

FDDIXPress™ for Indy™ Installation Guide

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Introduction

Welcome to the world of fast communication with the FDDIXPress™ network connection for the Indy™ workstation. The Indy workstation is shipped with a built-in Ethernet networking connection, so FDDI can replace Ethernet as your Indy's network connection or be used in addition to Ethernet.

The *FDDIXPress Release Notes* document provides instructions for installing and configuring the software. You should read and follow the instructions in the release notes first.

This *FDDIXPress for Indy Installation Guide* shows you how to install your FDDIXPI™ (single-attachment board). The board and these instructions are designed so that you can install the board yourself; no special knowledge or tools are required.

The *FDDIXPress Administration Guide* covers station and software configurations. It also includes verification procedures for the FDDI connection and a glossary of FDDI terms. (For example, if you do not know what *FDDI* or *single-attachment* mean, you can look these terms up in the glossary to gain a better understanding of the equipment you are installing.)

Product Support

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Installing the FDDIXPI Board

This guide tells you how to install the FDDIXPI network board into your Indy workstation. You install this board only after you have set up your Indy workstation as either a standalone workstation or as an Ethernet station.

If your Indy workstation is not yet up and running, follow the instructions in the *Indy Workstation Owner's Guide* to bring the workstation to a functioning state. If an Ethernet connection is available, bring your Indy workstation up as an Ethernet node. Doing this first verifies that everything is working properly before you install the FDDIXPI board.

Caution: The components on the FDDIXPI board and the graphics board in the Indy workstation system are sensitive to static electricity. Handle all boards carefully, and use the wrist strap shipped with your FDDIXPI board to avoid any flow of static electricity.

The FDDIXPI Package

The FDDIXPI board is an optional network board shipped separately from your Indy workstation.

Your FDDIXPI package should contain all of the items listed below. If anything is missing, contact your sales representative.

- The FDDIXPI board inside an antistatic bag. Without removing the board from its bag, peek inside to verify that it is the one you ordered. A cable is attached to the board. The cable ends in a media interface connector (MIC) receptacle.
- A Phillips screwdriver.
- An antistatic wrist strap.
- A bag containing screws.

- A CD-ROM disk (or tape if specially ordered) containing the FDDIXPress software.
- This manual (*FDDIXPress for Indy Installation Guide*).
- The *FDDIXPress Release Notes*.
- The *FDDIXPress Administration Guide*.

And, if you ordered the optional optical bypass switch, you should have received it in a separate package.

Carefully follow all the steps in the following sections to install the FDDIXPI board.

Installing the FDDIXPI Board

The instructions for installing your FDDIXPI board and FDDIXPress software are divided into the three documents summarized below.

FDDIXPress Release Notes	Installing the software. Read this document first.
This guide	Installing the FDDIXPI board. Connecting the Indy workstation to the site's FDDI ring. Verifying the board's basic functionality.
FDDIXPress Administration Guide	Configuring the FDDI station and software. Verifying operation of the FDDI connection. Explaining terminology and operation.

The pull-down menus shown in the *FDDIXPress Administration Guide* may differ slightly on the Indy workstation. Additionally, when you use the command `/etc/autoconfig` on the Indy workstation, the system does not prompt you before reconfiguring the kernel.

Getting Ready

To prepare yourself and the Indy workstation for the FDDI board installation, follow these steps:

1. Verify that the following two statements are both true.
 - FDDIXPress software has been installed, following the instructions in the *FDDIXPress Release Notes*.
 - FDDIXPress has been configured, following the instructions in Chapter 2 of the *FDDIXPress Administration Guide* or the *FDDIXPress Release Notes*.

If both are true, proceed to the next step. If one or both are not true, follow the instructions in the appropriate document before proceeding.

2. Have the following items nearby:

- wrist strap
- Phillips screwdriver
- FDDIXPI board, still in its antistatic bag
- bag of screws

Shutting Down the System

To shut down your Indy workstation, follow these steps:

1. Press and release the power button on the front of the workstation, as shown in Figure 1-1, to power off the system. Note that it's not necessary to shut down the system software before pressing the power button.

A message that the system is shutting down appears on the screen within a few seconds, and the small light-emitting diode (called an LED) on the front panel blinks green and amber. The system powers off automatically within the next minute.

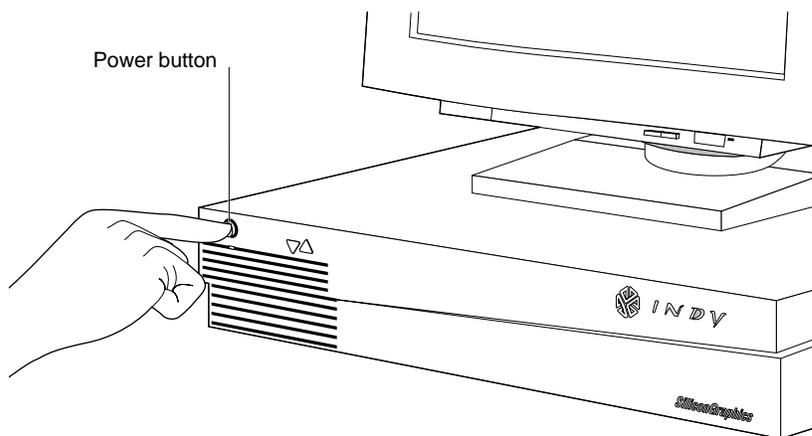


Figure 1-1 Shutting down the system

2. Disconnect all cables from the rear of the Indy workstation, as shown in Figure 1-2. You may wish to label the cables so you can reconnect them properly.

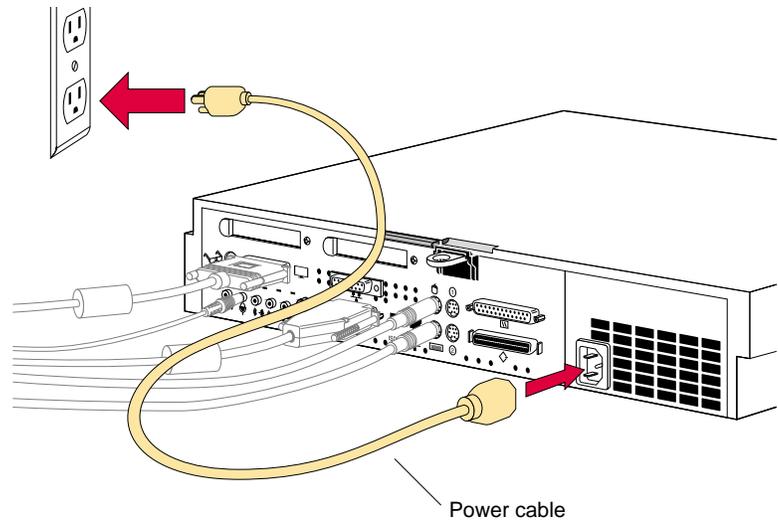


Figure 1-2 Disconnecting the cables from the rear of the Indy workstation

Warning: Make sure to disconnect the black power cable.
Electric shock can be hazardous!

Removing the Top Cover

Once you have shut down the system and disconnected all cables, follow these steps:

1. Remove the Indy workstation's top cover.
 - Facing the front of the Indy workstation, place your right thumb on the small channel at the back of the cover, and your second and third fingers under the finger ledge, as shown in Figure 1-3.
 - Snap the cover loose by bracing your thumb against the lip and pushing up the finger ledge with the second and third fingers, followed by a small push toward the front.
 - Slide the cover forward about one inch and remove it.

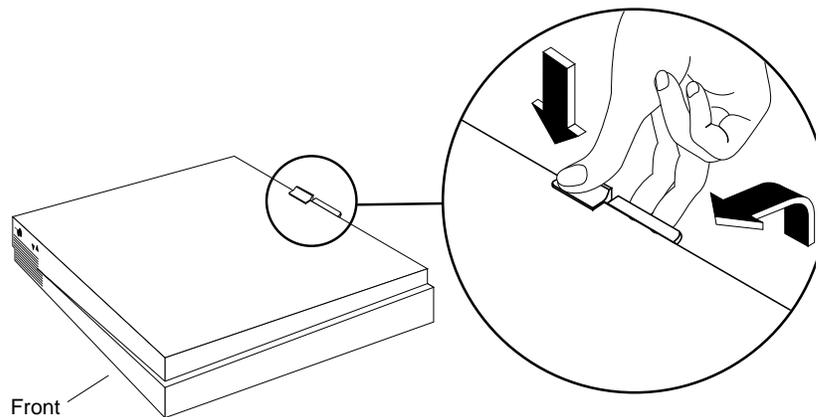


Figure 1-3 Removing the top cover of the Indy workstation

Installing the FDDIXPI Board

You will be installing the FDDIXPI board on the graphics board that is already installed in the Indy workstation. There is no need to remove the graphics board first.

Note: If you are replacing an existing option board with the FDDIXPI board, refer to the *Indy Workstation Owner's Guide* for instructions on removing the existing option board before installing the FDDIXPI board.

To install the FDDIXPI board, follow these steps:

1. Orient yourself as follows:
 - Move the system or position yourself so that you are facing the rear of the system as shown in Figure 1-4.
 - Locate the graphics board.

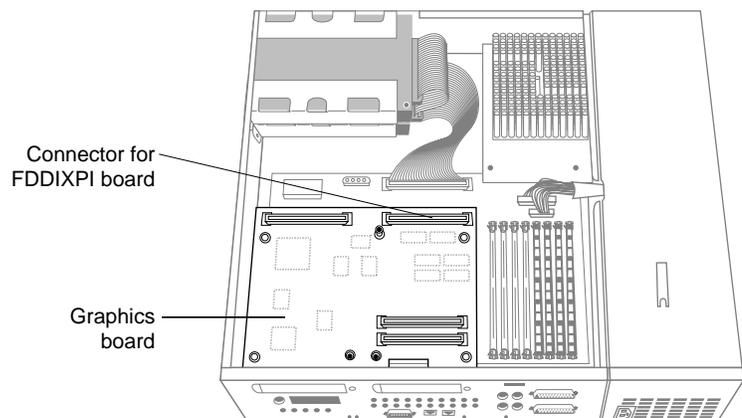


Figure 1-4 Locating the graphics board

2. Ground yourself to a metal part on the Indy workstation.
 - Put the wrist strap over your wrist, making sure that it's tight against your arm.
 - Attach its alligator clip to a metal part of the Indy workstation. The backplane of the chassis works well.

Caution: The graphics board is extremely sensitive to static electricity; you must wear the wrist strap while touching it. A properly used wrist strap prevents the damaging flow of static electricity.

3. Using the Phillips screwdriver provided, remove one screw from each of the two face plates covering the I/O slots for GIO option boards on the rear of the workstation, as shown in Figure 1-5. Save the face plates and screws in the event you remove and do not replace the board in the future.

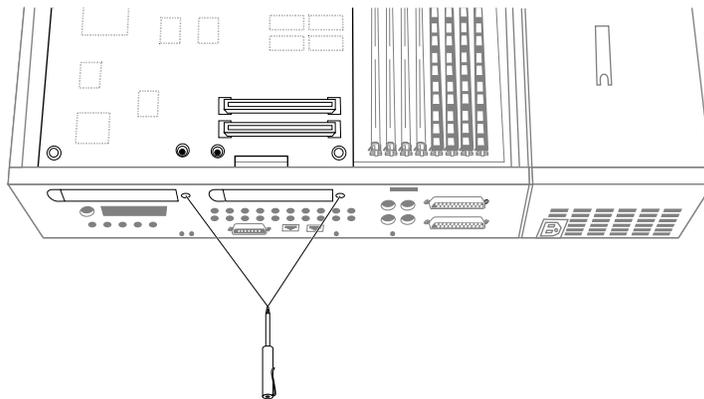


Figure 1-5 Removing the face plates from the I/O slots

4. Disconnect the cable from the FDDIXPI board, as shown in Figure 1-6.
 - Remove the FDDIXPI board from its antistatic bag and place it on top of the antistatic bag with the side with the chips facing up and the cable closest to you.
 - Place one hand on the board's metal I/O panel and with your other hand, grasp the cable connector and pull it toward you to disconnect the cable from the board.

Caution: Do not touch the white fiber optic material exposed at the ends of the FDDI cable. Do not leave the cable ends uncapped for long periods. Performance of the fiber optic cable can seriously degrade due to grease or dust.

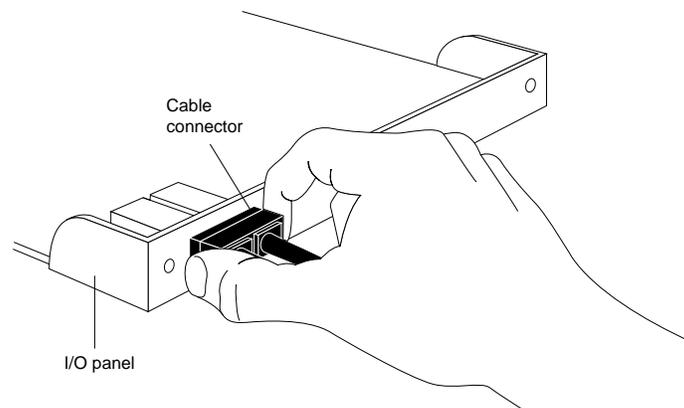


Figure 1-6 Disconnecting the cable from the FDDIXPI board

5. Position the FDDIXPI board over the graphics board, as shown in Figure 1-7.
 - Grasp the FDDIXPI board with the side with the chips facing up and the 96-pin male connector on the underside.
 - Lower the FDDIXPI board over the graphics board, inserting the FDDIXPI board's I/O connector through the open slot on the rear of the workstation.
 - Loosely place the FDDIXPI board on top of the graphics board so that the male connector on the underside of the FDDIXPI board matches the female connector on the graphics board, as shown in Figure 1-7.

Caution: The pins in the male connector are delicate. Gently wiggle or reposition the FDDIXPI board to fit the pins of the male connector into their slots in the female connector. Do not apply any pressure until the pins fit properly

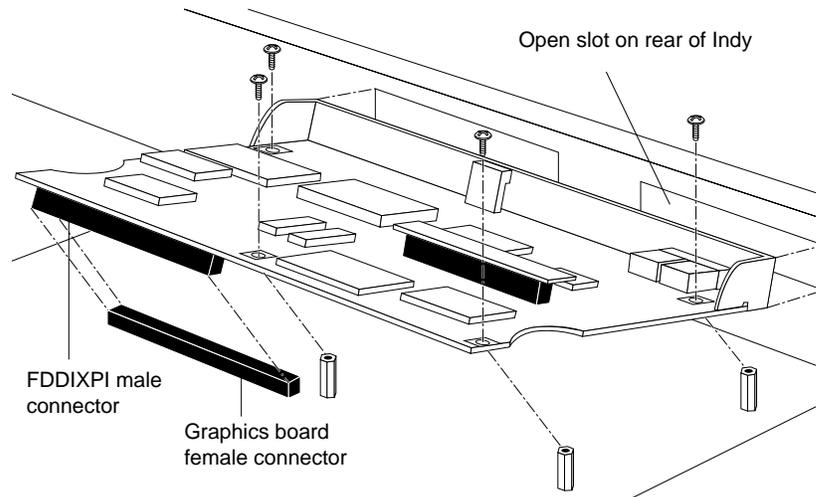


Figure 1-7 Positioning the FDDIXPI board over the graphics board

6. Press to seat the FDDIXPI board's connector into the graphics board's connector, as shown in Figure 1-8.
 - Place your fingers or thumbs on the FDDIXPI board above where the connector is located.
 - Press down gently but firmly until the two connectors fit snugly.

Caution: Do not press hard enough to bend the graphics board.

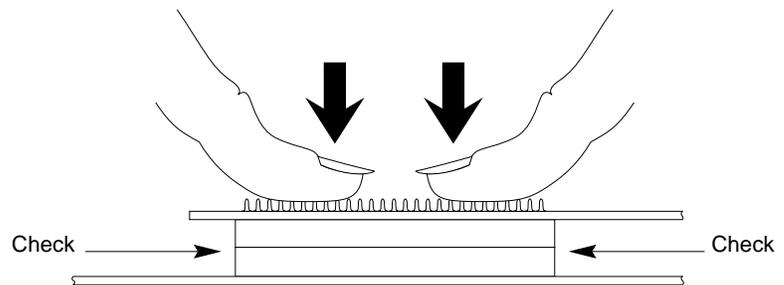


Figure 1-8 Pressing the FDDIXPI board into the connector on the graphics board

7. Verify that the FDDIXPI board is properly seated.
 - Look underneath the FDDIXPI board to see the 96-pin connectors. Due to the other components on the graphics board, it may be difficult to see the connectors. The male and female connectors must be touching along the entire shared surface, as shown in Figure 1-8. Be sure to check each end of the connection.
 - Check that each screw hole on the FDDIXPI board is sitting directly above a matching standoff (tall, hexagonal post) on the graphics board.

- Using the Phillips screwdriver and four of the screws from the plastic bag, secure the FDDIXPI board to the graphics board in the locations indicated in Figure 1-9. As you tighten the screws, alternate among them so that the boards are brought together gradually and evenly.

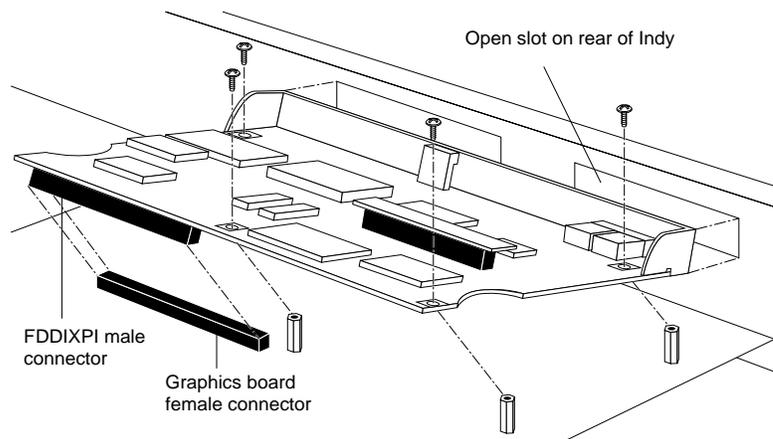


Figure 1-9 Attaching the FDDIXPI board to the graphics board

- Insert and tighten the remaining three screws provided with the board through the rear of the workstation, in the locations shown in Figure 1-10.

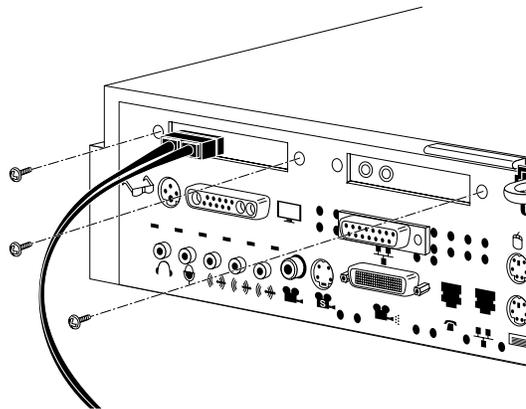


Figure 1-10 Inserting the screws through the rear of the workstation

10. Reconnect the cable to the board.

The FDDIXPI board has one FDDI port protruding through the I/O panel. The transmit (**TX**) line is the round hole within the port on the left and the receive (**RV**) line is on the right, as illustrated in Figure 1-11.

- Identify the end of the cable that connects to the board.
- Position the cable connector so the guiding ridges will slide into the slots on the board's connector.
- Slide the connector in until it clicks and will not slide farther.

The two lines making up the cable are marked with arrows indicating the signal's direction. The arrows on the cable should match Figure 1-11.

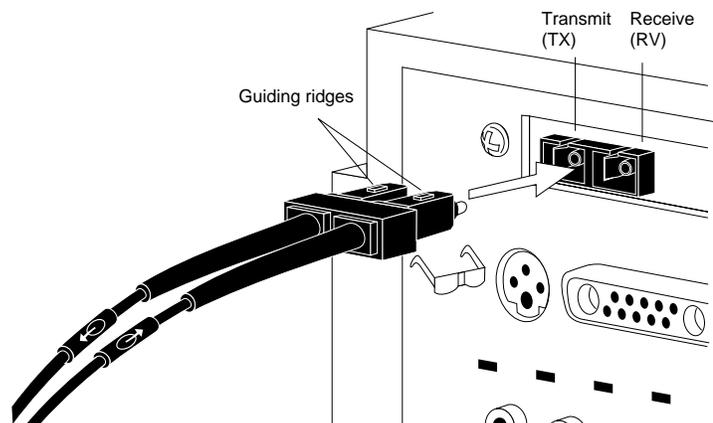


Figure 1-11 Connecting the cable to the FDDIXPI board

You are now ready to replace the top cover, reconnect all the exterior cables, and connect the Indy workstation to the site's FDDI ring.

Replacing the Top Cover and Reconnecting the Cables

To replace the cover of your Indy workstation and reconnect the exterior cables, follow these steps:

1. Facing the front of the system, lower the cover about one inch from its fully closed position, as shown in Figure 1-12.
2. Tilt the cover and insert the tab through the hole in the rear of the chassis.
3. Slide the cover toward the back of the chassis until it snaps into place.

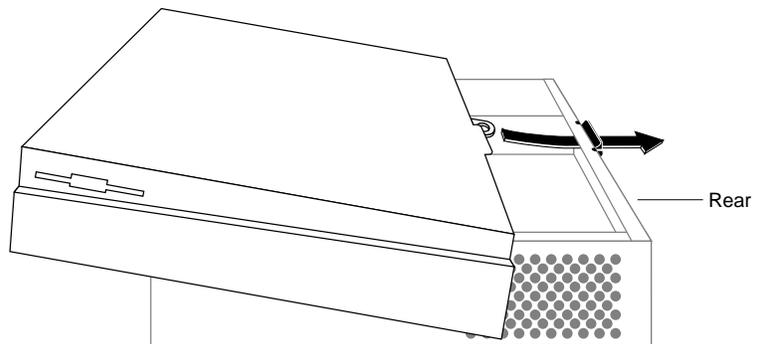


Figure 1-12 Replacing the top cover

4. Reconnect all the original exterior cables to the rear of the Indy workstation.

You are now ready to connect your Indy workstation to the site's FDDI ring.

Connecting the Indy Workstation to the Site's FDDI Ring

The FDDIXPI board will be attached to your site's FDDI ring as a Single-attachment Station (SAS).

Note: If the FDDIXPI board's cable becomes disconnected from the board, refer to page 13 for instructions to reconnect it.

Follow the instructions below to attach the Indy workstation to your site's FDDI connectors. If you need help locating the site's FDDI connectors, your site administrator can help you.

1. Remove the protective covering from the MIC (media interface connector) receptacle at the end of the FDDIXPI board's cable, as shown in Figure 1-13.
 - Identify the MIC receptacle (female connector) at the end of the cable.
 - Using the Phillips screwdriver, remove the screw that attaches the protective covering to the MIC receptacle.

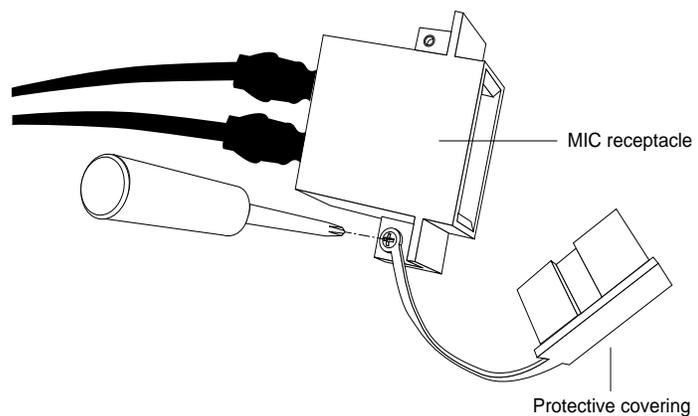


Figure 1-13 Removing the protective covering from the MIC receptacle

Caution: Do not touch the fiber optic material exposed at the ends of the FDDI cable. Do not leave the cable ends uncapped for long periods. Performance of the fiber optic cable can seriously degrade due to grease or dust.

2. Identify the male connector for your site's FDDI ring. This connector is part of your site's current equipment, not part of your order. The connector might be labeled **S** and it connects at the other end to an M-port on a concentrator.
3. Plug the FDDIXPI board's MIC receptacle into the site's connector. Push to snap the two together.

Verifying the Board's Functionality

The FDDIXPI board has two LEDs (small light-emitting diodes) that can be seen through the I/O panel on the back of the Indy workstation. The left LED signals green; the right one signals yellow. Different sequences and timings of the LED signals are used to indicate FDDIXPI board states.

To verify that the board is functional, do the following:

1. Turn on the power switch on the front of the Indy workstation, as shown in Figure 1-14.

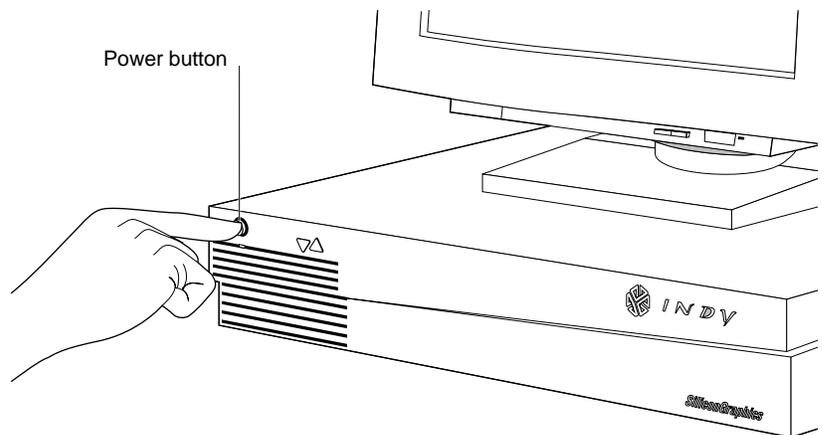


Figure 1-14 Turning on the Indy workstation

2. When the system restarts, look for the following message:

```
IRIX Release 5.1
Copyright 1981-1993 Silicon Graphics Inc.
All Rights Reserved
The system is coming up
Automatically reconfiguring the operating system
Reboot to start using the reconfigured kernel
```

If you are doing a first-time installation and do not see the "Automatically reconfiguring the operating system" message, something is wrong. (For example, the FDDIXPress software may not be installed.) Follow the instructions in the section "Recognition of Board by Software" of Chapter 4 in the *FDDIXPress Administration Guide*.

If the system does not restart, something is wrong with the Indy workstation or with the electrical supply.

- Check that the power cable is plugged into a working electrical socket and that it is seated firmly in its receptacle on the back of the Indy workstation.
 - If this does not solve the problem, follow the instructions in the "Troubleshooting" chapter of the *Indy Workstation Owner's Guide*. Do not proceed until the system restarts.
3. Log in. For more information on logging in, refer to the *Indy Workstation Owner's Guide*.
 4. Once you are logged in, from the System toolchest, select "Open Console."
 5. To become a superuser, from the Console window, type:

```
su
```

You may be prompted for a password.
 6. Use the *reboot* command to restart the system (a second time).

```
/etc/reboot
```

7. If the system does not restart, check the LEDs (small light-emitting diodes) on the FDDIXPI board.

The FDDIXP LEDs are located on the back of the Indy workstation, to the right of the FDDIXPI board's cable, as shown in Figure 1-15.

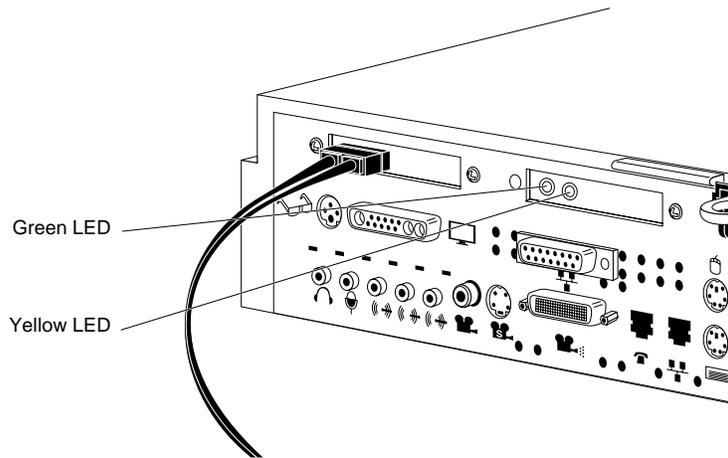


Figure 1-15 Locating the FDDIXPI board's LEDs

- Verify that the green FDDIXP LED is on and that the yellow LED is off most of the time. Each green flash indicates that the board has seen something on the ring; a solid green indicates heavy traffic.
 - If the yellow LED flashes a lot, something might be wrong. If this occurs, verify that you have installed the board correctly. Go to "Installing the FDDIXPI Board" on page 3 and make sure you completed all the steps.
8. Optional. You are ready to make your station's environment user-friendly and safe, as described in Chapter 2 of the *FDDIXPress Administration Guide*.
 9. Verify the FDDI connection, as described in Chapter 2 of the *FDDIXPress Administration Guide*.

xpi0: bad EDT entry

The Equipped Device Table (EDT) entry for the FDDIXPI board is incorrect. This is usually caused by conflicting or duplicate lines in the file */usr/sysgen/system*. Reinstall the software that was shipped with the board, then reboot the system to rebuild the operating system (kernel).

xpi0: bad firmware checksum

The firmware on the board has been corrupted; the driver calculated the checksum for the firmware and the calculation did not match the firmware's known correct checksum. Use *smtconfig* to disable then reenale the *xpi0* interface. If the problem persists, the board may need to be replaced. If so, contact Silicon Graphics' Technical Assistance Center.

xpi0: bad firmware version

The driver is not compatible with the firmware on the board. This error message is a problem only in the three situations listed below:

- when the message is displayed every time the system is rebooted
- when the system fails to load (write) new firmware onto the board immediately after it displays this message

Note: You know the system is writing new firmware when it displays the message `Warning: Writing EEPROM. Do not reset the system until finished.`
Finished.

- when the message is followed by other error messages

If any of the above three conditions occur, use *smtconfig* to disable then reenale the *xpi0* interface. If *smtconfig* cannot be invoked or if the problem persists, reinstall the FDDIXPress software for the FDDIXP board, invoke the command */etc/autoconfig* to rebuild the operating system, then reboot the system.

If this error message continues to be displayed, contact Silicon Graphics' Technical Assistance Center.

xpi0: bad MAC address ##.##.##.##.##.##

The driver considers the board's MAC (media access control) address invalid. The invalid value is displayed in canonical order and in hexadecimal format. Because of this problem, the driver has disabled the *xpi0* interface. Contact Silicon Graphics' Technical Assistance Center.

xpi0: bad MAC address checksum

The MAC (media access control) address, stored within the MAC chip on the board, has become corrupted. Contact Silicon Graphics' Technical Assistance Center.

xpi0: board asleep at *linenumber* with *curaddr* not *lstaddr*

The board is not responding. This does not indicate a problem during each restart of the system, and should be very infrequent during normal operation. Each time this message occurs during normal operation, the driver will attempt to reset the board. If the message appears only occasionally and the driver successfully resets the board and it functions, you do not need to do anything. If the message occurs frequently, or if the board does not function after the message has been displayed, the board may be defective. Contact Silicon Graphics' Technical Assistance Center.

xpi0: cannot handle address family

While attempting to send a packet, the driver encountered an unknown address family. The known address families are IP (inet family, which includes TCP and UDP), unspecified (for example, an ARP packet), and raw. Any other address will cause this error message to be displayed. The application that made the transmission request should be altered to use destination addresses for known address families. Nothing is wrong with the FDDIXP driver or board.

xpi0: duplicate EDT entry

The Equipped Device Table (EDT) entry for the FDDIXPI board is a duplicate. This is usually caused by conflicting or duplicate lines in the file */usr/sysgen/system*. Reinstall the software that was shipped with the board, then use */etc/autoconfig* to rebuild the operating system (kernel), and reboot the system to start running the new operating system.

`xpi0: ELM programming errors hexaddress`

While checking the status of the FDDIXP board, the system found a problem with the ELM chip. Contact Silicon Graphics' Technical Assistance Center.

`xpi0: failed to get MAC address`

The driver could not read the MAC (media access control) address from the board. The FDDIXPI board may not be firmly seated into the connector on the graphics board. Follow the instructions in Chapter 1 of this manual to reinstall the board. If the error message still appears, contact Silicon Graphics' Technical Assistance Center.

`xpi0: failed to reset`

The driver attempted to reset the board, but the board did not respond. Use `smtconfig` to disable then reenble the `xpi0` interface. If the message appears again, the board may not be firmly seated firmly into the connector on the graphics board. Follow the instructions in Chapter 1 of this manual to reinstall the board. If the error message still appears, contact Silicon Graphics' Technical Assistance Center.

`xpi0: failure`

The driver has determined that the board is dysfunctional. Contact Silicon Graphics' Technical Assistance Center.

`xpi0: digit false interrupts`

The driver has experienced the indicated number of unaccountable (false) interrupts. This may indicate that the board is malfunctioning. Contact Silicon Graphics' Technical Assistance Center.

`xpi0: FSI internal error`

While checking the status of the FDDIXP board, the system found and recovered from a problem with the FSI component. Contact Silicon Graphics' Technical Assistance Center.

`xpi0: impossible output checksum`

While attempting to calculate the checksum for a transmit packet, the driver encountered a protocol for which it does not perform checksumming. There is no malfunction; the packet was transmitted.

xpi0: MAC programming error *hexaddress*

While checking the status of the FDDIXP board, the system found a problem with the MAC (media access control) chip. Contact Silicon Graphics' Technical Assistance Center.

xpi0: missing

The operating system (kernel) has been configured with a driver for an FDDIXP board, but the board is not responding. The board may have never been installed, it may have been removed, it may be loose from its connection to the graphics board, or it may be dysfunctional.

If the board has not yet been installed, follow the instructions in Chapter 1 of this manual to install it.

If the board has been removed, the driver should be removed from the configured operating system (kernel). To do this, use the commands below :

su

This makes you a superuser. You may be prompted for a password.

Then use the following commands to rebuild the operating system:

/etc/autoconfig

/etc/reboot

If the board is installed, it may be loose. Follow the instructions in Chapter 1 of this manual to reinstall it. Take extra precautions to seat its connectors firmly. If this error message still appears, contact Silicon Graphics' Technical Assistance Center.

xpi0: present

When resetting the board, the driver found the board. This message does not indicate any problem.

FDDIXPI LEDs

This chapter describes the behavior of the two light-emitting diodes (LEDs) on the FDDIXPI board, for Indy workstations for which both of the following statements are true:

- the FDDIXP board and its FDDIXPress driver have been installed, and
- the driver has been built into the operating system and is available

Note: The driver is available (although not necessarily enabled or functional) whenever it is listed by the `/usr/etc/netstat -i` command. The driver is not available when the system is displaying the System Maintenance menu or the PROM monitor prompt, or when the network interface is not listed by the `/usr/etc/netstat -i` command. (Failure by `netstat` to list an installed interface may indicate that the system has not been rebooted.)

Description of LED Signals

This section describes situations that cause each LED to turn on and off.

1. The green LED flashes when the MAC (media access control) component on the FDDIXP board is sending or receiving packets. When the number of packets being processed is large, the LED will appear to be steadily on because it is flashing faster than the human eye can distinguish.

The green LED turns on when power is supplied to the board and each time the board is reset. Within seconds of the reset, the board's firmware turns the LED off and the driver controls the LED as described above. The green LED can be steadily on if the firmware on the board is not functioning properly or if the board has become badly dysfunctional.

2. The yellow LED flashes each time the state of the ring makes the transition from operational (`RINGOP`) to nonoperational. The ring becomes nonoperational whenever the MAC component on the FDDIXP board has not seen a token in a recent fraction of a second or when the valid transmission timer (TVX) has expired. Situations that cause the ring's state to become nonoperational include, but are not limited to, the following:

- No connection to the ring.

On an SAS (Single-attachment Station), one of the fiber lines within the cabling between the FDDIXP board and the concentrator is disconnected or broken. This could be caused by MICs (media interface connectors) that have not been snapped firmly together.

- A completely quiet ring (no token and no packets), which implies that not even the local station is issuing a token.
- The MAC component on the FDDIXP board is not active.

This could be caused if the board has been reset so many times that the setting for `max_flops` (maximum number of resets allowed in the SMT daemon configuration file) was reached. When this occurs, the driver turns the MAC off.

- The FDDI network interface has been disabled or was not enabled during startup. (An improperly configured network interface may not be enabled during startup.)

The yellow LED turns on when power is initially supplied to the board and each time the board is reset. Within seconds of the reset, the board's firmware turns the LED off and the driver controls the LED as described above. The yellow LED can be steadily on if the firmware on the board is not functioning properly or if the board has become badly dysfunctional.

Instructions for Troubleshooting with LEDs

Use this section to troubleshoot the FDDIXP board. Each combination of LED signaling behavior is listed below with an explanation of what the signals indicate about the board.

- GREEN LED is steadily on or intermittently flashing
YELLOW LED is off

Normal operation. The board has passed its on-board diagnostics, the driver has successfully written the EEPROM, and the board is sending or receiving packets from the ring. Steady green indicates that the board is sending or receiving a large number of packets.

- GREEN LED is off (for more than two minutes)
YELLOW LED is off (for more than two minutes)

The FDDIXP board may not be seated properly in the slot connector on the graphics board. Go to Chapter 1 of this manual and reinstall the FDDIXP board, taking extra care to seat the male connector on the underside of the FDDIXP board into the female connector on the graphics board.

Note: If you have already done this step once before and the problem persists, the board might be defective. Contact Silicon Graphics' Technical Assistance Center to report a defective FDDIXP board.

- GREEN LED is steadily on
YELLOW LED is steadily on

Two problems can produce this symptom: the ring is going from operational to nonoperational very quickly or the board's firmware is not functioning.

To verify the health of the ring, do the following:

1. To become a superuser, enter:

```
su
```

2. To make sure the FDDI network interface is enabled, enter:

```
/usr/etc/smtconfig xpi0 down up
```

3. Look at the messages displayed on the Indy's monitor during startup for `xpi0` error messages. If you find any, look them up in Chapter Two of this manual.

4. Follow the instructions in the *FDDIXPress Administration Guide* to verify the FDDI connection.

To verify the board's firmware, do the following:

1. Reboot the Indy workstation to give the driver an opportunity to reload the firmware.
 2. If the problem persists, reinstall the FDDIXPress software. Then use `/etc/autoconfig` to rebuild the operating system and reboot the Indy workstation to start using the new operating system.
 3. Look at the messages displayed on the Indy's monitor during startup for `xpi0` error messages. If you find any, look them up in Chapter Two of this manual.
 4. If the problem continues, contact Silicon Graphics' Technical Assistance Center to report a defective FDDIXP board.
- GREEN LED is off (for more than two minutes)
YELLOW LED is steadily on

The board has not transitioned to an operational state (that is, the state of the ring is not `RINGOP`). This may indicate that the FDDI network interface is disabled (that is, `OFF` or not enabled at startup due to improper configuration) or that a cable connection is faulty or disconnected.

Perform the following steps:

1. To become a superuser, enter:

```
su
```

2. To stop and restart the FDDI network interface, enter:

```
/usr/etc/smtconfig xpi0 down up
```

3. If the green LED does not start flashing, verify all the cable connections, starting at the Indy's I/O panel and ending at the connection to the dual ring or concentrator.

4. Use the command below to verify that the FDDI network interface (*xpi0*) is UP and is configured properly. The displayed address must be an IP address for your site's FDDI network. An asterisk next to the interface (for example, *xpi0**) indicates that the interface is disabled.

```
/usr/etc/netstat -in
```

If the green LED still does not flash, the board may be defective. Contact Silicon Graphics' Technical Assistance Center to report a defective FDDIXP board.

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