



*Unpacking and
Installing Your
Domain
Personal
Workstations
and Servers*

007857-A01

apollo

Unpacking and Installing Your Domain Personal Workstations and Servers

Order No. 007857-A01

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WARNING: This equipment generates, uses, and may emit radio frequency energy and, if not installed and used in accordance with these instructions, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Canadian Department of Communications (CDC)

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the Radio Interference Requirements of the Canadian Department of Communications.

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This product has been tested and found to comply with the limits for a Class A computing device pursuant to VDE 0871/6.78. Compliance to these regulations depends on the use of shielded cables. It is the user who is responsible for procuring the appropriate cables.

Emissions Regulation Compliance

Any third-party I/O device installed in a Domain® Personal Workstation must be in accordance with the requirements set forth in the preceding Emissions Regulations statements. In the event that a third-party noncompliant I/O device is installed, the customer assumes all responsibility and liability arising therefrom.

The 802.5 Network Controller-AT requires shielded cable to comply with emission limits.

Installation Notice

Products designated in the Apollo® applicable price list as customer-installable can be installed by computer-knowledgeable customers who carefully read and follow the instructions in this manual. Customers who elect to have the product installed by our field personnel will be charged the applicable Field Installation Charge (FIC), as covered under the standard terms and conditions. For more information, please contact your local sales representative.

Please refer to the *Release Document(s)* for additional information that we may not have been able to include in this manual at the time of its publication.

Warnings and Cautions

WARNING: Lifting the system unit or the monitor requires more than one person because each unit weighs more than 40 pounds (18 kilograms).

WARNUNG: Zum Anheben des Gerätes oder des Bildschirms wird mehr als eine Person benötigt, da jede Einheit mehr als 18 Kilogramm wiegt.

ADVERTISSEMENT:

S'assurer que plusieurs personnes soulèvent l'unité ou le moniteur, car chaque unité pèse plus de 18 kilogrammes.

WARNING: To avoid personal injury and to prevent possible equipment damage, ensure that the ac power is off and the ac power cord is disconnected.

WARNUNG: Um Verletzungen und mögliche Ausrüstungsschäden zu verhindern, muß die Wechselstromquelle ausgeschaltet sein und das Wechselstromzuführungskabel aus der Steckdose entfernt sein.

ADVERTISSEMENT:

Pour éviter les risques de blessures et de dommages au matériel, s'assurer que le système n'est pas sous tension et que le fil d'alimentation électrique c.a. est débranché.

WARNING: Disconnect power plug from wall outlet or source power before moving or removing the device, or installing add-on components.

WARNUNG: Entfernen Sie die Stromzuführung von der Steckdose oder der Stromquelle bevor Sie das Gerät bewegen, abbauen, oder zusätzliche Bauteile installieren.

ADVERTISSEMENT:

Débrancher la fiche de la prise de courant ou de la source d'alimentation électrique avant de déplacer ou de retirer l'unité, ou avant d'installer des modules supplémentaires.

WARNING: Removing device cover may expose sharp edges in equipment chassis. To avoid injury, use care when installing customer add-on devices.

WARNUNG: Das Entfernen der Geräteabdeckung legt die scharfen Kanten im Inneren des Gerätes frei. Um Verletzungen zu vermeiden, seien Sie vorsichtig beim Einbau von zusätzlichen Bauteilen, die vom Kunden selber eingebaut werden können.

ADVERTISSEMENT:

Des bords tranchants du châssis de l'équipement peuvent être exposés quand le cache de l'unité n'est pas en place. Pour éviter des blessures, faire très attention lors de l'installation de modules supplémentaires par le client.

CAUTION: System damage will occur if the voltage selection switches are set incorrectly. See pages 26, 28.

VORSICHT: Systemschaden ist unvermeidlich, falls die Volt-Wahlschalter falsch eingestellt sind. Siehe Seiten 26, 28.

ATTENTION: Le système sera endommagé si les sélecteurs de tension sont mal positionnés. Cf. pages 26, 28.

CAUTION: System power cord must be plugged into an accessible dedicated ac mains receptacle.

VORSICHT: Das System-Netzanschlußkabel muß an eine zugängliche spezielle Wechselstrom-Hauptzuführungssteckdose angeschlossen werden.

ATTENTION: Le fil d'alimentation électrique du système doit être branché dans une prise de courant c.a. spécialisée accessible.

CAUTION: Do not unplug the monitor video cable while the system unit is powered on.

VORSICHT: Ziehen Sie nicht das Stromzuführungskabel zum Bildschirm aus der Steckdose, solange das Gerät eingeschaltet ist.

ATTENTION: Ne pas débrancher le câble vidéo du moniteur pendant que l'unité est alimentée.

CAUTION: Monitor screen damage will occur if the monitor is left on for extended periods of time with the same image on the screen at high intensity.

VORSICHT: Bildschirmschaden ist unvermeidlich, falls der Bildschirm über längere Zeit und mit demselben Bild auf dem Schirm bei hoher Intensität angeschaltet bleibt.

ATTENTION: L'écran du moniteur sera endommagé si le moniteur est laissé pendant une période prolongée avec la même image sur l'écran à haute intensité.

Electrostatic Discharge (ESD) Precautions

Electrostatic charges can damage the integrated circuits on printed circuit boards. To prevent such damage from occurring, observe the following precautions during board unpacking and installation:

- Stand on a static-free mat.
- Wear a ground strap to ensure that any accumulated electrostatic charge will be discharged from your body to ground.
- Ground all equipment together, including the static-free mat, ground strap, routing nodes, and peripheral units.
- Keep uninstalled printed circuit boards in their protective antistatic bags.
- Handle printed circuit boards by their edges, once you have removed them from their protective antistatic bags.

Naming Conventions

This manual supports Domain Personal Workstations and Servers. Where manual contents apply to all models, the words *Domain System* or *Personal Workstation* appear. Where contents apply to a specific model, the appropriate model name appears.

Initial Boot OS Environment

SysV is the default operating system environment when the system initially boots. After you complete the installation procedure, the system administrator may change the default operating system environment to any of the three operating system environments: SysV, BSD, or Aegis™.

When we instruct you to run commands from the system that you are installing, the documentation lists only the SysV commands. When we instruct you to run commands from other Apollo systems that are already installed in the network, we document the commands in all three operating environments.

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Introduction

This manual explains how to unpack and install a workstation and server as a standalone system or within an Apollo Token Ring network or an ETHERNET*/IEEE 802.3 network (referred to in this manual as the 802.3 network) or an IEEE 802.5 network which is sometimes called the IBM** Token Ring Network/802.5 (referred to in this manual as the 802.5 network). Please read this manual carefully as you install the system, and then keep it handy for reference.

Please note that system component boards that are supplied by Apollo, such as the network controller and the graphics controller, may not be installed into the system unit during manufacturing; they may arrive at your site in separate shipping containers. You'll need to install these boards into the system unit as part of the installation process.

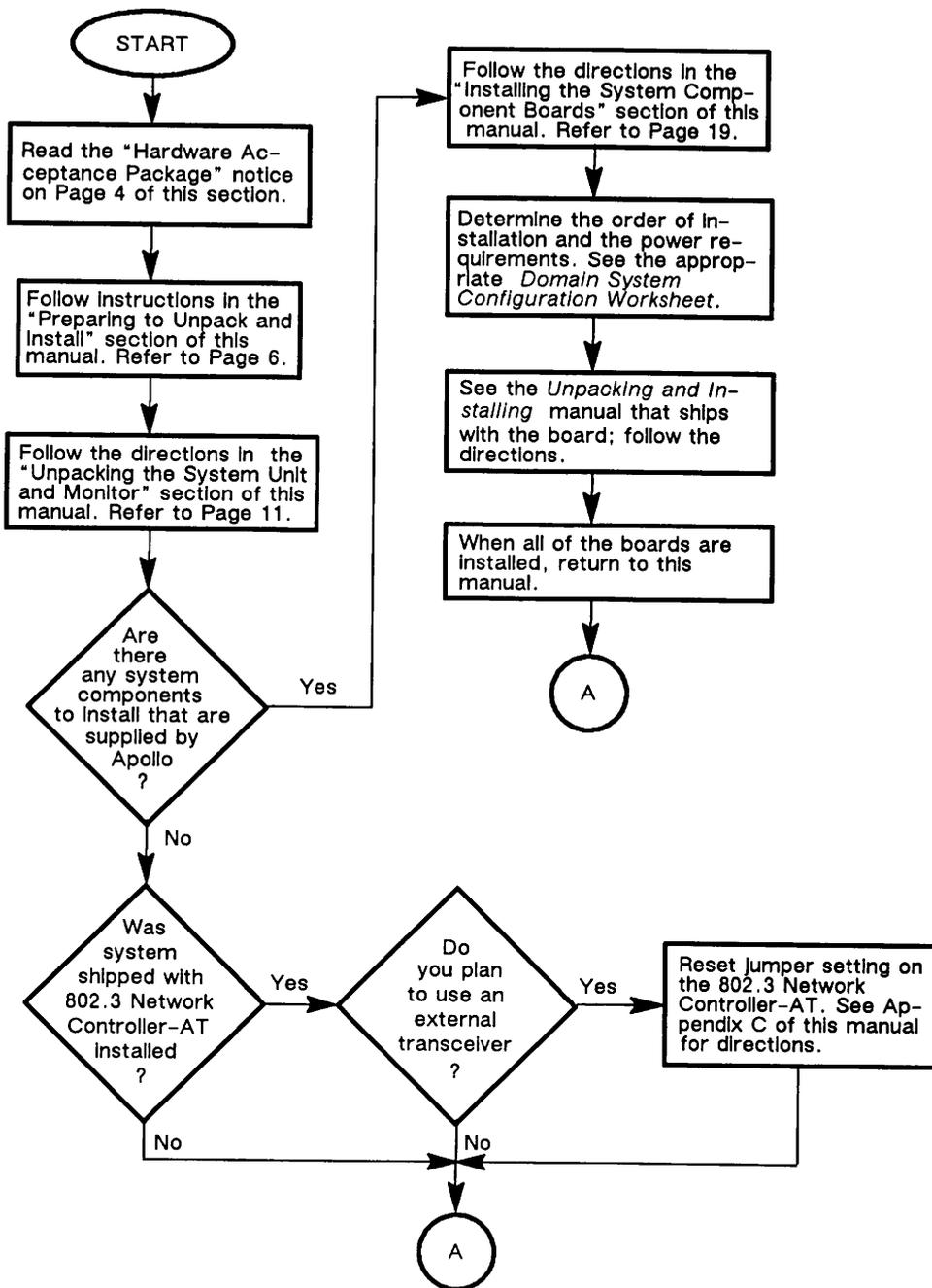
To aid the installation process, we've added Checkpoints in the manual, and an Installation Flowchart on the next two pages that describes the path that you'll use during the installation.

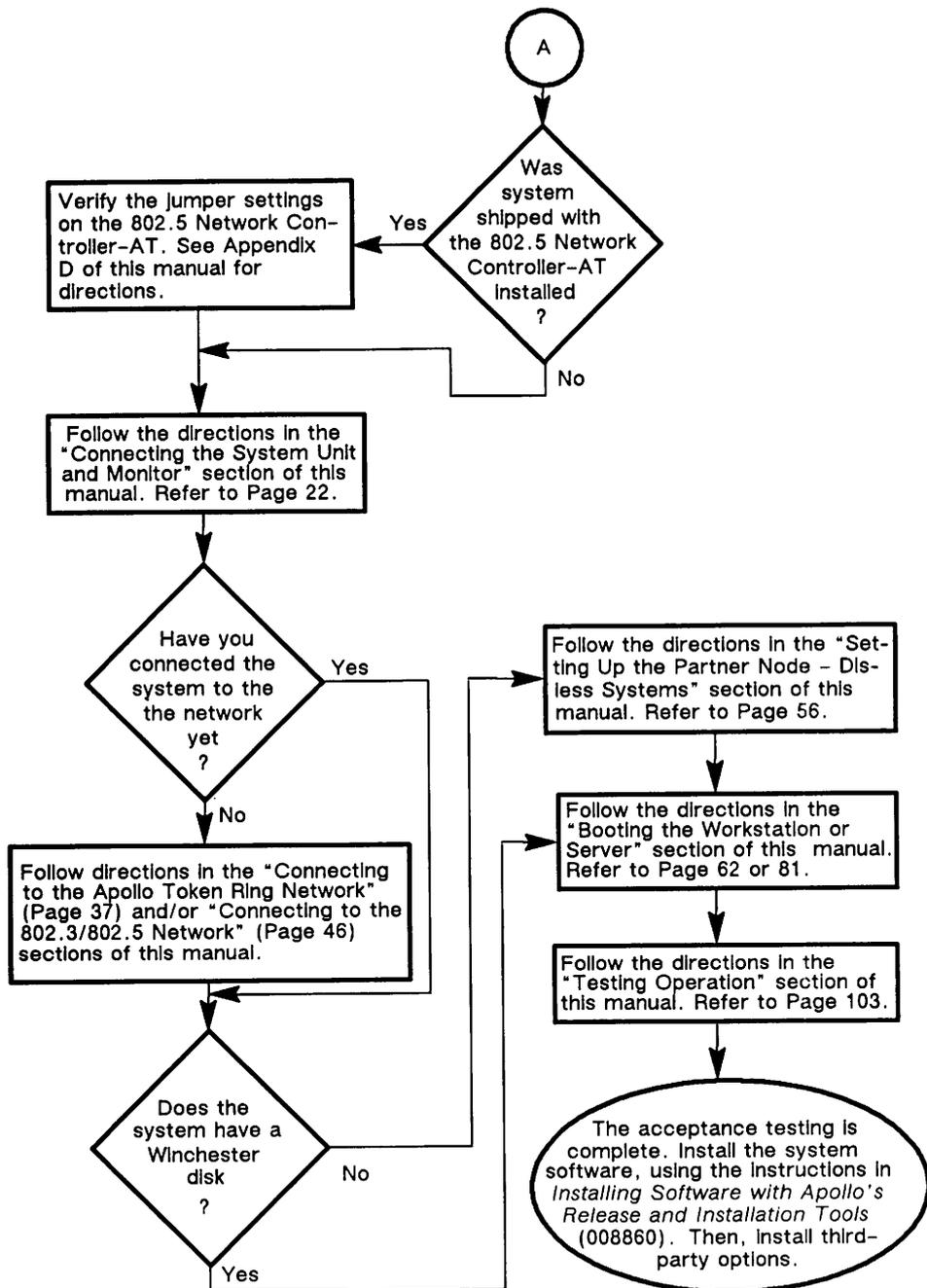
If you have a problem with the installation, turn to the "Solving Problems" table at the end of most sections. If your problem isn't listed there, or if it persists, call Apollo Customer Services at

1-800-2-APOLLO
(1-800-227-6556)
or
your designated service representative.

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Hardware Acceptance Package — Important Notice

Systems configured with a Winchester disk drive(s) arrive at the customer site with limited system software on the disk. This software, referred to as the Hardware Acceptance Package (HAP), enables you to install and verify the system. HAP is **not** a complete operating system, and is not usable for purposes other than system installation. The operating environment on the disk is **SysV**.

When you boot the installation system software on workstations (not on servers) configured with a Winchester disk drive, an instructional banner appears (as shown on the next page). We suggest that you read the banner carefully before you begin installing the system.

IMPORTANT NOTICE ABOUT PRODUCTS CONFIGURED WITH WINCHESTER DISKS

THE SOFTWARE ON YOUR DISK IS FOR HARDWARE ACCEPTANCE TESTING ONLY. THE SYSTEM SOFTWARE IS NOT COMPLETE AND THEREFORE NOT USABLE FOR OTHER PURPOSES. INSTALL THE COMPLETE SYSTEM SOFTWARE AFTER RUNNING THE HARDWARE ACCEPTANCE TEST.

PERFORM the steps listed below to verify the hardware and install the system software:

1. Complete the installation and verify the system's hardware according to the "Testing Operation" section of the *Unpacking and Installing* manual that shipped with your system. Make sure you complete ALL of the instructions in the *Unpacking and Installing* manual.
2. After you have verified the hardware, make sure that the media you received contains the system software release that supports your hardware. Compatibility information is available in Chapter 1 of the *Domain System Software Release Document* that shipped with your software.
3. Install the software using the instructions in *Installing Software with Apollo's Release and Installation Tools* (008860). This manual ships with the software media. Refer to the *Domain System Software Release Document* for any additional information you might need about the installation.

If you close this banner with <CTRL> n, you can find it again at `/sys/dm/start_sh_warn`

This notice will reappear each time you log in until you reload the disk with the complete software.

Preparing to Unpack and Install

Before unpacking your workstation or server, read the following checklist to be sure that you've completed all preliminary steps.

- Prepare the site according to instructions in *Domain Hardware Site Planning Specifications* (009859), *Planning Domain Networks and Internets* (009916), and *Installing Coaxial Cable and Accessories for a Domain Token Ring Network* (009860).
- Know your unpacking and installation responsibilities.

If you've purchased installation services from Apollo in the United States, call Apollo Customer Services at **1-800-2-APOLLO** (1-800-227-6556) to schedule the installation. In countries outside the U.S., contact your local Apollo sales and service center.

If you have any questions about your unpacking and installation responsibilities, call Apollo Customer Services at 1-800-2-APOLLO (1-800-227-6556) or your designated service representative before unpacking any equipment.

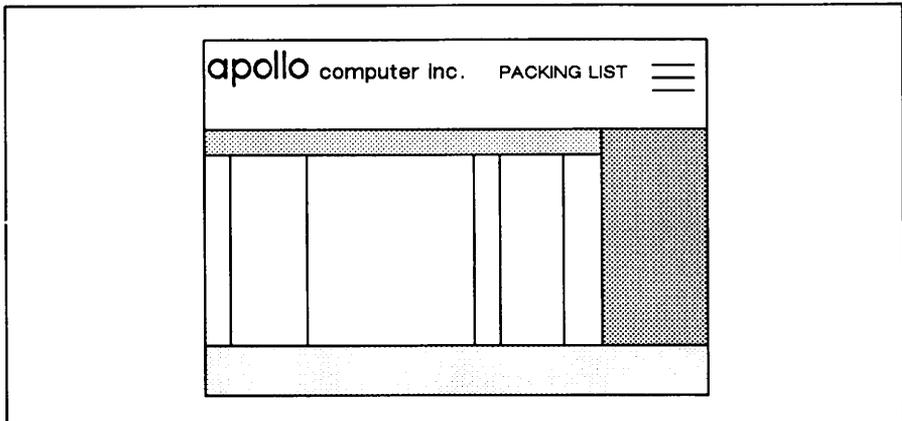
- When the equipment arrives, check for damaged shipping cartons. **If you see any damage, stop unpacking the equipment and immediately notify the freight carrier and/or insurer.** The equipment is shipped Freight On Board (FOB) from your local Apollo distribution center. It's your responsibility to report any damage to the freight carrier.

WARNING: Lifting the monitor or the system unit requires more than one person because each unit weighs more than 40 pounds (18 kilograms).

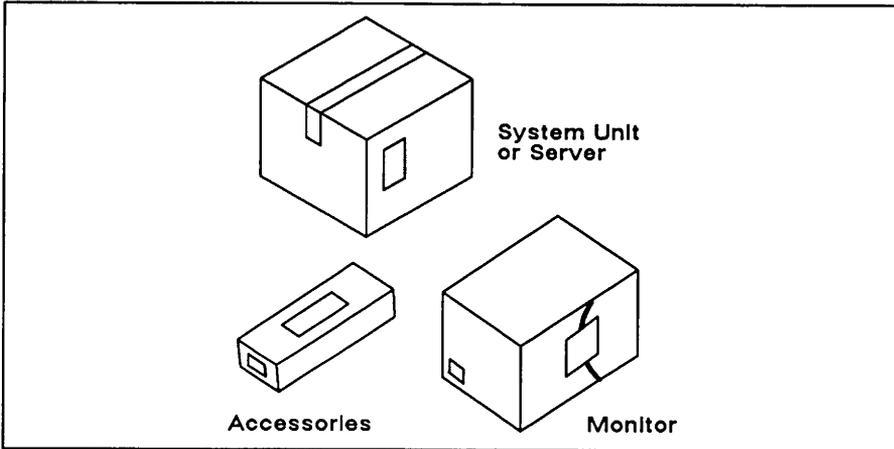
NOTICE: If your system has a **Winchester disk drive**, don't turn on the power until the system has adjusted to the ambient temperature at your site. If the system was shipped or stored at a temperature below freezing, allow the system to rest outside of its carton for 4 hours. Don't remove the plastic bag that covers the system unit until the 4 hours have elapsed.

- Remove the packing list(s) attached to one of the larger cartons. (A very large order has more than one list.)

If the packing list doesn't contain all the items you ordered, call your local sales representative.

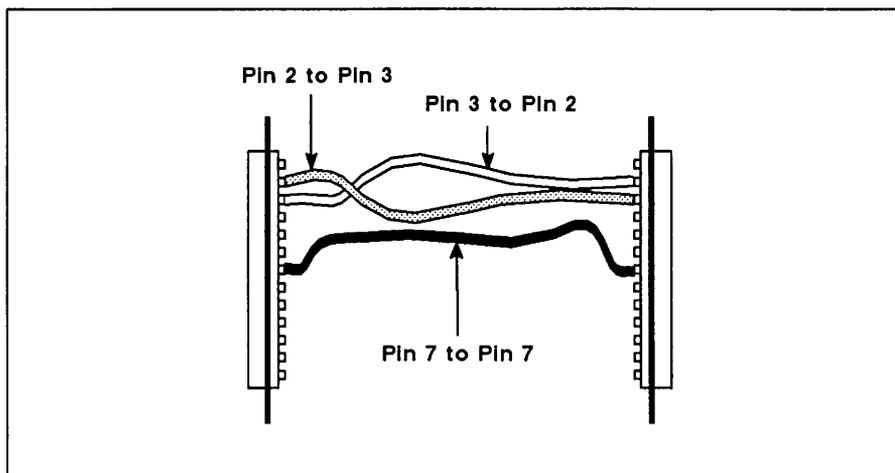


- Check the part numbers on each carton against those on the packing list. If any numbers don't match, call your Apollo Customer Services Branch Manager.



- Make sure you have the following items:
 - Cutters or scissors
 - 3-mm (1/8-inch), flat-blade screwdriver
 - 6-mm (1/4-inch), flat-blade screwdriver
 - Medium flat-blade screwdriver
 - 7-mm (9/32-inch) nutdriver
 - Integrated circuit extraction tool or needle-nose pliers to change jumpers (optional)
 - If your system has a cartridge tape drive, you need a **blank** cartridge tape (you'll receive a cartridge tape with your system). Your tape drive can use 3M DC300XLP 45-MB, 3M DC600A 60-MB, or Archive DC300XL 45-MB tapes.
 - A copy of the appropriate *Domain System Configuration Worksheet* if you plan to install system component boards or hardware options in the system.

- A copy of the installation manual that ships with your system component board(s) or hardware option(s).
 - For a complete listing of all available Domain technical publications, see the *Domain Documentation Quick Reference* (002685).
- If you're installing the server, you'll need an RS-232 cable. To ensure FCC/VDE compliance, the cable should have
- A 360-degree shield
 - Molded-shielded, metalized-plastic, or metal connectors on both ends
 - The cable shielding terminated to the connector on both ends.
- Before using your RS-232 cable,
- Make sure pins 2 and 3 are reversed on **one** connector as shown.
 - Make sure pin 7 is connected to pin 7.



- Know the dimensions and the weight of each *Domain System* component. Refer to *Domain Hardware Site Planning Specifications* (009859).

- Be familiar with the system controls as described in *Operating the Domain Personal Workstations and Servers* (007858).

Now turn to the next section for unpacking instructions.

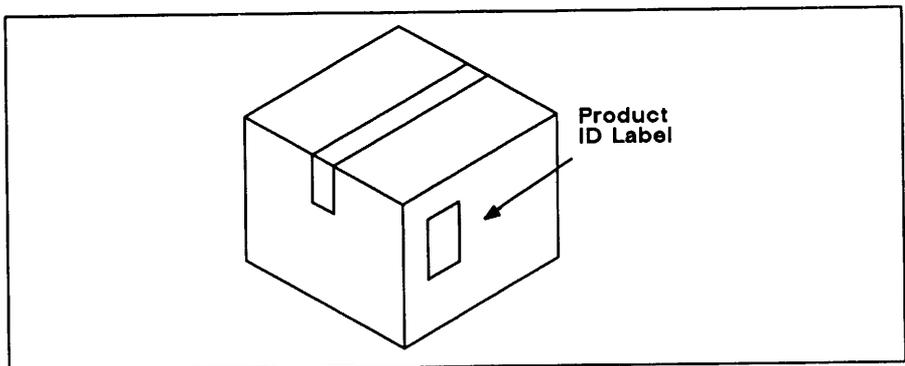
Unpacking the System Unit and Monitor

Follow these steps to unpack your workstation or server.

WARNING: Lifting the monitor or the system unit requires more than one person because each unit weighs more than 40 pounds (18 kilograms).

NOTICE: If you're installing a new Apollo Token Ring network or an 802.3/802.5 network, the first Domain System workstation or Domain node you install must have a Winchester disk. Before unpacking the first system unit, check its Product ID Label to see if it has a disk.

- 1 Copy the node ID listed on the Product ID Label onto the **Set-Up Information Sheet** printed on the last page of this manual.



2 Unpack the system unit carton (see the typical illustration of packaging material on the next page). Make sure that you have the following parts:

- 008394 Apollo Token Ring network cable to connect to DQC-100*

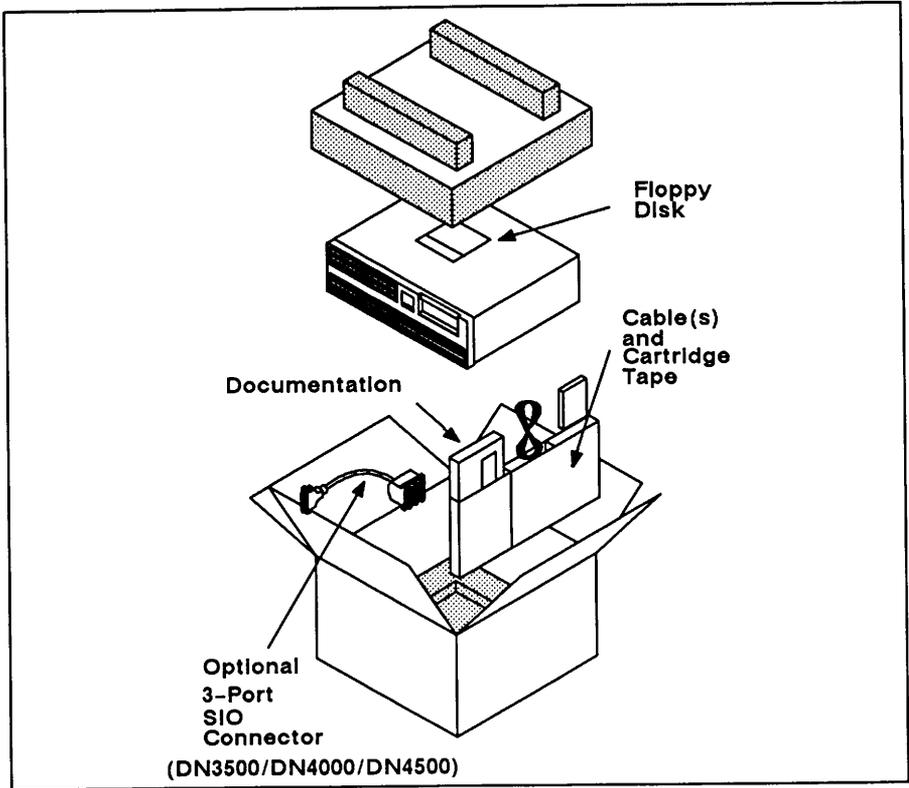
NOTICE: The video cable for the 15-inch monochrome monitor is attached to the rear of the monitor.

- 007604 Video cable for color monitor**
or
- 008956 Video cable for 19-inch monochrome monitor**
- 010338 Optional 3-port SIO cable for attachment to rear panel SIO connector (DN3500/DN4000/DN4500)
- Diskette (if your system has a diskette drive)
- Cartridge tape (if your system has a cartridge tape drive)
- Documentation package

If any parts are missing, call Apollo Customer Services at **1-800-2-APOLLO** (1-800-227-6556) or your designated service representative. In countries outside the U.S., contact your local Apollo sales and service center.

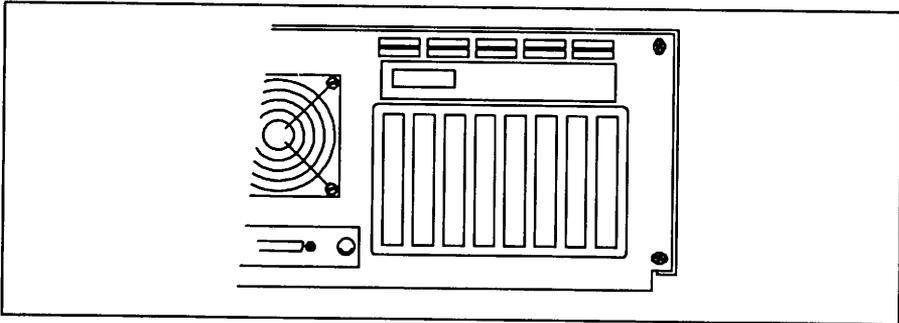
* If the Apollo Token Ring Network Controller-AT or the display controller ships outside the system unit, these cables will ship with the boards.

** Video cables do not ship with the servers.



- 3 Check the system unit for damage. If it's damaged, contact the freight carrier and insurer.

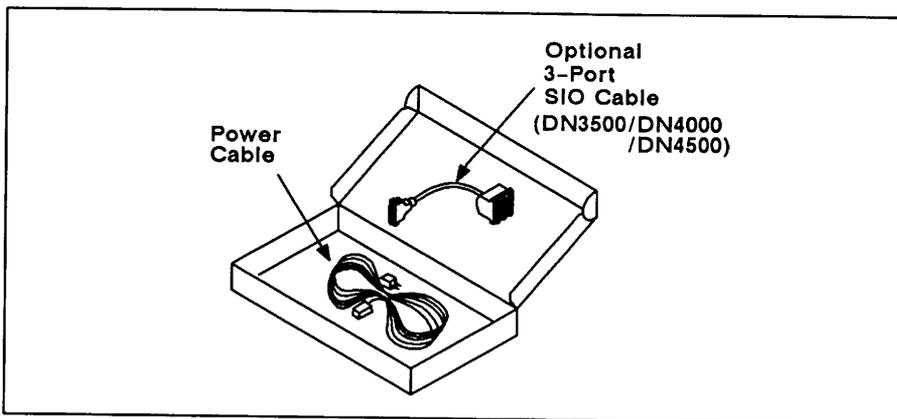
Compare the system unit's model number to the model number on its carton. If the numbers don't match, call Apollo Customer Services or your designated service representative.



4 For Servers:

Open the cable carton. Make sure that you have the following item:

- System Unit Power Cable appropriate for your location.



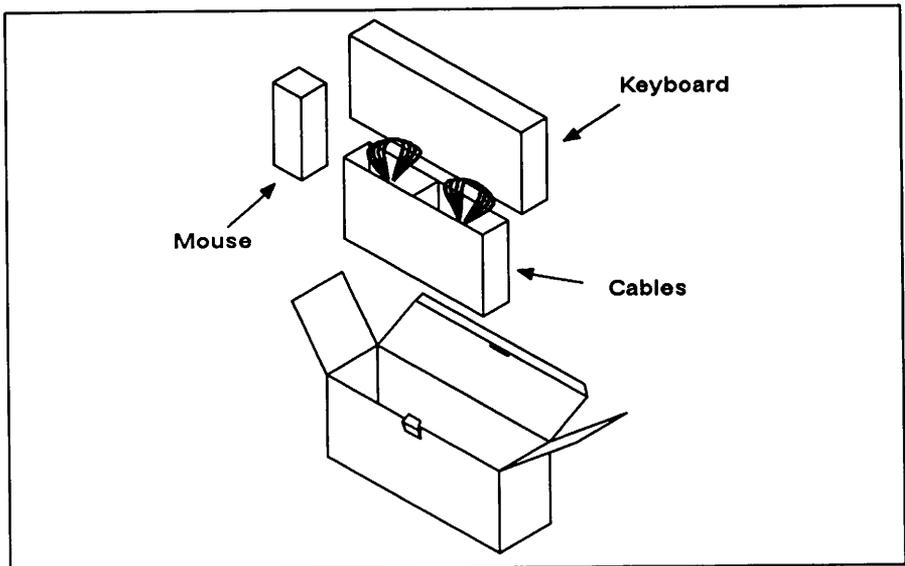
NOTICE: An **RS-232 cable** (described earlier in this manual) is **not** included with the server. You'll need to get this cable before installing and operating your server.

If you are not installing a workstation, proceed to the Checkpoint after Step 7.

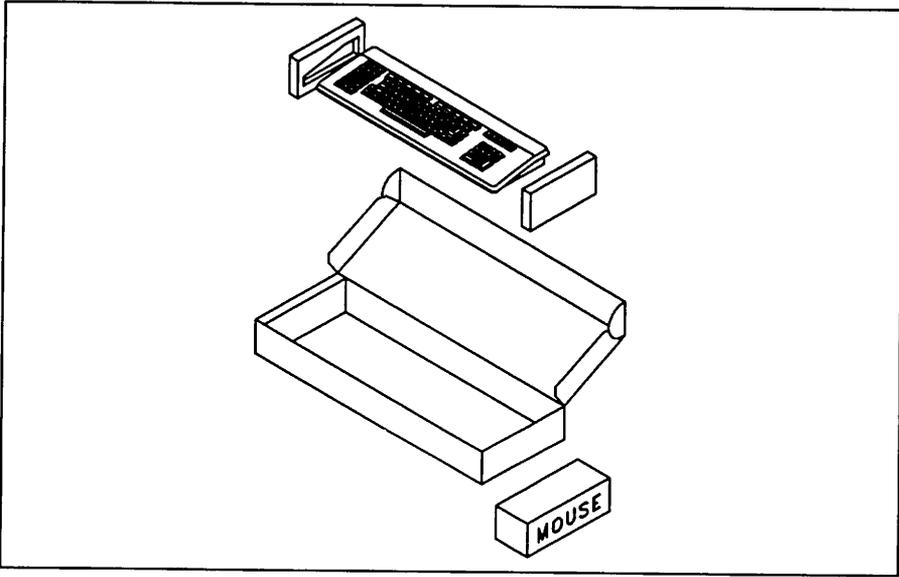
For Workstations:

Open the keyboard and accessories carton. Make sure that you have the following parts:

- Keyboard
- Mouse
- 007271 Keyboard Cable
- 007814 Monitor Power Cable
- System Unit Power Cable appropriate for your location

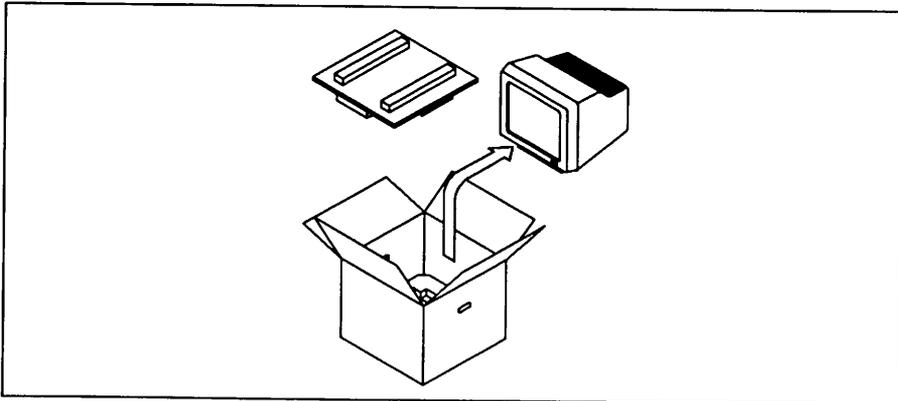


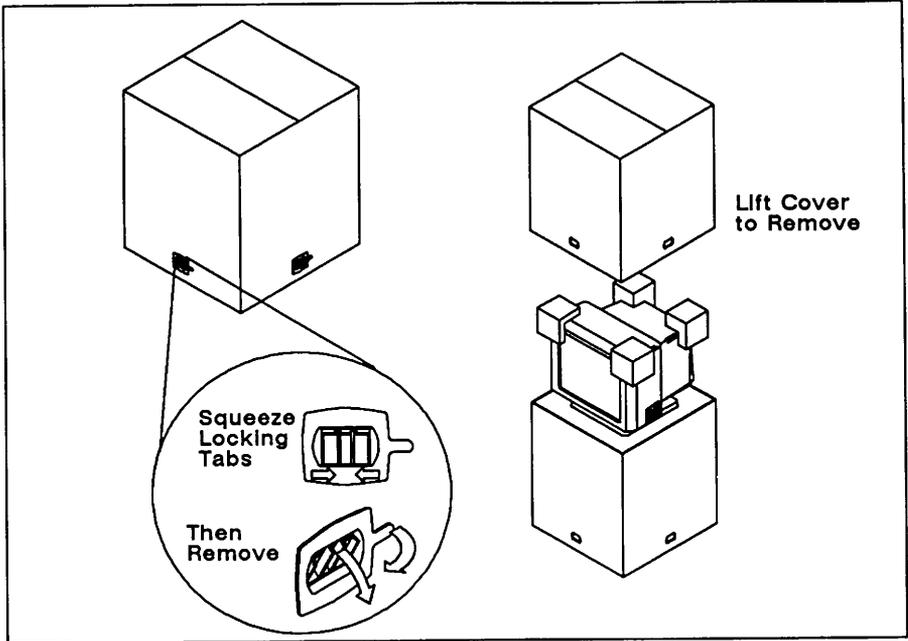
5 Unpack the keyboard and mouse.



WARNING: Lifting the monitor or the system unit requires more than one person because each unit weighs more than 40 pounds (18 kilograms).

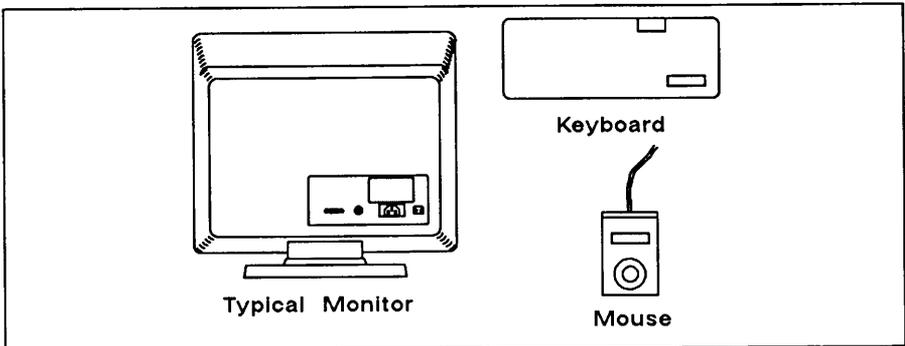
6 Unpack the monitor and remove its plastic wrapping. The following two illustrations are typical examples of how the monitors are packed.





- 7 Inspect the monitor, keyboard, and mouse for damage. If any of them are damaged, contact the freight carrier and insurer.

Monitor model numbers are on the rear of the monitors; keyboard and mouse model numbers are on the underside of the units. Compare the model numbers to those on the cartons. If the model numbers don't match, call Apollo Customer Services or your designated service representative.



Checkpoint:

Workstation and Server Installations:

- ✓ If you are installing a floor stand, unpack the Floor Stand Kit (008406) and follow the Floor Stand Assembly Instructions (008929) that are provided with the kit, then proceed to the "Connecting the System Unit and Monitor" section of this manual.
 - ✓ If you are **not** installing a floor stand, you've finished unpacking the system. Be sure to save all cartons and packing material for future moves.
 - ✓ If your order includes any **Apollo system component boards to install**, go to the "Installing the System Component Boards" section of this manual.
 - ✓ If your order **does not** include any Apollo system component boards, proceed to the "Connecting the System Unit and Monitor" section of this manual.
-

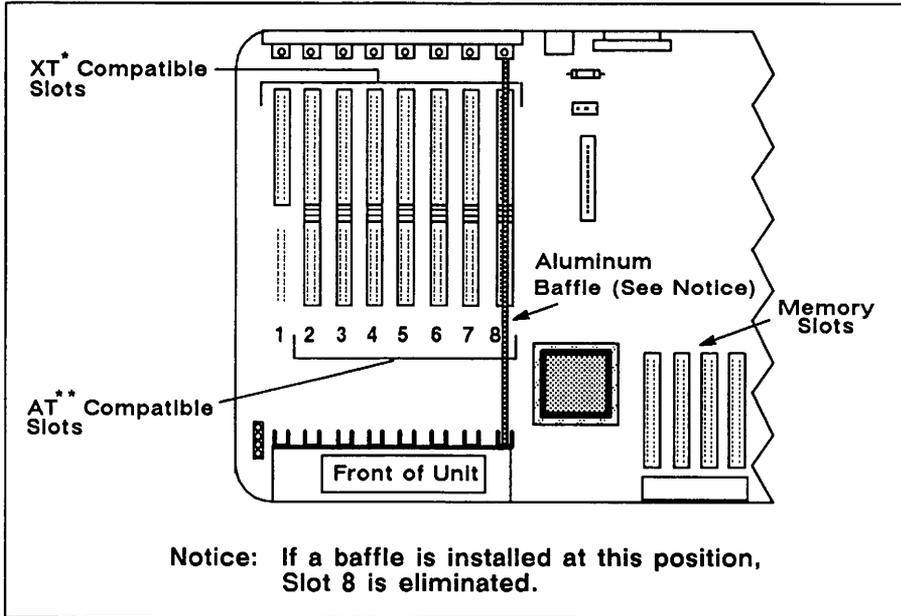
Installing the System Component Boards

These steps outline the procedure for installing any memory boards and/or Apollo system component boards shipped separately from your system. If your system does not include any separate boards, proceed to the next section to connect the system unit and monitor. If you do have boards to install, please read this section carefully.

- 1 Obtain the appropriate *Domain System Configuration Worksheet* that shipped with your system and **complete the "Power Required" section**. You do *not* need to complete the rest of the worksheet *unless* you are installing any "third-party options" (boards *not* supplied through Apollo Computer). If the worksheet does not list all the system component boards you plan to install, get the information for those boards from the table in the "Configuration Information" section of the *Installation* manual shipped with the board.

NOTICE: Do not install any third-party options until you complete all the procedures in this manual. This ensures that the system is functioning normally before you add any boards not covered by the final test program.

- 2 Open the system unit by using the directions in Appendix B of this manual. Your system may contain less than eight slots for system component boards. The area where you install the boards may vary slightly in different systems, but in general, the area looks like the following illustration:



- 3 If you have additional memory board(s), install them by using the instructions in the manual(s) shipped with the board(s).
- 4 Install the Apollo AT compatible bus board(s) by using the instructions in the manual(s) shipped with the board(s).

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The following chart shows the installation order based on board priority for the AT compatible bus boards. Install the board with the **highest** priority number in the **highest-numbered** board slot, then the next highest number, and so on until you have installed all the boards. (The illustration with Step 2 shows the board slot numbers).

Priority of Installation*	AT Compatible Bus Controller Board
7	Storage Device Controller
6	Cartridge Tape Controller
5	PC Coprocessor
4	Graphics Controllers
3	Apollo Token Ring Network Controller-AT
2	Other Network Controllers
1	Miscellaneous Controllers

*The Priority of Installation **does not** signify the actual board slot number. Please refer to the following restrictions.

Keep these restrictions in mind as you install the boards:

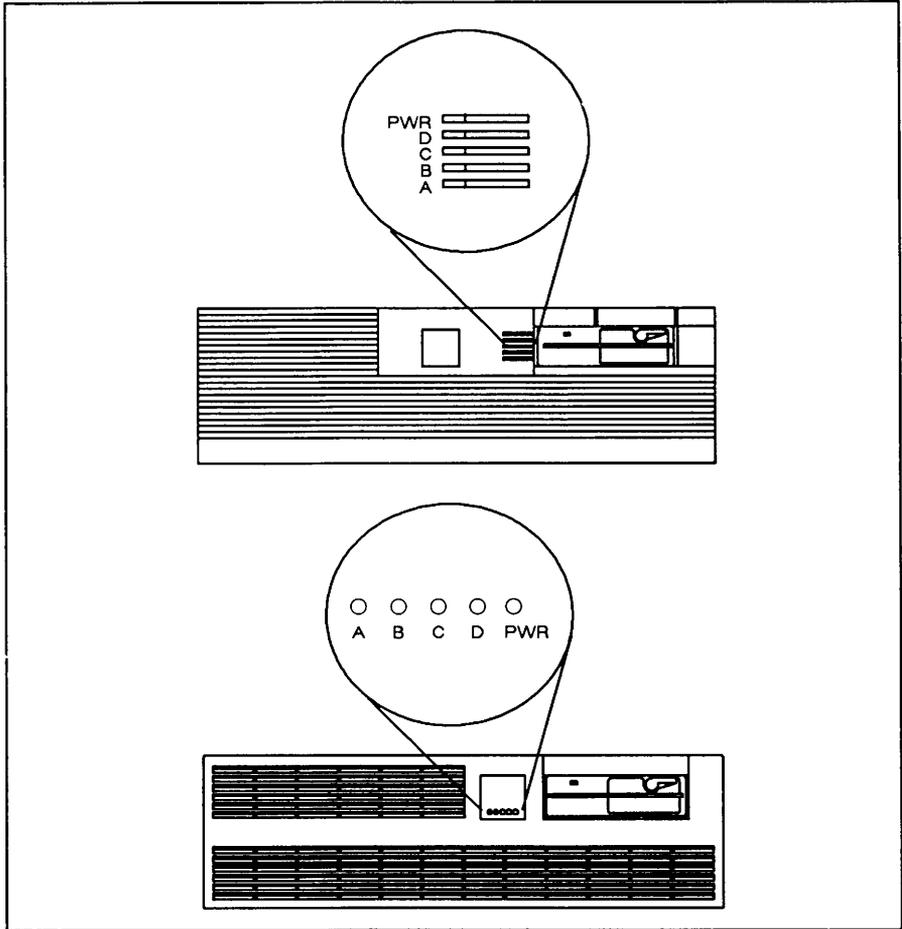
- Unless specifically instructed to do so, **do not** remove the aluminum baffle if it is present in your system.
 - Unless specifically instructed to do so, **do not** move the Storage Device Controller.
 - With the exception of the 1280 x 1024, 8-plane color controller (which requires two slots), **do not** leave empty slots between boards. Install the boards in consecutive slots.
 - The 802.5 Network Controller-AT requires Software Release 10.1 or later, and jumper settings that make the controller compatible with your system. Verify the jumper settings by using the instructions in Appendix D.
- 5 When you install the last Apollo system component board, close the system unit and **return to the "Connecting the System Unit and Monitor" section of this manual. Do not power on the system until you are instructed to do so in this manual.**

Connecting the System Unit and Monitor

Follow these steps to connect the system components and prepare the system for operation. If you have any problems connecting the components, contact your designated service representative or call Apollo Customer Services at 1-800-2-APOLLO (1-800-227-6556) in the U.S. only. In countries outside the U.S., contact your nearest Apollo sales and service center.

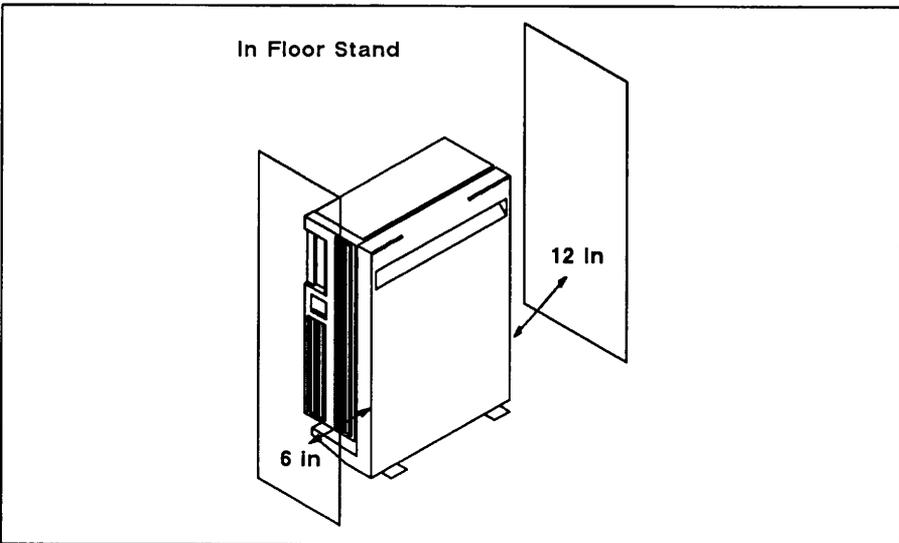
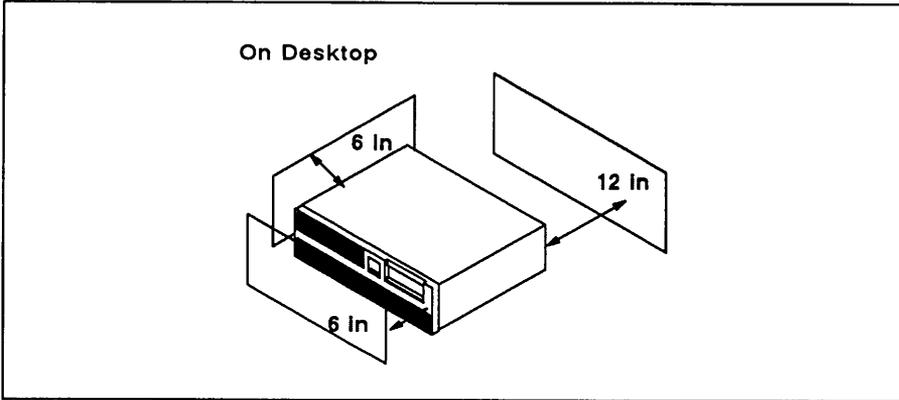
NOTICE: If you are connecting the system to an 802.3 network **and** the system arrived with the board installed, **and** you plan to connect the system to the network by using an **external transceiver**, you'll have to reset the transceiver jumper on the 802.3 Network Controller-AT board. (The board is preset for an **internal (on-board) transceiver**.) Follow the instructions in Appendix C. Return to this section when you finish.

NOTICE: The system unit bezel is one of the following two designs.



1 System/Server Placement:

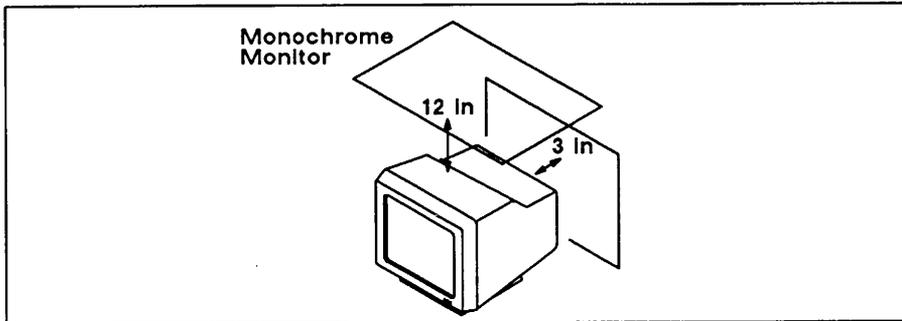
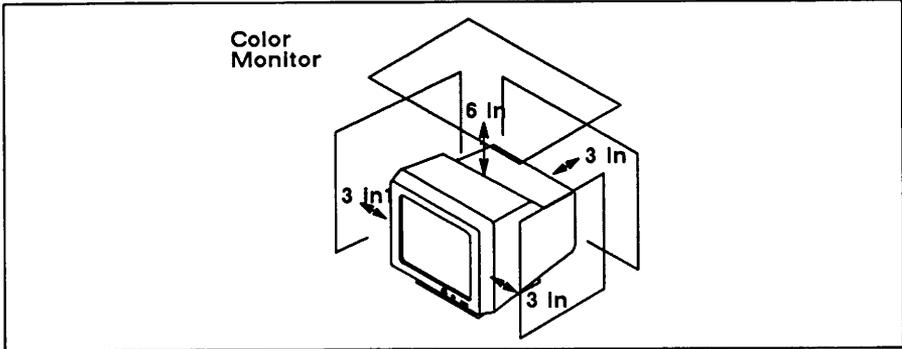
Place the system unit where you plan to use it. Be sure to allow enough space for air circulation around it.



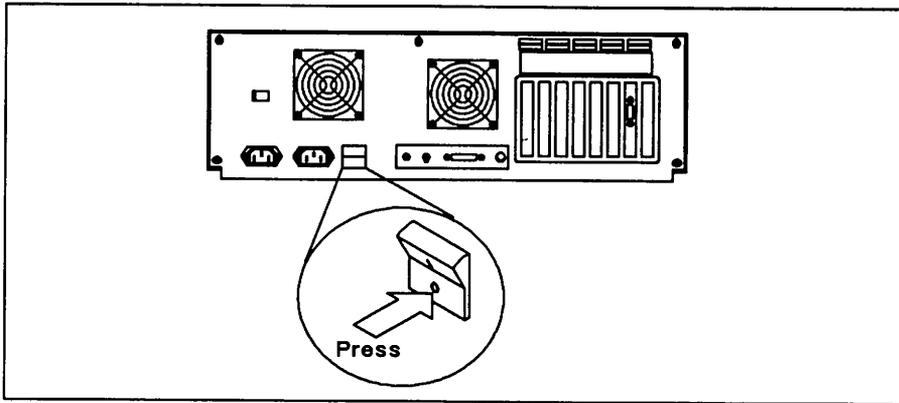
NOTICE: In order to maintain adequate air circulation, do not place the system unit on end unless it is mounted in a floor stand. The floor stand keeps the system unit 3-inches off the floor and ensures that the air-intake slots are not blocked.

2 Monitor Placement:

If your system unit is in the floor stand, place the monitor on a desktop. If you don't have a floor stand, you may place the monitor on top of or next to the system unit. Be sure to allow enough space for air circulation around the monitor.



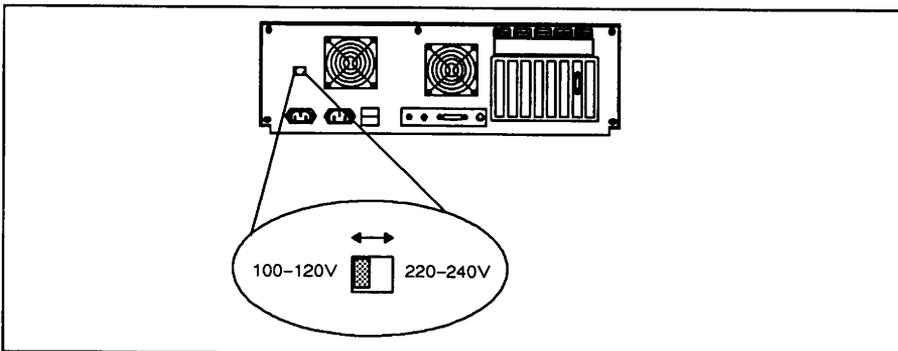
- 3 Make sure the system unit's power switch is OFF (0).



- 4 Check your local voltage requirements.

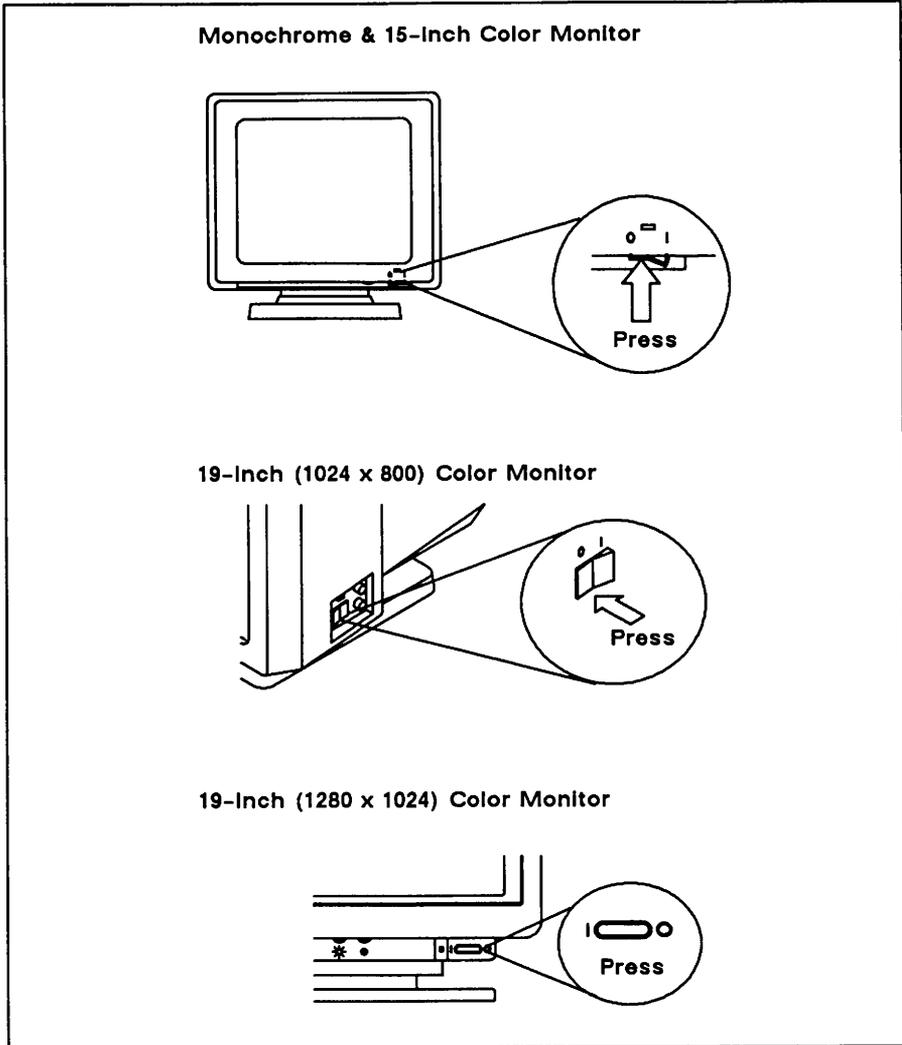
Remove the label that covers the system unit's power receptacle. If the voltage setting is incorrect for your location, use a 6-mm (1/4-inch), flat-blade screwdriver to change it.

If you are installing a server, go to Step 15.



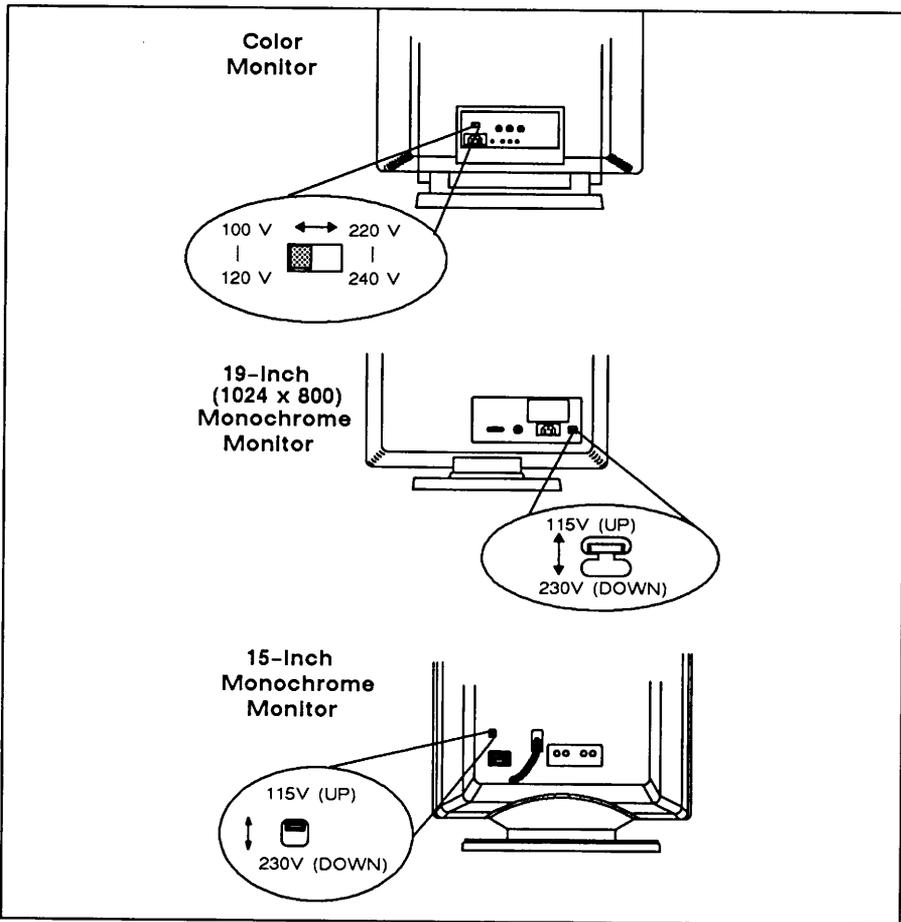
CAUTION: System damage will occur if the voltage selection switch is set incorrectly.

- 5 Make sure the monitor's power switch is OFF (0).



- 6 Remove the label that covers the monitor's power receptacle. If the voltage setting is incorrect for your location, use a 6-mm (1/4-inch), flat-blade screwdriver to change it.

NOTICE: The 19-inch, 1280 x 1024 color monitor does not have a voltage selection switch. The voltage is 90 V ac to 240 V ac continuous.

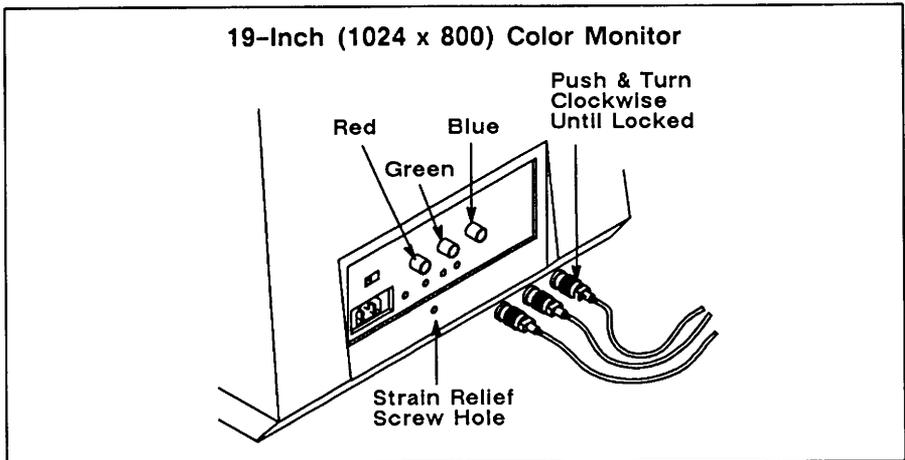
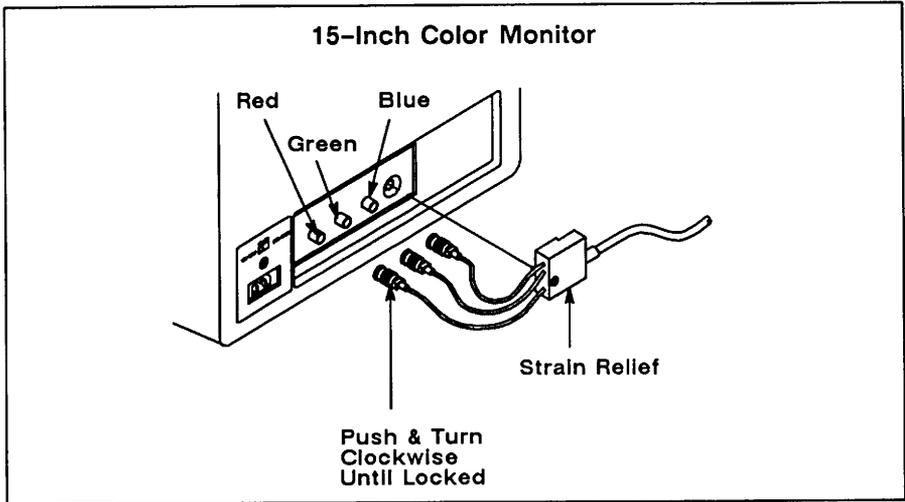


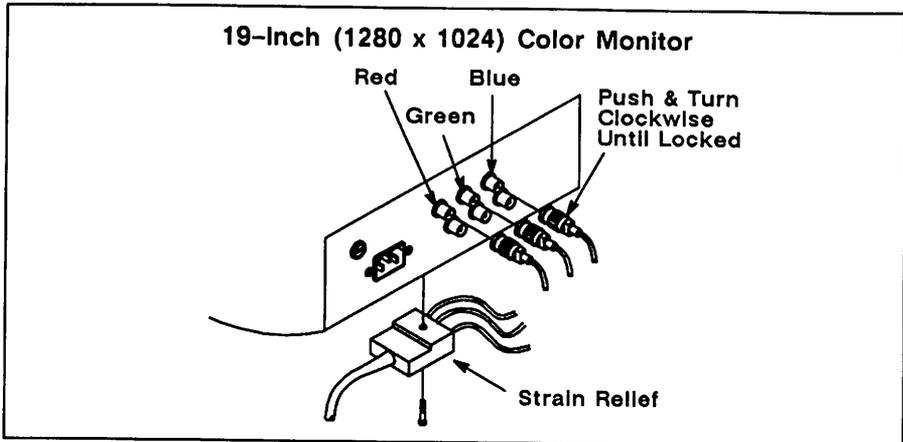
CAUTION: System damage will occur if the voltage selection switch is set incorrectly.

- 7 Connect the video cable to the color monitor. Place one hand on top of the monitor to steady it while connecting the video cable (007604) to the back of the monitor.

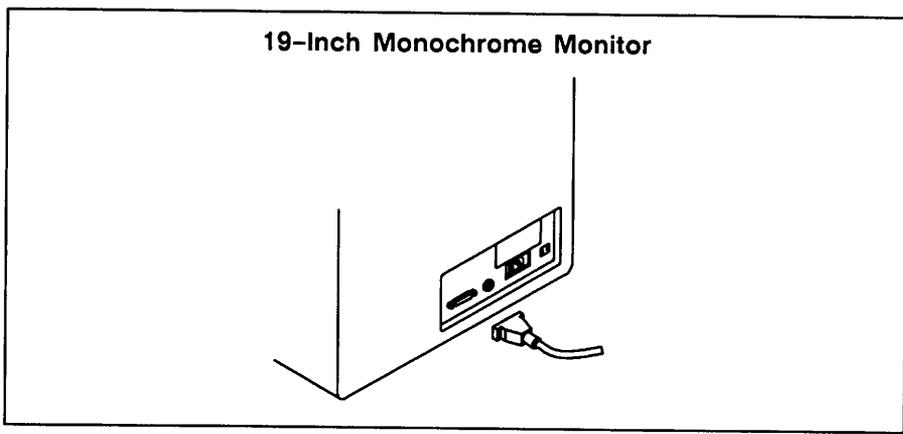
Be sure to match the color-coded cables to the label above each connector.

Attach the strain relief to the monitor by tightening its screw.





Connect the video cable (008956) to the back of the 19-inch monochrome monitor.* Tighten the screws, using a 3-mm (1/8-inch), flat-blade screwdriver.



* The video cable for the 15-inch monochrome monitor is permanently attached to the rear of the monitor.

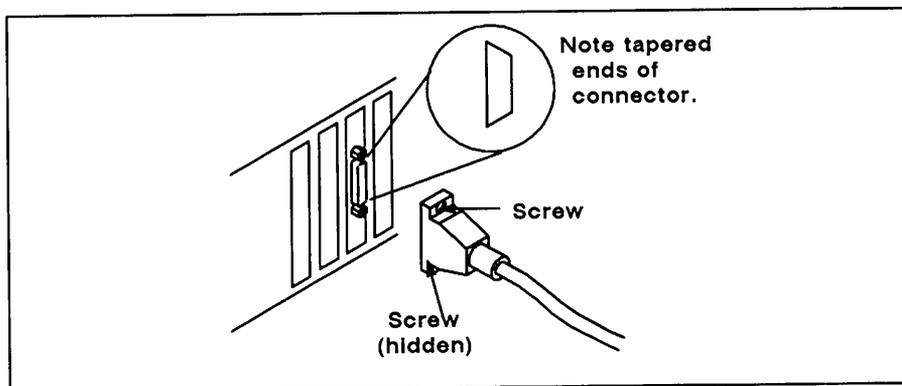
Checkpoint:

If you installed the graphics controller into the system during this installation, the video cable should be connected to the system unit; proceed to Step 9.

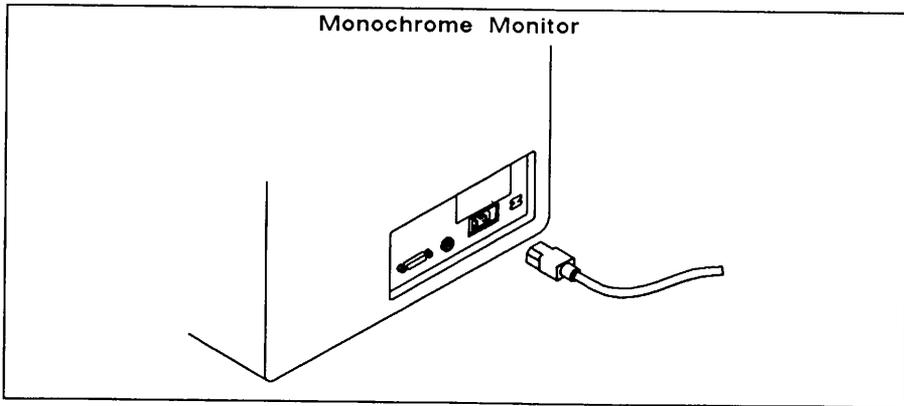
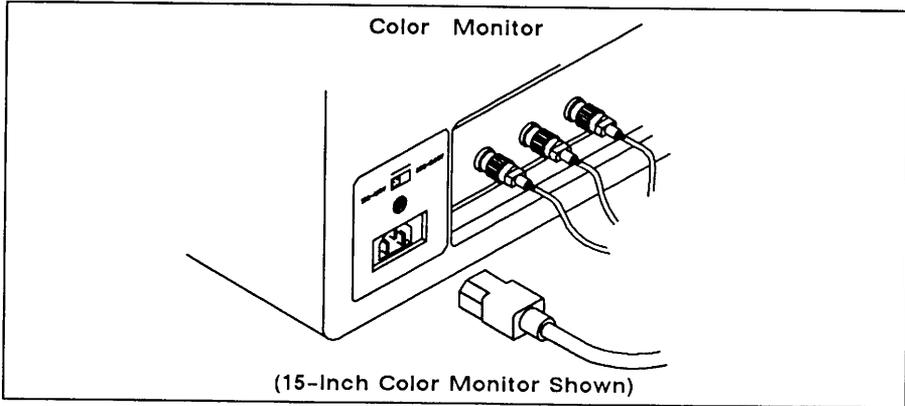
- 8 Connect the other end of the video cable to the system unit.

Be sure to correctly align the tapered ends of the connectors.

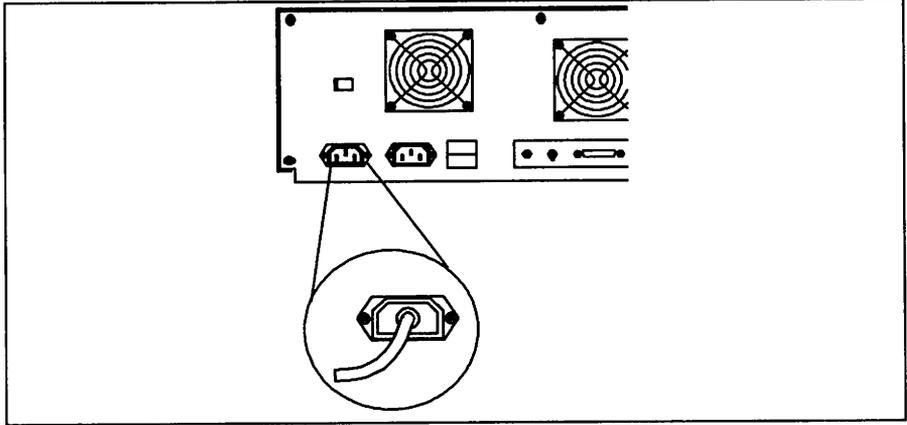
Tighten the screws, using a 3-mm (1/8-inch), flat-blade screwdriver.



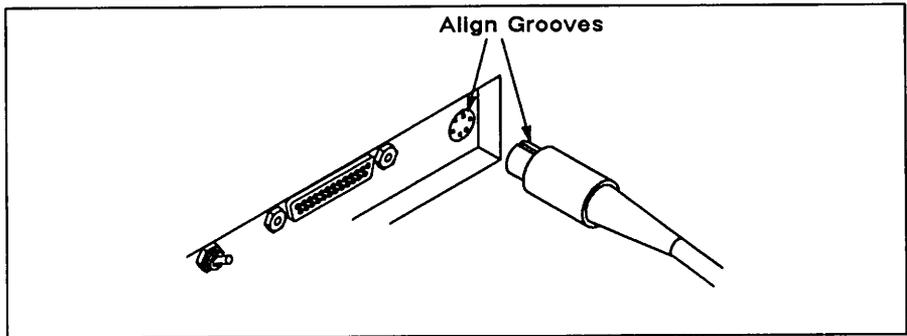
- 9 Place one hand on top of the monitor to steady it while connecting the monitor power cable (007814) to the back of the monitor.



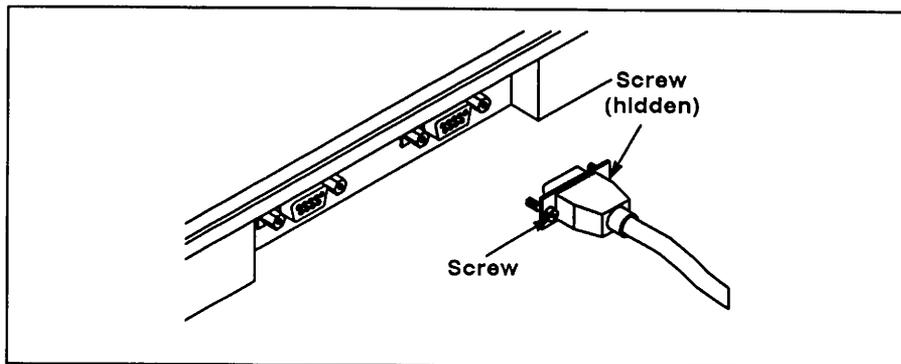
- 10 Connect the other end of the monitor power cable (007814) to the rear of the system unit.



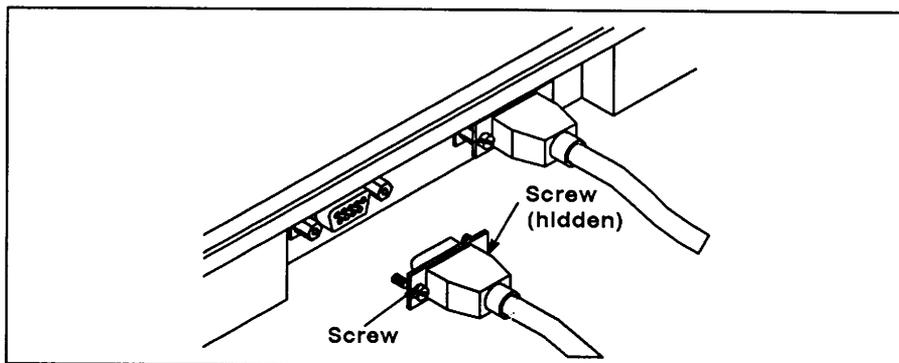
- 11 Connect the keyboard cable (007271) to connector P1 on the rear of the system unit.



- 12** Connect the keyboard cable to the keyboard. Tighten the screws, using a 3-mm (1/8-inch), flat-blade screwdriver.

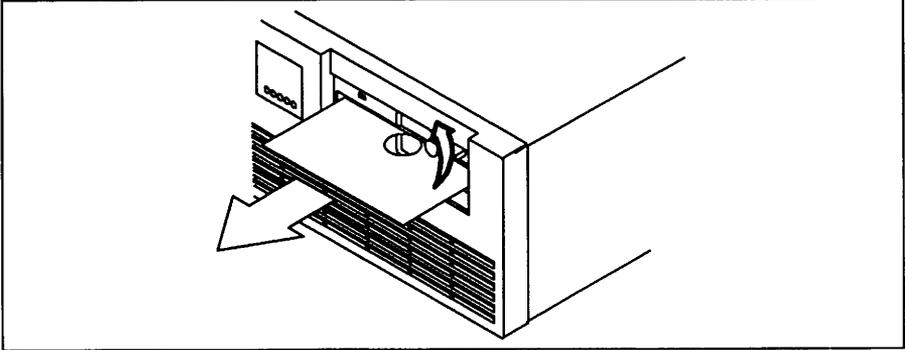


- 13** Connect the mouse to the keyboard. Tighten the screws, using a 3-mm (1/8-inch), flat-blade screwdriver.



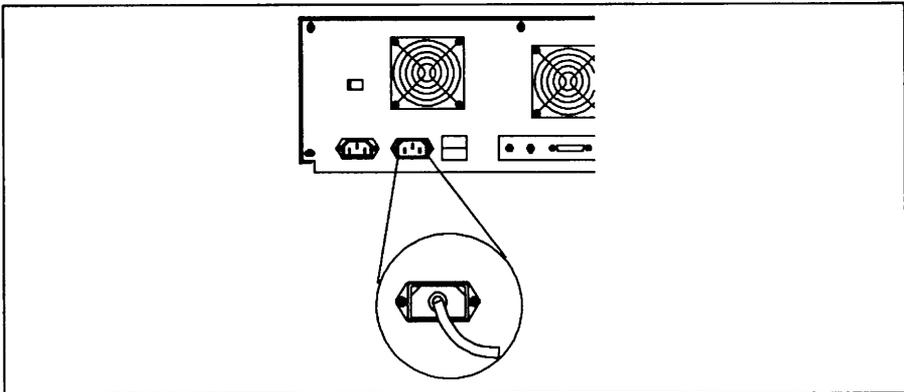
14 If you do not have a floppy drive, go to the next step.

Open the diskette drive and remove the protective cardboard shipping diskette. Save the cardboard diskette to insert into the drive if you move the system.



NOTICE: Don't close the diskette drive lever. Always leave the drive open when you're not using it. The read/write heads may be damaged if the lever is closed on an empty drive.

15 Connect the system unit's power cable to the rear panel connector on the system unit and to an ac outlet.



Checkpoint:

- ✓ You've now finished connecting the system components.
 - ✓ If you've already connected the system to the network, turn to the "Booting the Workstation" or "Booting the Server" section for directions on booting the operating system.
 - ✓ If you need to connect your system to the network, turn to the "Connecting to the Apollo Token Ring Network" and/or "Connecting to the 802.3/802.5 Network" section, depending on your system configuration.
-

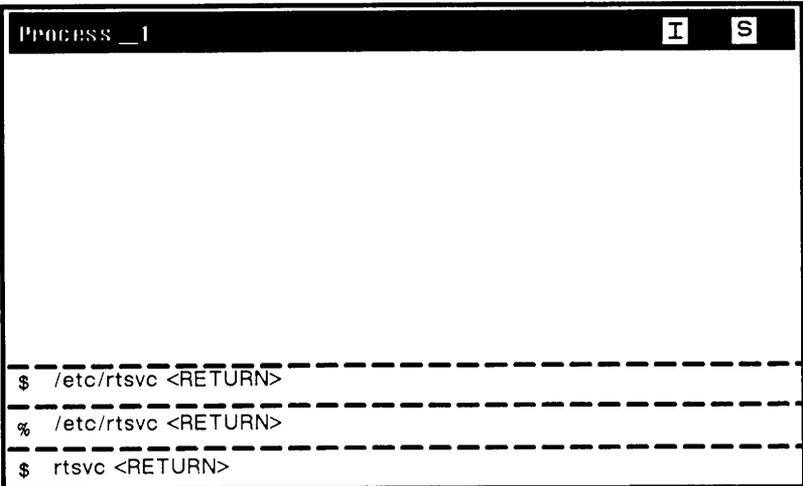
Connecting to the Apollo Token Ring Network

Follow these steps to connect your workstation or server to the Apollo Token Ring network. If you have any problems connecting the system to the network, see the "Solving Apollo Token Ring Network Connection Problems" table at the end of this section.

- 1 Prepare to take a base-level reading of the network status to find out if your network is operating correctly. Log in at a **node already installed in your network.**

NOTICE: Perform Step 1 from **another** node already installed in the **same** network as the system that you are installing. Make sure the network is its **principal** network.

- 2 Verify the principal network of the node you chose in Step 1. At the prompt, type:



```
Process _1 I S
$ /etc/rtsvc <RETURN>
BSD % /etc/rtsvc <RETURN>
Aegis $ rtsvc <RETURN>
```

- 3 The screen displays a listing of the networks on the node as shown in the following illustration. The principal network is first in the list.

Process _1		
Controller	Net ID	Services Offered
-----	-----	-----
RING	nnnnnn	Own traffic only
ETH802.3_AT	nnnnnn	Port not open

- 4 Take a base-level reading of the network. At the prompt, type:

Process _1	
	I S
SysV	\$ /etc/probenet <RETURN>
BSD	% /etc/probenet <RETURN>
Aegis	\$ /etc/probenet <RETURN>

5 You'll see a screen similar to the following:

```
PROCESS _1 I S

$ probenet
There are n nodes in the test.
Broadcasting 10 1024-byte packets. yy/mm/dd h:m:s # failures = n
Last ring hardware failure detected by node nnnn on yy/mm/dd at h:m

          MODEM
NODE  NAME  ATTEMPT  ERRS  ERRS  BIPH  ESB  TOKENS= n
-----
nnnn  node_a  54       0     0     0     0     0     Self
nnnn  node_b  54       0     0     0     0     0
nnnn  node_c  54       0     0     0     0     0
```

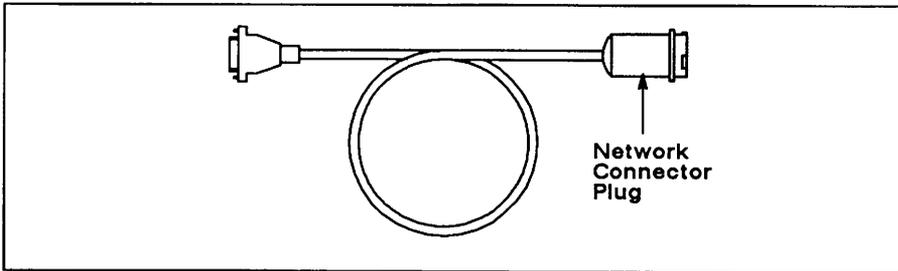
If the screen doesn't show 0 readings in the ERRS column, tell your system administrator or call Apollo Customer Services at **1-800-2-APOLLO** (1-800-227-6556) or your designated service representative. For countries outside the U.S., call your nearest Apollo sales and service center. **Network problems must be corrected before continuing the installation.**

- 6 If the site has more than one network, check the alternate network by invoking the **probenet** or **lcnode** command from another node that has the alternate network as its principal network. (See "Connecting to the 802.3/802.5 Network" if you need information on running the **lcnode** command.)

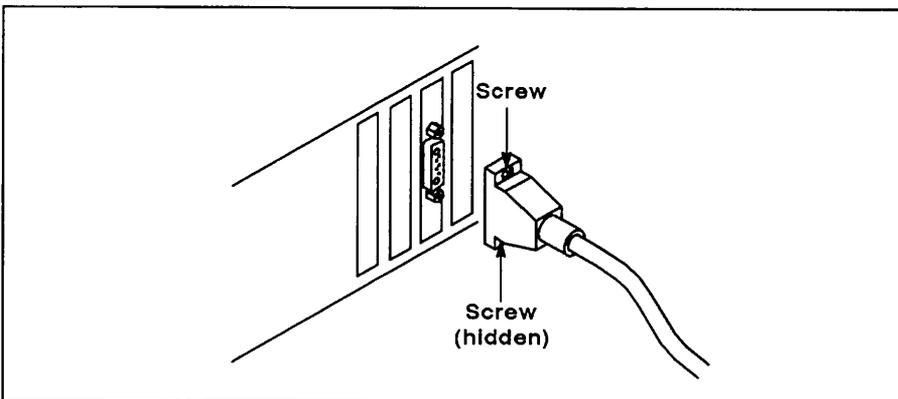
Checkpoint:

- ✓ You can connect the workstation or server to the Apollo Token Ring network by using a **network connector cable** (008394) or a **BNC cable** (007605).
 - ✓ To connect the system to a **DQC-100 wall receptacle**, use the **network connector cable** (008394), as described in Steps 7 through 9.
 - ✓ If you're planning to use a **BNC cable** (007605), go to Step 10.
-

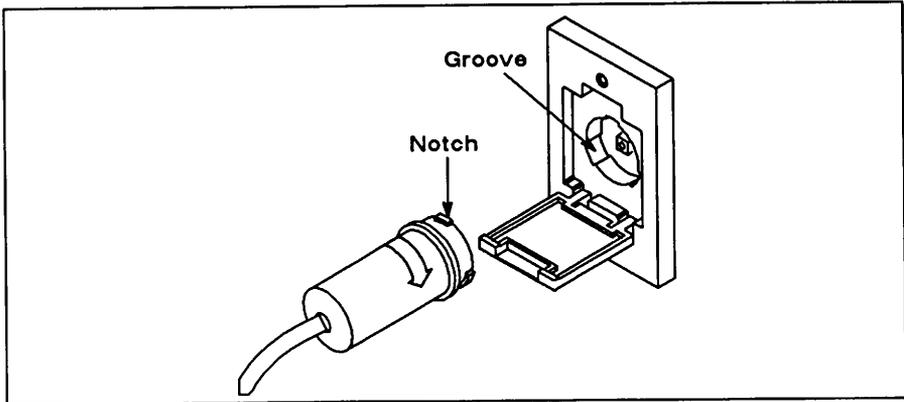
7 Find the cable (008394) with the **network connector plug**.



8 Connect the network cable to the system unit. Tighten the screws, using a 3-mm (1/8-inch), flat-blade screwdriver.



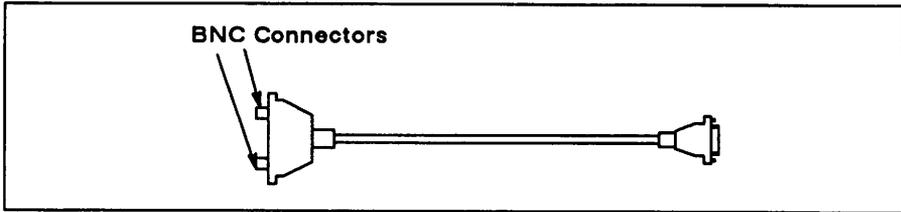
- 9 Align the cable plug notches with the connector box grooves. Turn the cable plug clockwise until it locks into place.



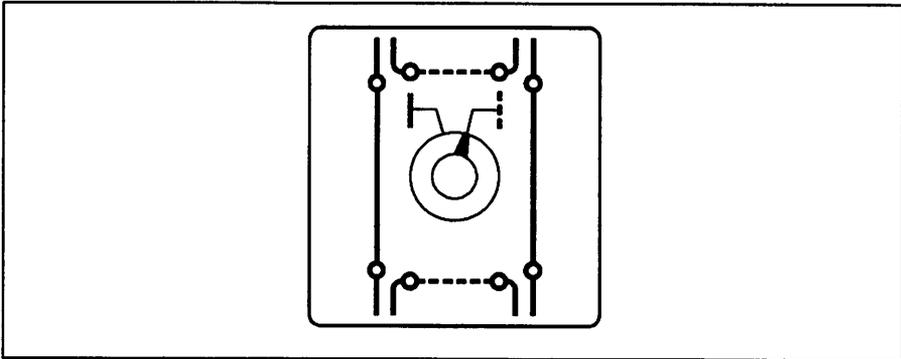
Checkpoint:

- ✓ You've now finished connecting the system to the Apollo Token Ring network by using the network connector.
 - ✓ If you plan to connect the system to an 802.3/802.5 network, turn to the "Connecting to the 802.3/802.5 Network" section.
 - ✓ If you are installing a diskless workstation or server, turn to the "Setting Up the Partner Node — Diskless Systems" section. If you are installing a workstation with a Winchester disk, turn to the "Booting the Workstation" section for instructions on booting the workstation. If you are installing a server with a Winchester disk, turn to the "Booting the Server" section for instructions on booting the server.
-

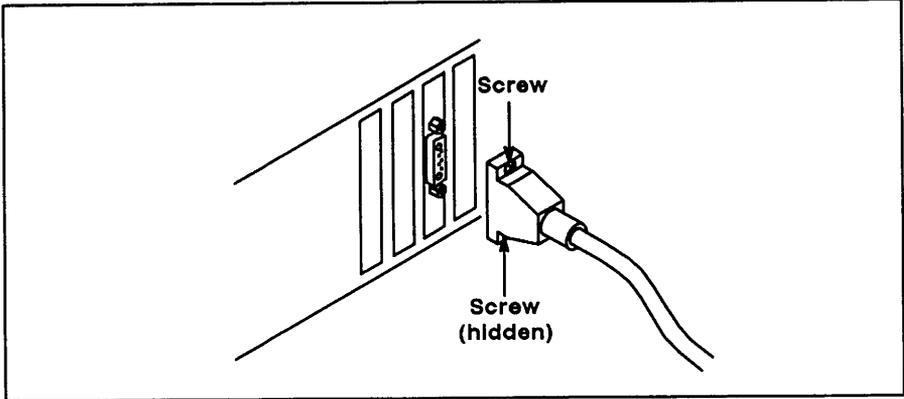
10 If you're using a cable with **BNC connectors** (007605) to connect the system to the network, tell the system administrator that you're about to switch the workstation or server loop out of the network.



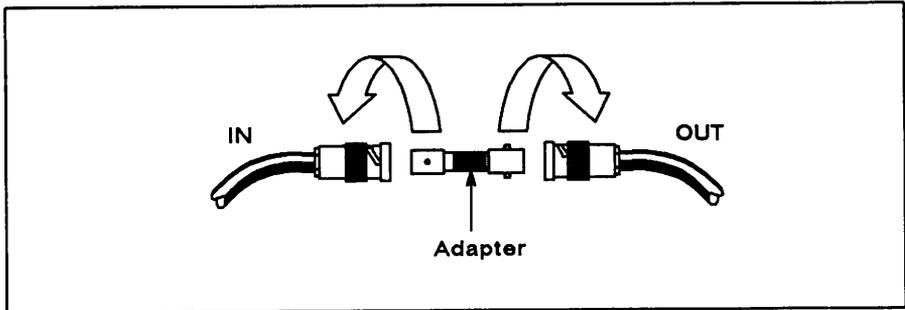
11 Switch the system loop out of the network.



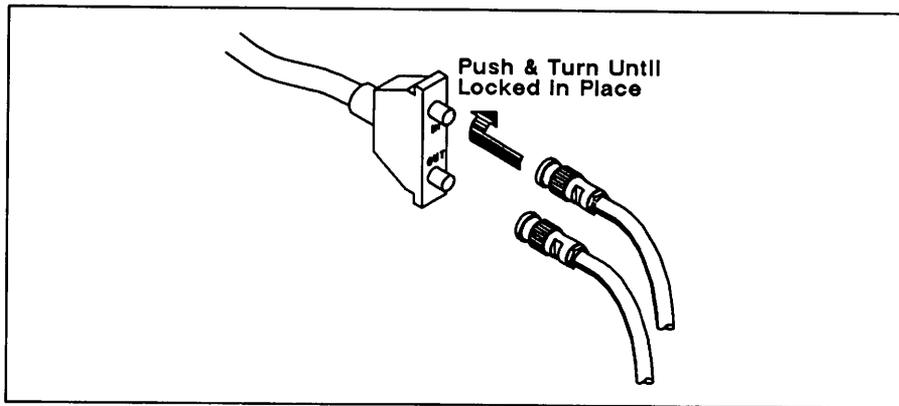
- 12** Connect the network cable to the system unit. Tighten the screws, using a 3-mm (1/8-inch), flat-blade screwdriver.



- 13** Disconnect the adapter between the cables in your network labeled IN and OUT.



- 14** Connect the IN cable to the BNC connector marked IN. Connect the OUT cable to the OUT connector.



Checkpoint:

- ✓ You've now finished connecting the system to the Apollo Token Ring network by using the network connector.
 - ✓ Don't switch the workstation or server back into the network until you're told to in either the "Booting the Workstation" or the "Booting the Server" section.
 - ✓ If you plan to connect the system to an 802.3/802.5 network, turn to the "Connecting to the 802.3/802.5 Network" section.
 - ✓ If you are installing a diskless workstation or server, turn to the "Setting Up the Partner Node — Diskless Systems" section. If you are installing a workstation with a Winchester disk, turn to the "Booting the Workstation" section for instructions on booting the workstation. If you are installing a server with a Winchester disk, turn to the "Booting the Server" section for instructions on booting the server.
-

Solving Apollo Token Ring Network Connection Problems

If you have a problem connecting the system to the Apollo Token Ring network, follow the suggestions listed on the following table. If your problem isn't described here, contact your designated service representative or call Apollo Customer Services at 1-800-2-APOLLO (1-800-227-6556) in the U.S. only. For countries outside the U.S., contact your nearest Apollo sales and service center.

Page	Step	Problem	Solution
43	13	The cables in your network aren't marked IN and OUT.	<ul style="list-style-type: none">▪ Ask your system administrator the direction of network data flow. ▪ Mark the IN network cable. ▪ Connect the cable to the system and continue the installation.

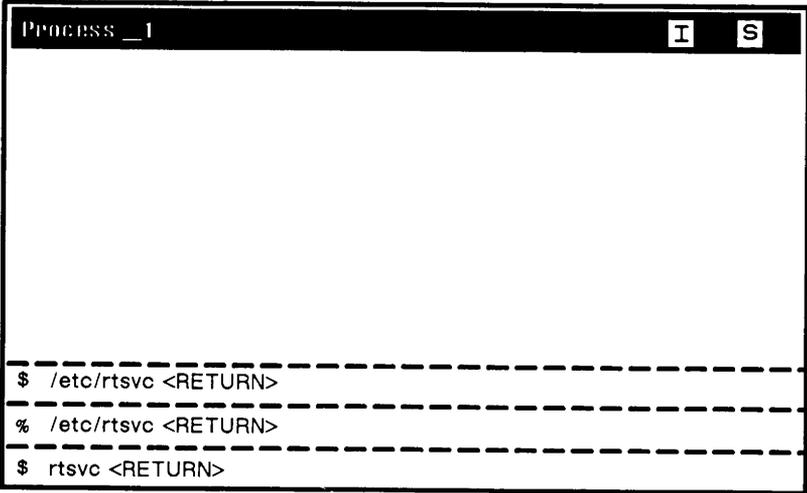
Connecting to the 802.3/802.5 Network

Follow these steps to connect the workstation or server to the 802.3/802.5 network.

- 1 Prepare to take a base-level reading of the network status to find out if your network is operating correctly. Log in at a **node already installed in your network.**

NOTICE: Perform Step 1 from **another** node already installed in the **same** network as the system that you are installing. Make sure its **principal** network is the same as the system you are installing.

- 2 Verify the principal network of the node you chose in Step 1. At the prompt, type:



```
Process _1  I  S
-----
SysV $ /etc/rtsvc <RETURN>
BSD  % /etc/rtsvc <RETURN>
Aegis $ rtsvc <RETURN>
```

- 3 The screen displays a list of the networks on the node as shown in the following illustration. The principal network is first in the list.

Process _1		
Controller	Net ID	Services Offered
-----	-----	-----
ETH802.3_AT RING	nnnnnn nnnnnn	Own traffic only Port not open

- 4 Catalog all new Apollo systems on the principal network. At the prompt, type:

```

Process _1
-----
SysV $ /etc/ctnode -update <RETURN>
BSD  % /etc/ctnode -update <RETURN>
Aegis $ ctnode -update <RETURN>

```

- 5 Verify that the principal network functions properly by checking to see if the Apollo systems on the network respond to a "list connected nodes" request. At the prompt, type:

```

Process _1
-----
SysV $ /etc/lcnode <RETURN>
BSD  % /etc/lcnode <RETURN>
Aegis $ lcnode <RETURN>

```

- 6 You'll see a screen similar to the following:

```

Process _1
-----

The node ID of this node is 21.
2 other nodes responded in random order.

ID      Boot time      Current Time    Entry Directory
21 yy/mm/dd  9:21:44 yy/mm/dd  16:06:22 //DOLLAR
17 yy/mm/dd  13:52:02 yy/mm/dd  16:06:13 //QUARTER
27 yy/mm/dd  12:53:28 yy/mm/dd  16:06:07 //NICKEL
11 yy/mm/dd  12:03:39 yy/mm/dd  16:06:15 **DISKLESS** partner node:17

```

If any active Apollo systems on the network respond to the request, continue with the installation.

If no active Apollo systems on the principal network respond to the **lcnode** command, log in at **another** workstation and type the **ctnode** and **lcnode** commands again. If no active Apollo systems respond on this attempt, you can be reasonably sure that your principal network is not functioning properly. Tell your system administrator or call Apollo Customer Services at 1-800-2-APOLLO (1-800-227-6556) in the U.S. only or contact your designated service representative. For countries outside the U.S., call your nearest Apollo sales and service center. **Network problems must be corrected before continuing the installation.**

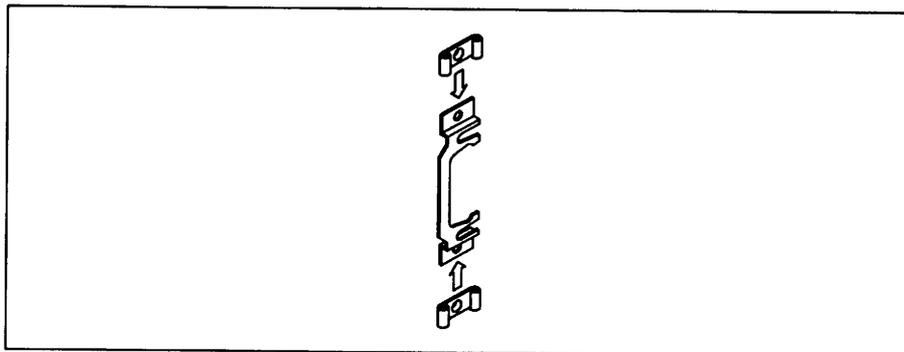
- 7 If the site has more than one network, check the alternate network by invoking the **lcnode** (for the 802.3 or 802.5 network) or the **probenet** (for the Apollo Token Ring network) command from another node that has the alternate network as its principal network. (See the "Connecting to an Apollo Token Ring Network" section for information on running the **probenet** command.)

Checkpoint:

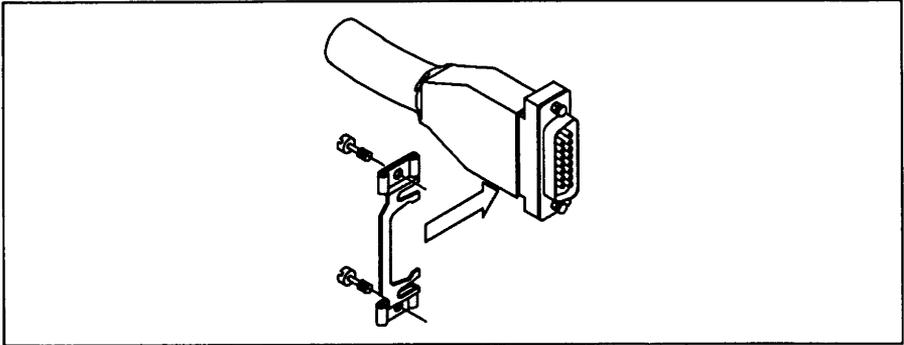
- ✓ You can connect the system to an 802.3 network by using an **external transceiver** or an **on-board (internal) transceiver**. If you installed the controller board into the system unit, you chose the jumper setting during the installation. If the controller board was installed in the system unit during manufacturing, it was set for an **on-board transceiver**.
- ✓ To connect the system to an **802.3** network by using the **external transceiver**, follow the directions in **Steps 8 through 11**.
- ✓ To connect the system to an **802.3** network by using an **on-board transceiver**, follow the directions in **Steps 12 through 14**.

- ✓ The **802.5 Network Controller-AT** can be connected in two ways. The type of installation depends on the type of cable and the wall plate or Multistation Access Unit (MAU) with which you are interfacing.
 - ✓ To connect the system to an **802.5 network** by using a **cable with D-subminiature** and **802.5 network D9 connectors**, perform **Steps 15 and 16**.
 - ✓ To connect the system to an **802.5 network** by using the **Type 3 cable with RJ11 connectors**, perform **Steps 17 and 18**.
-

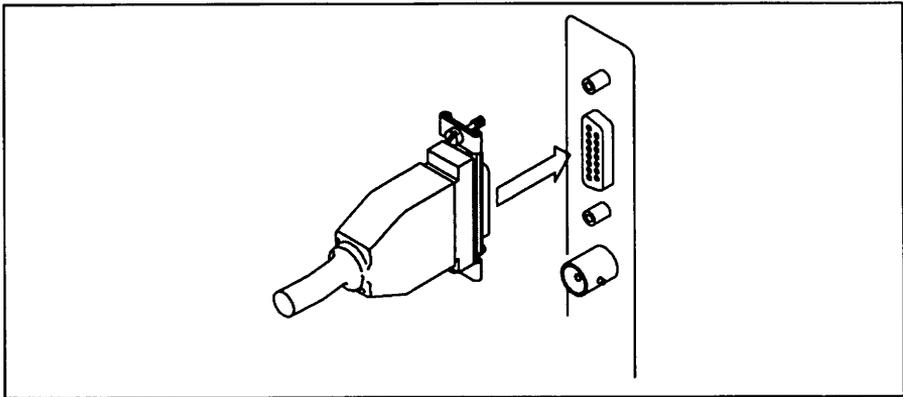
- 8** To connect the system to an **802.3 network** by using the **external transceiver**, you'll need to install the adapter plate assembly to adapt the transceiver cable's D-subminiature connector to the standoffs on the system unit. Slide the threaded clips onto both ends of the adapter plate.



- 9** Insert the screws into the clips on the adapter plate assembly. Align the slots on the adapter plate with the lock posts on the network cable's connector. Slide the adapter plate onto the connector.



- 10** Connect the network cable to the system unit. Tighten the screws, using a 3-mm (1/8-inch), flat-blade screwdriver.

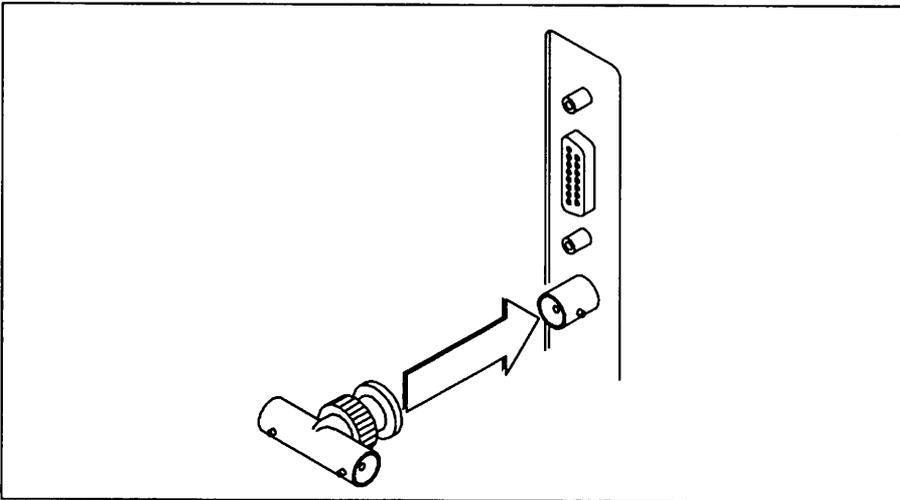


- 11** Connect the other end of the transceiver cable to the external transceiver. Slide the lock closed to secure the connection.

Checkpoint:

- ✓ You've now finished connecting the system to the 802.3 network by using the external transceiver. Proceed to the Checkpoint following Step 18.
-

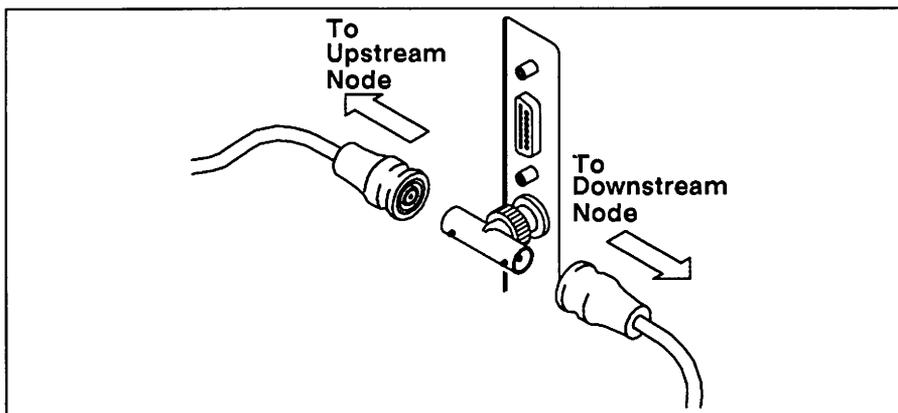
- 12** To connect the system to an **802.3** network by using an **on-board transceiver**, you'll need to connect the network cable to the T-connector that attaches to the system unit's BNC connector. Push the T-connector onto the system unit's BNC connector. Turn the sleeve clockwise 1/4 turn until it stops.



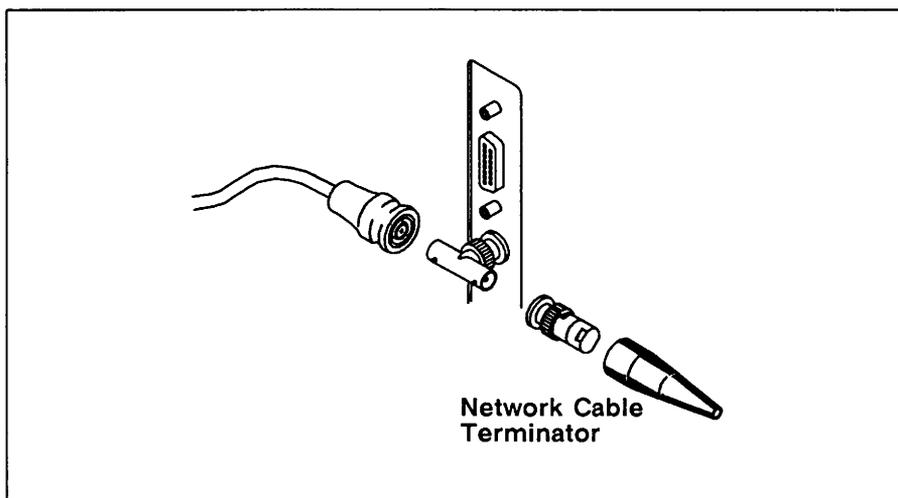
Checkpoint:

- ✓ If the system that you are connecting is at the end of the network cable, go to Step 14; otherwise, continue with Step 13.
-

- 13** Connect the ends of the network cable onto the T-connector. Turn the sleeves clockwise 1/4 turn until they stop.



- 14** Connect the network cable to the network side of the T-connector. If the system is at the end of the network segment, use a network cable terminator on the terminal end of the T-connector.

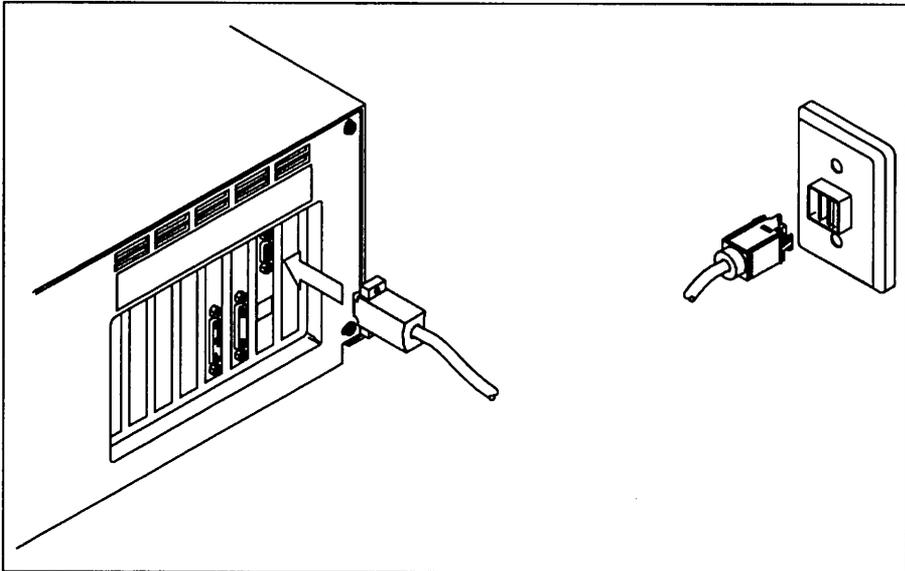


Checkpoint:

- ✓ You've now finished connecting the system to the 802.3 network by using the external transceiver. Proceed to the Checkpoint following Step 18.
-

15 To connect the system to an **802.5** network by using a **cable with D-subminiature** and **802.5 network D9 connectors**, go to the back of the system unit and insert the D-subminiature connector into the network controller. Tighten the two screws, using a 3-mm (1/8-inch), flat-blade screwdriver.

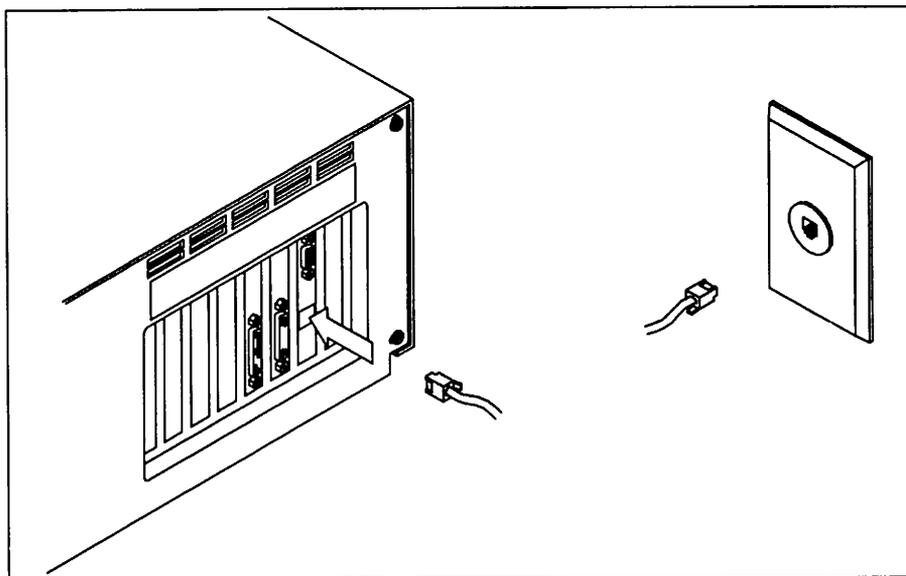
16 Insert the D9 connector into the wall plate or MAU.



Checkpoint:

- ✓ You've now finished connecting the system to the 802.5 network. Proceed to the Checkpoint following Step 18.
-

- 17 To connect the system to an 802.5 network by using the **Type 3 cable with RJ11 connectors**, squeeze the RJ11 connector's spring clip and insert it into the faceplate at the rear of the network controller. Release the spring clip to complete the connection.
- 18 Squeeze the RJ11 connector's spring clip and insert it into the faceplate on the wall plate or the MAU. Release the spring clip to complete the connection.



Checkpoint:

- ✓ If you are installing a diskless workstation or server, turn to the "Setting Up the Partner Node — Diskless Systems" section. If you are installing a workstation with a Winchester disk, turn to the "Booting the Workstation" section for instructions on booting the workstation. If you are installing a server with a Winchester disk, turn to the "Booting the Server" section for instructions on booting the server.
-

Setting Up the Partner Node — Diskless Systems

This section provides instructions for setting up a partner node for a diskless system.

Checkpoint:

- ✓ If the workstation or server has a **Winchester disk**, proceed directly to either the “Booting the Workstation” or “Booting the Server” section of this manual.
-

A **diskless** workstation or server boots the operating system from a disked node that is running in the same loop (on a Apollo Token Ring network) or on the same segment (on an 802.3/802.5 network). The disked node is called the **partner node**. There are several requirements that you should know when you select the partner node:

- You can only partner with another system that resides on the same **principal** network as the system you are installing. If there is only one type of network controller in your system, by default that network type becomes the principal network. If your system has more than one type of network controller, you will choose the principal network later in this manual. For now, make a note of the principal network that you will choose.
- The partner node must be running the required software release for your system as described in the *Software Release Document*.

- 3 The screen displays information about the network controllers that reside in the system. If the node has more than one network controller, the network controller listed first is the principal network. In the following example, the node's principal network is the 802.3 network.

Process _1		
Controller	Net ID	Services Offered
ETH802.3_AT RING	nnnnnn nnnnnn	Own traffic only Port not open

- 4 Make sure the partner node is running the required software release for your system. Go to the partner node and type:

Process _1	
SysV	\$ /usr/apollo/bin/bltd <RETURN>
BSD	% /usr/apollo/bin/bltd <RETURN>
Aegis	\$ bltd <RETURN>

- 5 The screen displays the software revision number:

```
Process _1 I S

**** Node nnnnn **** "//entry"
Domain/OS kernal, revision n.n, dd/mm/yy
```

- 6 Check to make sure that the partner node contains the correct `/sau` directory as specified in your *Software Release Document*. Type the following command on the partner node:

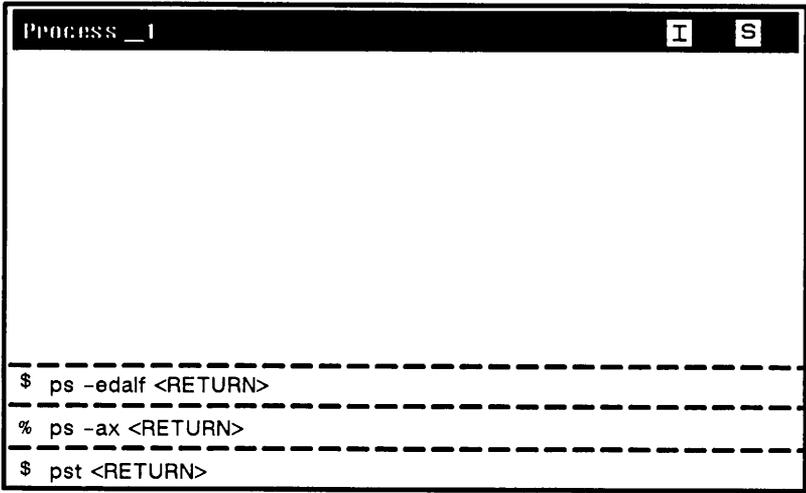
```
Process _1 I S

-----
SysV $ cd /; ls <RETURN>
BSD % cd /; ls <RETURN>
-----
Aegis $ wd /; ld <RETURN>
```

- 7 The screen displays a list of the directories contained in the top-level directory. If the partner you've chosen isn't running the appropriate software release or doesn't have the correct `/sau` directory, select another node as the partner and go back to Step 1.

NOTICE: If **no nodes** in your network fulfill the preceding requirements, you'll have to install new software and the correct `/sau` directory on the partner node. For instructions, refer to *Installing Software with Apollo's Release and Installation Tools* (008860); this manual ships with all standard software.

- 8 Type the following on the partner node to check that the `netman` process is running:



```
Process _1 [I] [S]
-----
SysV $ ps -edalf <RETURN>
-----
BSD  % ps -ax <RETURN>
-----
Aegis $ pst <RETURN>
```

The screen displays all processes running on the node. Check to make sure that the screen displays the `/sys/net/netman` process.

If you need to start the `netman` process, press the `<CMD>` key, and enter `cps /sys/net/netman <RETURN>`. Using the `pst` command, verify that `netman` is running.

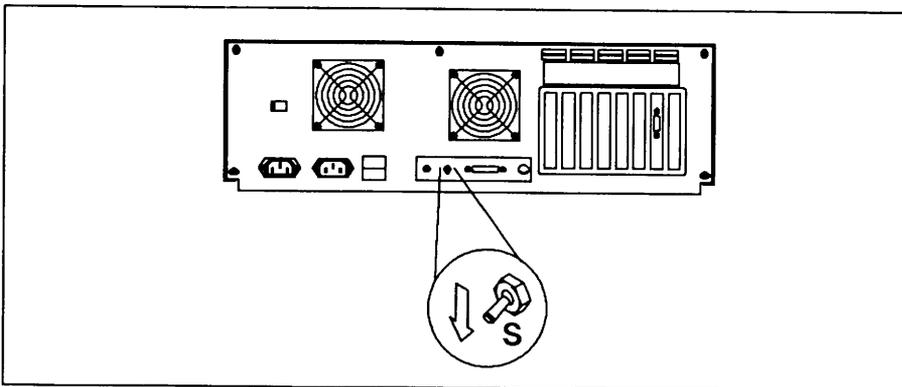
Booting the Workstation

This section provides instructions for booting a workstation. If you have any booting problems, see the "Solving Booting Problems with the Workstation" table at the end of this section.

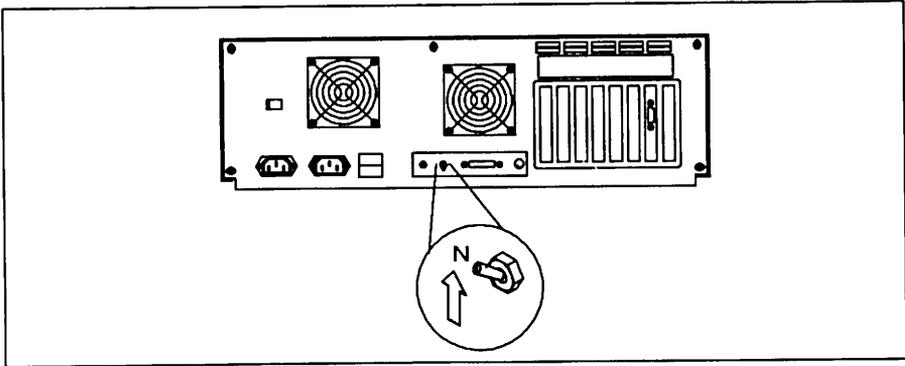
Checkpoint:

- ✓ If your workstation is **diskless**, go to the the previous section, "Setting Up the Partner Node — Diskless Systems", and follow the instructions for setting up a partner node. Return to this section once you set up the partner node.

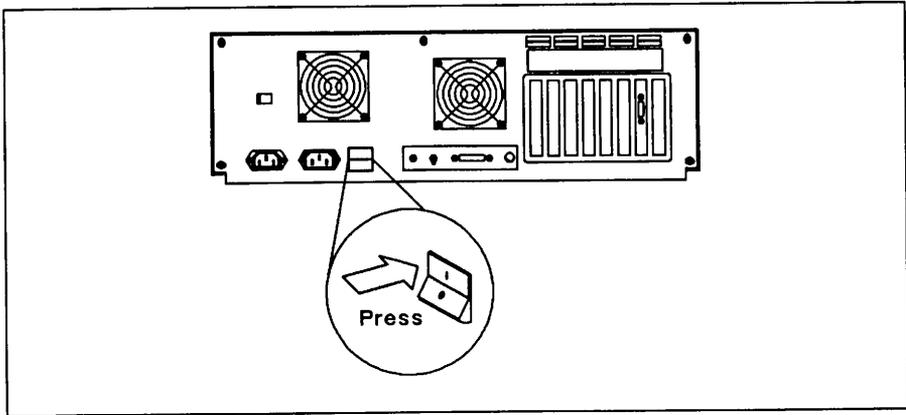
-
- 1 If you installed any **optional** or **system component boards** in your system, set the **Normal/Service** switch (SW2) on your workstation to **Service**.



If you **did not** install any optional or system components in your system, set the **Normal/Service** switch (SW2) on your workstation to **Normal**.



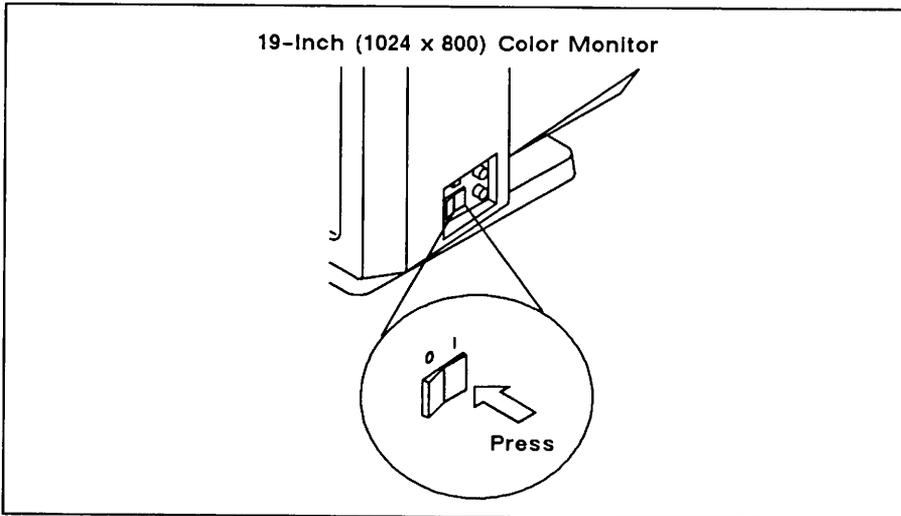
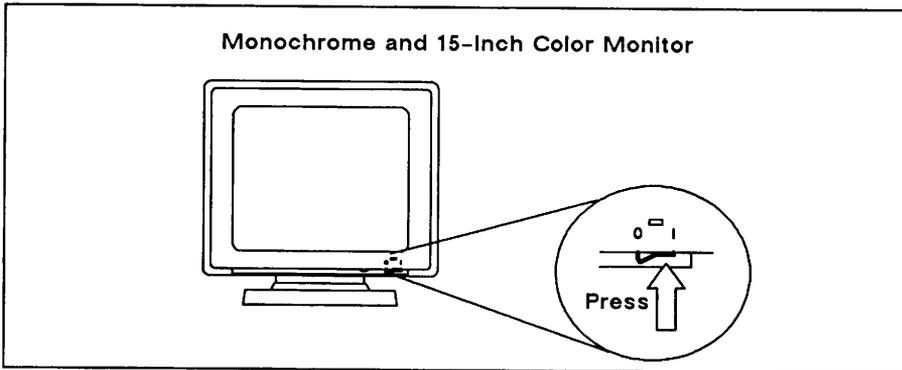
2 Turn ON (1) the system unit.

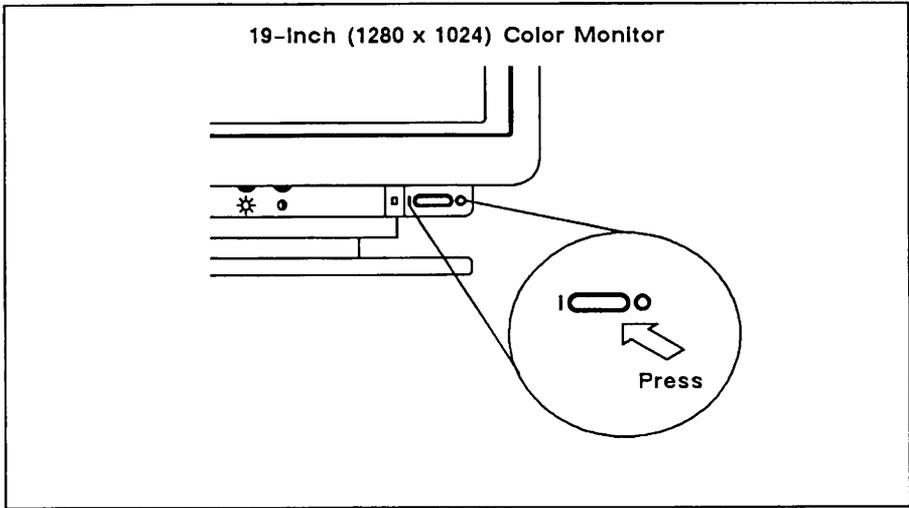


NOTICE: If the system is at the Mnemonic Debugger (MD) level, keep the monitor intensity turned down to prevent damage to the monitor screen (see the **CAUTION** on page vi). The operating system software contains a time-out function that turns off the monitor's display after a 15-minute absence of keyboard activity.

- 3 Turn ON (1) the monitor. The monitor lights come on.

If you turned on the system in **Service** mode, the screen now displays the > prompt from the Mnemonic Debugger (MD) program. If you turned on the system in **Normal** mode, the screen displays test numbers for approximately 20 seconds as the system performs power-up diagnostics.



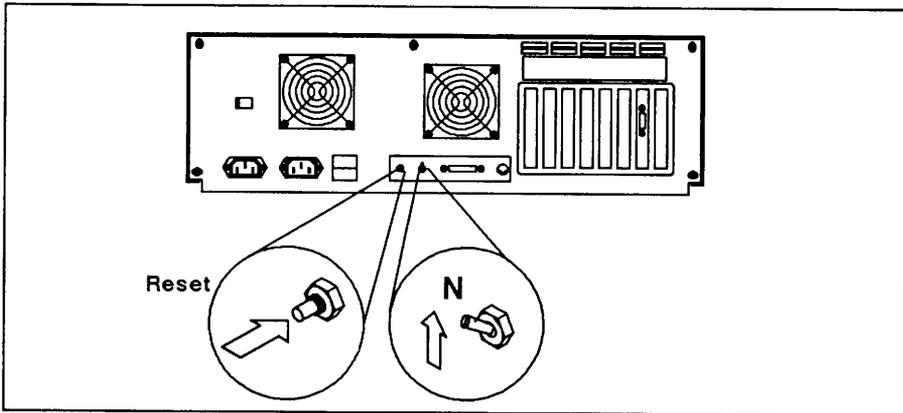


Checkpoint:

- ✓ If you installed any system component boards in your system, you'll need to run the **config** utility program to update your system's configuration table (a part of the system's internal memory). It is important to update the configuration table so that the system knows what components to look for during the power-on and other diagnostic tests. After completing the **config** instructions in Appendix A, **return to Step 4** in this section.
 - ✓ If you **didn't** install any system component board(s) in the system, go to Step 5.
-

NOTICE: Read the important notice in the "Introduction" about the Hardware Acceptance Package (HAP).

- 4 Set the **Normal/Service** switch (SW2) on **your system** to **Normal**. Press the **Reset** button (SW1). The system runs the power-on diagnostics and boots the Hardware Acceptance Package (HAP).



NOTICE: If you cannot boot the HAP software, check for possible solutions in the "Solving Booting Problems with the Workstation" table at the end of this section. If your problem still persists or isn't listed, call Apollo Customer Services or your designated service representative for assistance.

- 5 If you **receive** one of the following messages, you need to set the system **calendar** before you can boot the HAP software. Respond to the following screen prompts.

If you **don't receive** one of these messages, go to Step 8.

More than 14 days have elapsed since the last shutdown.

Do you want to run domain/os with the current calendar? n <RETURN>

Please set the calendar using the offline calendar program.

>

The calendar is more than a minute slow.

Do you want to run domain/os with the current calendar? n <RETURN>

Please set the calendar using the offline calendar program

>

6 Use the following commands to start the **calendar** program:

```
> re <RETURN>
> <RETURN>
md rev x.x year/month/day
> <RETURN>
> ex calendar <RETURN> *
```

*For diskless nodes, type:

```
> di n 0nnnnn <RETURN>
> ex calendar <RETURN>
```

7 Your screen now displays a series of prompts. Answer the disk type question as shown in the following illustration. Press <RETURN> after answering each question.

NOTICE: Ignore the last prompt on the screen. **Do not shutdown, and do not reboot** the system.

```
> ex calendar <RETURN>
calendar-offline, revision n.n, y/m/d
Please enter disk type (w,s, or f) [,lvno]
If...enter none (n): w <RETURN>
.
.
.
You should now shutdown and reboot the
system to run with the new calendar setting.
```

- 8 When Done appears on your screen, type the following to boot the HAP software:

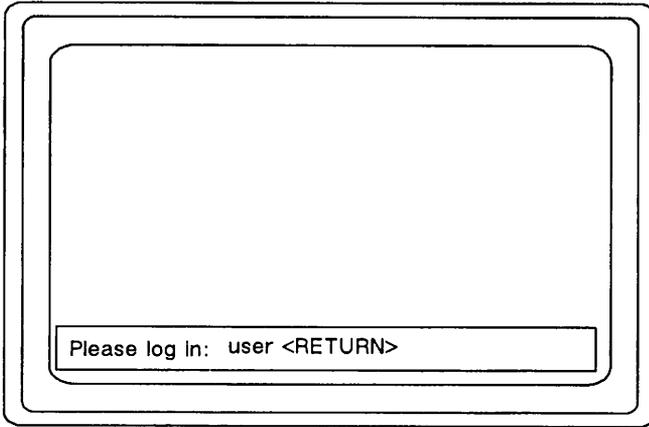
```
> re <RETURN>
> <RETURN>
md rev x.x year/month/day
> <RETURN>
> ex domain_os <RETURN>*
```

* For diskless nodes, to boot HAP software from MD, type:

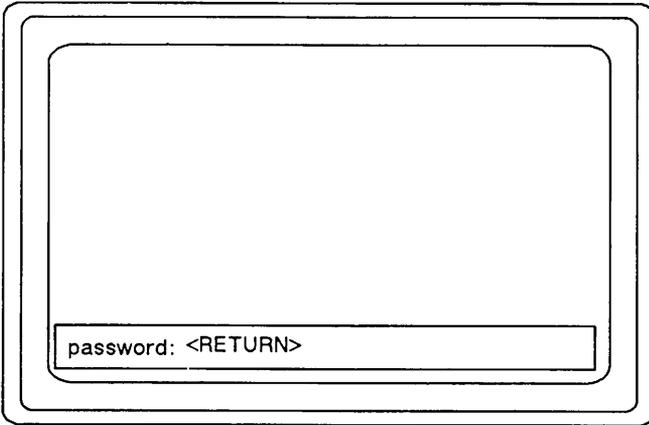
```
> di n <RETURN>
> ex domain_os <RETURN>
```

NOTICE: If you cannot boot the HAP software, check for possible solutions in the "Solving Booting Problems with the Workstation" table at the end of this section. If your problem still persists or isn't listed, call Apollo Customer Services or your designated service representative for assistance.

9 When the log-in prompt appears, log in as follows:



A terminal window with a double-line border. At the bottom, there is a text prompt: "Please log in: user <RETURN>".



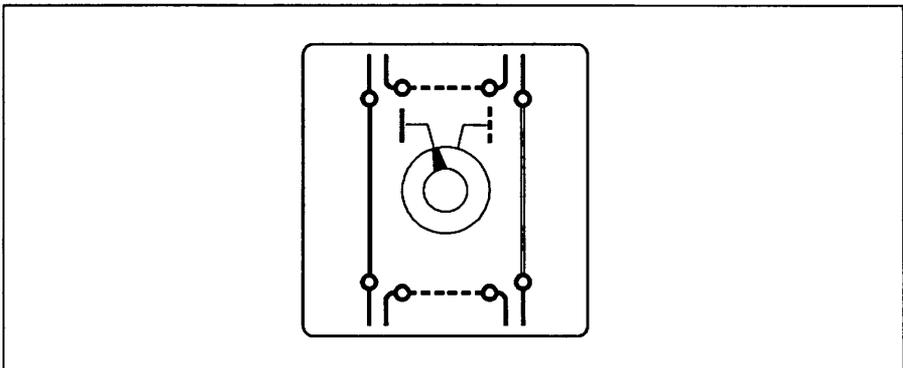
A terminal window with a double-line border. At the bottom, there is a text prompt: "password: <RETURN>".

NOTICE: If you see the following message, ignore it:
user_data/startup_dm.191 - name not found.

Checkpoint:

- ✓ If your system is a **standalone workstation**, you've now completed booting the HAP software. Turn to the "Testing Operation" section to test the system's operation.
 - ✓ If you've connected your system to an **Apollo Token Ring network** and it's the **principal** network, go to Step 10.
 - ✓ If you've connected your workstation to an **802.3/802.5 network** and it's the **principal** network, go to Step 14.
 - ✓ If you've connected to more than one network (that is, to an Apollo Token Ring network and an 802.3/802.5 network, or to two Apollo Token Ring networks), the system you are installing is a Domain internet router or a TCP/IP gateway, or both. Additional networks that your system is connected to are referred to as "alternate" networks.
 - ✓ The procedures in this manual test the principal network **only**. You need to test any alternate network(s) **after** you complete the "Testing Operation" section.
-

- 10** If you switched the system loop out of the Apollo Token Ring network, switch it back in.



11 Take another base-level reading of the network status to make sure the network is operating correctly. To do this, log in at a node already installed in your network.

12 At the prompt, type:

```

PROCESS _1
-----
SysV $ /etc/probenet <RETURN>
BSD  % /etc/probenet <RETURN>
Aegis $ probenet <RETURN>

```

13 You'll see a screen similar to the following:

```

PROCESS _1
-----
probenet

There are n nodes in the test.
Broadcasting 10 1024-byte packets. yy/mm/dd h:m:s # failures = n
Last Biph hardware failure detected by node nnnn on yy/mm/dd at h:m
                                MODEM
NODE   NAME   ATTEMPT  ERRS   ERRS   BIPH   ESB   TOKENS= n
-----
45F2   ELF     54       0      0      0      0      0   Self
2576   BOB     54       0      0      0      0      0
190A   CAT     54       0      0      0      0      0

```

If the screen doesn't show 0 readings in the ERRS column, tell your system administrator or call your designated service representative or Apollo Customer Services at **1-800-2-APOLLO** (1-800-227-6556) in the U.S. For countries outside the U.S., call your nearest Apollo sales and service center. **Network problems must be corrected before continuing the installation.**

Checkpoint:

- ✓ You've now finished booting the HAP software. Turn to the "Testing Operation" section of this manual for instructions on how to test the system's operation.
-

14 Check to see that the 802.3/802.5 network is functioning properly. To do this, log in at a **node already installed in your network.**

15 Catalog all new Apollo systems on the 802.3/802.5 network. At the prompt, type:

```
Process _1 [I] [S]
-----
SysV $ /etc/ctnode -update <RETURN>
-----
BSD  % /etc/ctnode -update <RETURN>
-----
Aegis $ ctnode -update <RETURN>
```

- 16 Check to see if Apollo systems on the 802.3/802.5 network can respond to a "list connected nodes" request. At the prompt, type:

```

Process _1
-----
SysV $ /etc/lcnode <RETURN>
BSD  % /etc/lcnode <RETURN>
Aegis $ lcnode <RETURN>

```

- 17 You'll see a screen similar to the following:

```

Process _1
-----

The node ID of this node is 21.
2 other nodes responded in random order.

ID      Boot time      Current Time    Entry Directory
21 yy/mm/dd  9:21:44 yy/mm/dd  16:06:22 //DOLLAR
17 yy/mm/dd  13:52:02 yy/mm/dd  16:06:13 //QUARTER
27 yy/mm/dd  12:53:28 yy/mm/dd  16:06:07 //NICKEL
11 yy/mm/dd  12:03:39 yy/mm/dd  16:06:15 **DISKLESS** partner node:17

```

If any active Apollo systems on the network respond to the request, continue with the installation.

If no active Apollo systems on the network respond, log in at **another** workstation and reenter the `ctnode` and `lcnode` commands. If no active Apollo systems respond on this attempt, you can be reasonably sure that your 802.3/802.5 network is not functioning properly. Tell your system administrator or call your designated service representative or Apollo Customer Services at **1-800-2-APOLLO** (1-800-227-6556) in the U.S. For countries outside the U.S., call your nearest Apollo sales and service center. **Network problems must be corrected before continuing the installation.**

Checkpoint:

- ✓ You've now finished booting the HAP software. Turn to the "Testing Operation" section of this manual for instructions on how to test the system's operation.
-

Solving Booting Problems with the Workstation

If you have a problem booting the workstation, follow the suggestions listed on the following table. If your problem isn't described here, contact your designated service representative or call Apollo Customer Services at 1-800-2-APOLLO (1-800-227-6556) in the U.S. only. In countries outside the U.S., contact your nearest Apollo sales and service center.

Page	Step	Problem	Solution
56 71	— 10	The Domain workstation loop/segment doesn't have a disked node.	If the system is connected to an Apollo Token Ring network with BNC cables, switch the loop back into the network before setting up the partner node. Recommend that the system administrator place all diskless nodes in the same loop/segment as their partners.
70	9	You receive the message: The node ID you entered is not hexadecimal. Please enter HEX ID of the new node.	You didn't type the correct node ID. First try retyping the node ID. If you still receive the error message, check the system unit Product ID Label for the correct node ID.

(Continued)

Solving Booting Problems with the Workstation (Cont.)

Page	Step	Problem	Solution
62	1	You receive the message:	Record the message, and then press the System's Reset button on the back of the system unit. If you still receive an error message, contact your designated service representative or Apollo Customer Services.
64	3	TEST FAILED *	
69	8	<p>*You'll only see this message in Step 8 if you boot in Normal mode.</p> <p>You receive the message:</p> <p>My network node ID:nnnn Error: Receive timeout *</p> <p>* In Step 8, you'll only see this message if you boot in Normal mode.</p>	<p>If you're booting a disked DNxxxx, do the following:</p> <ul style="list-style-type: none"> ▪ Record the message in the logbook. ▪ Make sure the Normal/Service switch is set to Normal (up). ▪ Press the Reset button. ▪ Repeat the booting procedure.

(Continued)

Solving Booting Problems with the Workstation (Cont.)

Page	Step	Problem	Solution
62	1	You receive the message:	<p>If you're booting a diskless system, do the following:</p> <ul style="list-style-type: none"> ▪ Check your system's ID and reenter it on the partner node. ▪ Check to see if the partner node is running properly. If not, choose another partner and repeat the booting procedure. Then report the partner node's problem to your system administrator. <p>These error messages suggest network problems. Check with your system administrator.</p>
64	3	My network node ID:nnnn	
69	8	Error: Receive time-out *	
		<p>You receive the message: My network node ID: nnnn but nothing happens*</p> <p>You receive the message: Error: Transmit request failed*</p> <p>* You'll only see this message in Step 8 if you boot in Normal mode.</p>	

(Continued)

Solving Booting Problems with the Workstation (Cont.)

Page	Step	Problem	Solution
62 64 69	1 3 8	<p>You receive the message: Error: Sysboot not found. *</p> <p>You receive the message: Boot error: *</p> <p>* You'll only see this message in Step 8 if you boot in Normal mode.</p>	<p>The program that loads the HAP software can't run. Record the message, and then press the Reset button. If you still receive an error message, contact your designated service representative or Apollo Customer Services.</p> <p>The system can't load the HAP software. Record the message, and press the Reset button. If you still receive this message, contact your designated service representative or Apollo Customer Services.</p>
63	2	<p>The power lights don't come on and the screen remains blank.</p>	<p>Make sure all cables are connected securely.</p> <p>Make sure the power switches are set to ON (1).</p> <p>If the problems persist, call your designated service representative or Apollo Customer Services.</p>

(Continued)

Solving Booting Problems with the Workstation (Cont.)

Page	Step	Problem	Solution
[64 63]	[3 2]	The power lights come on, but the screen is blank or flickers.	<p>Turn the Brightness knob clockwise. If the screen is still blank, turn off the power switches. When all LEDs are off, check the video cable connections.</p> <hr/> <p>CAUTION</p> <p>Do not unplug the monitor video cable while the system unit is powered on.</p> <hr/> <p>If problems persist, call your designated service representative or Apollo Customer Services.</p>

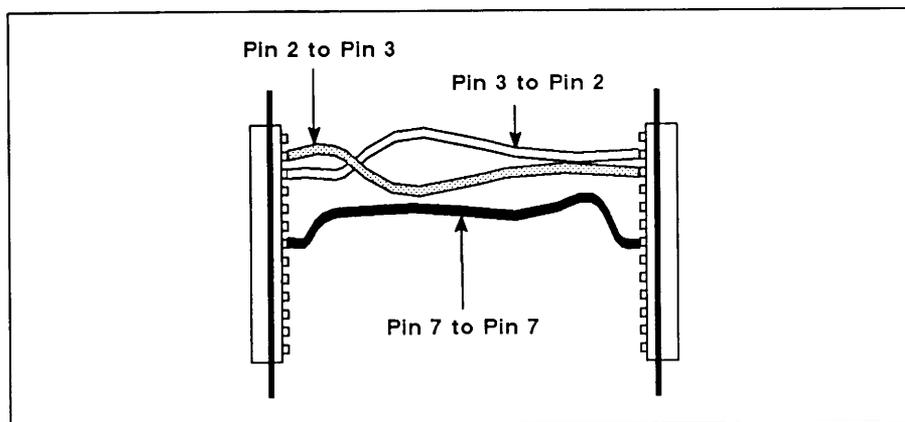
Booting the Server

This section provides instructions for booting a server. If you have any booting problems, see the "Solving Booting Problems with the Server" table at the end of this section.

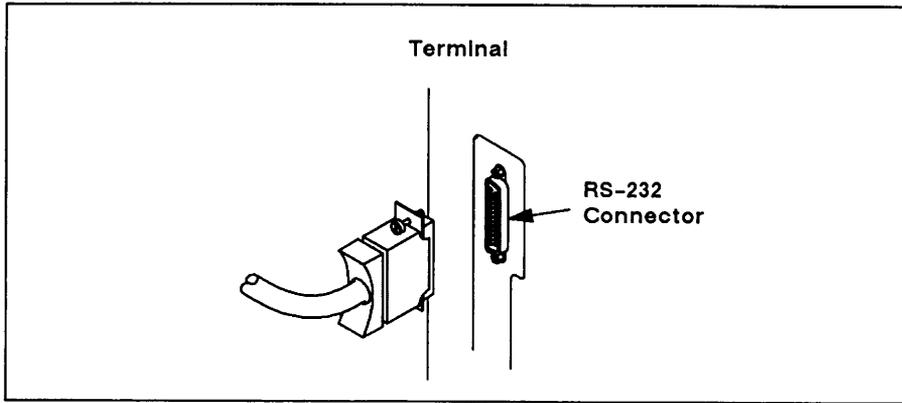
Checkpoint:

- ✓ If your server is **diskless**, go to the the "Setting Up the Partner Node — Diskless Systems" section, and follow the instructions for setting up a partner node. Return to this section once you set up the partner node.
-

- 1 You'll now use an RS-232 cable to connect the server to a terminal or node in your network. Before using your RS-232 cable,
 - Make sure pins 2 and 3 are reversed on **one** connector.
 - Make sure pin 7 is connected to pin 7.



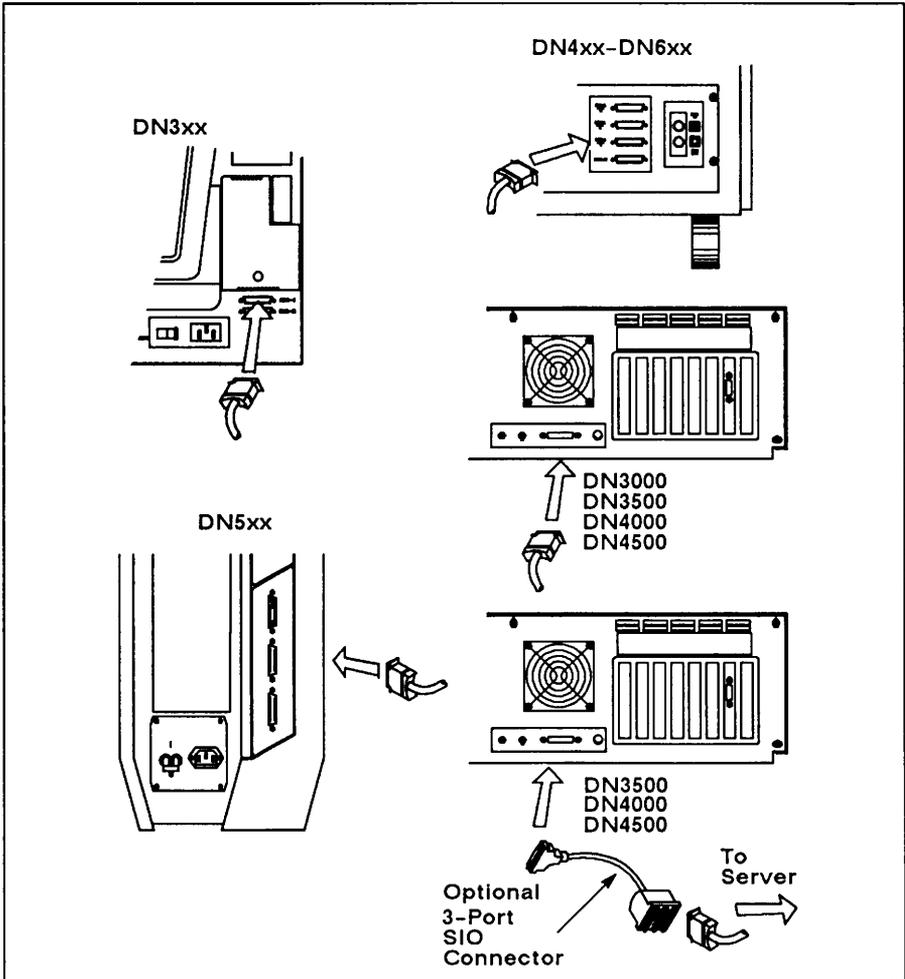
- 2 If you're connecting the server to a terminal, connect one end of the RS-232 cable to the terminal's RS-232 connector.



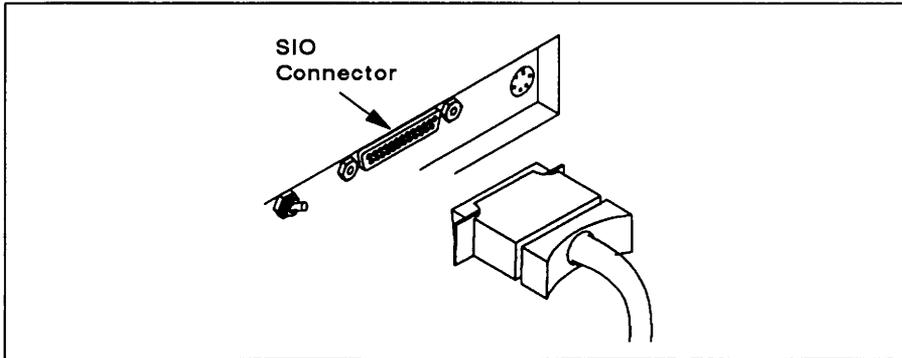
If you're connecting the server to a node, connect one end of the RS-232 cable to the node's SIO1 connector.

Note the optional connector configuration for the DN3500/DN4000/DN4500.

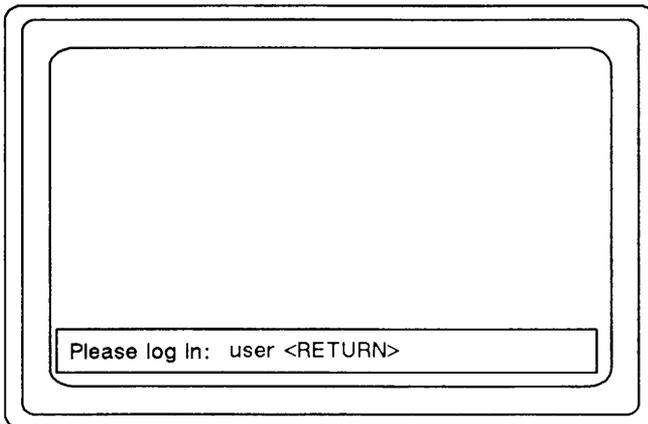
The node should be in the same loop/segment as the server.



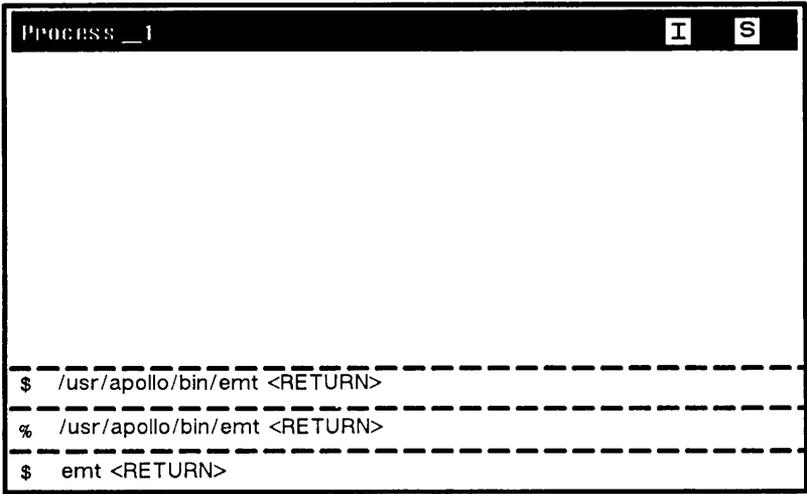
- 3 Connect the RS-232 cable to the DSP3000/DSP3500 SIO connector (P2) or SIO1 of the DSP3500/DSP4000/DSP4500 optional 3-port SIO connector.



- 4 If you're using a **node**, go to Step 5. If you're using a **terminal**, go to Step 8.
- 5 Log in on the node. Press **<RETURN>** when asked for a password.

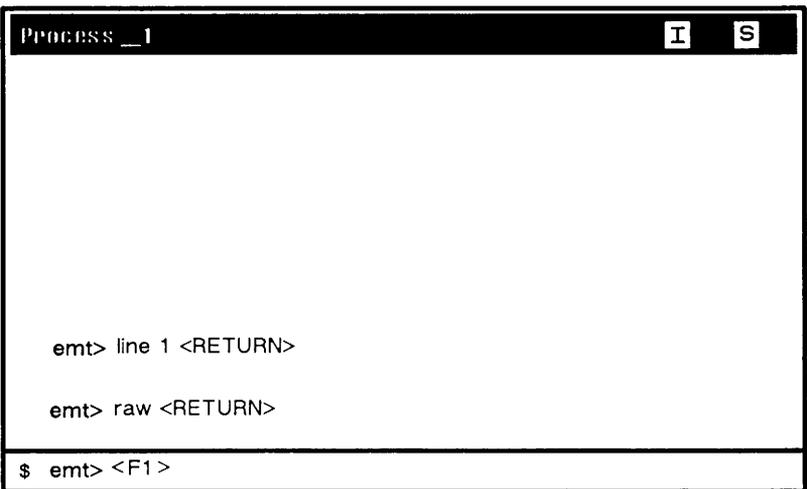


- 6 Type the following command to direct the node to act as a terminal:



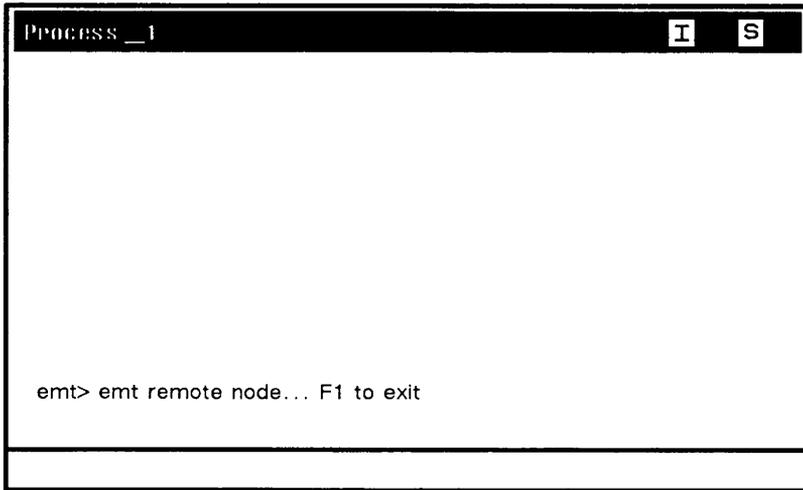
```
Process _1 I S
-----
SysV $ /usr/apollo/bin/emt <RETURN>
BSD  % /usr/apollo/bin/emt <RETURN>
Aegis $ emt <RETURN>
```

- 7 When you receive the `emt>` prompt, type the following sequence of commands:



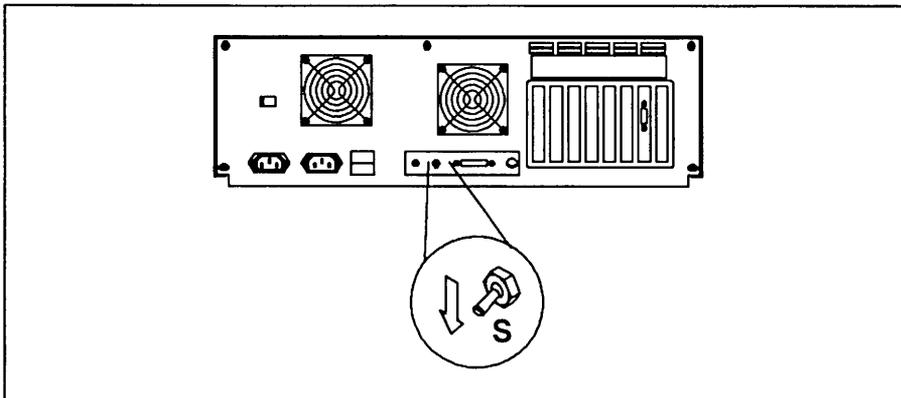
```
Process _1 I S
-----
emt> line 1 <RETURN>
emt> raw <RETURN>
$ emt> <F1 >
```

After you press the <F1> key, the node displays the following message:

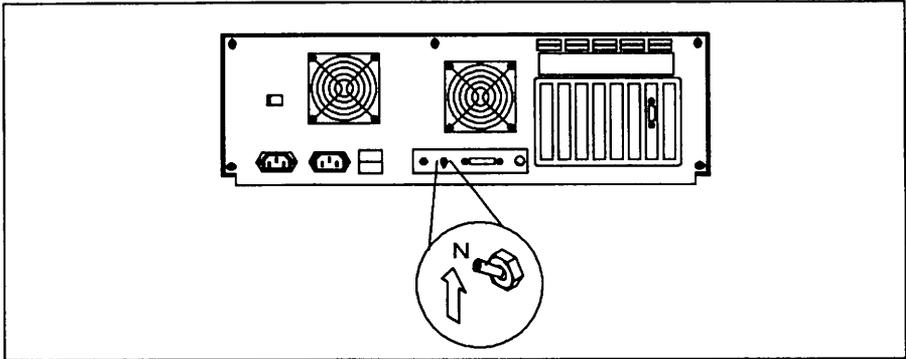


The node is now acting as a terminal connected to the server.

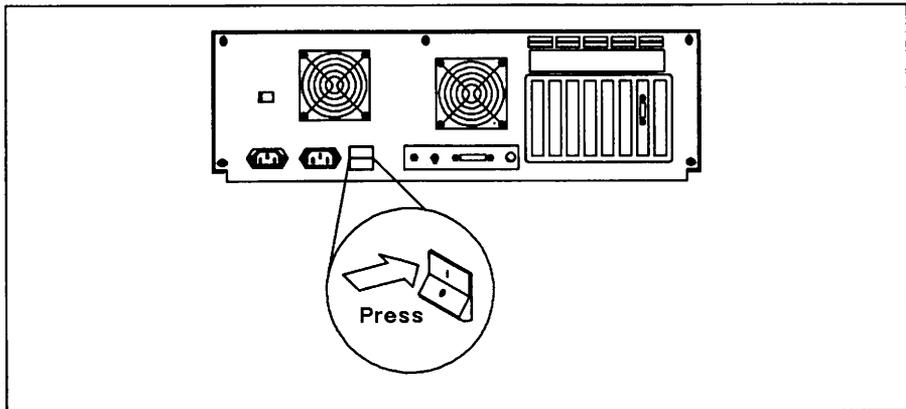
- 8 If you installed any **system component boards** in your system, set the **Normal/Service** switch (SW2) on your server to **Service**.



If you **did not** install any system component boards in your system, set the **Normal/Service** switch (SW2) on your server to **Normal**.

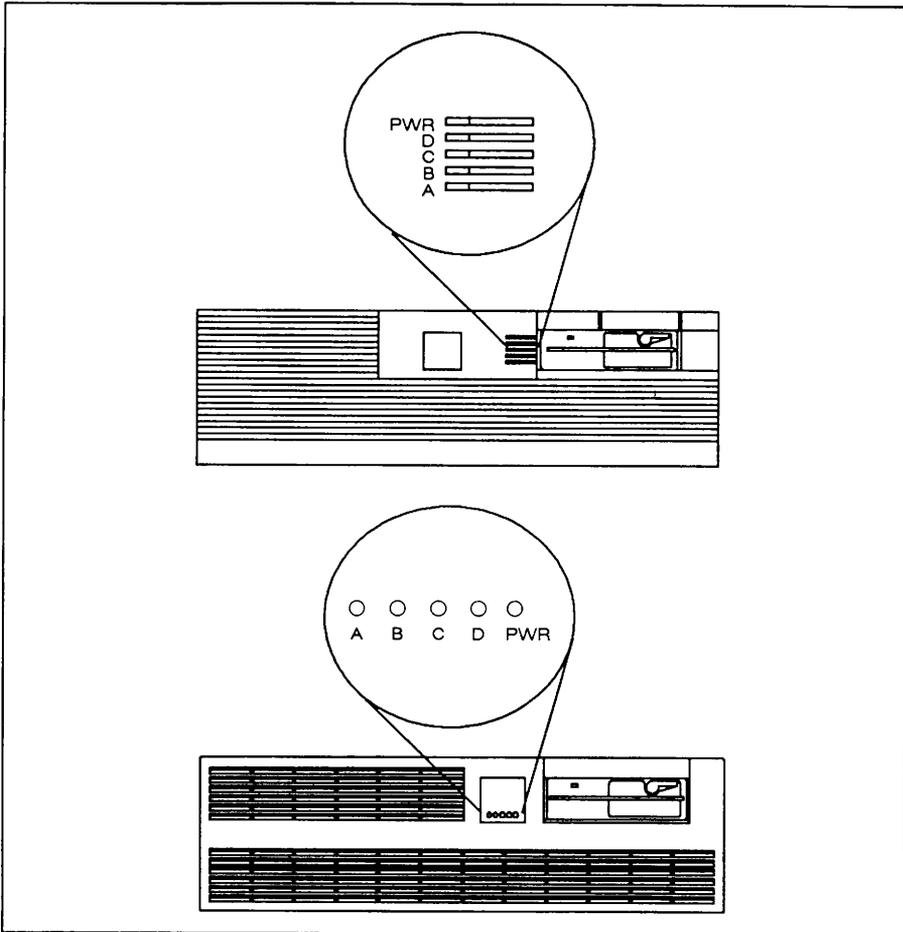


- 9 Turn ON (1) the system unit. The green power LED on the front of the system unit comes on. If you turned on the system in **Service** mode, the screen now displays the > prompt from the Mnemonic Debugger (MD) program.



If you turned on the system in **Normal** mode, for about 20 seconds the screen displays test numbers as the server performs diagnostics. When the operating system is running, LED **D** blinks continuously. LEDs **A**, **B**, and **C** blink intermittently, depending on disk and network activity.

The system unit bezel is one of the following two designs.

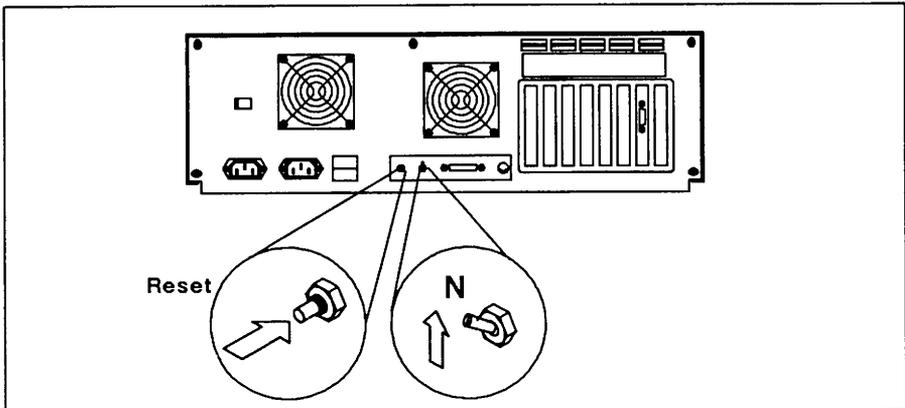


NOTICE: If you turned on your system in **Normal** mode and the HAP software does not boot, check for possible solutions in the "Solving Booting Problems with the Server" table at the end of this section. If your problem still persists or isn't listed, you may not have the correct software revision level to boot your system. Call Apollo Customer Services or your designated service representative for assistance.

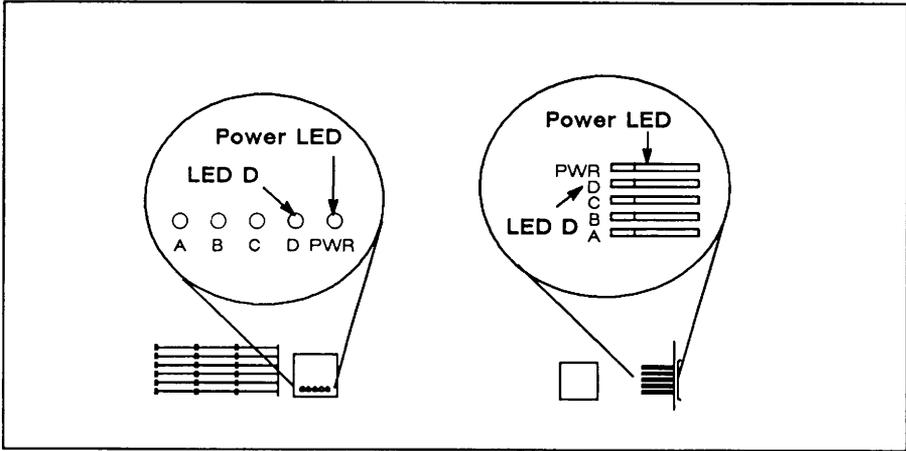
Checkpoint:

- ✓ If you installed any system component boards, run the **config** utility program according to the instructions in Appendix A of this manual. You **must** do this to update the system configuration table. When finished, proceed to Step 10 of this section.
 - ✓ If you **didn't** install any optional or system component boards, go to Step 11.
-

- 10** Set the **Normal/Service** switch (SW2) on your server to **Normal**. Press the **Reset** button (SW1).



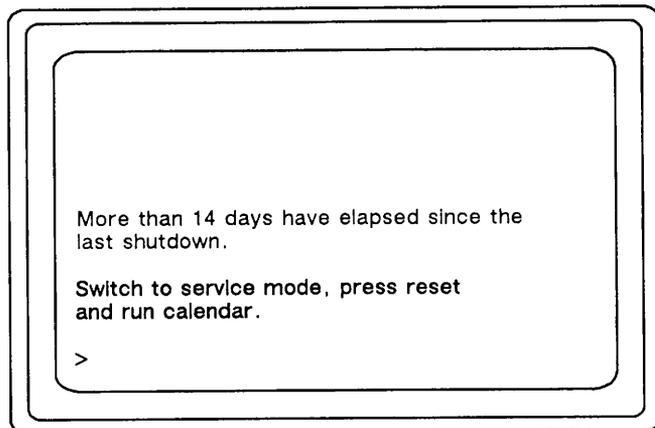
For about 20 seconds, the screen displays test numbers as the server performs diagnostics. When the HAP software is running, LED D blinks continuously. LEDs A, B, and C blink intermittently, depending on disk and network activity.



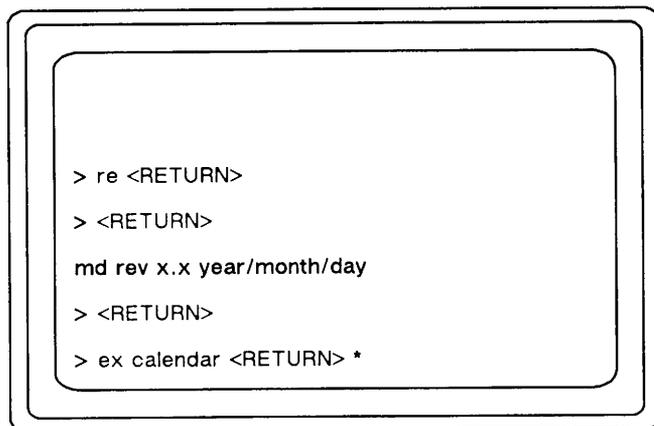
NOTICE: If you cannot boot the HAP software, check for possible solutions in the "Solving Booting Problems with the Server" table at the end of this section. If your problem still persists or isn't listed, contact Apollo Customer Services or your designated service representative for assistance.

- 11 If you **receive** the following message, you need to set the server **calendar** before you can boot the HAP software.

If you **don't receive** this message, you are now ready to check the status of the network. Go to the Checkpoint after Step 14.



- 12 On your node/terminal, enter the following commands to start the **calendar** program:

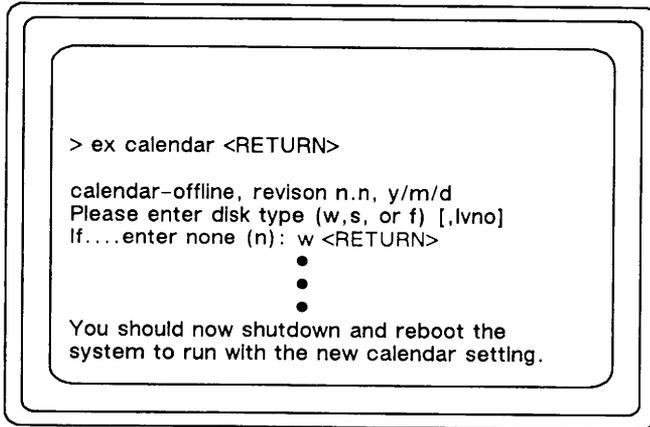


*For diskless nodes, type:

```
> di n 0nnnnn <RETURN>
> ex calendar <RETURN>
```

13 Your screen now displays a series of prompts. Answer the disk type questions as shown in the following illustration. Press <RETURN> after answering each question.

NOTICE: Ignore the last prompt on the screen. Do not **shutdown**, and do not **reboot** the system.



```
> ex calendar <RETURN>

calendar-offline, revision n.n, y/m/d
Please enter disk type (w,s, or f) [.,lvno]
If....enter none (n): w <RETURN>

      .
      .
      .

You should now shutdown and reboot the
system to run with the new calendar setting.
```

- 14 When Done appears on your screen, type the following to boot the HAP software:

```
> re <RETURN>
> <RETURN>
md rev x.x year/month/day
> <RETURN>
> ex domain_os <RETURN>*
```

* For diskless servers, to boot HAP software from MD, type:

```
> dl n <RETURN>
> ex domain_os <RETURN>
```

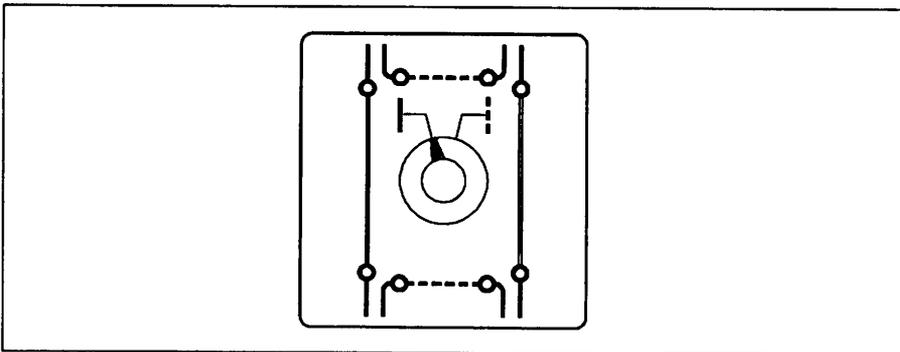
When the server boots successfully, LED D on the system unit flashes continuously.

NOTICE: If you cannot boot the HAP software, check for possible solutions in the "Solving Booting Problems with the Server" table at the end of this section. If your problem still persists or isn't listed, contact Apollo Customer Services or your designated service representative for assistance.

Checkpoint:

- ✓ If you've connected your server to an **Apollo Token Ring network** and it's the **principal** network, go to Step 15.
 - ✓ If you've connected your server to an **802.3/802.5 network** and it's the **principal** network, go to Step 19.
 - ✓ If you've connected to more than one network (that is, to an Apollo Token Ring network and an 802.3/802.5 network, or to two Apollo Token Ring networks), the system you are installing is a Domain internet router or a TCP/IP gateway, or both. Earlier in this section, you chose the principal network when you ran **config**. Additional networks that your system is connected to are referred to as "alternate" networks.
 - ✓ The procedures in this manual test the principal network **only**. You need to test any alternate network(s) **after** you complete the "Testing Operation" section.
-

- 15** If you switched the server loop out of the network, switch it back in.



16 Take another base-level reading of the network status to make sure the network is operating correctly. To do this, log in at a **node already installed in your network**.

17 At the prompt, type:

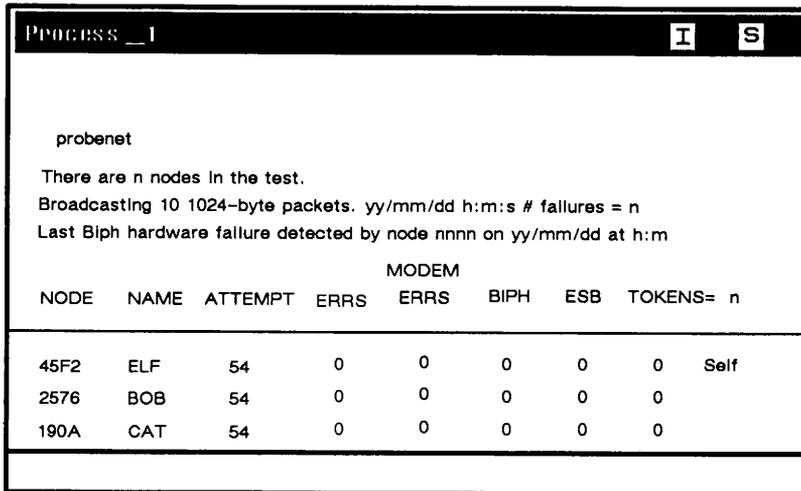
```
Process _1  I  S
-----
SysV $ /etc/probenet <RETURN>
-----
BSD  % /etc/probenet <RETURN>
-----
Aegis $ probenet <RETURN>
```

If you receive the following message after typing the previous command, another node is also trying to run **probenet**.

```
*** Another node <node_id> sending
    diagnostic packets that will confuse
    the results.
```

Make sure no other node on the network is running **probenet** before you attempt to run it.

18 Once **probenet** runs, you'll see a screen similar to the following:



```
Process _1  I  S

probenet

There are n nodes in the test.
Broadcasting 10 1024-byte packets. yy/mm/dd h:m:s # failures = n
Last Biph hardware failure detected by node nnnn on yy/mm/dd at h:m

          MODEM
NODE    NAME  ATTEMPT  ERRS  ERRS  BIPH  ESB  TOKENS= n
-----
45F2    ELF    54       0     0     0     0     0  Self
2576    BOB    54       0     0     0     0     0
190A    CAT    54       0     0     0     0     0
```

If the screen doesn't show 0 readings in the ERRS column, tell your system administrator or contact your designated service representative or Apollo Customer Services at **1-800-2-APOLLO** (1-800-227-6556) in the U.S. only. For countries outside the U.S., contact your nearest Apollo sales and service center. **Network problems must be corrected before continuing the installation.**

If you do not have an 802.3/802.5 network, go to Step 23.

NOTICE: The Apollo 802.3 Network Controller-AT is not the same as the EtherController-AT. The 802.3 controller acts as an interface into an 802.3 ring for an individual node as well as acting as a gateway from an Apollo Token Ring network to an 802.3 network. The EtherController-AT is strictly a gateway interface.

19 Prepare to take a base-level reading of the network status to find out if your network is operating correctly. Log in at a node already installed in your network.

20 Catalog all new Apollo systems on the 802.3/802.5 network. At the prompt, type:

```
Process _1 I S
-----
SysV $ /etc/ctnode -update <RETURN>
-----
BSD  % /etc/ctnode -update <RETURN>
-----
Aegis $ ctnode -update <RETURN>
```

21 Now, check to see if Apollo systems on the 802.3/802.5 network can respond to a "list connected nodes" request. At the prompt, type:

```
Process _1 I S
-----
SysV $ /etc/lcnode <RETURN>
-----
BSD  % /etc/lcnode <RETURN>
-----
Aegis $ lcnode <RETURN>
```

22 You'll see a screen similar to the following:

```
Process _1  I  S

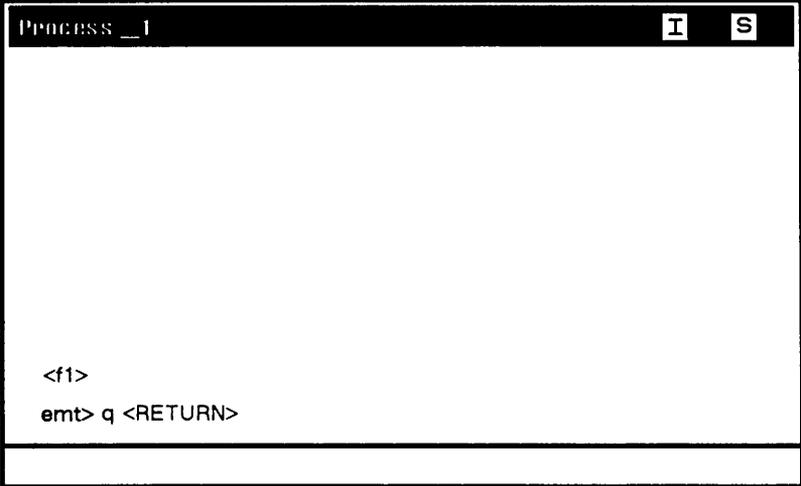
The node ID of this node is 21.
2 other nodes responded in random order.

ID      Boot time      Current Time  Entry Directory
21 yy/mm/dd  9:21:44  yy/mm/dd  16:06:22 //DOLLAR
17 yy/mm/dd  13:52:02 yy/mm/dd  16:06:13 //QUARTER
27 yy/mm/dd  12:53:28 yy/mm/dd  16:06:07 //NICKEL
11 yy/mm/dd  12:03:39 yy/mm/dd  16:06:15 **DISKLESS** partner node:17
```

If any active Apollo systems on the network respond to the request, continue with the installation.

If no active Apollo systems on the network respond, log in at **another** workstation and enter the **ctnode** and **lcnod** commands again. If no active Apollo systems respond on this attempt, you can be reasonably sure that your 802.3/802.5 network is not functioning properly. Tell your system administrator or contact your designated service representative or Apollo Customer Services at 1-800-2-APOLLO (1-800-227-6556) in the U.S. only. For countries outside the U.S., call your nearest Apollo sales and service center. **Network problems must be corrected before continuing the installation.**

- 23 If you had to connect the server to a **terminal or node**, you can now disconnect the RS-232 connector from the server's SIO connector. If you connected the server to a **node**, type the following commands to return control to the shell process:



```
Process _1 I S
<f1>
emt> q <RETURN>
```

Checkpoint:

- ✓ You've now finished booting the HAP software. Turn to the "Testing Operation" section of this manual for instructions on how to test the system's operation.
-

Solving Booting Problems with the Server

If you have a problem booting the server, follow the suggestions listed on the following table. If your problem isn't described here, contact your designated service representative or call Apollo Customer Services at 1-800-2-APOLLO (1-800-227-6556) in the U.S. only. For countries outside the U.S., contact your nearest Apollo sales and service center.

Page	Step	Problem	Solution
[84 86 89 93]	[5 8 10 14]	You receive the message: My network node ID:nnnn Error: Receive time out* *You won't receive this message in Step 14 unless you boot the node in Normal mode.	If you're booting a disked server, do the following: <ul style="list-style-type: none"> ▪ Record the message in the logbook. ▪ Make sure the Normal/Service switch on the back of the system unit is set to Normal. ▪ Press the Reset button on the back of the system unit. ▪ Repeat the booting procedure.
[56 60 86 89 93]	[— 8 8 10 14]		If you're booting a diskless server, do the following: <ul style="list-style-type: none"> ▪ Check your server's ID and reenter it on the partner node. ▪ Check to see if the partner node is running properly. If not, choose another partner and repeat the booting procedure. Then report the partner node's problem to your system administrator.

(Continued)

Solving Booting Problems with the Server (Cont.)

Page	Step	Problem	Solution
60 86 89 93	8 8 10 14	You receive the message: My network node ID:nnnn but nothing happens.*	This error message suggests network problems. Check with your system administrator.
		You receive the message: Error: Transmit request failed*	This error message suggests network problems. Check with your system administrator.
89	10	You receive the message: Error: Sysboot not found*	The program that loads the HAP software can't run. Record the message, and then press the server's Reset button on the back of the system unit. If you still receive an error message, contact your designated service representative or Apollo Customer Services.
89	10	You receive the message: Boot Error:*	The server can't load the HAP software. Record the message, then press the server's Reset button on the back of the system unit. If you still receive an error message, contact your designated service representative or Apollo Customer Services.
89	10	You receive the message: TEST FAILED * *You won't receive this message in Step 14 unless you boot the node in Normal mode.	Record the message, and then press the server's Reset button on the back of the system unit. If you still receive an error message, contact your designated service representative or Apollo Customer Services.

(Continued)

Solving Booting Problems with the Server (Cont.)

Page	Step	Problem	Solution
87	9	The power LED didn't come on.	Make sure all cables are connected securely. Make sure the power switch is set to ON (1). If problems persist, call your designated service representative or Apollo Customer Services.
93	14	You receive the message: SELF-TEST FAILED	Report the screen display to your designated service representative or Apollo Customer Services.
56 94	— 15	The Domain Server loop/segment doesn't have a disked node.	Switch the loop back into the network before setting up the partner node. Recommend that the system administrator place all diskless nodes in the same loop as their partners.
60 84	8 5	You receive the message: The node ID you entered is not hexadecimal. Please enter HEX ID of the new node.	You didn't type the correct node ID. First try retyping the node ID. If you still receive the error message, check the system unit Product ID Label for the correct node ID.

Testing Operation

Now that you've installed the workstation or server, verify its operation with the System Acceptance Exerciser (**sax**) test described in this section. If you have any problems, see the "Solving Testing Problems" table at the end of this section.

For a more detailed description of **sax**, refer to the manual *Using Domain Diagnostics, Volume 1* (009329).

NOTICE: If your system includes the PC Coprocessor or Serial/Parallel Expansion (SPE) interface, make sure you have installed the software for the component before you run the **sax** test. Refer to the *Software Release Document* shipped with the component for information on how to install the software.

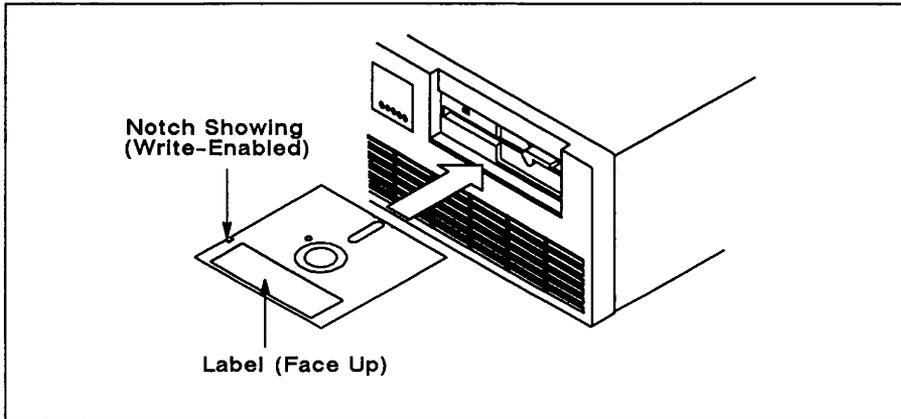
NOTICE: If you're not using the diskette shipped with the system, make sure the diskette that you use is an **initialized, 5 1/4-inch, double-sided, double-track, blank (96-tpi) diskette**. This type of diskette can be purchased from vendors such as Maxell (MD2HD) and Dysan (HC).

For instructions on initializing diskettes, refer to *Operating the Domain Personal Workstations and Servers* (007858).

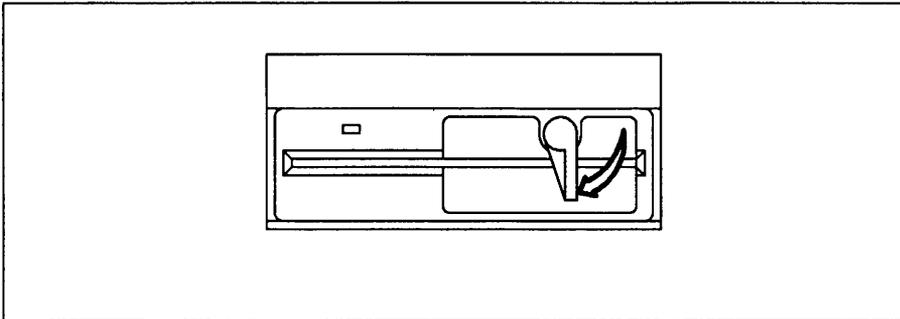
Don't use a diskette that contains valuable data. The **sax** test will destroy data stored on the diskette.

- 1 If the system has a diskette drive, insert the diskette shipped with the system.

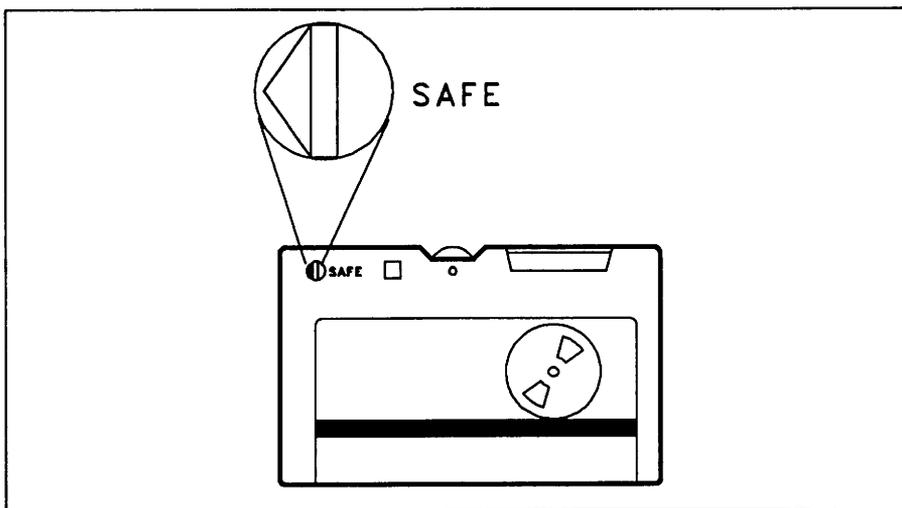
If the system doesn't have a diskette drive, go to Step 3.



- 2 Close the drive latch. Go to Step 7.

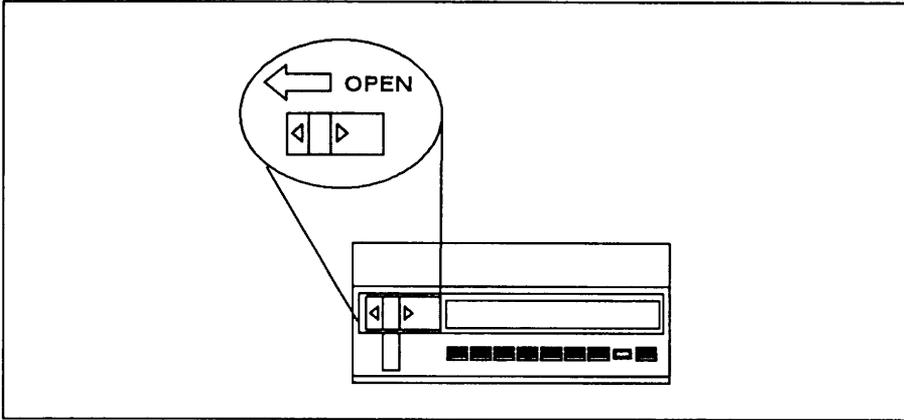


- 3 If the system **doesn't** have a cartridge tape drive, go to Step 7. If it has a tape drive, find the cartridge tape shipped with the system. **Make sure the write-protect switch is pointing away from SAFE.**

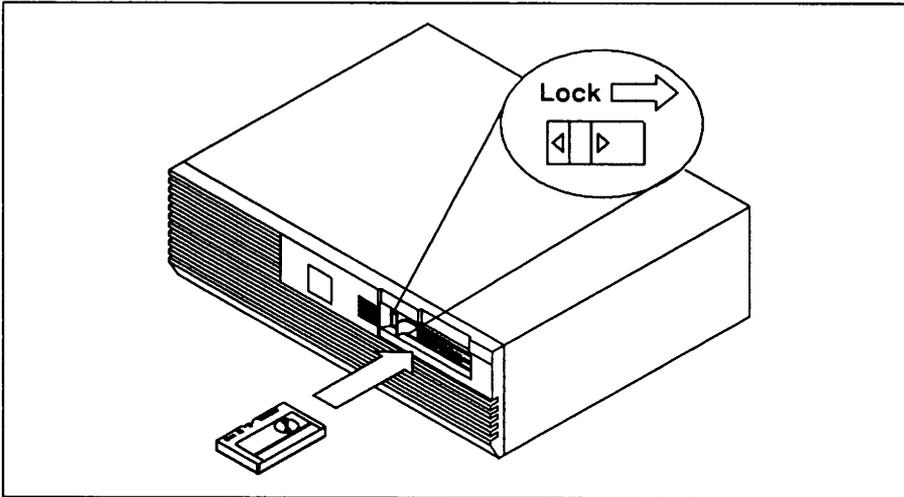


NOTICE: Don't insert a tape that contains valuable data. The sax test will destroy data stored on the tape.

4 Open the tape drive.



5 Insert the tape into the drive and lock the tape drive.



- 6 If the tape you loaded in Step 5 has never been used for **sax** testing, initialize the tape with the command shown in the following screen (*you must initialize the tape shipped with the system*):

NOTICE: SysV is the default operating system environment for HAP when the system initially boots. After you complete the installation procedure, the system administrator may change the default operating system environment to any of the three operating environments: SysV, BSD, or Aegis.

```
Process _1      I  S
-----
SysV  $ /systest/init_ctape.sh <RETURN>
BSD   % /systest/init_ctape.sh <RETURN>
Aegis $ /systest/init_ctape.sh <RETURN>
```

NOTICE: If the new workstation or server is diskless, you must also start the **sax** program on its partner node (see "Setting Up the Partner Node — Diskless Systems"). Use the following command to start **sax** on the partner node:

```
SysV  $ /systest/sax -server <RETURN>
BSD   % /systest/sax -server <RETURN>
Aegis $ /systest/sax -server <RETURN>
```

- 7 If the system has **one** network controller, go to Step 10. If the system has **more** than one network controller, open the alternate network port(s), using the **rtsvc** command. Type the following to determine the network controller device names that your system contains:

```

Process _1
-----
SysV $ /etc/rtsvc <RETURN>
BSD  % /etc/rtsvc <RETURN>
Aegis $ rtsvc <RETURN>

```

- 8 The screen displays a listing of the networks on the node similar to the following:

```

Process _1
-----

Controller          Net ID          Services Offered
-----
RING
ETH802.3_AT
ETH802.3_AT 1      nnnnnn         nnnnnn         Own traffic only
Port not open
Port not open

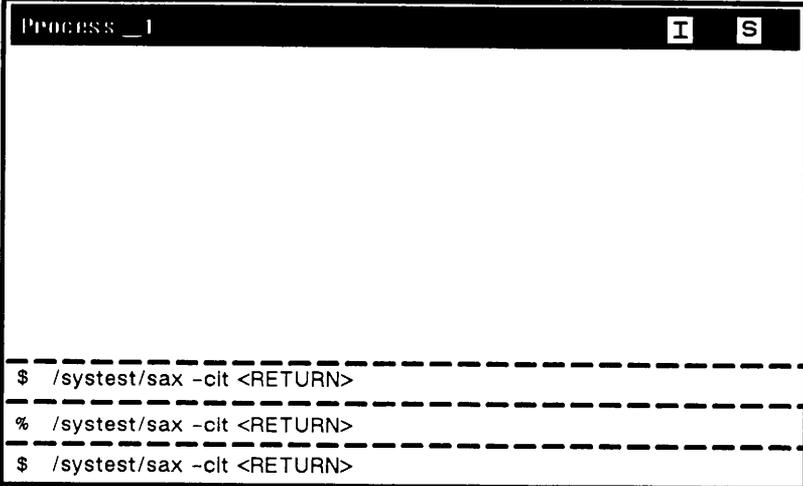
```

- 9 Open the alternate network port(s) by entering the following command:

```
Process _1 [I] [S]
-----
SysV $ /etc/rtsvc -dev device_name [unit_number] -noroute <RETURN>
BSD  % /etc/rtsvc -dev device_name [unit_number] -noroute <RETURN>
Aegis $ rtsvc -dev device_name [unit_number] -noroute <RETURN>
```

Replace the *device_name* with the exact name listed in the "Controller" field (see Step 8). Replace the *[unit_number]* with the exact unit number listed in the field next to the *device_name*. Note that the unit number is only listed if there is more than one controller of the same type.

- 10 If you are installing a workstation, begin the **sax** tests by typing:



A terminal window titled "Process _1" with "I" and "S" icons in the top right corner. The window is mostly empty. Below the window, three lines of text are separated from the window by dashed lines. Each line shows a shell prompt followed by a command to run the sax tests with the -cit option.

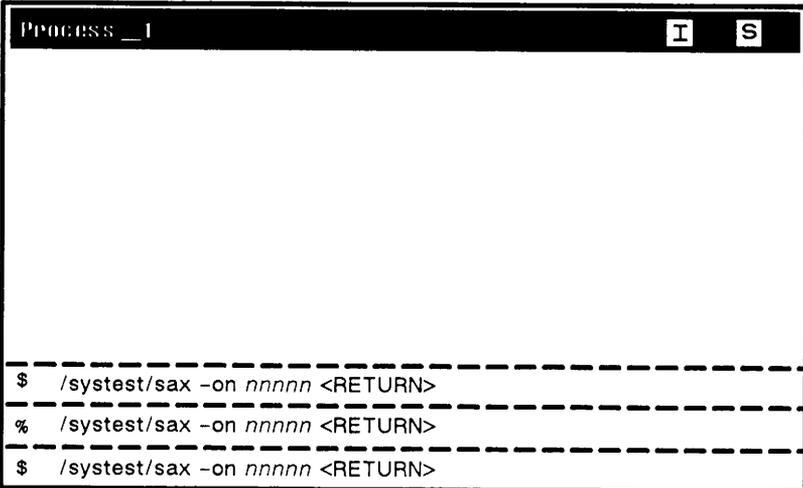
```
Process _1
```

SysV \$ /systest/sax -cit <RETURN>

BSD % /systest/sax -cit <RETURN>

Aegis \$ /systest/sax -cit <RETURN>

- 11 If you are installing a server, begin the **sax** tests by going to **another** node on the network and typing the command shown in the following screen (if the server is **diskless**, use a node **other than** it's partner node):



A terminal window titled "Process _1" with "I" and "S" icons in the top right corner. The window is mostly empty. Below the window, three lines of text are separated from the window by dashed lines. Each line shows a shell prompt followed by a command to run the sax tests with the -on option and a placeholder nnnnn.

```
Process _1
```

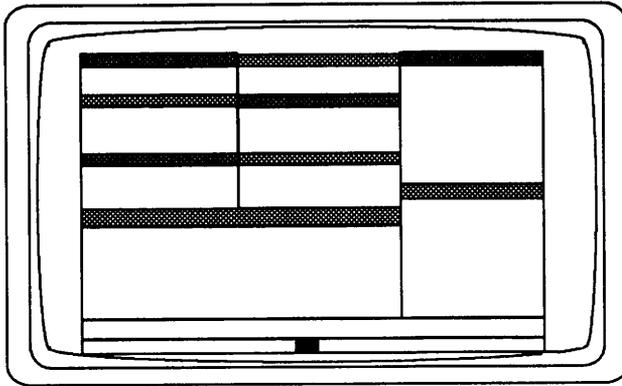
SysV \$ /systest/sax -on nnnnn <RETURN>

BSD % /systest/sax -on nnnnn <RETURN>

Aegis \$ /systest/sax -on nnnnn <RETURN>

Use the server Node ID that you recorded on the **Set-Up Information Sheet** in place of *nnnnn*.

- 12 Your screen now displays multiple windows as concurrent tests run:



- 13 The **sax** tests take up to 75 minutes to run on a fully configured system. When the system **passes** the **sax** test, you will receive the message:

```
End of pass 1, 0 errors  
End Time: mm/dd/yyyy hh:mm:ss  
Elapsed runtime: hhhh:mm:ss
```

If you receive an **error** message, contact your designated service representative or Apollo Customer Services as described in the "Solving Testing Problems" table at the end of this section.

14 Close all open alternate network ports. At the prompt, type:

```
Process _1 [I] [S]
-----
SysV $ /etc/rtsvc -dev device_name [unit_number] -off <RETURN>
BSD  % /etc/rtsvc -dev device_name [unit_number] -off <RETURN>
Aegis $ rtsvc -dev device_name [unit_number] -off <RETURN>
```

15 If your system is **diskless**, you or your system administrator should set up a permanent partner for it. Refer to *Managing SysV System Software* (010851), *Managing BSD System Software* (010853), or *Managing Aegis System Software* (010852).

Checkpoint:

- ✓ If you are installing any third-party options, make sure that the Printed Circuit Boards (PCBs) meet the following safety requirements:
 1. The PCB must be able to accept up to 42.4 V dc at 8 A.
 2. The PCB must be an approved Underwriters Laboratory Inc. component with a flammability rating of UL94 V-1 (minimum), and be marked accordingly.
-

The acceptance testing is now complete. Install the system software, using the instructions in Installing Software with Apollo's Release and Installation Tools (008860). Then, if you have any non-Apollo options, install them, using the new system software. Keep this manual handy for reference when you move and reinstall your system.

Solving Testing Problems

If you have a problem testing the workstation or server, follow the suggestions listed on the following table. If your problem isn't described here, call your designated service representative or Apollo Customer Services at **1-800-2-APOLLO** (1-800-227-6556) in the U.S. only. For countries outside the U.S., contact your nearest Apollo sales and service center.

Page	Step	Problem	Solution
110	11	You receive a message that states you don't have access rights to the /systest directory.	Have your system administrator append his/her log-in name and password to the sax command: <pre>/systest/sax -on nnnnn -cit -login name_sys_admin password <RETURN></pre> Then continue with Step 12.
111	13	You receive sax error messages.	Report the error messages to your designated service representative or to Apollo Customer Services at 1-800-2-APOLLO (1-800-227-6556) Outside the U.S., contact your Apollo sales and service center.

Appendix A — Running the config Utility

This appendix describes how to run the config utility.

You need to run the **config** utility program:

- When you install any Apollo system component boards in your system
- When you connect the system to more than one network:
 - To test the operation of your system in each network
 - If necessary, to choose the principal network

The **config** utility program updates your system's configuration table in the system's internal memory. It is important to update the configuration table so that the system knows what components to look for during the power-on and other diagnostic tests.

- 1 Make sure the system is in **Service** mode at the Mnemonic Debugger (MD) level. The MD displays the > prompt.
- 2 Enter the following series of commands next to the MD > prompt.
 - > <RETURN>
 - > re <RETURN>
 - > <RETURN>

*If the system is diskless, enter the following command. Substitute the Node ID number of the partner node for *nnnnn*.*

> di n 0nnnnn <RETURN>

3 Start `config` with the following command:

```
> ex config <RETURN>
```

NOTICE: Read the following Checkpoint before you respond to any of the prompts. The Checkpoint explains some basic information about the `config` utility program.

Checkpoint:

- ✓ The system's ID and component configuration was entered into the system's internal memory at the factory.
 - ✓ If a prompt asks you a question about a peripheral or component that you have **not** changed or installed, ignore the question and press `<RETURN>`. This response indicates that there are no changes to the factory configuration.
 - ✓ The answers to prompts can be y/n, numerical, or alphabetical symbols for types of components, or numbers for memory size.
-

4 The program displays the most recently recorded configuration information for the system, including the principal network. A series of prompts ask you to enter the new component configuration of your system into the system memory. If you have not changed a component, press `<RETURN>`.

NOTICE: The following Checkpoint lists some questions you may receive along with the an explanation of how you should respond.

Checkpoint:

- ✓ Floating-Point Unit? All systems have a floating-point unit. Press <RETURN>.
- ✓ Unknown Devices? Do not add any third-party devices until this installation is complete. Press <RETURN>.
- ✓ Network Types? Unit 0 corresponds to the **standard** jumper configuration. Unit 1 corresponds to the **alternate** jumper configuration (not to be confused with alternate networks). If you are installing a network controller board, follow the instructions in the *Installation* manual that is shipped with the board, **if you have not changed the configuration**, press <RETURN>.
- ✓ Principal Network? The program asks you to choose the principal network. You won't receive this prompt if you have only one network controller. If you do have more than one type of network controller in your system, you must rerun **config** as part of the test procedure for each network. To test a network, you must choose that network as your principal network. When you have completed the test procedures, restore the configuration information and specify the network you want as your principal network.

-
- 5 The **config** utility then prints out a list of the new configuration and asks you "Anything more to do?" **Double-check the new configuration information to make sure that it is correct.** Respond **y** to change the configuration table again, respond **n** to exit the **config** program (if you respond **n**, **config** prints **Done** and returns you to the MD).

Return to the main installation procedure at either Step 4 in Booting the Workstation or Step 10 in Booting the Server.



Appendix B — Opening the System Unit

This appendix describes how to shut down the system, remove the system unit cover, and replace the system unit cover.

To open the system unit, you will need a medium-size, flat-blade screwdriver, and a 7-mm (9/32-inch) nutdriver.

WARNING: Disconnect power before installing, removing, or moving the device.

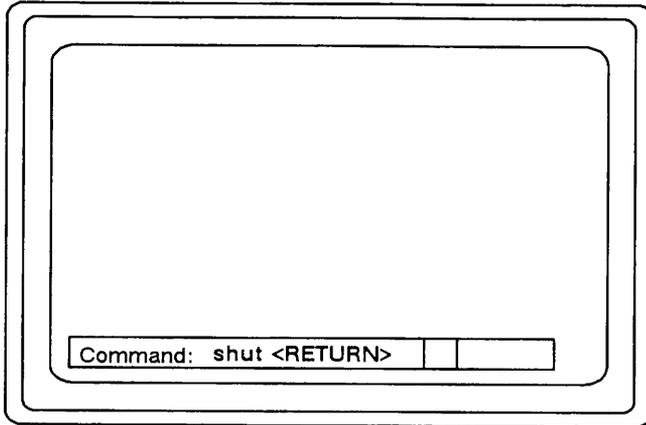
NOTICE: Before performing any of the procedures in this appendix, please read the "FCC Regulations", "Warnings and Cautions", and "ESD Precautions" that are located at the beginning of this manual.

Checkpoint:

- ✓ If you are referring to this Appendix as part of the system installation process, your workstation or server is **not connected or powered on**, follow the directions in the "Removing the System Unit Cover" on page B-4.
 - ✓ If you are referring to this Appendix as part of an add-on procedure, verify that the system does not have power by reading and following the directions in the "Shutting Down the System" on page B-2.
-

Shutting Down the System

- 1 Press the **<CMD>** key and type **shut <RETURN>** in the Display Manager input window to shut down the system.



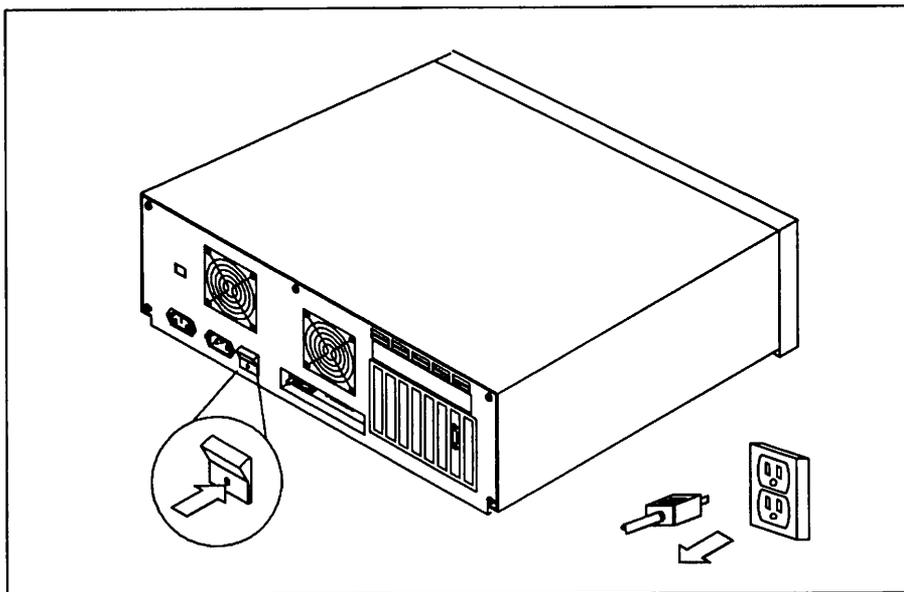
If you are not currently logged onto your system, you may type **shut <RETURN>** at the **Please log in:** prompt to shut down the system.

To shut down a server, connect its SIO line to a partner node. At the partner node, press the **<F1>** key to return to the **emt** window. Press **<CTRL> z** to display the bootshell prompt **>**. At the prompt, type **shut <RETURN>**.

For a diskless node, connect its SIO line to a partner node. At the partner node, press the **<F1>** key to return to the **emt** window. At the diskless node, press the **Reset** button (**SW1**).

- 2 Set the power switches on any peripheral devices (for example, a printer), the monitor, and the system unit to **OFF (0)**.

- 3 Unplug the system unit's power cord from the ac outlet and let the system cool down for 5 minutes before continuing.

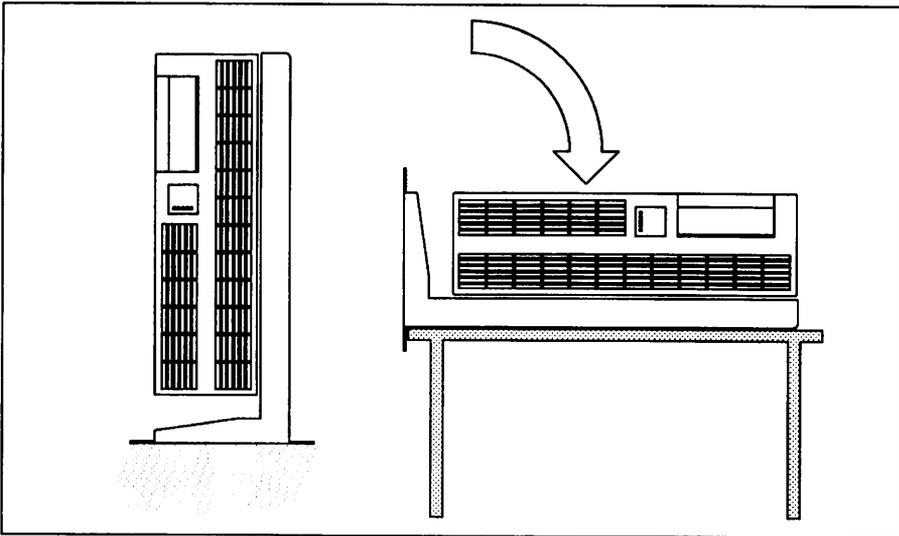


Removing the System Unit Cover

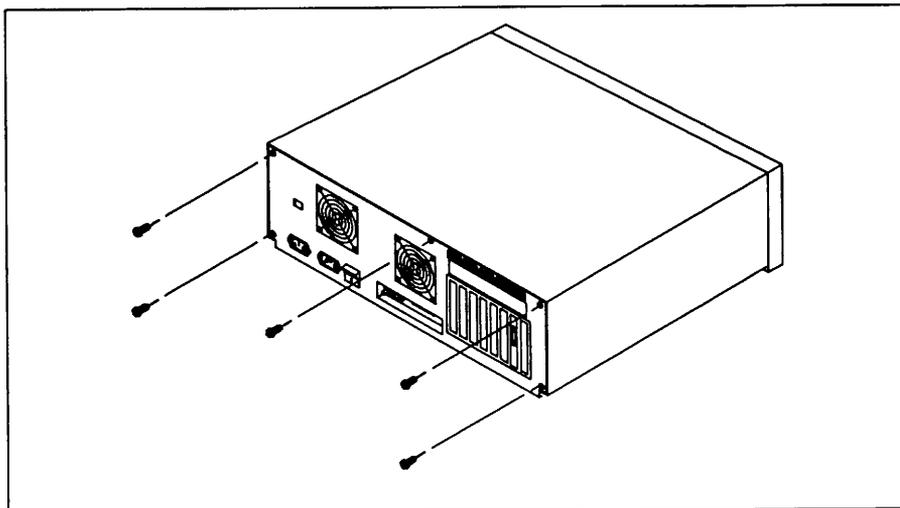
WARNING: Lifting the system unit or the monitor requires more than one person because each unit weighs more than 40 pounds (18 kilograms).

- 1 If your system is mounted on a floor stand, gently tip it over so that it is laying on the long side of the stand. You may want to place it on a table for easier access. (There is no need to remove the system unit from the floor stand.)

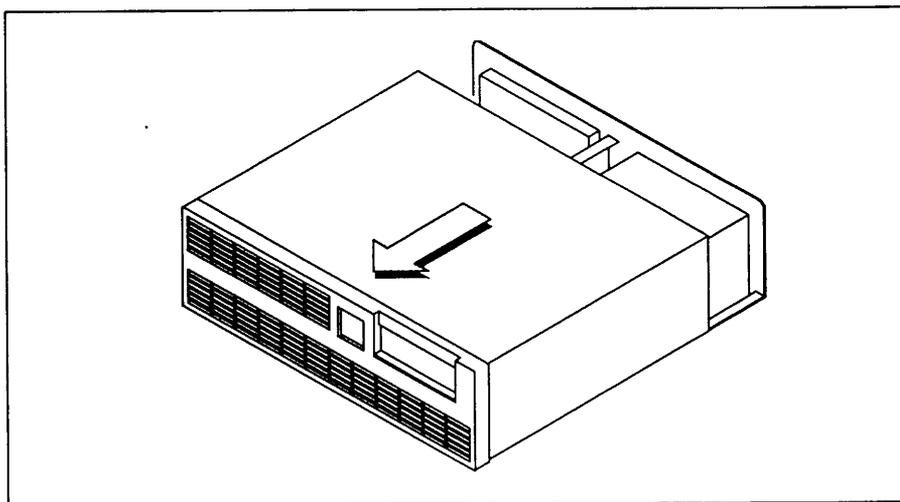
NOTICE: When handling boards, be sure to follow the Electrostatic Discharge (ESD) Precautions listed at the beginning of this manual.



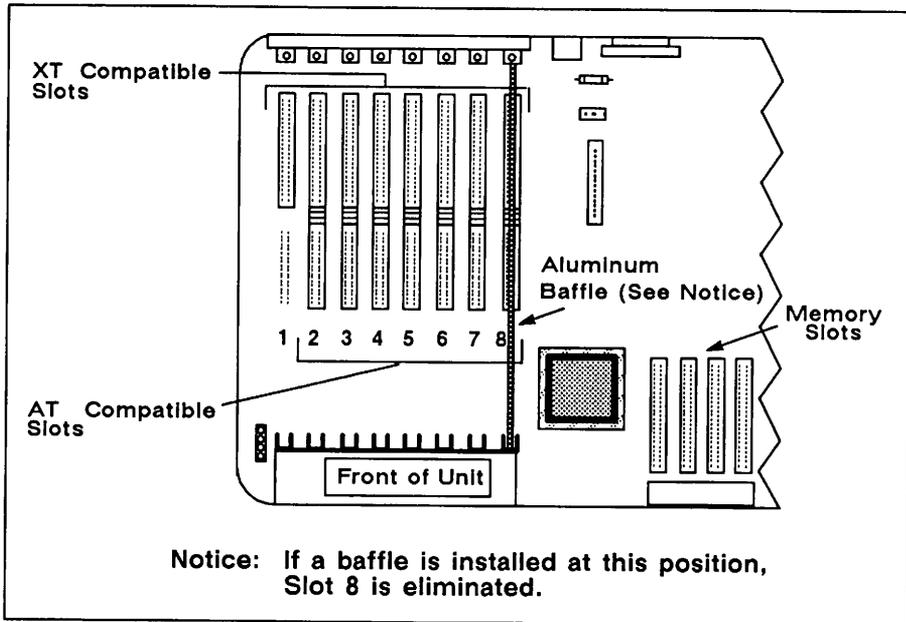
- 2 Use the medium flat-blade screwdriver or 7-mm (9/32-inch) nutdriver to remove the five screws that secure the cover to the chassis.



- 3 Slide the cover forward until it is free of the chassis and set the cover aside. Use care when sliding the cover forward to avoid catching the rear edge of the cover on internal cabling. This can result in damage to the cables or separation of the cables from their connectors.



- 4 Familiarize yourself with the internal layout of your system. Observe how the boards are installed in your system. Looking at the front of the unit, either a baffle or the disk controller must be in the rightmost slot. Your system may contain eight or fewer slots for boards, with support brackets and retaining brackets to hold the boards in place. Note that the memory modules use a separate set of connectors and retaining brackets. The area where you install the boards may vary slightly in different systems, but in general, the area looks like the following illustration:



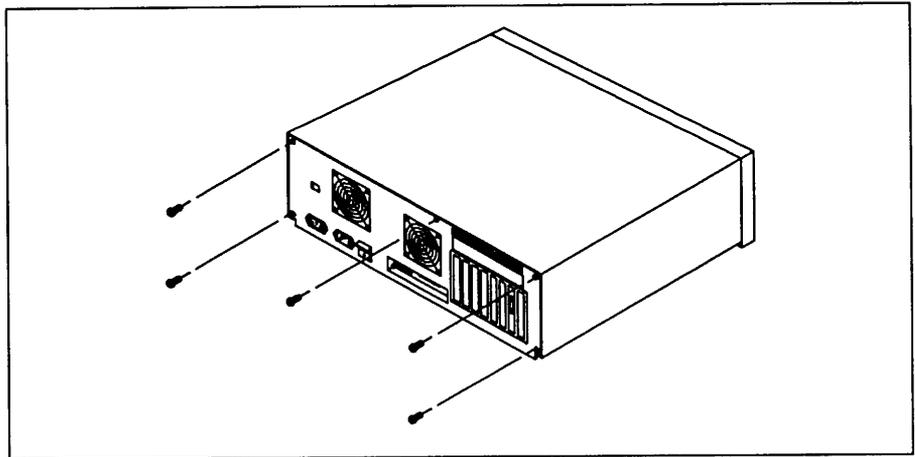
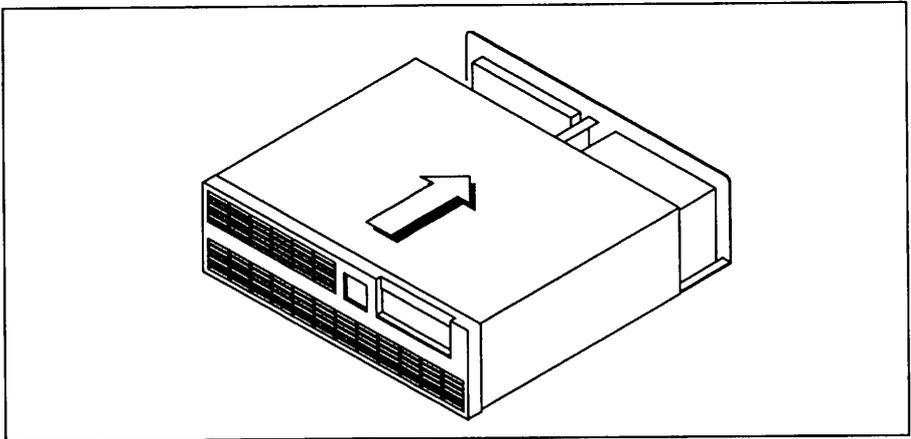
Checkpoint:

- ✓ If you are installing a system component, return to the board's *Installation* manual for directions. When you are ready to replace the system unit cover, return to page B-7 of this Appendix.

Replacing the System Unit Cover

Slide the cover over the chassis and replace the screws as shown in the following illustrations.

NOTICE: Use care when installing or reinstalling screws and covers to maintain FCC/VDE compliance.



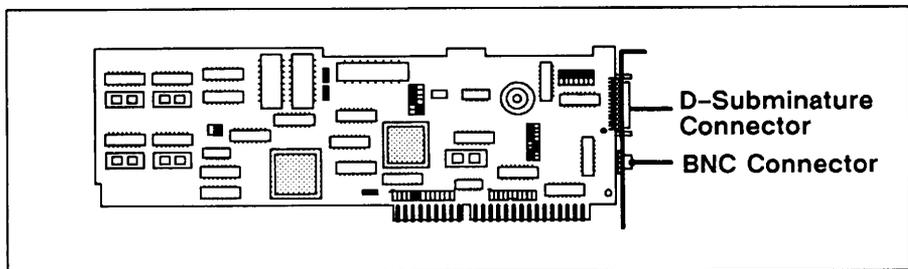


Appendix C — Selecting the 802.3 Network Controller-AT Transceiver Mode

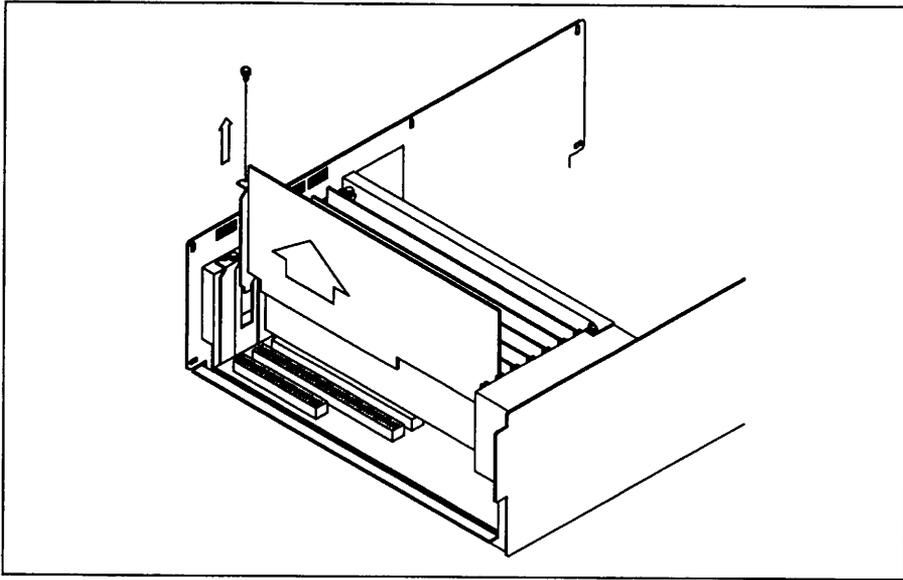
This appendix describes how to configure the transceiver select jumpers to the DIX setting. The DIX setting is used with external transceivers and the "Thick" ETHERNET configuration. During manufacturing, the transceiver select jumpers were set at the BNC (internal) setting to use the "Thin" ETHERNET cable.

NOTICE: When handling boards, be sure to follow the "Electrostatic Discharge (ESD) Precautions" listed at the beginning of this manual.

- 1 Open the system unit according to the directions that appear in Appendix B.
- 2 Locate the 802.3 Network Controller-AT board in the system; it resides in one of the AT compatible bus slots and has both a BNC and D-subminiature connector.

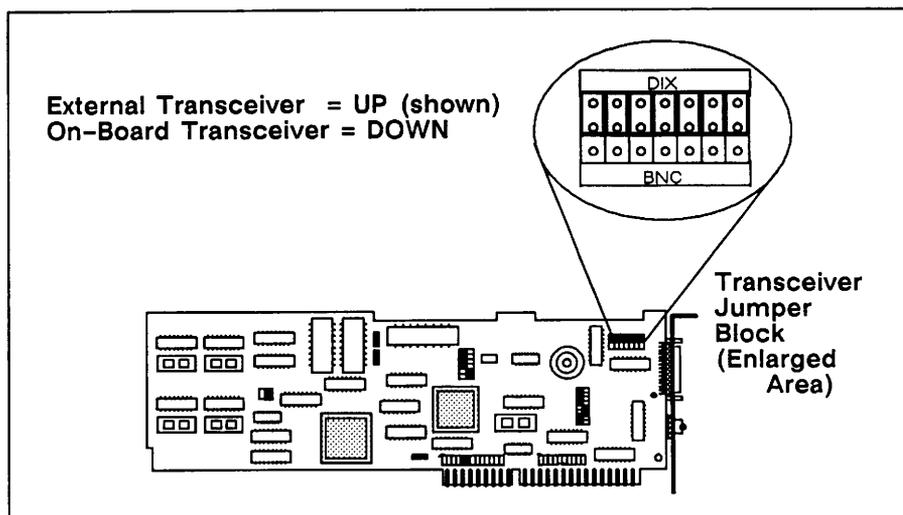


- 3 Remove the retaining screw that secures the controller to the chassis. Carefully lift the controller out of its slot.

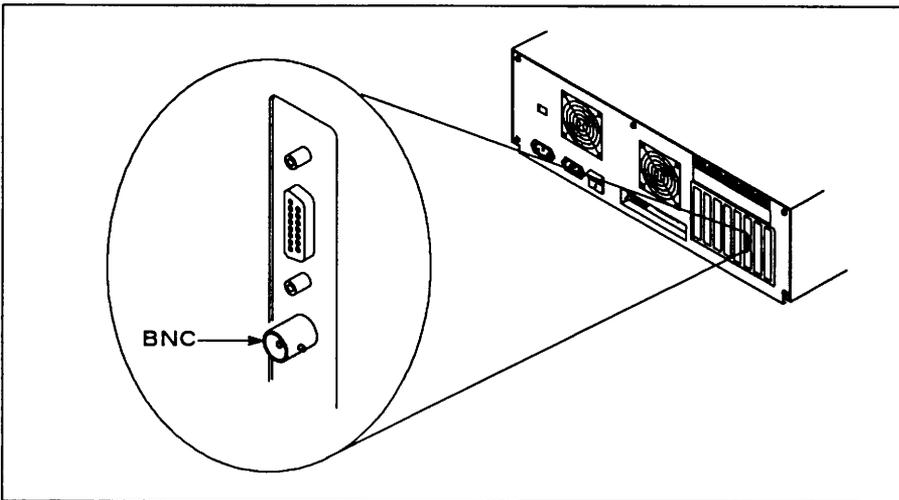
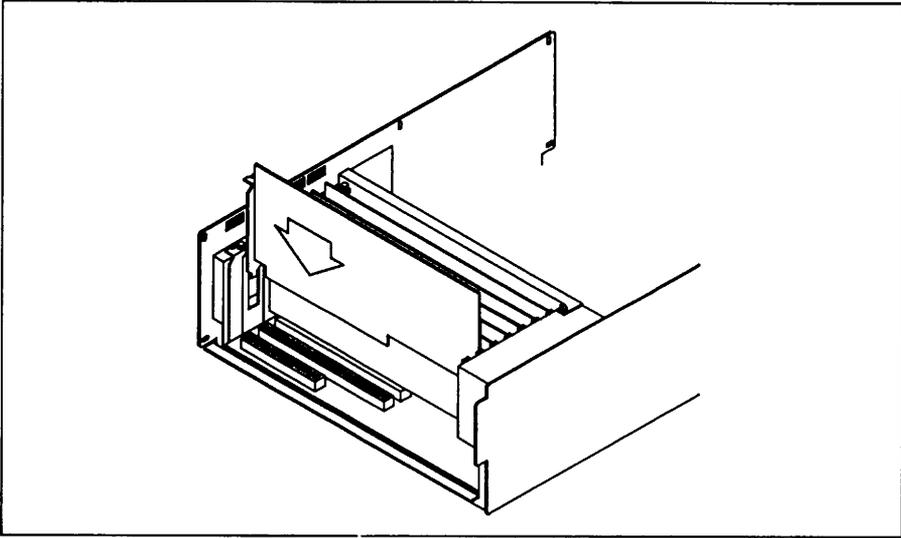


NOTICE: If necessary, use an integrated circuit extraction tool or needle-nose pliers to remove jumpers. Inspect for bent or damaged pins and line up the pins carefully before pressing the jumper into position. Apply even pressure to avoid bending the pins.

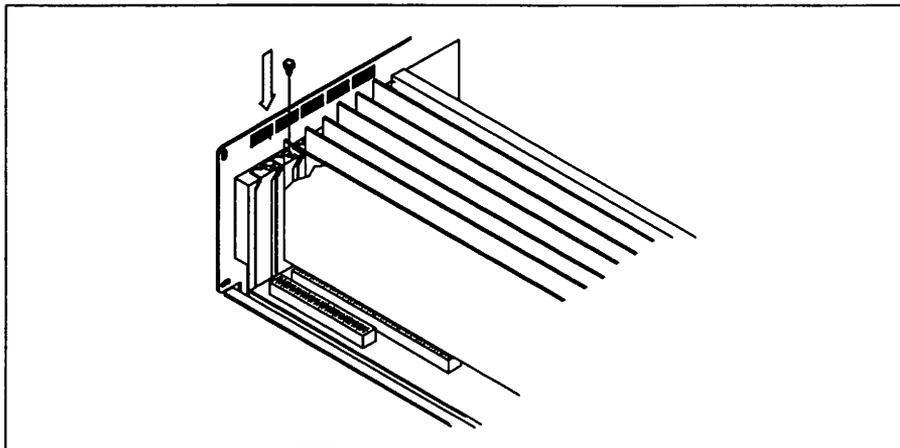
- 4 Orient the controller as shown in the following illustration. Reset the jumpers on the transceiver jumper block to the "DIX" setting (UP) as shown.



- 5 Reinsert the controller into the slot. Tip the board so that the BNC connector on the controller's mounting bracket slips through the system's rear panel. Make sure the board is properly seated in the connector.



- 6 Align the retaining bracket on the controller board with the hole in the system unit back panel. Start the screw and then tighten it by using a medium-size screwdriver or 7-mm (9/32-inch) nutdriver.



- 7 Examine all of the printed circuit boards plugged into the slots, and any cables attached to the boards, to be sure that you have not loosened any of them during the installation.
- 8 Replace the system unit cover as described in Appendix B.

You've now finished setting the transceiver select jumper on the 802.3 Network Controller-AT board. Return to the beginning of the section, "Connecting the System Unit and Monitor" to complete the installation process. After you have completed the installation process, perform all necessary verification tests to ensure proper system operation.



Appendix D — Configuring the 802.5 Network Controller-AT

This appendix describes how to configure the jumpers on the 802.5 Network Controller-AT.

If your system was shipped with a single network controller, the 802.5 Network Controller-AT, verify that the jumpers are set to the standard settings described on page D-2.

NOTICE: When your system contains more than one network controller, the first controller is the board with the highest priority number in the highest-numbered board slot (refer to the table on page 21).

If your system was shipped with two 802.5 network controllers, you must configure them differently so the address and request lines do not conflict. The first 802.5 network controller must be set to the standard jumper settings described on page D-2. The second 802.5 network controller must be set to the alternate jumper settings described on page D-3.

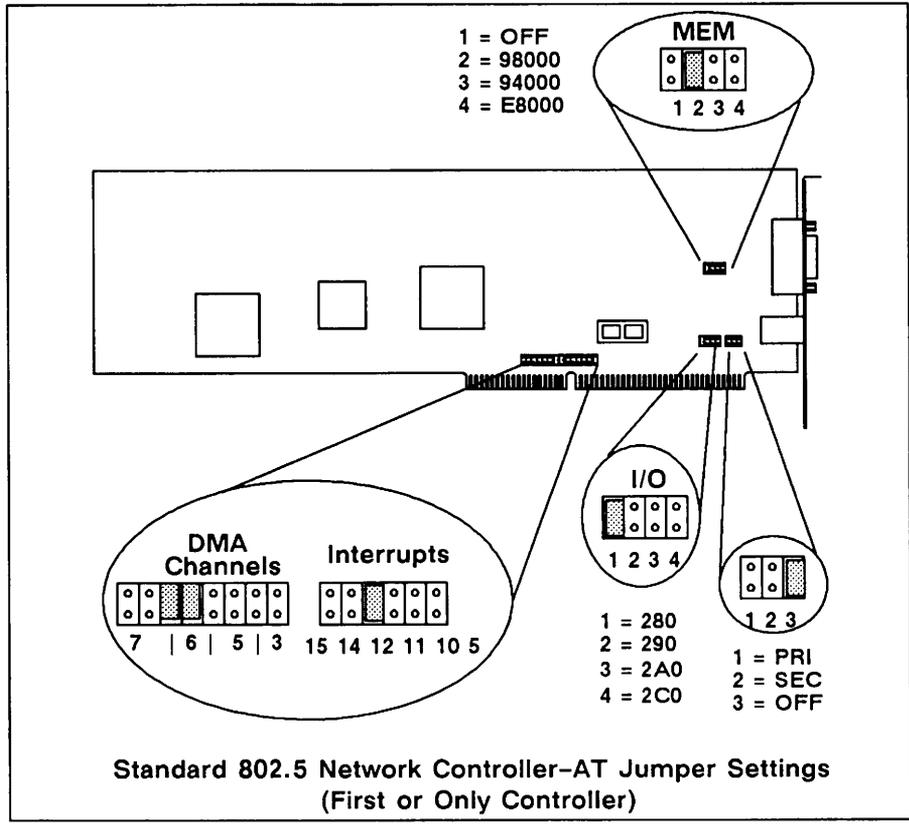
You also may need to reset the jumpers to the alternate settings if there is another network controller in the system or if another device is using one of the parameters specified by the standard jumper settings.

NOTICE: Some jumpers are very close together. If you connect adjacent pins that are not in the same jumper set, the controller may malfunction. Be certain that all jumpers are properly installed in the correct jumper blocks.

NOTICE: Use a pair of tweezers or needle-nose pliers to remove the jumpers (if necessary). Inspect for bent or damaged pins and line up the pins carefully before pressing the jumper into position. Apply even pressure to avoid bending the pins.

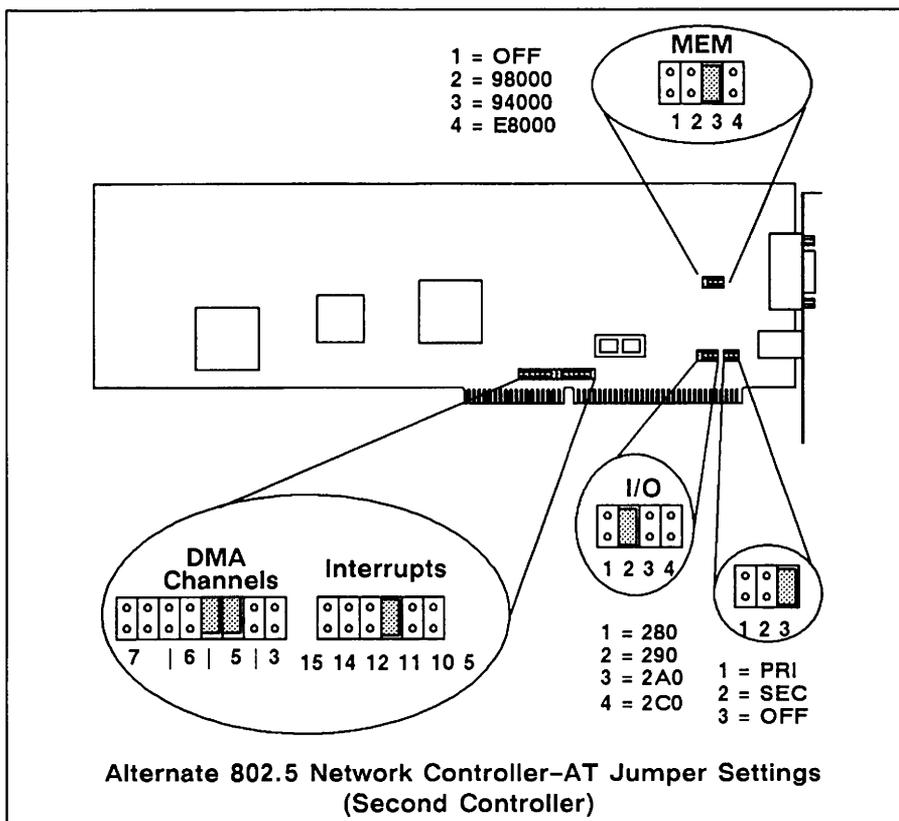
Setting Jumpers on the First Controller

Orient the controller as shown in the following illustration and identify the areas shown. The jumper blocks are labeled on the board. The plastic jumpers fit over two of the pins in each column or row. Make sure that the jumpers on the controller are set as shown in the following illustration:



Setting the Jumpers on a Second Controller

If you are using two 802.5 Network Controller-AT boards in one system, make sure that the jumpers on the second controller are set as shown in the following illustration:



Now that you've verified (and reset, if necessary) the jumper configuration, reinstall the controller into your system and proceed to Step 5 in the "Installing the System Component Boards" section.



Appendix E — Solving Problems

This appendix describes what to do if you have a problem after you've installed a new option or system component.

The System Does Not Power-Up or Shuts Down at Power-Up

This condition indicates a problem with a short circuit on the new system component board or in the system. Remove the board and try to power up the system again.

If the system powers up correctly, suspect that the option is defective. If the option is specifically supported by Apollo for your system, use the instructions at the end of this appendix to contact Apollo Customer Services. If the option is not supported by Apollo for your system, follow the manufacturer's instructions for reporting the problem.

If the system does not power up correctly, use the "Getting Help" instructions at the end of this appendix to contact Apollo Customer Services.

The System Fails the Power-On Diagnostics

If the power-on diagnostics detect any system problems during the start-up routine, the system uses the display screen and/or the LED indicator lights on the front of the system unit to show an error message that describes the problem. Normally the message appears on the display; however, if the display is inoperative, the LED indicator lights display an error code. The table on the following page lists the LED error codes.

LED Display					Malfunctioning Unit
A	B	C	D	PWR	
○	○	○	○	○	Central Processor Unit
○	○	○	○	○	Memory Module 1
○	○	○	○	○	Display System
○	○	○	○	○	Keyboard
○	○	○	○	○	Memory Module 2
○	○	○	○	○	Memory Module 3
○	○	○	○	○	Memory Module 4
○	○	○	○	○	Disk Drives (optional)
○	○	○	○	○	Network Controller-AT
○	○	○	○	○	Cartridge Tape Drive
○	○	○	○	○	EtherController-AT 0 *
○	○	○	○	○	EtherController-AT 1 *
○ = LED Off ○ = LED On					
* Applicable in early models only.					

If you receive one of these error messages, repeat the installation, taking particular care to check for the following conditions that often cause system failures:

- Incorrect cabling

Return to the appropriate instructions in this manual, or to the manufacturer's instructions, and check the cable connections on the new option.

- Incorrect jumper or switch settings on the new board

Return to the appropriate instructions in this manual, or to the manufacturer's instructions, and check the settings on the new option.

- Other boards loosened during installation

Inspect each board to be sure that it is properly seated in the connector, and that all attached cables are secure.

If the problem is not cabling, jumpers, switches, or a loose board, suspect that the new option board is defective or that the system is malfunctioning. Remove the new option and try the power-up diagnostics again, noting the following:

- If the system now passes the power-up diagnostics,

Suspect that the option is defective. If the option is specifically supported by Apollo for your system, use the "Getting Help" instructions to contact Apollo Customer Services. If the option is not supported by Apollo for your system, follow the manufacturer's instructions for reporting the problem.

- If the system now fails the power-up diagnostics,

The system is malfunctioning. Use the "Getting Help" instructions that follow to contact Apollo Customer Services. **Do not install the board in any other system as it may have caused the failure in the first system.**

Getting Help

If after you use these procedures you continue to have a problem with your system, or with an option supported for your system, call Apollo Customer Services (in the United States) at

1-800-2-APOLLO
(1-800-227-6556)

or

your designated service representative.

Outside the U.S., contact your regional Apollo sales and service center.



Reader's Response

Please take a few minutes to send us the information we need to revise and improve our manuals from your point of view.

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Order No.: 007857-A01

Date of Publication: *December 1988*

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- Applications programmer; language _____
- System maintenance person
- System Administrator Student
- Manager/Professional Novice
- Technical Professional Other

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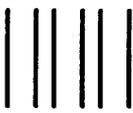
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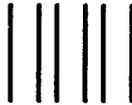
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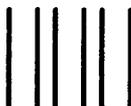
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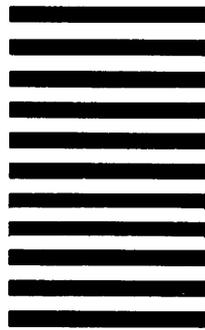
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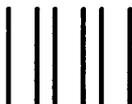
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Set-Up Information Sheet

Keep this list handy because you'll use it several times during the installation.

Name of workstation/server _____
you are installing

Node ID of workstation/ _____
server you are installing

Partner Node Name _____

Partner Node ID _____

