Figure 2-20 Inserting the I/O Blank Panel

10. Install an I/O blank panel in the I/O door in place of the PCI board.

Be sure to place the tip of the I/O blank panel inside the groove at the bottom of the PCI module. Do not position the tip outside the groove.

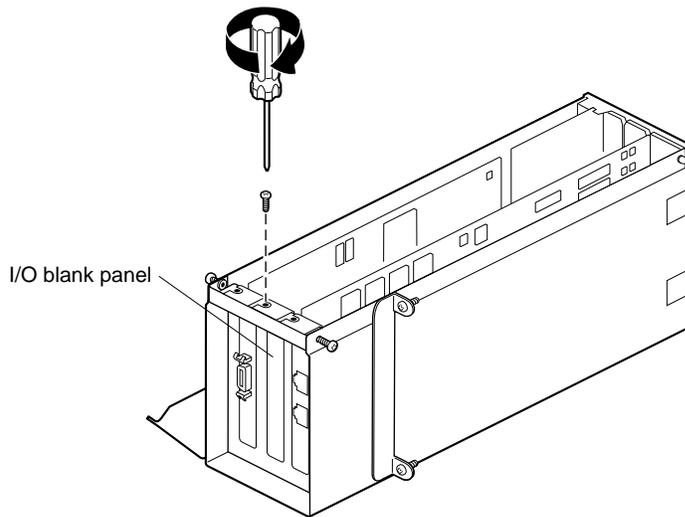


Figure 2-21 Attaching the Blank Panel to the I/O Door

11. Attach the blank panel to the I/O door with a screw. Replace and tighten any other screws that hold boards to the I/O door.

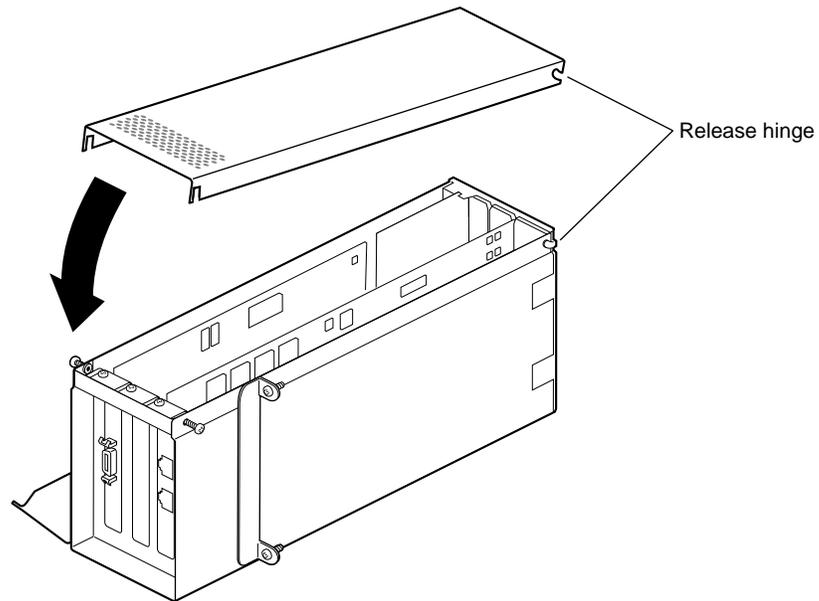


Figure 2-22 Reconnecting the PCI Module Door

12. Fit the hinged door to the PCI module.

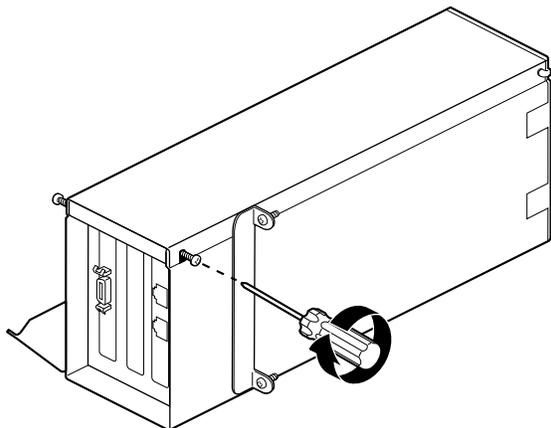


Figure 2-23 Replacing the Screws of the PCI Module Door

13. Tighten the door screws.

Go to “Installing the PCI Module” on page 59.

Installing the PCI Module

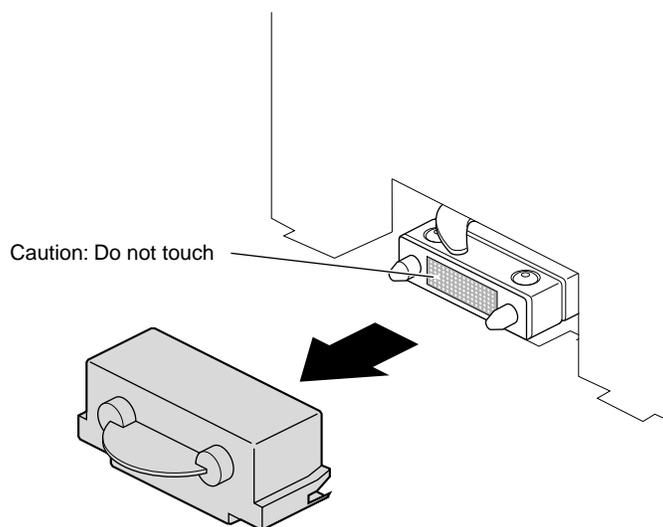


Figure 2-24 Removing the Cap on the Compression Connector

1. Remove the cap from the compression connector on the back of the PCI module and save it for future use.

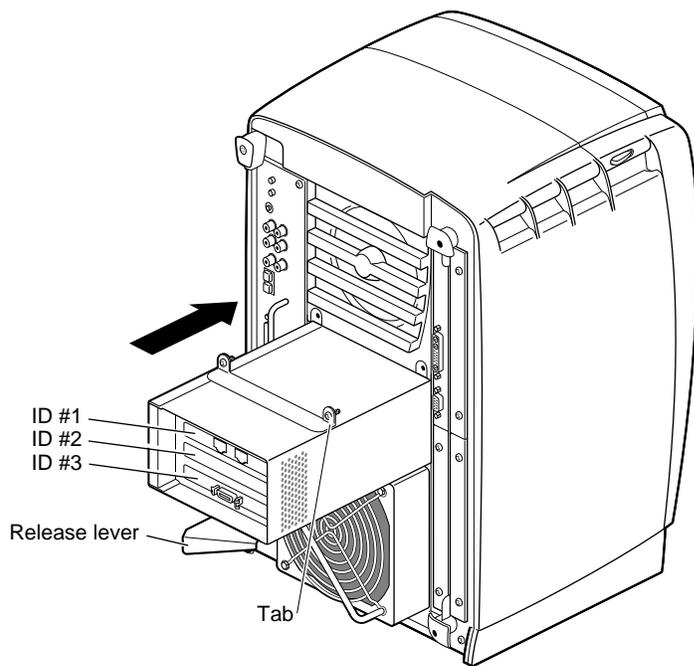


Figure 2-25 Replacing the PCI Module

Note: If the release lever is not pulled out as shown in Figure 2-25, pull it out. It must be out for the PCI module to lock to the workstation.

2. Place the PCI module in the chassis and push it until the tabs are flush with the chassis.

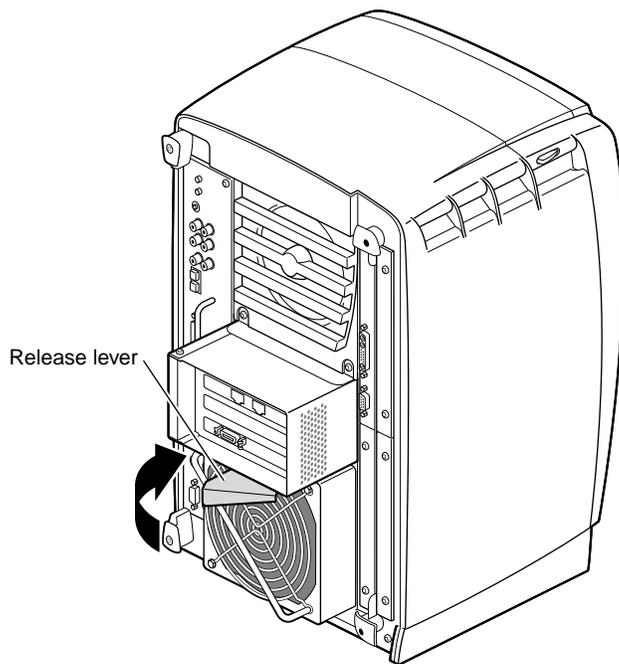


Figure 2-26 Closing the Release Lever

3. Close the release lever by pushing it to the left until it is parallel with the PCI module. You will feel some resistance as you close the release latch.

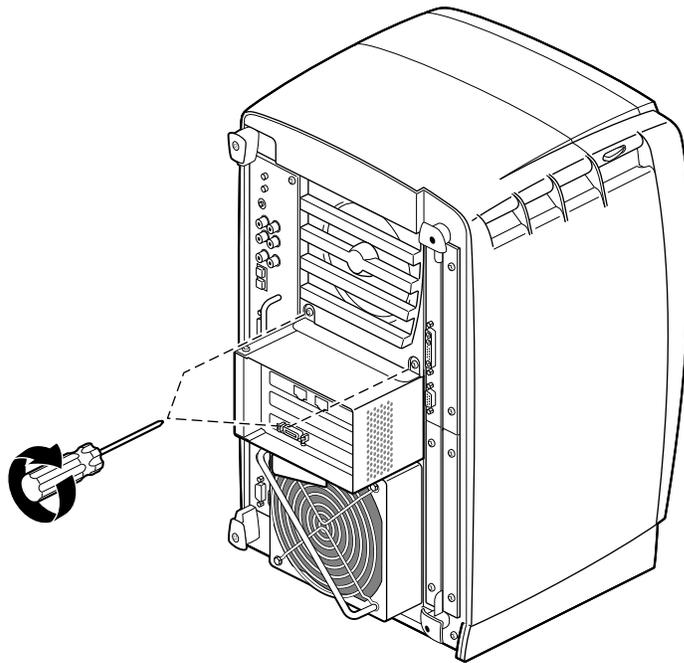


Figure 2-27 Replacing the PCI Screws

4. Tighten the captive screws that hold the PCI module to the chassis.

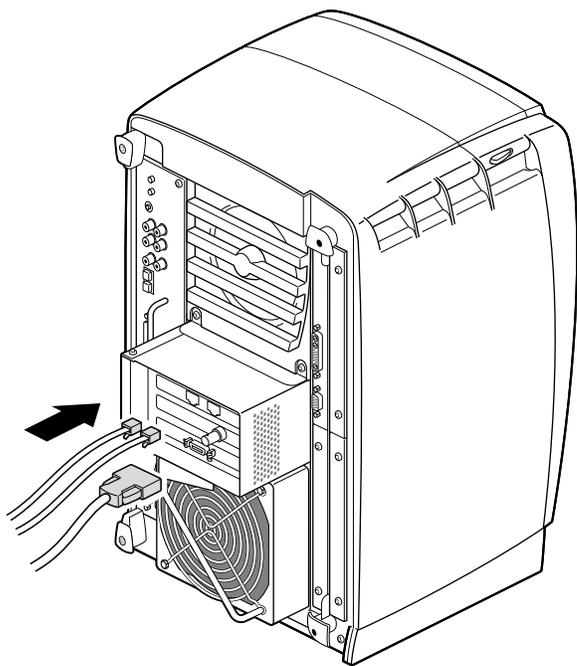


Figure 2-28 Replacing the PCI Cables

5. Connect any PCI cables to the PCI connectors.
6. Remove the wrist strap.

You have finished replacing the PCI module and are ready to power on the OCTANE workstation.

Go to “Powering On the OCTANE Workstation” on page 64.

Powering On the OCTANE Workstation

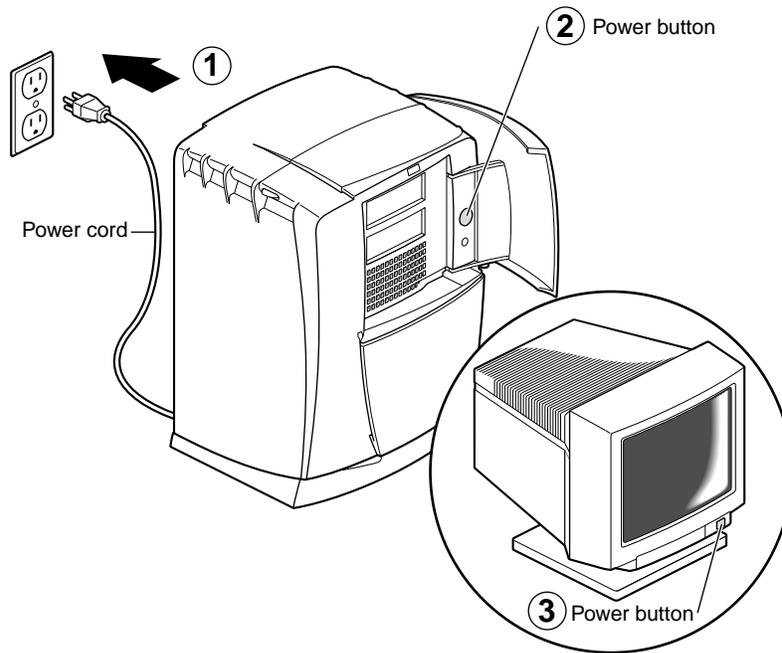


Figure 2-29 Replacing the Power Cord and Turning On the OCTANE Workstation

1. Connect the workstation's power cord to an electrical outlet.
2. Face the front of the OCTANE workstation, and press the power button to power on the OCTANE workstation.
3. Press the monitor power button to power on the monitor.

Returning Parts

To return any part, use the packaging materials and box that came with your replacement part.

For product support information, see the Introduction to this guide.

Cabling and Configuration Information

This chapter provides information to help you connect cables to the correct port on a particular PCI board.

Mapping the Logical Controller Numbers to the Physical Port Locations

Before you can connect cables, you need to map the logical ports numbers to the physical port locations. Follow these instructions:

1. From the Toolchest > Desktop, open a UNIX® shell.
2. At the prompt, type: `cat /etc/ioconfig.conf`
3. Read the following table, descriptions, and explanations to determine the correct port location(s) for the cables you wish to connect.

You see a listing similar to the following example.

Table 3-1 Identification of Information in ioconfig.conf File

Logical Controller Number	Hardware	Node	Bus Type	Physical XIO™ Slot ID	Bus Type	Slot ID	Port Type (Abbreviation)	Serial Port ID
2	/hw	/node	/xtalk	/13	/pci	/2	/scsi_ctrl	
0	/hw	/node	/xtalk	/13	/pci	/1	/rns	
2	/hw	/node	/xtalk	/13	/pci	/3	/pckb	
2	/hw	/node	/xtalk	/13	/pci	/3	/pcms	
1	/hw	/node	/xtalk	/13	/pci	/3	/ef	

Logical Controller Number Column

The Logical Controller Number is the number assigned to a port on an option board by the operating system. The logical controller numbers assigned by the operating system to a port on an option board always start higher than the last assigned port of the same type on the system module. Ports of the same type are assigned incrementing port numbers. For example, because there is one Ethernet port on the System module, the logical number 1 is assigned to the first optional Ethernet port that the software sees. (The Ethernet port on the system module is assigned logical number 0.)

Hardware, Node, and Bus Type Columns

Ignore the Hardware, Node, and Bus Type columns containing XIO entries when looking for information in this table. They appear in the *ioconfig.conf* file to report that hardware is being probed, on one node, using XIO at one point and PCI at another within the workstation.

Physical ID Column

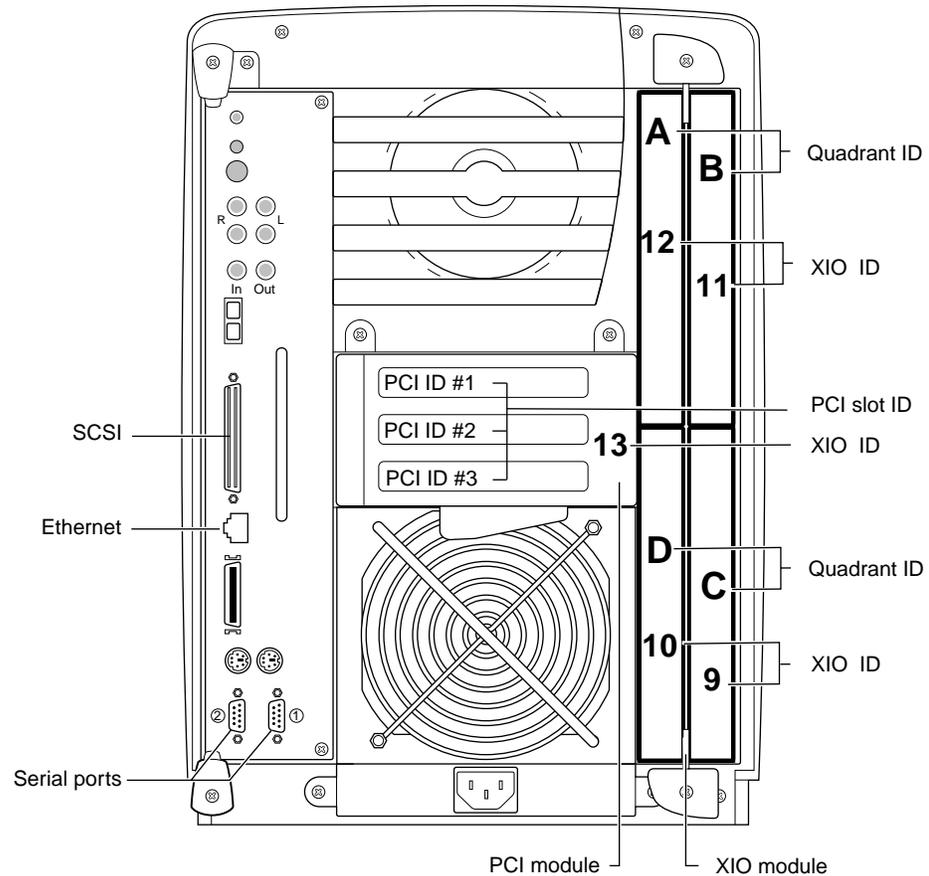


Figure 3-1 Physical Identification

Use Figure 3-1 to determine the physical XIO ID number. The PCI module is the first XIO module probed. Its number is 13.

Note: Physical port numbers are assigned in descending XIO probing order. Example: a port on an Ethernet board in the PCI module (13) will be assigned logical number 1, before an Ethernet port in quadrant C (9) of the XIO module is assigned a logical number, because XIO ID 13 is probed before XIO ID 9.

Bus Type Column

The column that contains PCI entries should be read only in conjunction with the Physical XIO Slot ID column that comes before it. If the Physical ID number is 13, the board, to which a logical controller number has been assigned, is in the PCI module.

Slot ID and Port Type Columns

The Slot ID column refers to the physical location of the option board in the PCI module.

Logical controller number	Hardware	Node	Bus type	Physical XIO Slot ID	Bus type	Slot ID	Port type (abbreviation)	Serial port ID
2	/hw	/node	/xtalk	/13	/pci	/2	/scsi_ctrlr	
0	/hw	/node	/xtalk	/13	/pci	/1	/rns	
2	/hw	/node	/xtalk	/13	/pci	/3	/pckb	
2	/hw	/node	/xtalk	/13	/pci	/3	/pcms	
1	/hw	/node	/xtalk	/13	/pci	/3	/ef	

The above example shows a PCI module with three boards installed. One of the boards has three ports: a keyboard port, a mouse port, and an Ethernet port. The physical XIO identification number is 13, meaning these are PCI boards. The slot identification number matches the PCI slot identification number in the PCI module. The board with three ports is in slot 3. Slot 1 contains an FDDI or CDDI board with one port. Slot 2 contains a board with a SCSI port.

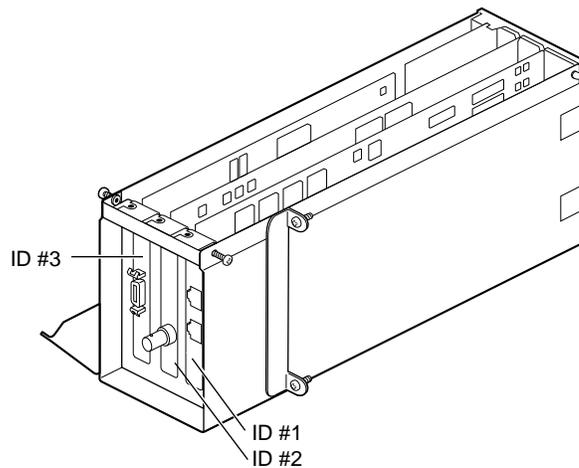


Figure 3-2 PCI Module on Its Side

Serial Port ID Column

Because each pair of XIO serial ports share a bus, this column identifies which XIO serial port is on which bus.

Types of Ports

Table 3-2 Abbreviations and Definitions

Abbreviation	Definition
ef	Ethernet
rns	FDDI or CDDI
pckb	keyboard
pcms	mouse
tty	serial
scsi_ctlr	SCSI controller

About the `ioconfig.conf` File

The `ioconfig.conf` file records and saves option board and port information after the option board is installed in the OCTANE workstation. However, the file reserves the board and port spaces if the option board is removed, and assigns new logical controller numbers if the same type of board is inserted in a different PCI slot.

However, if you wish to have a listing of only what is currently installed, remove the `ioconfig.conf` file and restart your system. The file is rebuilt with information about the current hardware configuration reflecting what is currently installed.

Install the cable into the appropriate port.

After Installing the Board and Cables

When the board is installed and connected, and the OCTANE workstation is powered on, use the following information for configuration.

Certain PCI boards require some configuration, others do not. Use the table below to determine whether you need to configure the board.

Table 3-3 Determining Which Board to Configure

Configuration Needed	No Configuration Needed
All networking boards	Mouse, keyboard, SCSI, Radical

Refer to the *Personal System Administration Guide* or *IRIX Admin: Networking and Mail* guides for instructions on configuring software. Both documents are online and accessible from the Toolchest > Help > Online Books. The Personal System Administration Guide is under SGI End User, and the IRIX system administration guides are under SGI Admin.

Identifying Ports and Modules on the Back of the Workstation

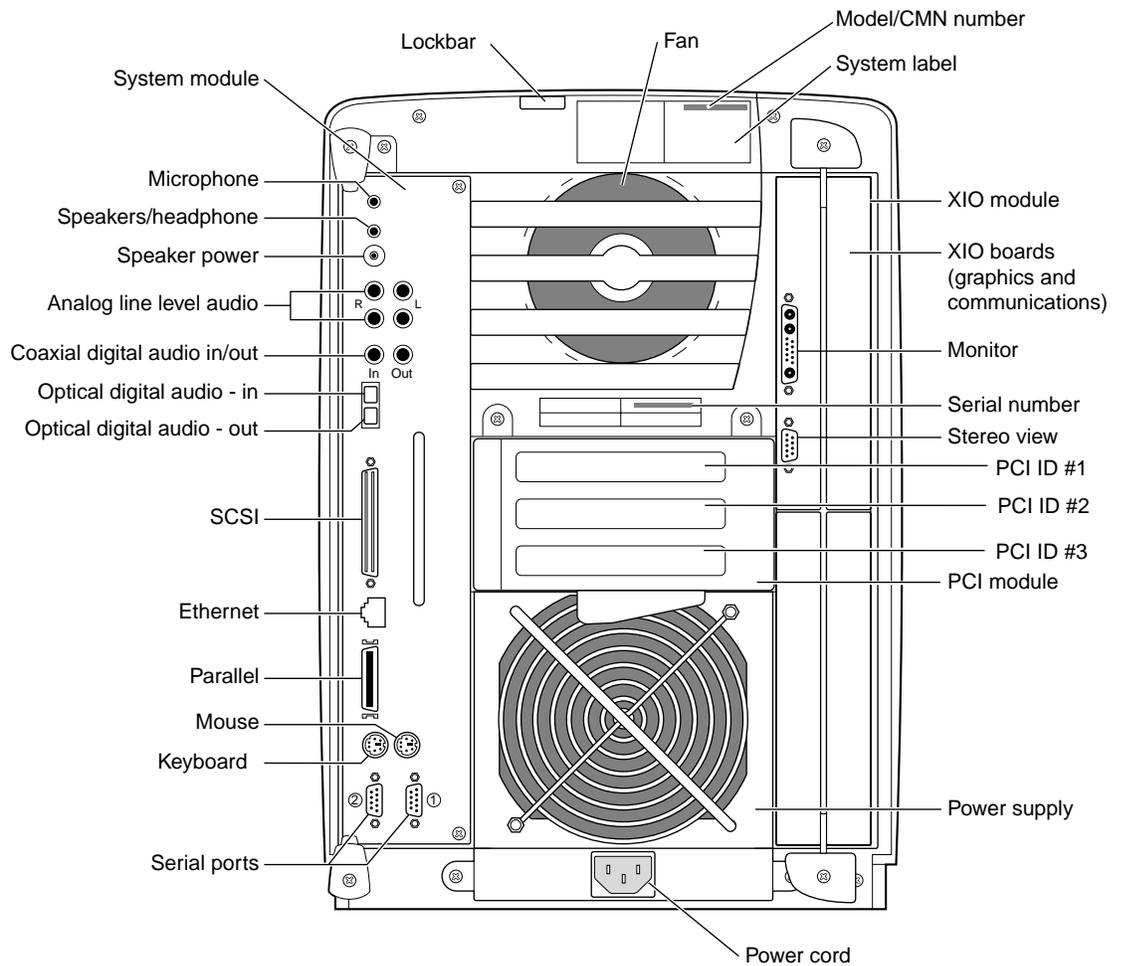


Figure A-1 Back of Workstation

Care and Cleaning of the Compression Connector

This appendix describes the compression connector and provides guidelines for their storage, handling, and cleaning:

- “Guidelines for Storing and Handling the Compression Connector” on page 76
- “Guidelines for Cleaning the Compression Connector” on page 77

About the Compression Connector

The OCTANE workstation uses compression connectors to connect several modules and boards to the frontplane.

A single compression connector is used in the OCTANE workstation in two places:

- on the back of the PCI module
- on each XIO board on the XIO module

Two compression connectors are used on the system module.

The compression connector has 96 pads that enable passage of signals between the system (via the frontplane) and the system module, PCI module, or XIO board.

The compression connector has two halves: One half is located on the frontplane of the chassis; the other, on the system module, PCI module, or XIO board. Each pad on a frontplane connector is a flat, gold-plated surface. Each pad on the system module, PCI module, or XIO board is composed of hundreds of tiny bristles (dendrites). When a bristled pad is pressed into a gold-plated pad, a connection is created for one signal.

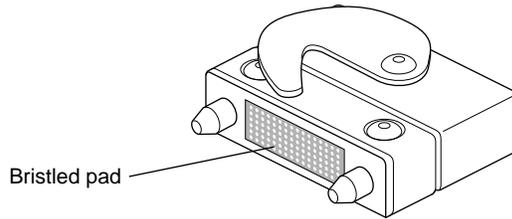


Figure B-1 Identifying the Bristled Pad of the Compression Connector

The bristled pads may attract and hold dust, lint, grease, powder, and dirt. The presence of these substances clogs or damages the bristles and prevents them from making proper contact with the gold-plated pads on the system's frontplane. It is important to prevent this.

Guidelines for Storing and Handling the Compression Connector

To avoid damaging a compression connector and to keep it in optimal working condition, follow these guidelines whenever the board is not installed.

Caution: Failure to follow these instructions can result in irreparable damage to the surface of the connector's pads, which may result in intermittent or complete failure of the product.

- Do not wipe or touch the pads of the compression connector with anything (no human fingers, no brushes, no cloth, no probes), except as specified in the cleaning instructions. The bristles might be damaged.
- Whenever the module or board is not in the chassis, put the protective cap over the compression connector and put the module or board in an antistatic bag. Make sure to close (fold over) the open end of the bag to minimize exposure to dust and atmospheric gases.
- Do not put anything (not even water) onto the pads, except as specified in the cleaning instructions.
- Before laying the board on a surface, make sure that the surface is free of dust, lint, powder, metal filings, oil, water, and so on.
- Do not blow dust, dirt, or powder anywhere near the board when it is not inside its protective bag.

Guidelines for Cleaning the Compression Connector

A compression connector should never need to be cleaned if you keep the protective cover on whenever the module or board is not in the chassis. However, if the connector becomes dirty, follow the instructions below for removing pollutants.

Note: Some pollutants can irreversibly damage (corrode or chemically alter) the pad surfaces. Although cleaning may remove the pollutant, it does not repair damage incurred by this contact.

To remove pollutants, follow these instructions:

1. Obtain a can of dry compressed air or inert gas. The Envi-ro-tech™ Duster 1671 product manufactured by TECHSPRAY™ (telephone 806-372-8523 in the USA) works extremely well for this application.

Caution: Do not use a cleaning product that contains any of the following ingredients: halogenated hydrocarbons, aromatic hydrocarbons, ethers, sulfur, ketones, or solvents of any kind. These substances cause irreparable damage to the connector's surface.

2. Prepare the can for use, as instructed on the can. For example, if a tube is provided, attach it to the can's dispensing mechanism.

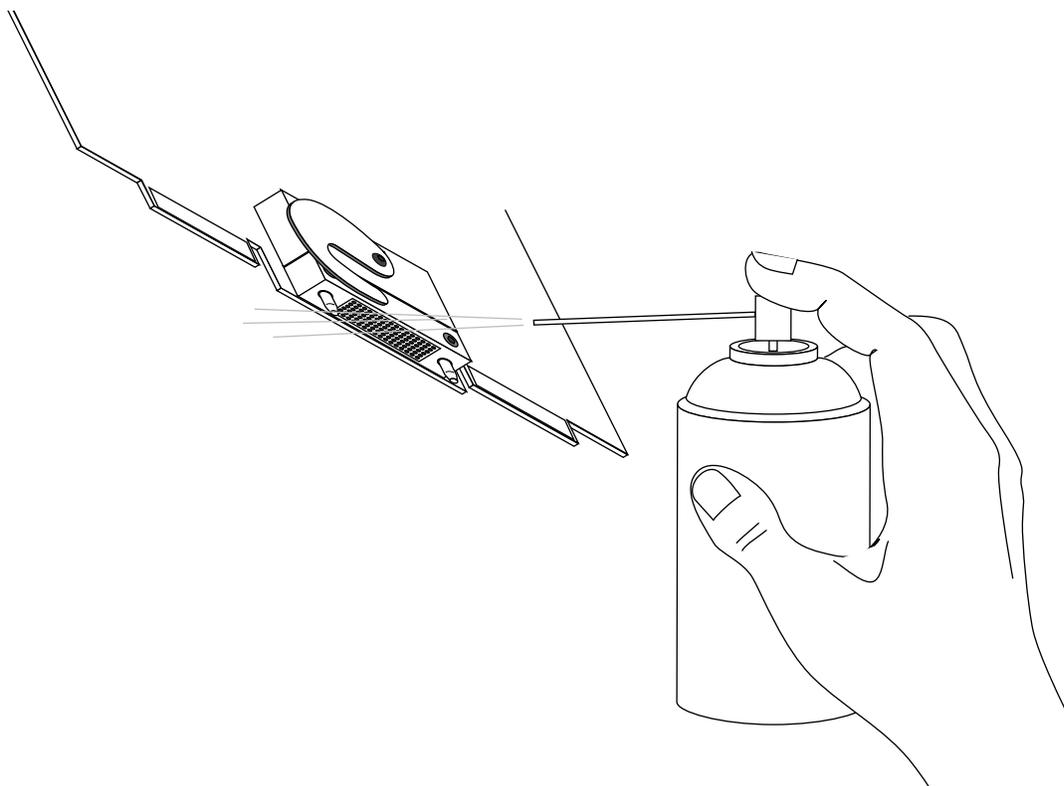


Figure B-2 Cleaning the XIO Compression Connector

3. Hold the can in a vertical position.
4. Place or hold the XIO board so that the rounded edge of the compression connector faces up. Note that the rounded edge is completely closed, so that air cannot flow into the connector, whereas the squared edge has an opening.

Caution: Spraying into the squared (open) edge of the connector can destroy it.

5. Position the XIO board at an angle to the can, so that the tip of the can's applicator is 1 to 2 inches away from the first (topmost) row of pads. Do not allow the applicator to touch the pads. When you spray, the air hits each pad and flows downward.
6. Start spraying. As you spray, move the spray along the length of the connector until the entire length has been sprayed. Move down a few rows and again spray along the entire length.

Note: Do not shake the can. Stop spraying if any visible material (for example, foam) appears. This foam will blow away once you resume spraying just air.

7. Repeat until all the pads have been sprayed.
8. When you finish, cover the compression connector with its cap or immediately install the board in an XIO slot.

Index

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