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# IX-brick Addendum

This addendum describes the function and physical components of the IX-brick, which is used to connect to I/O devices on your system and to install your operating system. It also describes how to install a PCI or PCI-X card in the IX-brick, and how to install and remove SCSI disk drives on the IX-brick. Specifically, it includes the following information:

- “Product Overview” on page 1
- “External Components” on page 6
- “Installing PCI and PCI-X Cards” on page 11
- “Installing and Removing SCSI Disk Drives” on page 22
- “Technical Specifications” on page 27
- “Pin Assignments” on page 28

This addendum is a supplement to the following documentation:

- *SGI Origin 3000 Series Owner’s Guide* (007-4240-00X)
- *SGI Onyx 3000 Series Graphics System Hardware Owner’s Guide* (007-4264-00X)

## Product Overview

The 4-U high IX-brick shown in Figure 1 provides 11 PCI and PCI-X card slots to support up to 11 PCI or PCI-X cards. The 11 slots are configured as six 2-slot busses. The leftmost slot (which would be the twelfth slot) comes with a preinstalled IO9 card, which has a SCSI connector, an Ethernet port connector, one RTO (output) connector, and one RTI (input) connector.

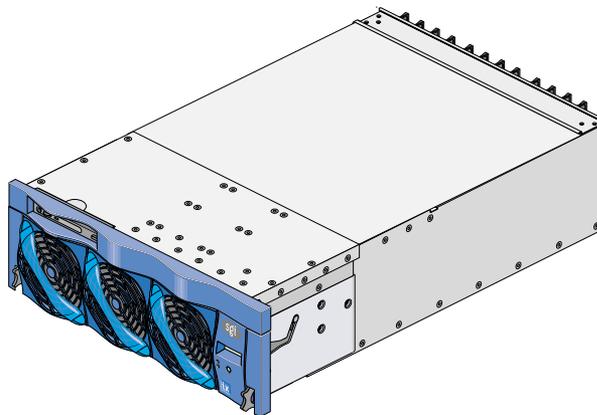
The IX-brick is an improvement on the I-brick, in that the IX-brick offers the following advantages:

- While the I-brick supports PCI cards, the IX-brick supports PCI-X cards also. PCI-X cards enable I/O devices to work more efficiently, which increases the sustained I/O bandwidth.
- The IX-brick in an Onyx 3000 graphics system comes preinstalled with a four-port USB PCI card. You can order an optional four-port USB PCI card for IX-bricks in Origin 3000 server systems. This PCI card, which is used for keyboard and mouse connections, is installed in the rightmost PCI/PCI-X slot (bus 6, slot 2).
- While the I-brick has only two serial ports, you can add an optional daughtercard to the IX-brick that adds two RS-232 serial ports to your system, for a total of four serial ports.

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**Note:** This daughtercard is always installed bus 1 slot 2, immediately to the right of the IO9 card. This daughtercard does not use any of the bus resources of the slot in which it is installed.

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**Figure 1** Front View of the IX-brick

Three PIC (PCI interface chip) ASICs are key components of the IX-brick architecture. The PIC ASICs support the following (see Figure 2 on page 4):

- Two 1200- or 800-MB/sec Crosstown2 XIO ports.

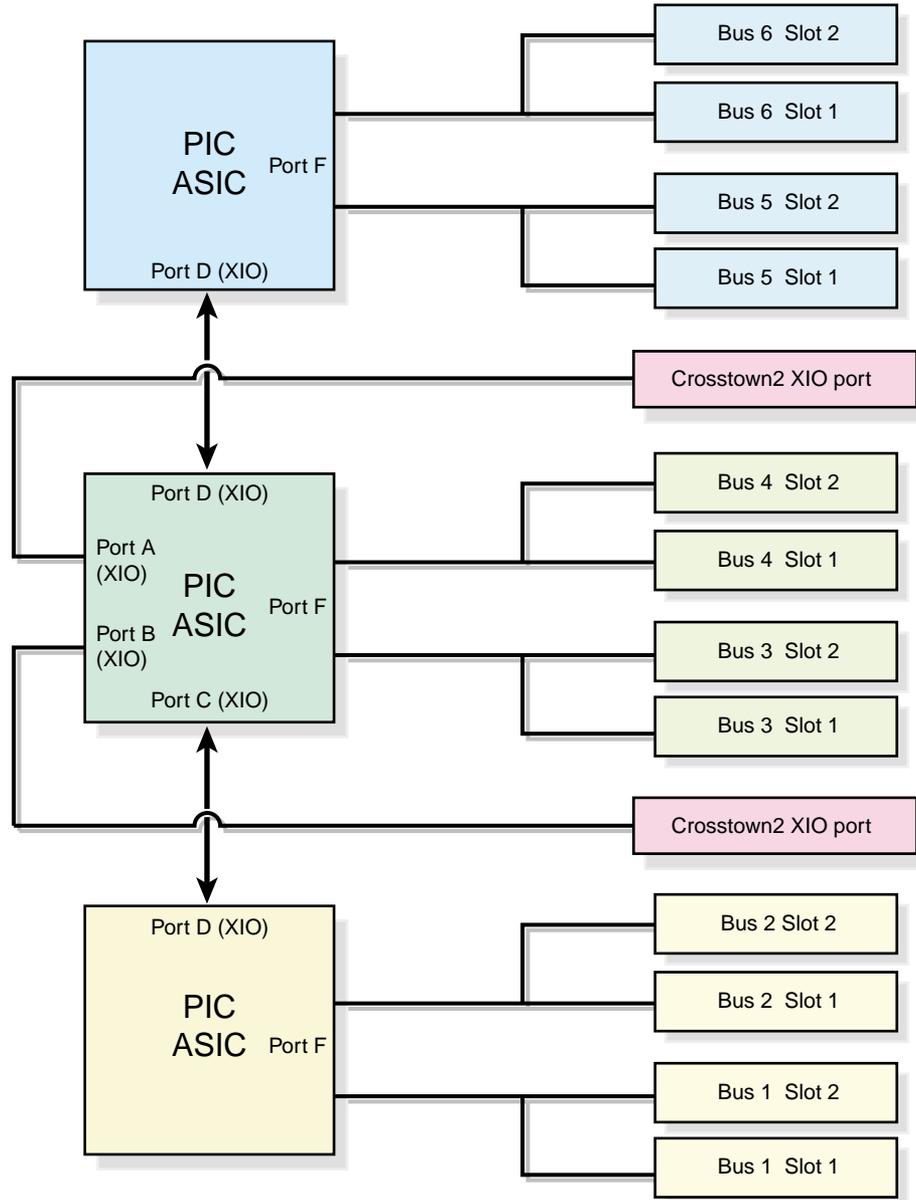
- Six PCI/PCI-X buses. Each bus has two card slots in which you can install PCI or PCI-X cards. (The leftmost slot, however, is unavailable for the installation of PCI or PCI-X cards because the slot comes with a preinstalled IO9 card.)

The IX-brick also includes an IO9 card with the following connectors (see Figure 3 on page 5):

- One external SCSI port connector.
- One internal SCSI port connector that connects to two SCSI disks.
- One Gigabit Ethernet connector.
- Two RT interrupt connectors (one input connector labeled **RTI**, and one output connector labeled **RTO**).
- Two RS-232 DB-9 serial port connectors. (These two connectors, which reside on the rightmost side of the IX-brick rear panel, are on a standard daughtercard that is internally connected to the IO9 card.)

You can also add an optional daughtercard to the IO9 card that adds two RS-232 DB-9 serial port connectors to the IX-brick (see Figure 3 on page 5) This daughtercard is always installed next to the IO9 card in bus 1, slot 2. (This daughtercard will be internally connected to the IO9 card.)

The IX-brick can also include a PCI card with four Universal Serial Bus (USB) type A connectors (see Figure 4 on page 6). This card comes preinstalled in IX-bricks in Onyx 3000 graphics systems. This card is an option in IX-bricks in Origin 3000 server systems. This PCI card is installed in the rightmost PCI/PCI-X slot (bus 6, slot 2).



**Figure 2** Block Diagram of Three PIC ASICs (IX-brick)

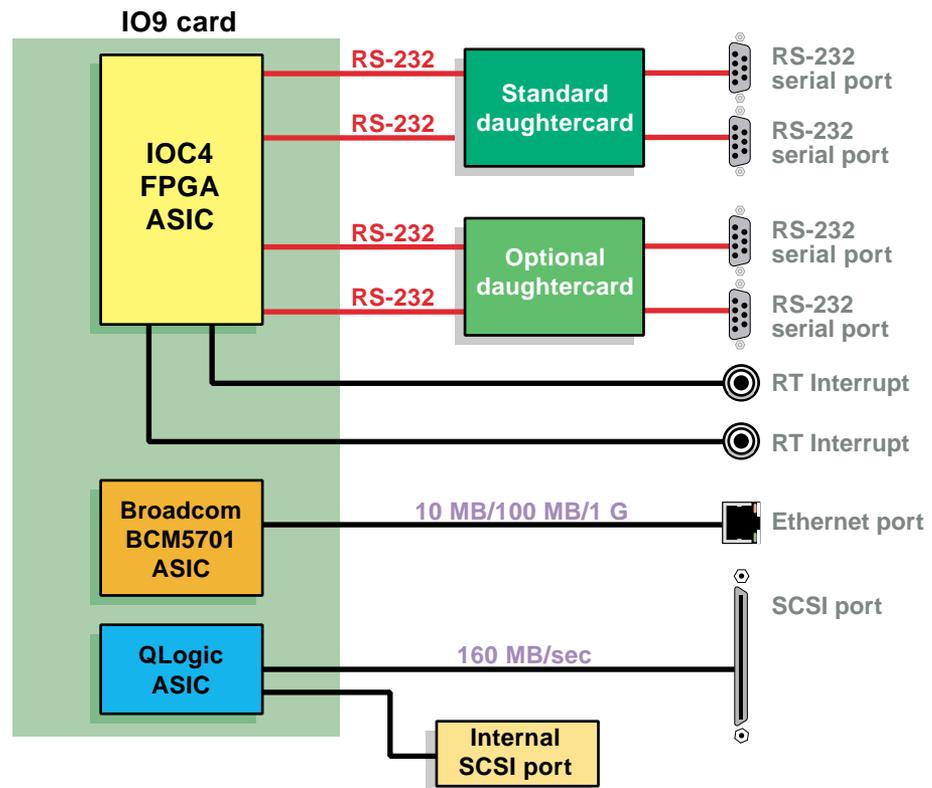
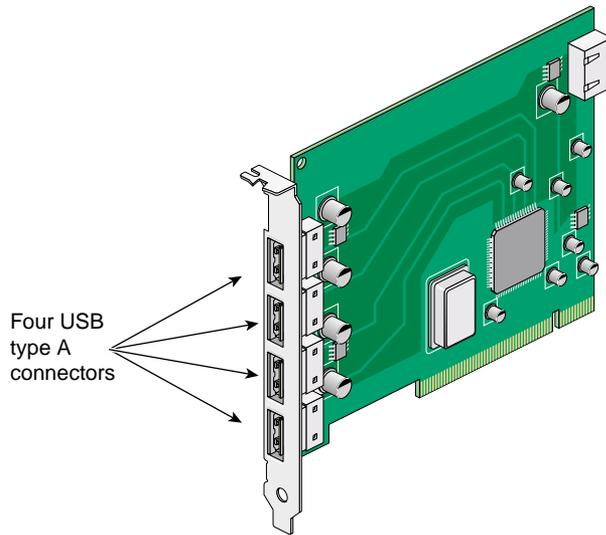


Figure 3 IO9 Card and Daughtercard Block Diagram



**Figure 4** PCI Card with Four USB Type A Connectors

## External Components

This section describes the external components, which are located on the front and rear panels of the IX-brick.

### Front Panel Components

The following are the front panel components of the IX-brick (see Figure 5 on page 8):

- **Two SCSI disk drives.** These customer-removable sled-mounted SCSI disk drives are used to house your operating system and other application software. (See “Installing and Removing SCSI Disk Drives” on page 22 for installation and removal instructions.)
- **DVD-ROM disk drive.** This drive is used to load software onto the SCSI disk drives of the IX-brick. (To be used for text read only.)
- **L1 controller and display.** The L1 controller generates IX-brick status and error messages that appear on the liquid crystal display (LCD).

**Note:** For more information about the L1 controller, see the *SGI L1 and L2 Controller Software User's Guide*.

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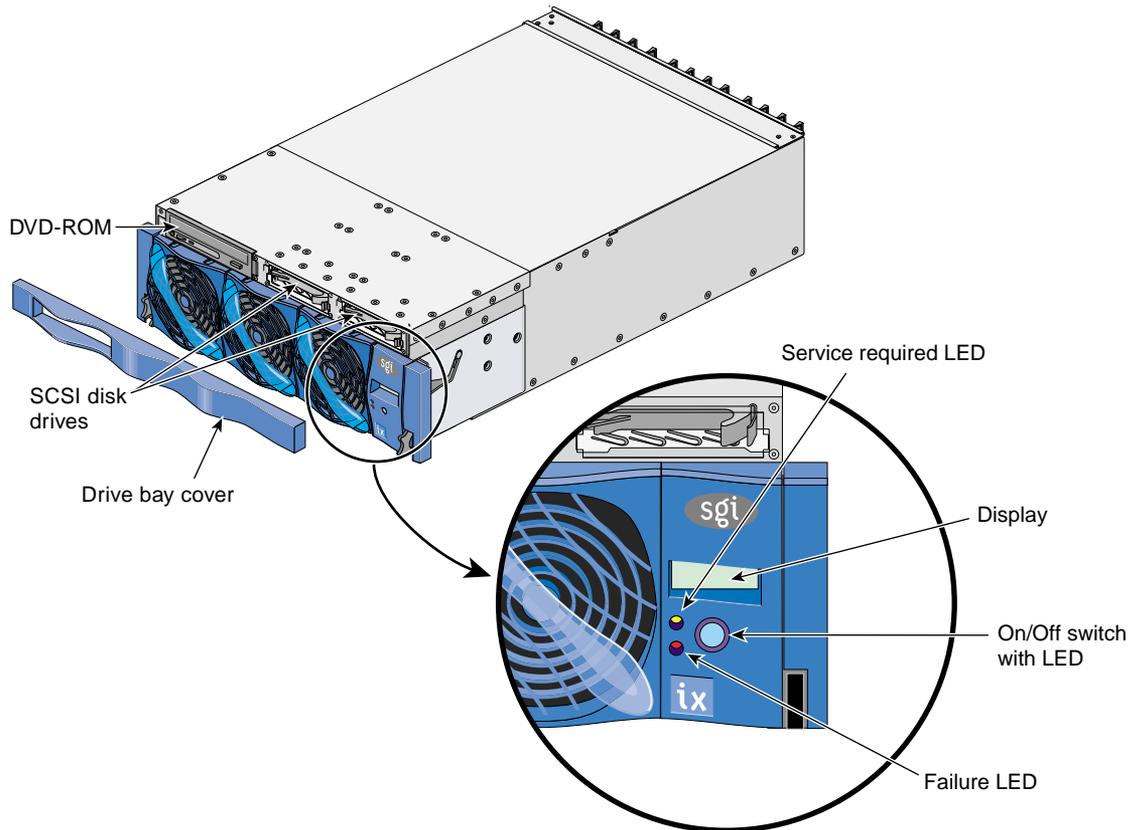
- **On/Off switch with LED.** Press this button with the green LED to turn on the internal components. Alternatively, you can turn on the internal components at an L2 controller display or at a system console.
- LEDs:
  - **On/Off switch LED.** This green LED lights when the internal components of the IX-brick are on, and it turns off when they are off.
  - **Service required LED.** This LED lights yellow to indicate that a component is broken or is not operating properly (for example, if a fan is off) but the IX-brick is still operating.
  - **Failure LED.** This LED lights red to indicate that a system failure has occurred and the IX-brick system is not operating.
- **Fans.** You have three hot-swappable fans to provide the required cooling for your IX-brick.



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**Warning:** To prevent personal injury, or damage to the IX-brick, the hot-swappable fans can be installed only by a trained SGI system support engineer (SSE).

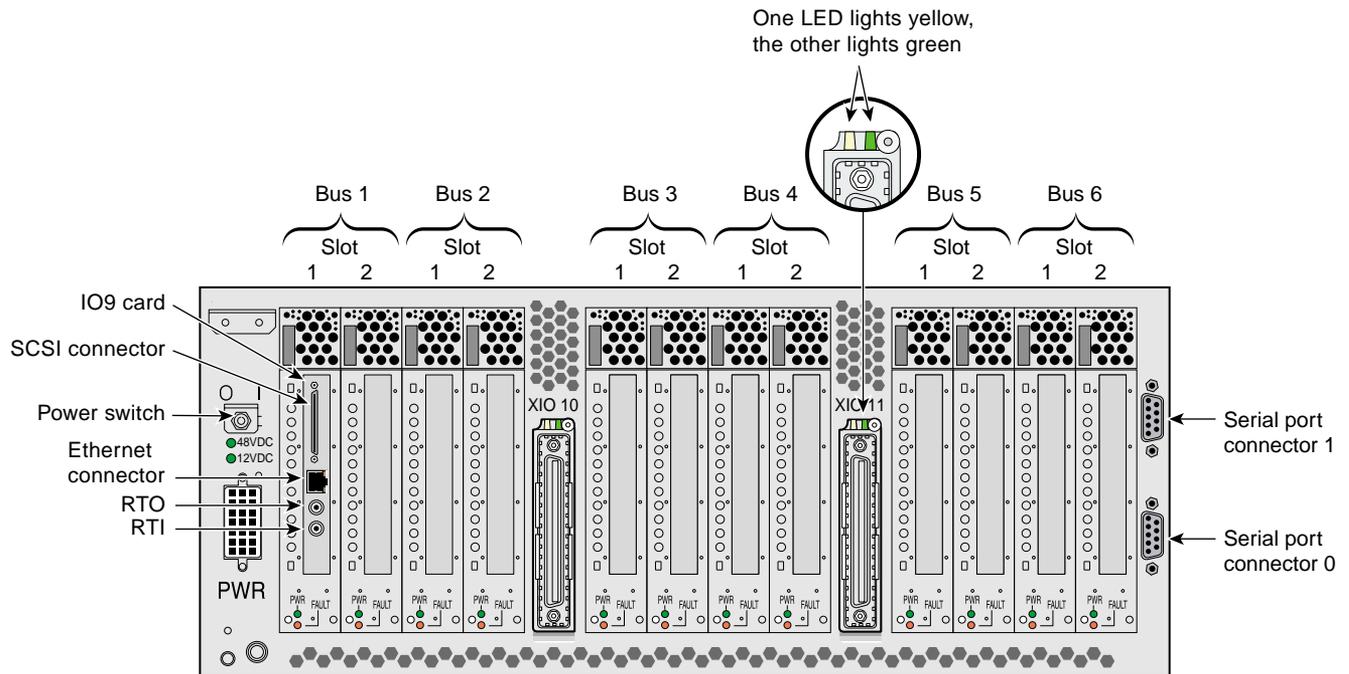
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**Figure 5** Front Panel of IX-brick

## Rear Panel Components

Figure 6 shows the location of the rear panel items of the IX-brick.



**Figure 6** Rear Panel of IX-brick

The rear panel has the following components:

- **Power switch.** Moving the power switch to the **I** position powers on the L1 controller of the IX-brick, and moving it to the **O** position powers off the L1 controller. Powering on the L1 controller lights the 12-VDC green LED.
- **12-VDC LED.** The 12-VDC green LED lights when the L1 controller is powered on and operating. The L1 controller is powered on by turning on the power switch.
- **48-VDC LED.** The power switch must be in the ON (**I**) position for this LED to light. This green LED lights when the rest of the IX-brick internal components are powered on and operating. The rest of the internal components are powered on by pressing the On/Off switch located on the front panel of the L1 controller. (The green LED on the On/Off switch lights when you power on the internal components.) These internal components can also be powered on via the L2 controller touch display or the system console.

- **Power connector.** This connector (labeled **PWR**) connects to the power bay to give power to the IX-brick.
- **PCI/PCI-X slots.** Use these slots to install or replace PCI or PCI-X cards in your system. See “Installing PCI and PCI-X Cards” on page 11. The card slots are numbered bus 1 through bus 6. Each bus has two slots, labeled 1 and 2, as shown in Figure 6.
  - **Power LED.** This LED (labeled **PWR**) lights green when the card carrier is installed securely and is getting power.
  - **Fault LED.** This LED lights yellow when a fault occurs with the PCI or PCI-X card.
- **XIO 10 and XIO 11 connectors.** Each connector can connect the IX-brick to one compute brick. As an option, the second connector can be connected to another compute brick to create a dual-ported IX-brick, which would provide greater bandwidth.
  - **XIO 10 and XIO 11 connector LEDs.** Each connector has an LED that lights yellow and an LED that lights green. One LED lights yellow to indicate that both the IX-brick and the compute brick to which it is connected are powered on. The other LED lights green when the IX-brick link to the compute brick is established.

The leftmost PCI/PCI-X slot has an IO9 card that has the following connectors:

- **RTO and RTI.** RTO (output) enables the compute brick to interrupt an external device. RTI (input) enables an external device to interrupt the compute brick.
- **Ethernet connector.** This connects the graphics system to an Ethernet network.
- **SCSI connector.** This connector allows the connection of SCSI devices to the system.
- **Two DB-9 RS-232 serial port connectors.** (These two connectors, which reside on the rightmost side of the IX-brick rear panel, are on a standard daughtercard that is internally connected to the IO9 card). These can be used as a COM port to connect modems or other serial devices.

An optional IO9 daughtercard can be added by an SGI system support engineer (SSE) to your IO9 card. This daughtercard uses one PCI/PCI-X card slot immediately to the right of the IO9 card (bus 1, slot 2), but it does not use the slot bus resources.

The optional daughtercard adds the following connectors to the IX-brick:

- **Two DB-9 RS-232 serial port connectors.** These can be used as COM ports to connect modems or other serial devices.

An IX-brick in an Onyx 3000 graphics system comes with a factory-installed USB PCI card. An optional USB PCI card can be ordered for an IX-brick in an Origin 3000 server system. This PCI card, which is installed in the rightmost (bus 6 slot 2) PCI/PCI-X slot, adds the following connectors to the IX-brick:

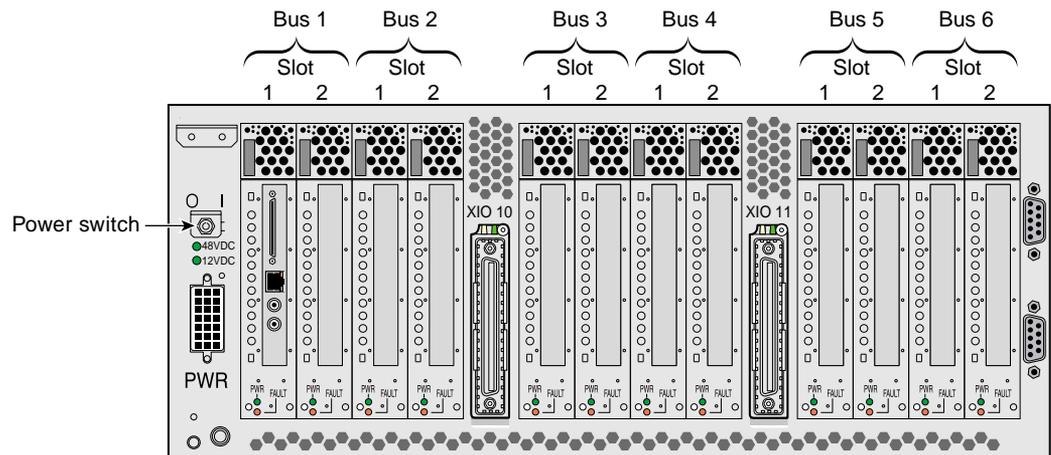
- **Four USB type A connectors.** These connectors are used to connect a keyboard and mouse. (Any connector can be used to connect a keyboard or a mouse.)

## Installing PCI and PCI-X Cards

The PCI and PCI-X card slots on the motherboard are numbered bus 1 through bus 6. Each bus has two slots, labeled 1 and 2, as shown in Figure 7. Separate buses enable the IX-brick to run cards of different frequencies at the same time. As a result, the same IX-brick can run 133-MHz, 100-MHz, 66-MHz, and 33-MHz cards at the same time.

The PCI/PCI-X bus supports both 32-bit and 64-bit PCI or PCI-X cards in the same bus at the same time.

For maximum bandwidth, PCI or PCI-X cards are distributed across all six buses when they are integrated at the factory.



**Figure 7** Numbering of IX-brick PCI and PCI-X Card Slots

To maximize the operating efficiency of PCI and PCI-X cards, you must consider the following during installation:

- Although you can install a PCI and a PCI-X card in the same bus at the same time, and install cards of different frequencies (for example, 33-MHz and 66-MHz cards) in the same bus at the same time, you should avoid doing so for the following reasons:
  - If you have a PCI card and a PCI-X card in the same bus at the same time, both cards will operate in PCI mode, thereby losing the capacity of the PCI-X card.
  - If you have two cards of different speeds in the same bus, both cards will operate at the lower speed. For example, if you have a 66-MHz and a 33-MHz card in the same bus, both cards will run at 33 MHz.
- To obtain optimum function from your cards, it is recommended that you install PCI and PCI-X cards in a bus in one of the following configurations:
  - One 133-MHz PCI-X card at 133 MHz.
  - Two 133-MHz PCI-X cards at 100 MHz.
  - Two 66-MHz PCI-X cards.
  - Two 66-MHz PCI cards.
  - Two 33-MHz PCI cards.
- The slot next to the IO9 card (bus 1, slot 2), which shares a bus with the IO9 card, is reserved to install an optional serial port daughtercard. To avoid slowing down the performance of the IO9 card, if you choose to install a PCI or PCI-X card instead of the daughtercard in the slot next to the IO9 card, you must install a card that runs at a frequency of 66-MHz or higher.
- If you need to change the mode or speed (MHz) of a bus to replace a card with a card of a different mode or speed, you must power off the IX-brick, install the replacement card, and then power on the IX-brick.
- PCI and PCI-X cards for which the system has the certified device drivers are hot-pluggable. (Contact your service representative to identify which cards are supported by certified device drivers.) If you are installing a hot-pluggable card, power off only the individual card slot in which you will add or replace the card, not the entire rack or IX-brick. Power off and power on the card slot with the `pciconfig` IRIX command. For details on using this command, type **man pciconfig** on your system console or see *IRIX Admin: System Configuration and Operation*.

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**Note:** PCI and PCI-X cards are hot-pluggable only in systems running IRIX operating system software. You cannot hot-plug PCI or PCI-X cards in systems running Linux operating system software.

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If you are installing a card that is not hot-pluggable, you need to shut down the operating system, power off the IX-brick, install or replace the card, power on the IX-brick, and then boot the operating system.

## Supported PCI and PCI-X Cards

SGI supports various PCI and PCI-X cards. These cards can be purchased from SGI or another manufacturer. Ask your SGI sales representative for a current listing of PCI and PCI-X cards supported by SGI.

## PCI and PCI-X Card Carrier

Each PCI or PCI-X card is mounted on a carrier so that you can slide the card into and out of the brick. This carrier, which can be adjusted to accommodate cards of different sizes, is designed to support most PCI and PCI-X cards. (To learn how to adjust a carrier, see the next section.)

When the IX-brick is shipped, any card that was ordered is installed with a carrier, and any unoccupied slot is populated with an empty carrier. A carrier must be present in an unpopulated slot to maintain an even airflow through the slot and to protect against electromagnetic interference (EMI).

## Adding or Replacing a Customer-Replaceable PCI and PCI-X Card

This section provides step-by-step instructions on how to add or replace a PCI or PCI-X card in the IX-brick. To maximize the operating efficiency of your cards, make sure that you have read all the introductory matter in “Installing PCI and PCI-X Cards” on page 11 before beginning the installation.



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**Warning:** Before installing, operating, or servicing any part of this product, read the “Safety Instructions” section in the appendix titled, “Regulatory Specifications and Safety Information” in your *SGI Origin 3000 Series Owner’s Guide* or *SGI Onyx 3000 Series Graphics System Hardware Owner’s Guide*.

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**Caution:** It is recommended that you use a grounding wrist strap while installing a PCI or PCI-X card.

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To add or replace a PCI or PCI-X card, follow these steps:

1. If the PCI or PCI-X card is hot-pluggable (if the system has a certified device driver for the card), using the `pciconfig` IRIX command, power off the card (the slot) in which you will add or replace the card. (For details on using the `pciconfig` command, type `man pciconfig` on your system console or see *IRIX Admin: System Configuration and Operation*.) Then proceed to step 2.

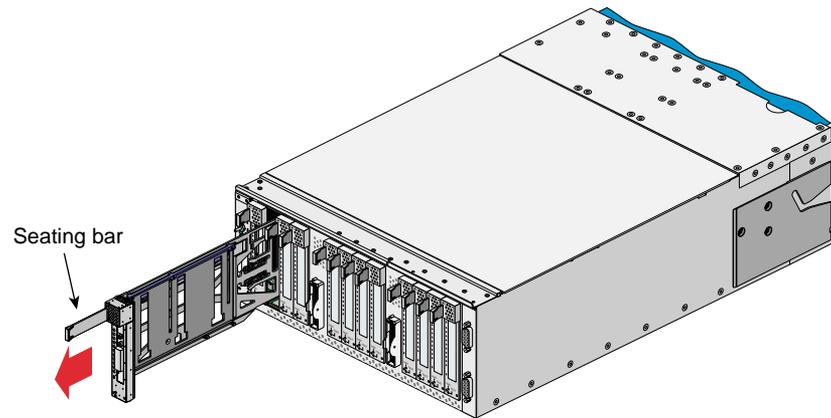
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**Note:** The PCI and PCI-X card slots are not hot-pluggable in systems running Linux operating system software.

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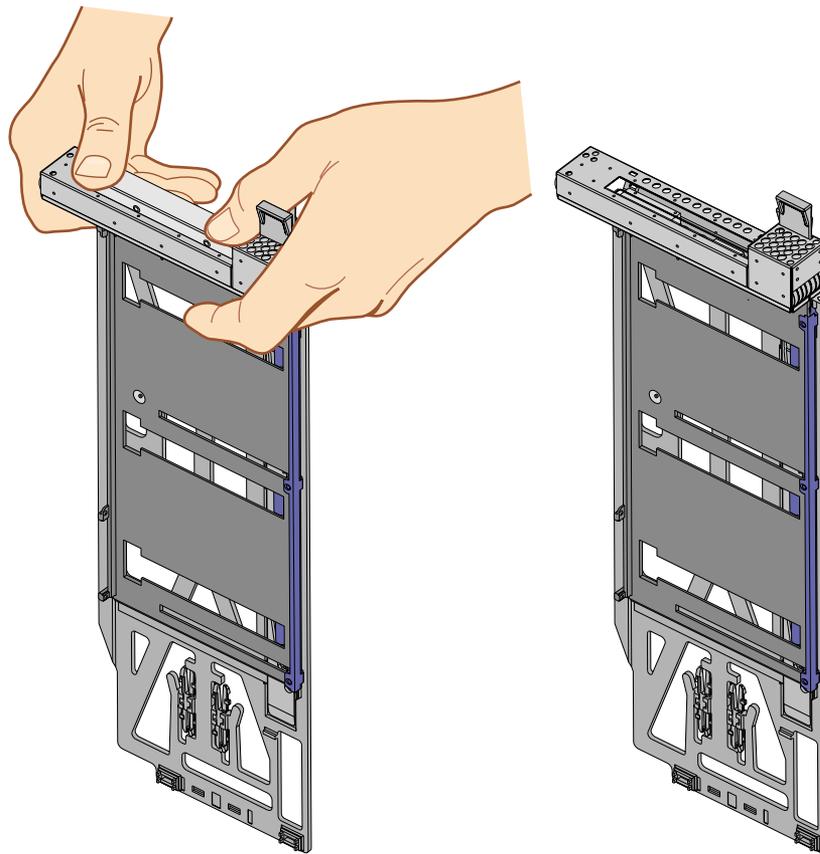
If the card is not hot-pluggable (if it does not have the required certified device driver or if the system is running Linux operating system software), or if you are replacing a hot-pluggable card with a card of a different speed, follow these steps:

- a. Shut down the operating system. (See your software guide if you need instructions for shutting down the operating system.)
  - b. Power off the IX-brick by following the power-off instructions in your *SGI Origin 3000 Series Owner’s Guide* or *SGI Onyx 3000 Series Graphics System Hardware Owner’s Guide*.
2. Pull the seating bar on the card carrier straight out to extract it from a slot, as shown in Figure 8.



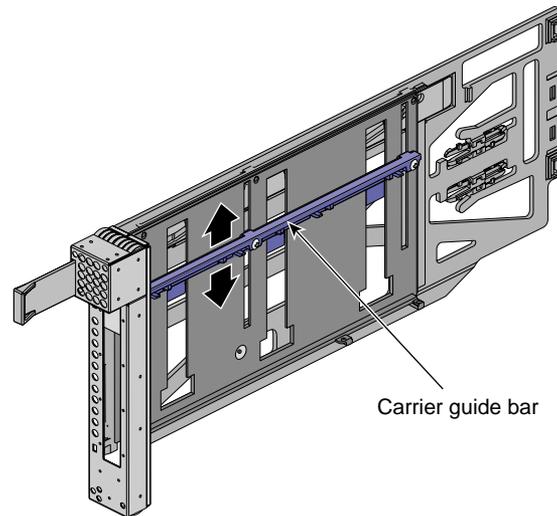
**Figure 8** Removing a Card Carrier

3. If you are replacing a card, gently pull the existing card from the carrier. If you are adding a card, extract the carrier metal filler plate by pushing down on it, as shown in Figure 9. This filler plate covers the area where your card connectors will protrude out to the rear panel of the IX-brick.



**Figure 9** Extracting the Carrier Metal Filler Plate

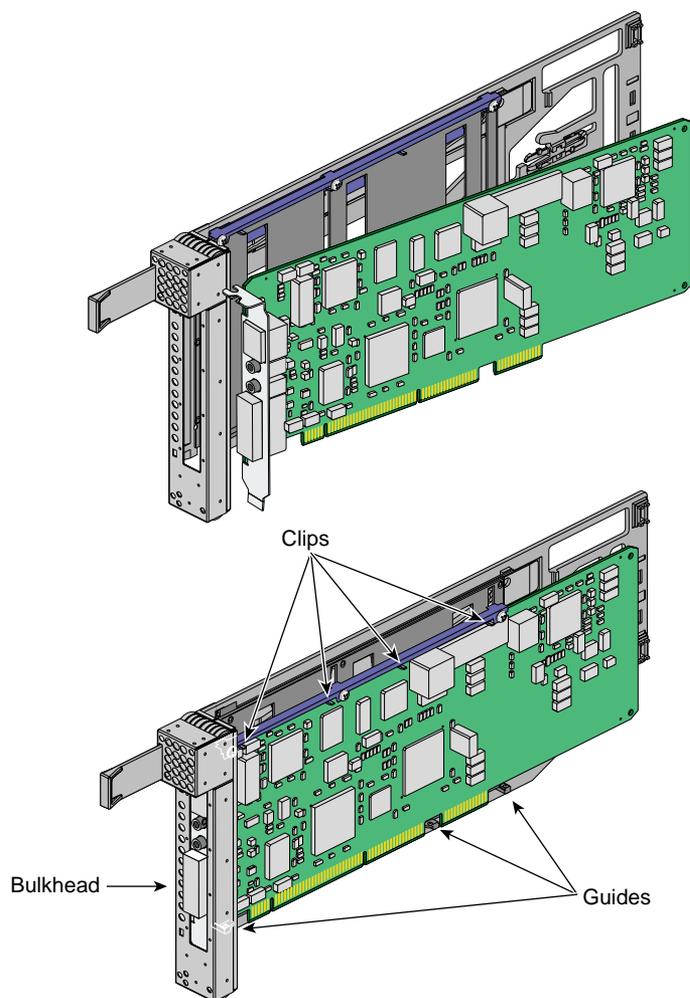
4. If the card you want to install does not fit the carrier, loosen the three screws on the guide bar with a Phillips screwdriver (if your carrier uses T8 Torx screws, you will need a Torx screw driver) and adjust the carrier guide bar (also known as the alignment rail) up or down as necessary (see Figure 10).



**Figure 10** Adjusting the Carrier Guide Bar

5. Mount the card in the carrier, as shown in Figure 11, so that the following occurs:
  - The card connectors protrude through the bulkhead where the metal filler plate was located.
  - The edge connectors fit between the bottom guides of the carrier.
  - The top of the card fits under the clips on the guide bar.

Tighten the three screws on the guide bar if necessary.



**Figure 11** Mounting Card in Carrier

If you want to install a half-height PCI card, do the following to secure the card to the carrier (if you are not installing a half-height PCI card, proceed to step 6):

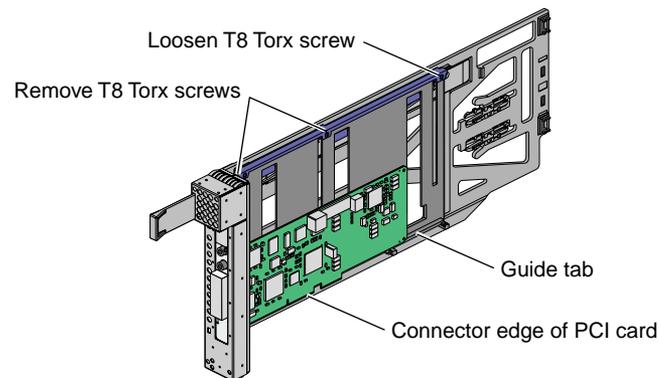
- a. Remove the two screws (T8 Torx screws or Phillips screws) from the carrier guide bar, as shown in Figure 12.

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**Note:** Be careful not to lose the threaded inserts in the carrier guide bar.

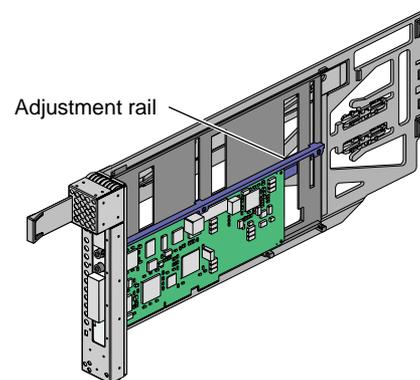
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- b. Loosen the third screw of the carrier guide bar.
- c. Place the half-height PCI card in the carrier so that the connector edge of the card rests against the lower guide tab of the carrier (see Figure 12).



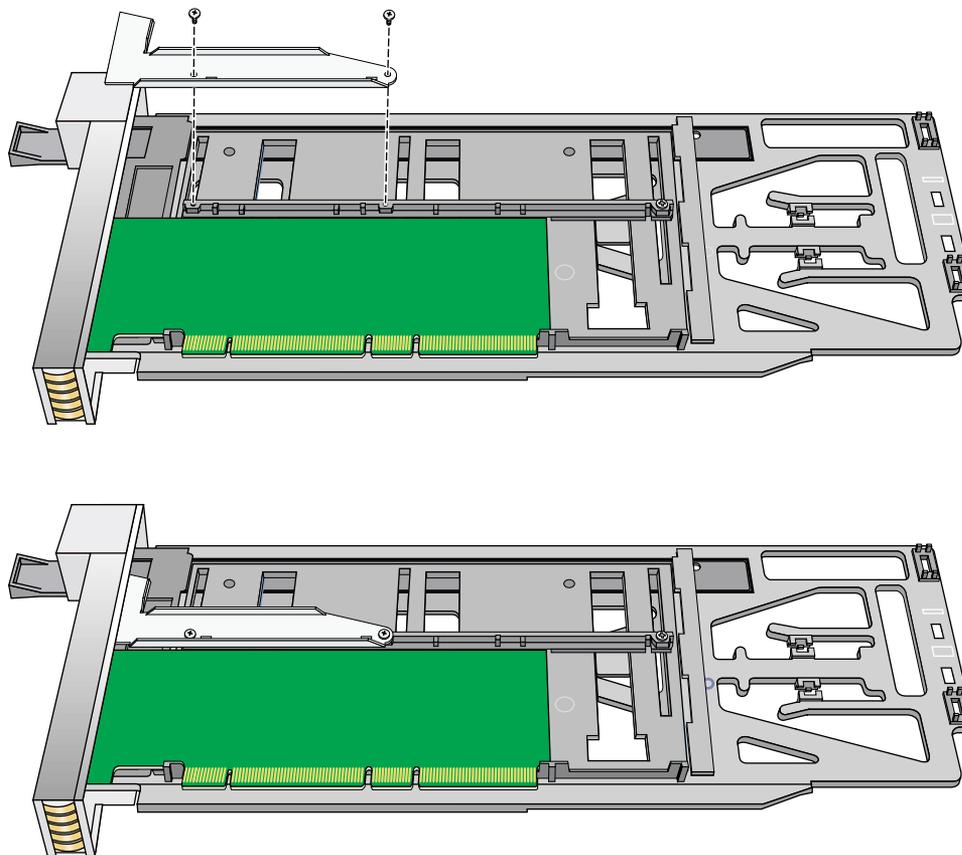
**Figure 12** Mounting Half-height PCI Card into Carrier

- d. Move the carrier guide bar (adjustment rail) so that it holds the card firmly in place (see Figure 13).



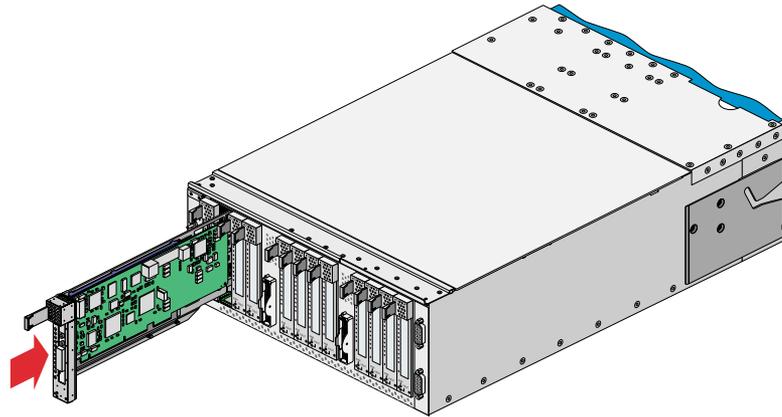
**Figure 13** Moving Carrier Guide Bar to Secure Half-height PCI Card

- e. Place the PCI card bracket so that the screw holes of the bracket align with the empty screw holes of the carrier guide bar, as shown in Figure 14.
- f. Secure the bracket to the carrier guide bar with two T8 Torx screws.



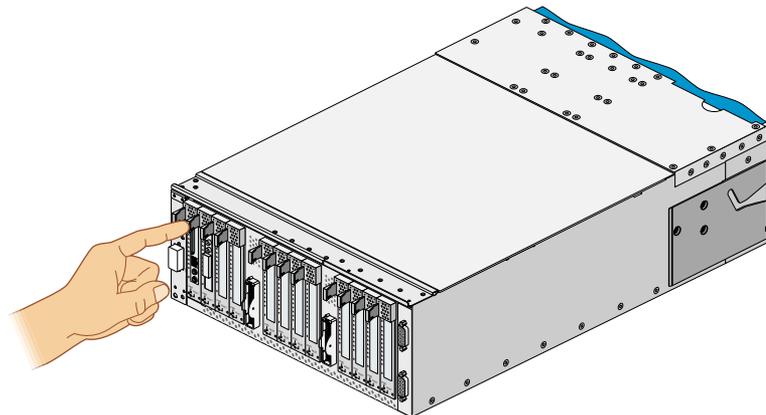
**Figure 14** Installing the Bracket to Secure a Half-height PCI Card

6. Insert the carrier that carries the card into the vacant slot, using the slot guide, as shown in Figure 15.



**Figure 15** Installing a Card in a Slot

7. Push horizontally on the seating bar, as shown in Figure 16, to seat the card securely in the slot.



**Figure 16** Seating the Card in the Slot

8. If the card is hot-pluggable, power on the card (slot) using the `pciconfig` IRIX command, and then proceed to step 9. (For details on using the `pciconfig` command, type `man pciconfig` on your system console or see *IRIX Admin: System Configuration and Operation*.) If the card is not hot-pluggable, power on the brick as follows:

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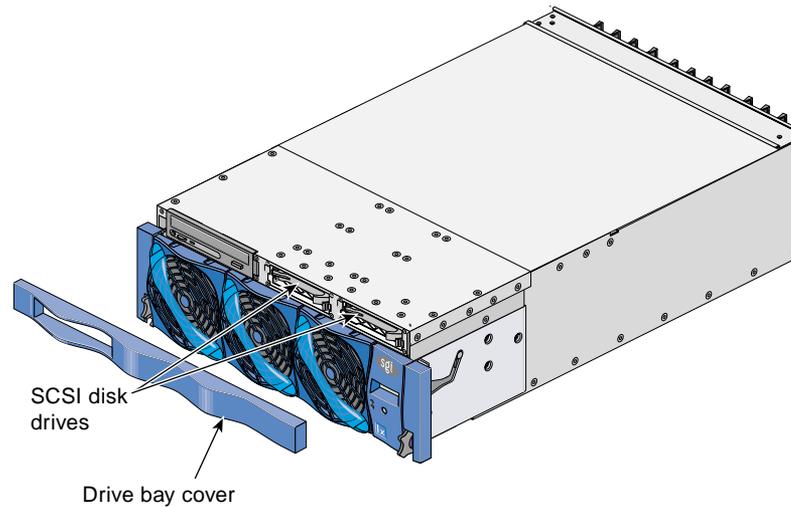
**Note:** The PCI and PCI-X card slots are not hot-pluggable in systems running Linux operating system software.

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- a. Power on the IX-brick by following the power-on instructions in your *SGI Origin 3000 Series Owner's Guide* or *SGI Onyx 3000 Series Graphics System Hardware Owner's Guide*.
  - b. Boot your operating system software. (See your software operation guide if you need instructions to boot your operating system.)
9. Run the `hinv` hardware inventory command to verify the installation. This command lists hardware that the operating system discovered during the boot operation.

## Installing and Removing SCSI Disk Drives

The IX-brick has two SCSI disk drives, as shown in Figure 17. This section describes how to install and remove SCSI disk drives.



**Figure 17** SCSI Disk Drives

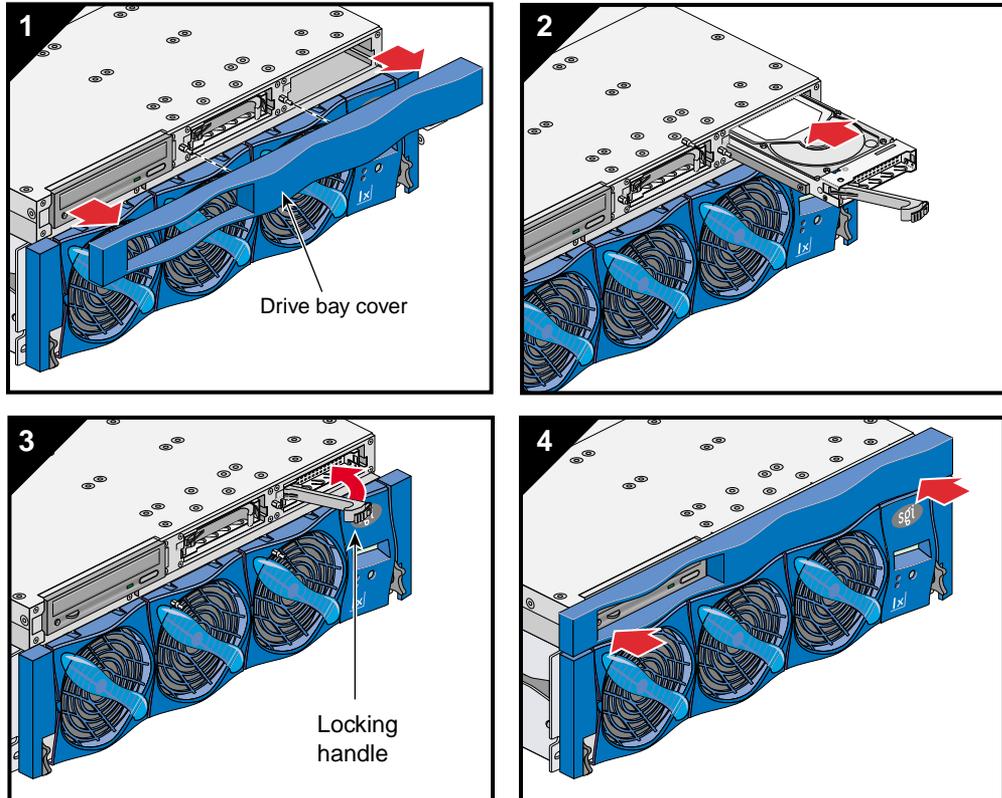
## Installing a SCSI Disk Drive

Before you install the SCSI disk drive, you must power off the IX-brick with the L2 controller touch display or at your system console, according to the instructions in your *SGI Origin 3000 Series Owner's Guide* or *SGI Onyx 3000 Series Graphics System Hardware Owner's Guide*.

To install a SCSI disk drive, follow these steps (see Figure 18):

1. Snap off the drive bay cover to access the two SCSI disk drive slots. (If you will install only one SCSI disk drive, it must be installed in the rightmost slot.)
2. Position the SCSI drive assembly so that it engages the bay guide rails, and gently push the drive into the bay. Do not use the locking handle to push the drive into the bay.
3. Swing the locking handle towards the chassis until the locking handle engages the latch.
4. Snap on the drive bay cover.

After you have installed the SCSI disk drive, power on the IX-brick with the L2 controller touch display or at your system console, according to the instructions in your *SGI Origin 3000 Series Owner's Guide* or *SGI Onyx 3000 Series Graphics System Hardware Owner's Guide*.



**Figure 18** Installing a SCSI Disk Drive

## Removing a SCSI Disk Drive

Before you remove the SCSI disk drive, you must power off the IX-brick with the L2 controller touch display or at your system console, according to the instructions in your *SGI Origin 3000 Series Owner's Guide* or *SGI Onyx 3000 Series Graphics System Hardware Owner's Guide*.

To remove a SCSI disk drive, follow these steps (see Figure 19):

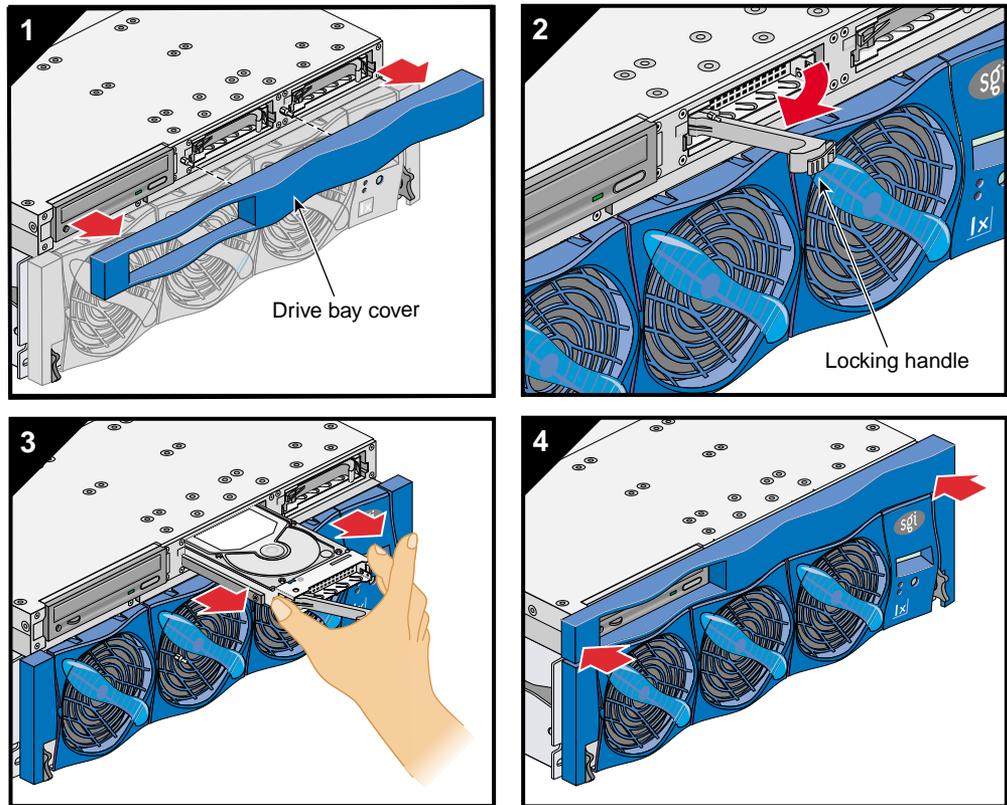
1. Pull off the drive bay cover to access the two SCSI disk drive slots, as shown in panel number 1 of Figure 19. (If you will have only one SCSI disk drive, it must be in the rightmost slot.)
2. Remove the drive by depressing its handle lock with your thumb and pulling the handle away from the chassis until the handle disengages the drive connector from the backplane connector.
3. Carefully slide the drive out of the bay and place it on an ESD-safe surface. Do not use the handle to pull the drive out of the bay.
4. Replace the drive bay cover.

After you have removed the SCSI disk drive, power on the IX-brick with the L2 controller touch display or at your system console, according to the instructions in your *SGI Origin 3000 Series Owner's Guide* or *SGI Onyx 3000 Series Graphics System Hardware Owner's Guide*.

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**Note:** If, after removing the SCSI disk drive, you want to install a SCSI disk drive, see "Installing a SCSI Disk Drive" on page 23 for instructions.

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**Figure 19** Removing a SCSI Disk Drive

## Technical Specifications

Table 1 lists the physical specifications of the IX-brick.

**Table 1** Physical Specifications of the IX-brick

Characteristics	Specifications
Height	6.64 in. (168.7 mm)
Width	17.5 in. (444.5 mm)
Depth	27.5 in. (698.5 mm)
Weight	65 lb (29.5 kg)
Input Power	+48 VDC

Table 2 shows the port specifications of the IX-brick.

**Table 2** Port Specifications of the IX-brick

Port	Quantity	Specification
Power entry	One	21-pin Foxcon
XIO	Two	1.2-GB/s each direction

The following connectors are located on the IO9 card:

SCSI	One external	68-pin VHDCI
Ethernet	One	RJ-45
RT interrupt input and output	One input and one output	Stereo jack

The following connectors are located on the standard preinstalled IO9 daughtercard (the connectors are located on the rightmost side of the rear panel of the IX-brick chassis):

Serial	Two	DB-9 RS-232 serial ports
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The following connectors are located on an optional IO9 daughter card:

Serial	Two	DB-9 RS-232 serial ports
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**Table 2** Port Specifications of the IX-brick **(continued)**

Port	Quantity	Specification
The following connectors are located on the USB PCI card:		
USB	Four keyboard and mouse connections	USB type A

## Pin Assignments

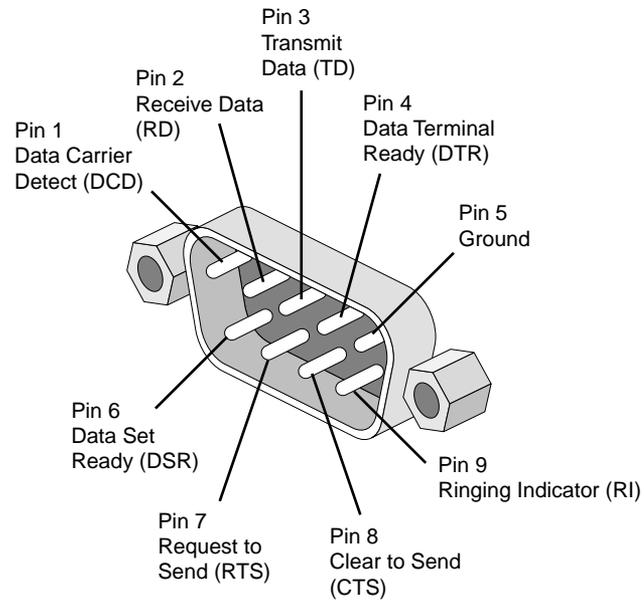
This section lists the pin assignment information for the non-proprietary IX-brick connectors listed in Table 3.

**Table 3** Pin Assignments for IX-brick Connectors

Connectors	Connector Type	Quantity	Pin Assignments
Serial RS-232 ports	DB9	Four	See Figure 20 on page 29
Ethernet port	RJ-45	One	See Figure 21 on page 30
External SCSI port	SCSI 68-pin VHDCI	One	See Figure 22 on page 30
RT interrupt input and output	Stereo jack	One input, One output	See Figure 23 on page 33
Four USB ports	USB type A	Four for keyboard or mouse	See Figure 24 on page 34

## DB-9 (Serial RS-232) Port Connectors

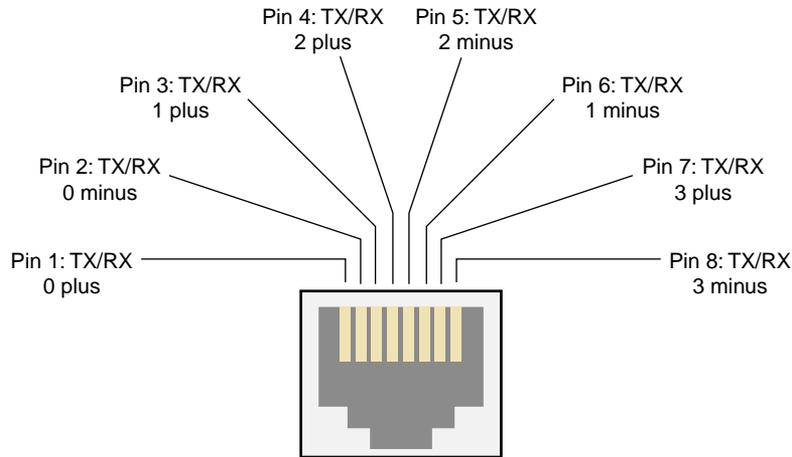
Figure 20 shows the pin assignments for the four DB-9 serial RS-232 port connectors. These connectors are used to connect serial devices such as modems.



**Figure 20** DB-9 Serial Port Connector Pin Assignments

## RJ-45 (Ethernet) Connector

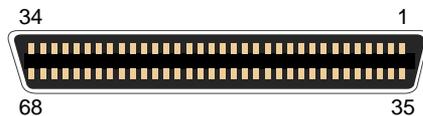
Figure 21 shows the pin assignments for the RJ-45 connector used to make Ethernet network connections. (In the following figure: TX equals transmit, and RX equals receive.)



**Figure 21** RJ-45 Connector Pin Assignments

## External SCSI Port Connector

Figure 22 shows the external SCSI VHDCI connector pin locations for the external SCSI connector on the rear panel of the IX-brick. Table 4 lists the pin assignments for these SCSI ports.



**Figure 22** External SCSI Port Pin Number Locations

**Table 4** SCSI VHDCI Pin Assignments

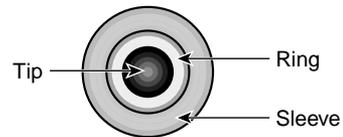
Pin Number	Signal Name	Pin Number	Signal Name
1	+DB (12)	35	-DB (12)
2	+DB (13)	36	-DB (13)
3	+DB (14)	37	-DB (14)
4	+DB (15)	38	-DB (15)
5	+DB (P1)	39	-DB (P1))
6	+DB (0)	40	-DB (0)
7	+DB (1)	41	-DB (1)
8	+DB (2)	42	-DB (2)
9	+DB (3)	43	-DB (3)
10	+DB (4)	44	-DB (4)
11	+DB (5)	45	-DB (5)
12	+DB (6)	46	-DB (6)
13	+DB (7)	47	-DB (7)
14	+DB (P0)	48	-DB (P0)
15	Ground	49	Ground
16	DIFSENS	50	Ground
17	TERMPWR	51	TERMPWR
18	TERMPWR	52	TERMPWR
19	Reserved	53	Reserved
20	Ground	54	Ground
21	+ATN	55	-ATN
22	Ground	56	Ground
23	+BSY	57	-BSY

**Table 4** SCSI VHDCI Pin Assignments **(continued)**

<b>Pin Number</b>	<b>Signal Name</b>	<b>Pin Number</b>	<b>Signal Name</b>
24	+ACK	58	-ACK
25	+RST	59	-RST
26	+MSG	60	-MSG
27	+SEL	61	-SEL
28	+CD	62	-CD
29	+REQ	63	-REQ
30	+IO	64	-IO
31	+DB (8)	65	-DB (8)
32	+DB (9)	66	-DB (9)
33	+DB (10)	67	-DB(10)
34	+DB (11)	68	-DB (11)

## Stereo Jack Connector Conductor

Figure 23 shows the stereo jack connector conductors for the RT interrupt input and RT interrupt output ports on the rear panel of the IX-brick. Table 5 lists the conductor assignments for the stereo jack connector.



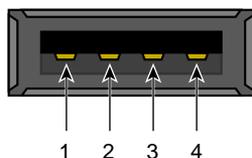
**Figure 23** Stereo Jack Connector Conductors

**Table 5** Stereo Jack Connector Conductor Assignments

Conductor	Function
Tip	Interrupt (active low)
Ring	+5 V
Sleeve	Chassis ground and cable shield

## USB Type A Connector

Figure 24 shows the USB type A connector pin number locations for the four USB connectors on the PCI card installed in the PCI/PCI-X slot on the rear panel of the IX-brick. Table 6 lists the pin assignments for the USB type A connector pins.



**Figure 24** USB Type A Connector Pin Number Locations

**Table 6** USB Type A Connector Pin Assignments

Signal	Color	Pin Number
VCC	Red	1
-Data	White	2
+Data	Green	3
Ground	Black	4

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