VAX 4000 Model 300

digital

Installation

Order Number: EK–335AB–IN-002

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Order Number EK–335AB–IN–002

Digital Equipment Corporation
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S1594

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Preface

This manual tells you how to install your system. Installation includes the following steps.

1. Verify site preparation
2. Check the shipment
3. Position the system
4. Open the system door
5. Install the console terminal
6. Set the system controls
7. Connect additional devices to the system
8. Connect an expander, if required
9. Connect the DSSI cable—dual host only
10. Connect the ground cable—dual host only
11. Connect the system power cable
12. Turn on the system and select a language
13. Close the system door

If you are installing a dual-host system, you must repeat each step in that procedure for each host. For more information on dual-host systems, refer to your system *Operation* manual and your *Dual-Host Systems* manual.

You should be familiar with computer hardware, familiar with operating systems, and experienced in using installation manuals. A glossary in your system *Operation* manual will help you with word definitions and abbreviations.

CAUTION: *Before installing the system, review your system warranty. The terms of your agreement with Digital may require that a Digital service representative install the system. Contact your local Digital representative if you have any questions.*

If you are installing an expander with your system:

1. Use this manual to begin the installation of the system.
2. After you complete step 7, install the expander as described in the installation document (addendum or manual) shipped with the expander.
3. Return to this manual (step 8) to complete the installation of the expander and the system.

NOTE: *Some of the devices mentioned in this manual are designed for multiuser systems and may not be suitable for server systems. If you have a server system, contact your Digital representative if you have any questions about whether a device is appropriate for your system.*

Conventions

The following conventions are used in this manual.

Convention	Meaning
Key	A terminal key used in text and examples. For example, Break indicates that you press the Break key on your terminal keyboard.
XXXX Return	Bold, monospaced type and the symbol for the Return key indicate interactive input that you must supply. For example, >>> **BOOT MUA0** Return tells you to enter the command BOOT MUA0 at the console terminal.
NOTE	Provides general information about the current topic.
CAUTION	Provides information to prevent damage to equipment or software.
WARNING	Provides information to prevent personal injury.

The following warning symbols appear on the power supply. Please review their meaning.

Indicates a risk of electric shock.

To reduce the risk of injury, do not remove modules, Integrated Storage Elements (ISEs), or the power supply. No user-serviceable parts are inside. Refer servicing questions to

your Digital service representative or to your qualified self-maintenance personnel.

The equipment is not designed for connection to an IT power system (a power system without a directly grounded neutral conductor). The equipment should be plugged into a dedicated (isolated) ground circuit.

The system contains an automatic voltage-selection power supply. Voltage selection is not required prior to installation.

1 Verify Site Preparation

You may have received a copy of the system *Site Preparation* manual, which describes the physical, environmental and electrical requirements for your system. A copy of that manual is also included in your Customer Hardware Information Kit. If you have not done so, read that manual and follow its instructions for preparing your site.

- The installation instructions that follow assume your site meets all the installation requirements listed in the *Site Preparation* manual.
- These instructions also assume all terminal data lines, telephone lines, and network lines that you plan to connect to your system are in place and clearly labeled.

You will need the following tools to install your system. They are not included in your shipment.

- Scissors
- Flat-blade screwdriver
- Phillips (cross point) screwdriver
- Adjustable wrench

If you are installing a dual-host system, you must repeat each step in the installation procedure for each host.

2 Check the Shipment

Before unpacking your system, find the Product Delivery Document. It is attached to the outside of a carton and is labeled with a blue "i" symbol. That document lists your order and how it breaks out into the items shipped.

Your shipment may include several cartons.

- One carton contains the system.
- A smaller carton contains the console terminal.
- Another carton contains hardware documentation, software documentation, and software licenses. That carton also contains system software and diagnostic software if you ordered those items separately.

Depending on your order, your shipment may also include cartons containing:

- Additional terminal(s)

- Printer(s)
- Modem(s)
- Expander(s)

Make sure your shipment is complete by checking that each item listed as shipped on the Product Delivery Document appears on a Content Listing or on a barcode label on the outside of one of the cartons in your shipment.

NOTE: *Save all packing materials until you are sure you will not reship any items in the shipment.*

Use the unpacking illustrations on the cartons as a guide to unpack your shipment, one carton at a time. Check the contents of each carton against the Content Listing on its side to ensure you received all items.

WARNING: *The system weighs 68 kilograms (150 pounds) with all options installed. Two or more people should move the system.*

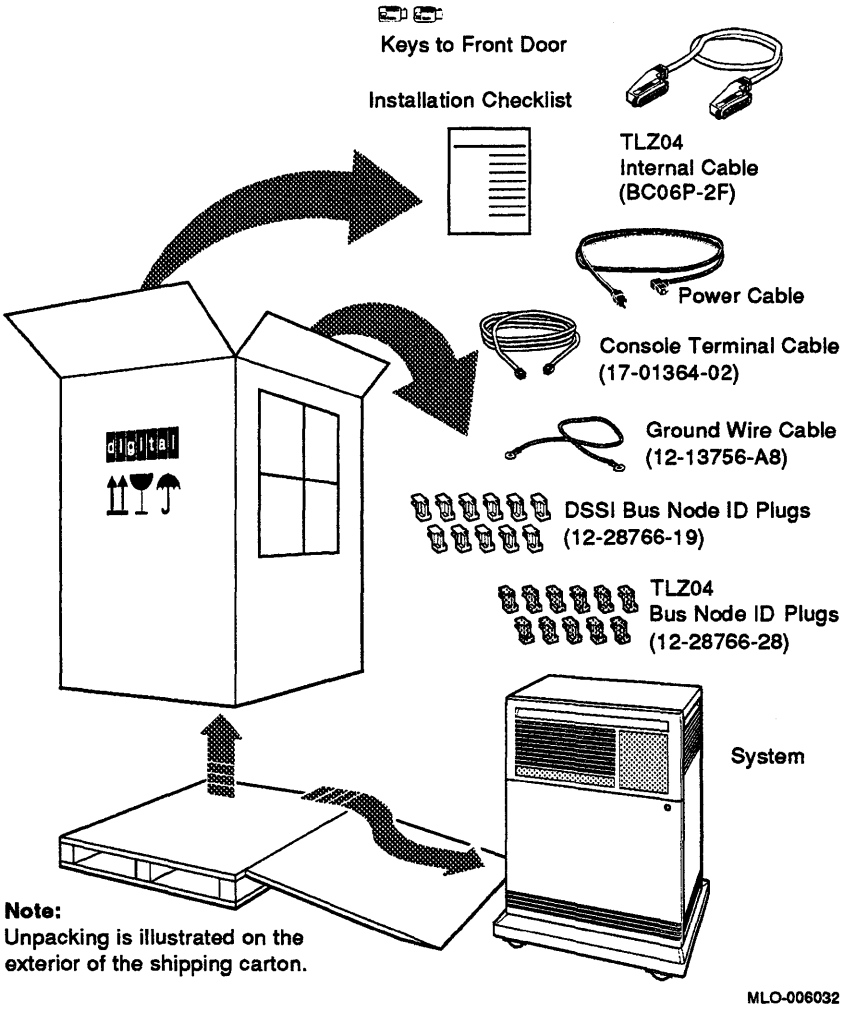
If any item is missing or damaged:

- Contact your delivery agent.
- Contact your Digital sales representative.

If you ordered a dual-host system, the carton containing the second system includes the same items as the first carton plus a DSSI cable (BC21M–09). (DSSI stands for Digital Storage Systems Interconnect.)

Figure 1 shows the contents of the shipping carton.

Figure 1: Shipping Carton Contents



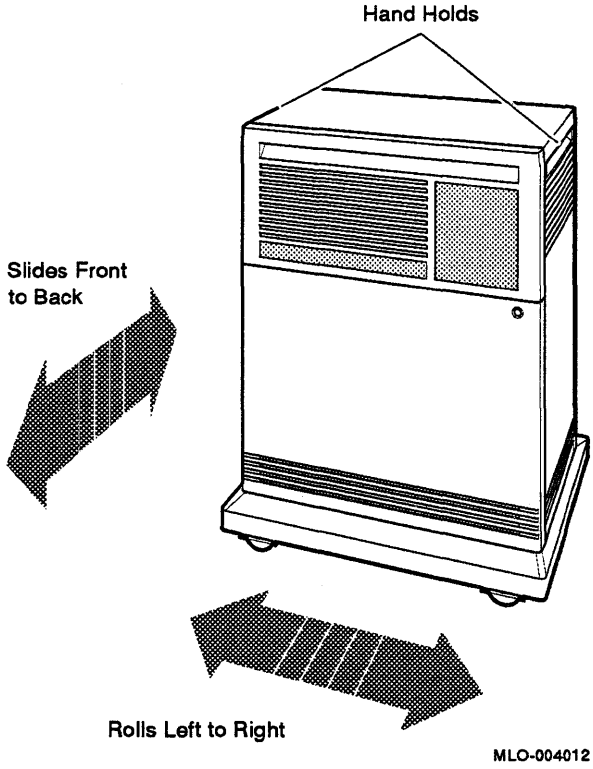
3 Position the System

You can move your system into position in one of two ways as shown in Figure 2.

- Roll it sideways.
- Slide or walk it backward or forward by gripping the hand holds on the side of the unit.

WARNING: *Do not use the hand holds to lift the system.*

Figure 2: Sliding the System into Position



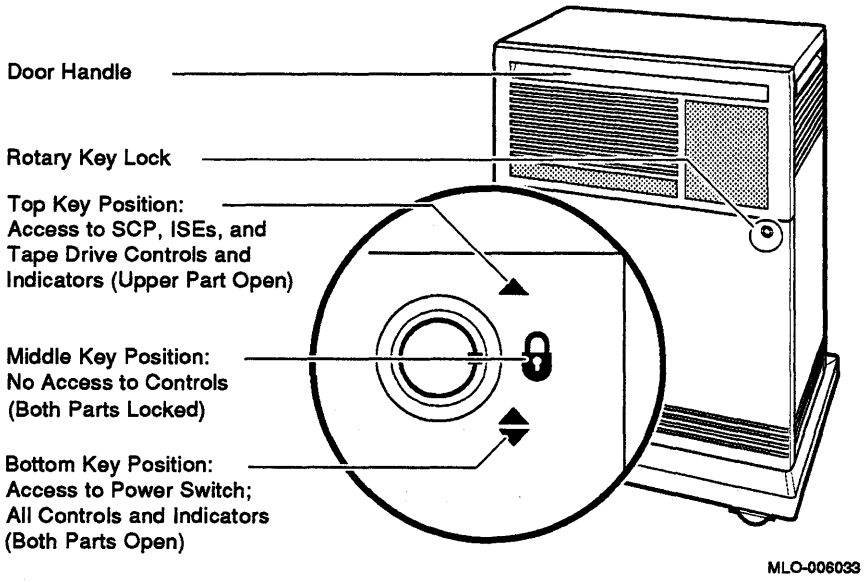
Leave space behind the system for routing cables. Once installation is complete, you can place the system directly against a wall. Its oversized base ensures enough space for proper rear ventilation.

4 Open the System Door

The system door is locked. To unlock and open it:

1. Find the key in the shipping carton (Figure 1). Two keys are provided, one to keep as a spare.
2. Insert the key in the three-position rotary lock shown in Figure 3. Turn the key to the bottom position to open the upper and lower parts of the door as a single unit.
3. Open the door by pulling on the handle on the upper door. Figure 3 shows the door handle.

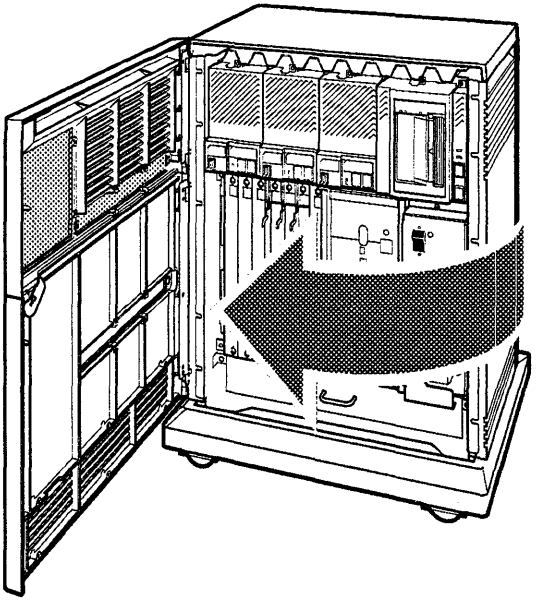
Figure 3: Lock and Key Positions



(SCP stands for system control panel and ISE stands for Integrated Storage Element.)

4. Swing the door open. Figure 4 shows the system with the upper and lower parts of the door open.

Figure 4: Opening the System Door



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Now you are ready to install the console terminal.

5 Install the Console Terminal

You will use the console terminal to communicate with your system.

1. Unpack the terminal and its documentation.
2. Use the instructions in the terminal installation guide to connect the various parts of the terminal.
3. Turn on the terminal.

   The console terminal performs a self-test every time you turn it on. The documentation for the terminal describes a successful self-test and error messages you receive if the terminal is not operating properly.

Once the terminal passes its self-test, you are ready to perform setup operations.

5.1 Perform Setup Operations

Setup instructions for terminals vary according to model or according to which read-only memory (ROM) is installed in the terminal. Be sure to:

- Read the documentation provided with your terminal.
- Follow the setup instructions for your terminal.

NOTE: *A new terminal from Digital has the baud rate set to 9600. If your terminal is new and you want to use that rate, you can skip the baud rate setup instructions.*

If you have a dual-host system, you can use one terminal with dual sessions instead of two terminals. See your terminal documentation for instructions.

Once you test the terminal and perform setup operations, you are ready to connect the terminal to your system.

5.2 Connect the Console Terminal to the System

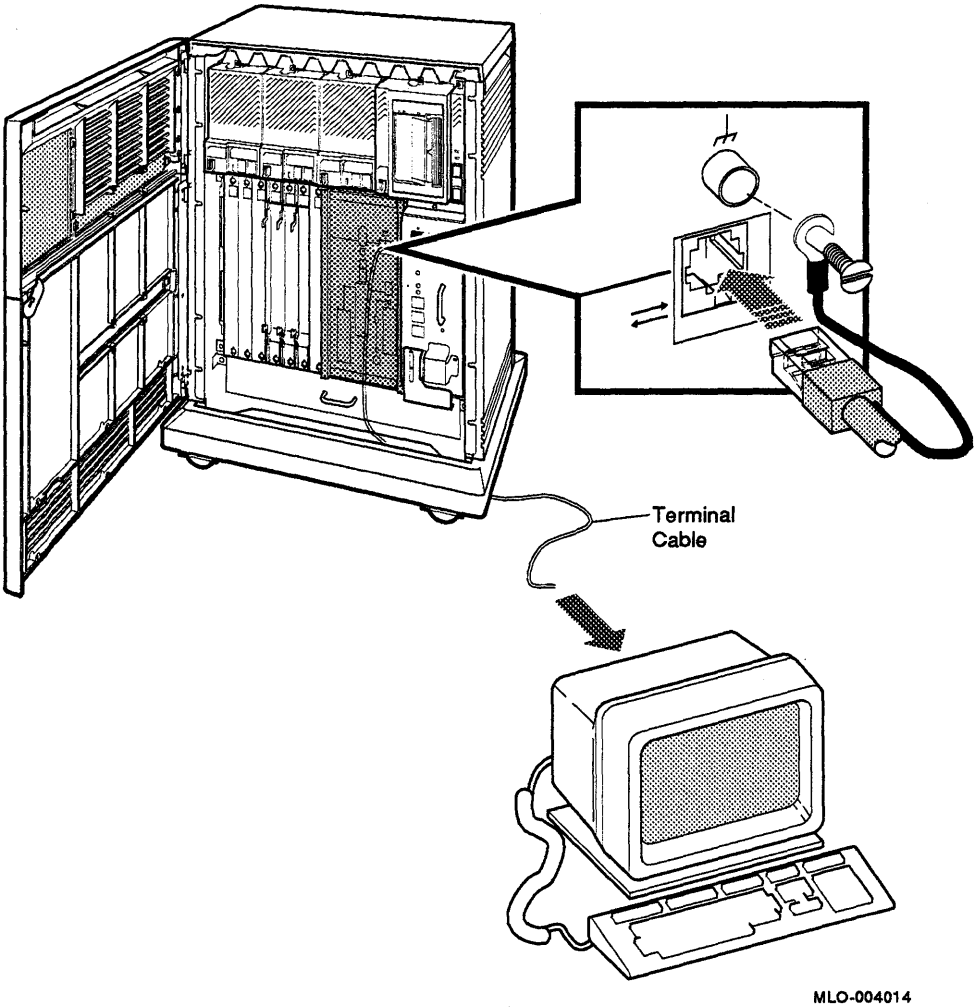
You will attach one end of a cable to the console module and the other end of the cable to a communication port in the back of the terminal.

- The console module is on the front of the system and covers backplane slots 1 through 5.
- The port on the back of the console terminal varies with the type of terminal.

Refer to the instructions that follow to connect a VT300-series or VT400-series terminal to a 120-volt or 240-volt system.

1. Turn off the console terminal.
2. Find the console terminal cable. It is labeled 17–01364–02 and has a DEC–423 modular plug on each end.
3. Connect the terminal cable to the DEC–423 modular jack labeled 1 on the rear of the terminal, according to the instructions in your terminal installation guide.
4. Feed the other end of the cable under the system from the back or side. Then draw up the cable and insert it into the DEC–423 modular jack shown in Figure 5.

Figure 5: Connecting a VT300-Series or VT400-Series Console Terminal



5. Connect the ground lead as shown in Figure 5.
   a. Loosen the ground screw, above the modular jack.
   b. Slide the end of the lead under the screw.
   c. Tighten the screw.

You are now ready to set the controls on your system.

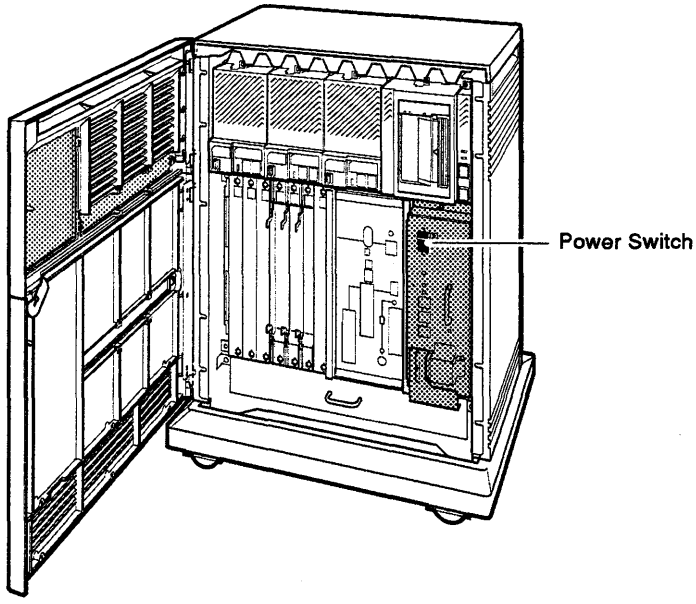
6 Set the System Controls

The system controls are on the power supply, Integrated Storage Elements, system control panel, console module, and tape drives.

6.1 Setting Controls on the System Power Supply

Check the setting of the system Power switch shown in Figure 6. It should be off (set at 0).

Figure 6: System Controls and Indicators—Power Switch



6.2 Setting Controls on the Integrated Storage Elements (ISEs)

Check the settings on each RF-series ISE. One is shown in Figure 7.

- Write-Protect button.

  The Write-Protect button is on the right side of each front panel. Make sure that button is in the out (write-enabled) position.

- Run/Ready button.

  The Run/Ready button is to the left of the Write-Protect button. Make sure the Run/Ready button is in the in (ready) position.

Verify that a Bus Node ID plug is inserted into each ISE.

6.3 Setting Controls on the System Control Panel (SCP)

Check the setting of the Halt button on the SCP shown in Figure 7.

The Halt button is to the right of the mass storage devices. It should be in the out position.

6.4 Setting Controls on the Console Module

Check the settings on the console module shown in Figure 7.

- Power-On Mode switch.

  The factory setting is Run mode, indicated by an arrow. Set that switch to the Language Inquiry mode (the uppermost position, indicated by a human profile).

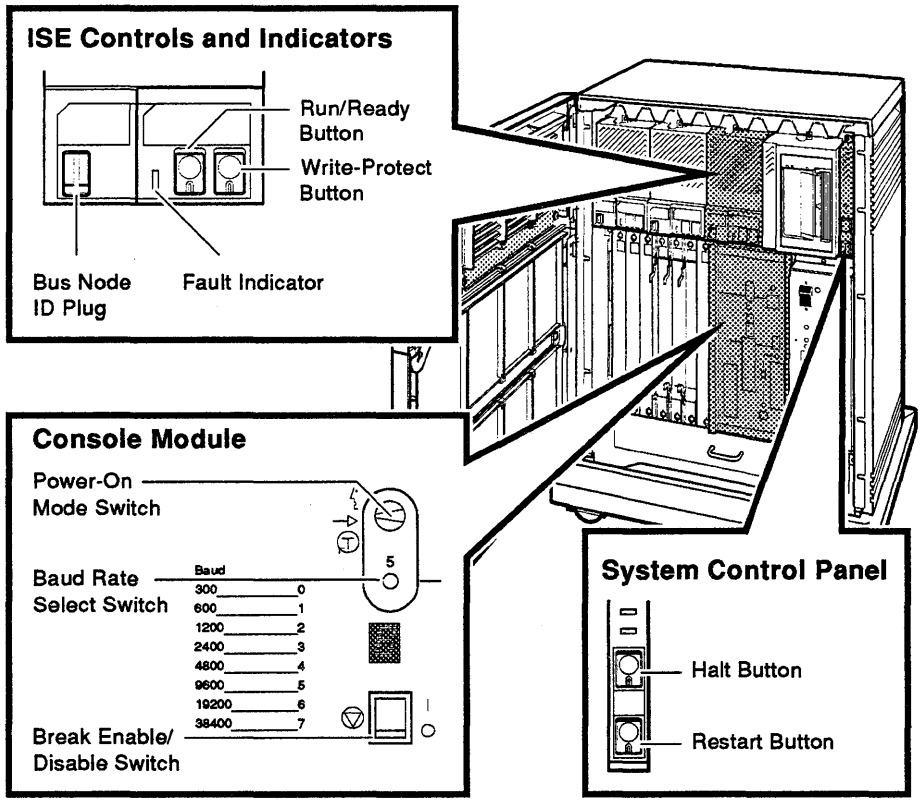
- Baud Rate Select switch.

  That switch is below the Power-On Mode switch. The factory setting is position 5 (9600). You should have set the console terminal baud rate to your preference. The system must be set to the same rate.

- Break Enable/Disable switch.

  The factory setting is break disabled (down, indicated by the number 0). Set the switch to break enabled (up, indicated by the number 1).

Figure 7: System Controls and Indicators—Integrated Storage Element, System Control Panel, and Console Module

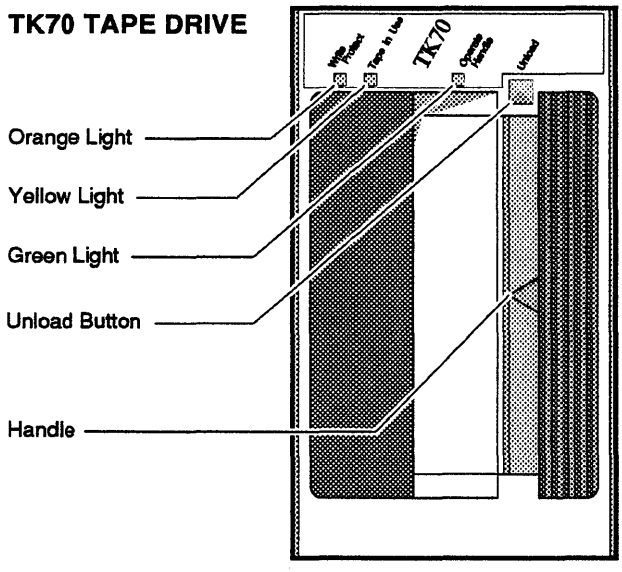


6.5 Setting Controls on the Tape Drives

If a TK-series tape drive is installed in your system, check the setting of the Cartridge Insert/Release handle shown in Figure 8.

Make sure that handle is closed (pushed in).

Figure 8: System Controls and Indicators—Tape Drive



You do not have to set controls on the TLZ04 tape drive for system installation.

You are now ready to connect additional devices to your system.

7 Connect Additional Devices to the System

You can connect additional devices at this time, or you can complete the installation (skip to step 8) before connecting additional devices.

- If you have an RRD-series compact disc external drive or other devices that must be installed before you start up or install system software, install them now.

- Otherwise, skip to step 8 if you prefer to connect additional devices later.

Use the following instructions when you are ready to connect the devices.

CAUTION: *Make sure the Power switch on the power supply panel is off (set at 0).*

Make all connections directly to the appropriate module cover.

1. Begin with the module at the far right.
2. As you complete connections for each module, move left to the next module.

The following numbered subsections explain how to connect each type of device.

To help you make the proper connections, each module cover has an identifying label at the top. That label contains the option number and module number. Table 1 lists the identifying labels for all modules you can use on your system. Use the table to identify the modules as you connect additional devices to your system. (Not all modules require additional connections.)

Table 1: Module Identification Labels

Module Number	Option Number	Description
L4000–AA	KA670–AA	System CPU (multiuser)
L4000–BA	KA670–BA	System CPU (server)
L4001–BA	MS670–BA	System memory, 32 megabytes
M8578–00	MRV11	Programmable read-only memory
M3127–PA	DESQA	Ethernet adapter
M3118–YA	CXA16	16-line asynchronous serial interface (RS–423–A, no modem support)
M3118–YB	CXB16	16-line asynchronous serial interface (RS–422, noise immune)
M3119–YA	CXY08	8-line asynchronous serial interface (full modem support)
M3018	DSV11	2-line synchronous serial interface (full modem support)
M3121–PA	DFA01	2-line asynchronous serial interface with integral modem

Table 1 (Cont.): Module Identification Labels

Module Number	Option Number	Description
M7531–PA	DIV32	ISDN controller, synchronous communication
M7164, M7165	KDA50	Intelligent board controller (RA-series disks and ESE20)
M7546	TQK50	TK50 tape drive controller
M7559	TQK70	TK70 tape drive controller
M7206–PA	TSV05	TS05 tape drive controller (old)
M7530	TSV05	TS05 tape drive controller (new)
M7740–PA	KLESI	RV20 write-once optical disk (or TU81E tape) controller
M7552–PA	KRQ50	RRD40 CDROM tabletop controller
M7658–PA	DRQ3B	Real-time parallel interface
M8049–PA	DRV1J	Real-time parallel interface
M7651–PA	DRV1W	Real-time parallel interface
M7769	KFQSA	DSSI mass-storage adapter
M5976–SA	KZQSA	TLZ04/RRD-series adapter
M8020–PA	DPV11	Synchronous serial line interface
M8086–PA	LPV11	Dual parallel printer interface
M8634–PA	IEQ11	IEEE instrument bus DMA controller
M3125–PA	IBQ01–SA	BITBUS to Q-bus DMA controller
A1009–PA	AAV11	Digital to analog converter
A1008–PA	ADV11	16-channel, single-ended, or 8-differential-channel analog to digital converter
A030–PA	ADQ32	32-channel, single-ended, or 16-differential-channel analog to digital converter
M4002–PA	KWV11	Programmable real-time clock
A026–PA	AXV11	D/A and A/D converter

CAUTION: *Do not operate the system without Digital module covers. They are required to protect the equipment, to maintain proper airflow for cooling, and to meet international regulatory standards. Do not substitute other covers as they may not meet the required specifications.*

7.1 Connecting Terminals and Serial Printers

You can connect up to 16 terminals and/or serial printers for each CXA16 or CXB16 module installed in your system. If your site was prepared properly, the lines for the additional terminals and printers are clearly labeled and terminate near the system.

- You do not connect the terminals and printers directly to the system, but to a cable concentrator (H3104) that has connections for up to eight terminals and printers.
- You then connect the cable concentrator to the system with a BC16D cable.

For each CXA16 or CXB16 module, two H3104 cable concentrators and two BC16D cables are shipped with your system.

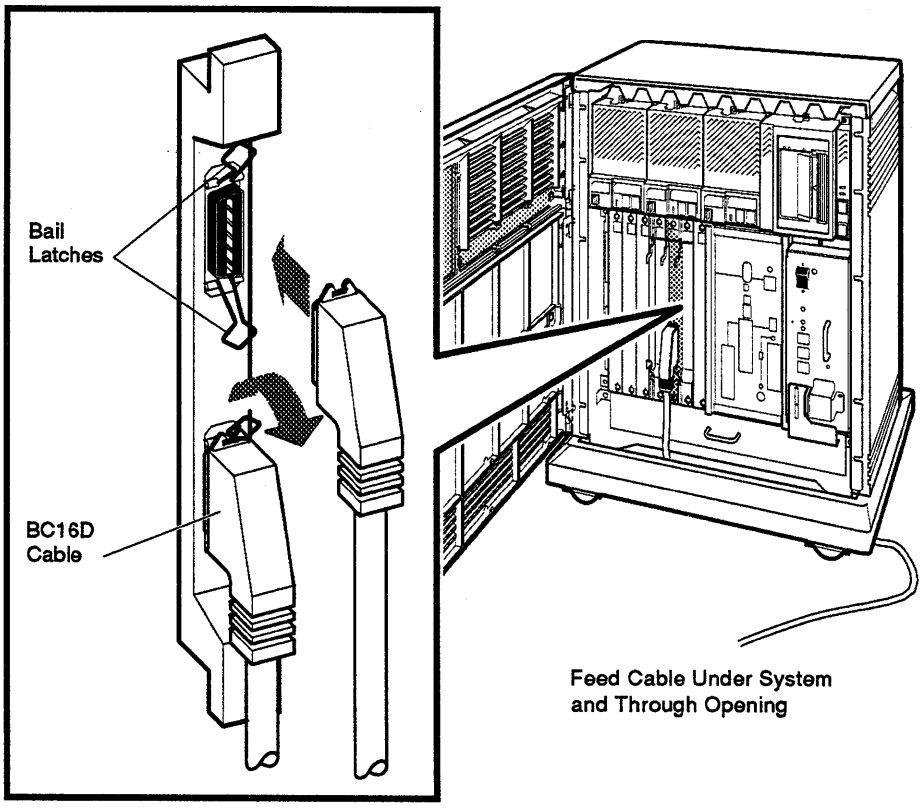
To connect additional terminals and printers:

1. Find the H3104 cable concentrator and BC16D cable.

2. Feed one end of the BC16D cable under the system from the back or side and insert it into the connector as shown in Figure 9.
   - If you are connecting two BC16D cables, connect the first to the connector labeled 8–15 on the module cover.
   - If you are connecting only one BC16D cable, connect that cable to the connector labeled 0–7.

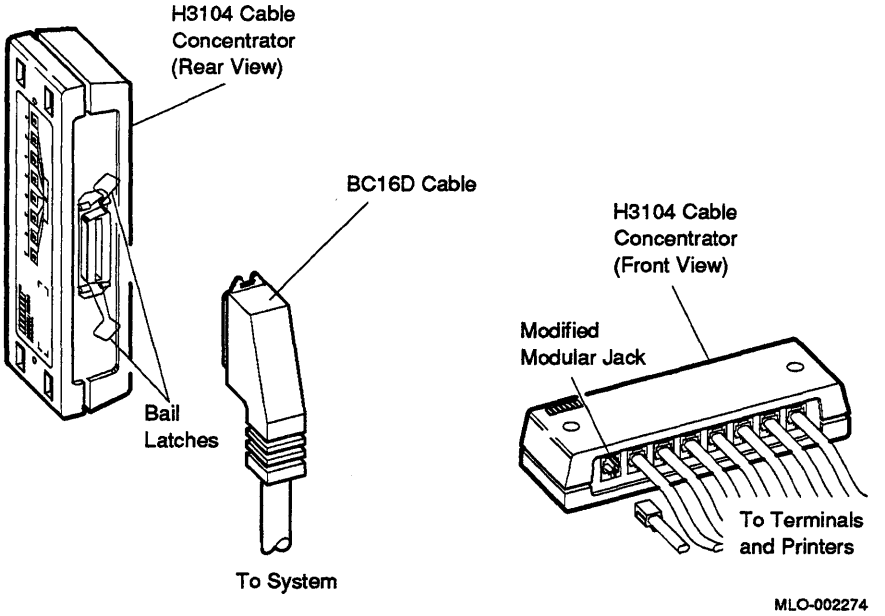
   Lock the connector in place by using the bail latches.

Figure 9: Connecting Devices to a CXA16 or CXB16 Module



3. Insert the other end of the BC16D cable into the cable concentrator shown in Figure 10. Lock the connector in place by using the bail latches.

Figure 10: Connecting Devices to the Cable Concentrator



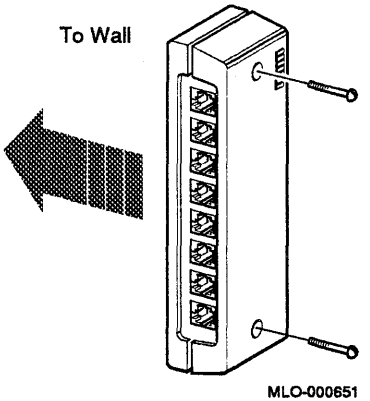
4. Insert each printer and terminal cable into one of the modified modular jacks on the cable concentrator as shown in Figure 10.
5. If you have not done so, connect the terminal or printer to the other end of the cable. Your terminal or printer documentation shows how to connect the cable.

   If the printer or terminal does not have a modified modular jack connection, use a passive adapter (H8575–A), available in 25-pin and 9-pin models.

Follow the same procedure for connecting a second BC16D cable to the module, except insert the cable into the connector labeled 0–7.

You can mount the cable concentrator on a wall. Wall mounting keeps cables off the floor. Use two screws as shown in Figure 11.

Figure 11: Mounting the Cable Concentrator



NOTE: *Be sure you mount the cable concentrator less than 7.6 meters (25 feet) from the system, to ensure the BC16D cable reaches the system.*

7.2 Connecting Parallel Printers to the System

You can connect up to two parallel printers for each LPV11 module installed in your system.

To connect parallel printers to the LPV11 module:

1. Find a BC27L–30 cable.
2. Feed one end of that cable under the system from the back or side. Then insert it into the connector labeled J1 on the module cover. Lock the connector in place by using the bail latches.
3. Insert the other end of the cable into the printer.

Follow the same procedure for connecting a second printer to the LPV11 module, except insert the cable into the connector labeled J2 on the module cover.

7.3 Connecting Synchronous Modems to the System

You can connect up to two synchronous modems for each DSV11 module installed in your system.

To connect a synchronous modem to a DSV11 module, using a protocol-specific adapter and extension cable:

1. Feed the socket end of the 0.6-meter (24-inch) adapter cable (BC19–B/D/E/F) under the system from the back or side and connect it to the module. Tighten the two screws on the cable connector using a screwdriver.
2. Connect the extension cable (BC55D, BC22F or BC19L) to the other end of the adapter cable. Secure the cables by tightening the two screws at the connection.
3. Connect the other end of the extension cable to the modem. Refer to your modem documentation for the location of the connector.

7.4 Connecting Asynchronous Modems to the System

You connect asynchronous modem lines to the CXY08 module which supports up to eight lines.

To connect a modem to a CXY08 module:

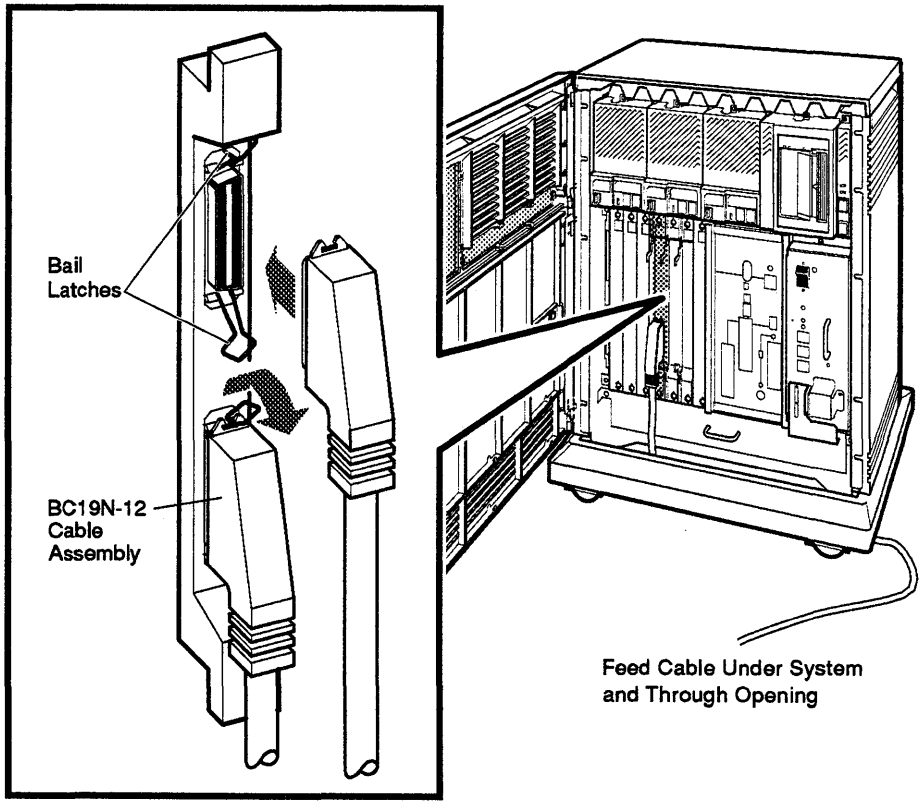
1. Find a BC19N–12 cable.

2. Feed one end of that cable under the system from the back or side and insert it into the connector as shown in Figure 12.

   - If you are connecting two BC19N–12 cables, connect the first to the connector labeled 4–7 on the module cover.
   - If you are connecting only one cable, connect it to the connector labeled 0–3.

   Lock the connector in place with the bail latches.

Figure 12: Connecting a Modem to a CXY08 Module



3. Attach a modem to one of the four connectors at the opposite end of the cable. If you want to place the modem farther away from the

system, attach a BC22F modem cable between the cable assembly and the modem. Refer to your modem documentation for the location of the connector.

Repeat the same procedure for connecting a second BC19N cable, except insert the cable into the connector labeled 0–3.

7.5 Connecting an Internal Modem to Telephone Lines

NOTE: *The DFA01 modem is available for U.S. and Canadian customers. Depending on the country you live in, the Telecommunication Administration (PTT) may not let you connect private integral modems to the public switched telephone network. Call your Digital representative for information on modem availability in your country.*

7.5.1 DFA01 Modem

The DFA01 module contains two modems, A and B. Each requires its own telephone.

The DFA01 modem connects to the following types of dial-up telephone service.

- RJ11C (United States) and CA11A (Canada) standard single-line telephone service. The switchpacks are factory set for that service. If you have it, you have one wall-mounted modular telephone jack per telephone.
- RJ12C/RJ13C (United States) and CA12A/CA13A (Canada) telephone service. The switchpacks are factory set for that service. If you have it, you have one wall-mounted modular telephone jack per telephone.
- RJ41S/RJ45S (United States) and CA41A/CA45A (Canada) data-jack telephone service. If you have it, you have two wall-mounted modular telephone jacks per telephone.

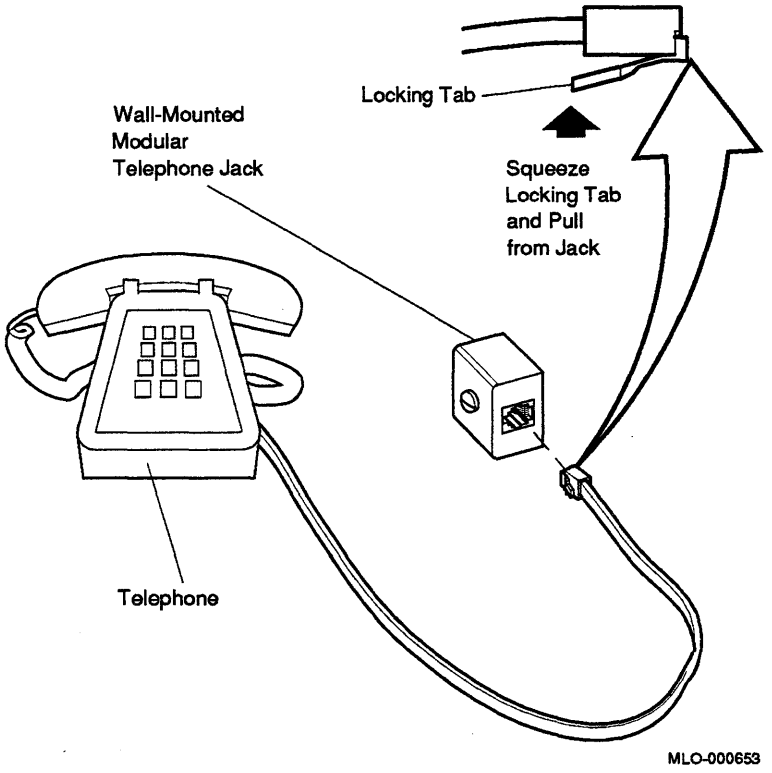
NOTE: *If you do not know which telephone service you are using, call your telephone company.*

7.5.2 RJ11C/CA11A, RJ12C/CA12A and RJ13C/CA13A Telephone Service

Use the following procedure to connect the DFA01 modem to RJ11C/CA11A, RJ12C/CA12A or RJ13C/CA13A service.

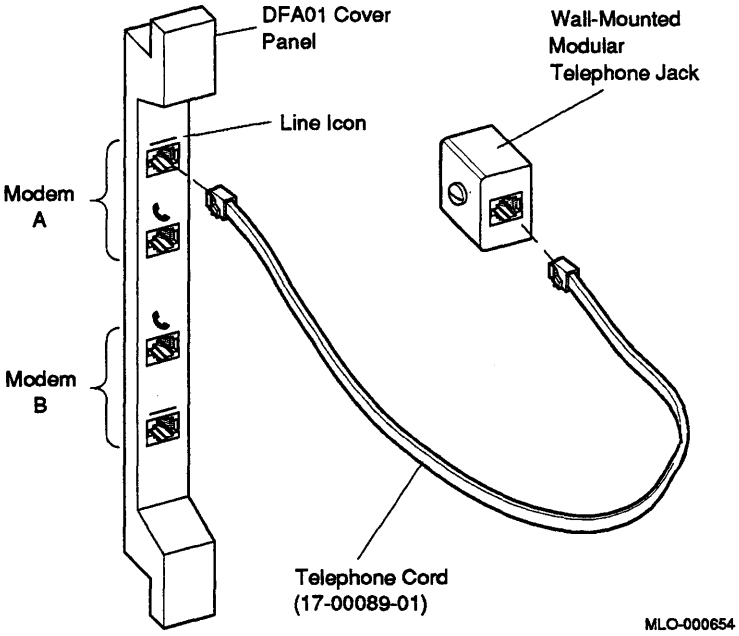
1. Disconnect the telephone line from the wall-mounted modular telephone jack. Leave the other end of the telephone line connected to the telephone as shown in Figure 13.

Figure 13: Disconnecting the Telephone Line (Single-Line and Multiline Service)



2. Take one end of one of the cords included with the modem (17–00089–01) and insert it into the top jack on the module cover (modem A). The top jack is marked with the line icon as shown in Figure 14.

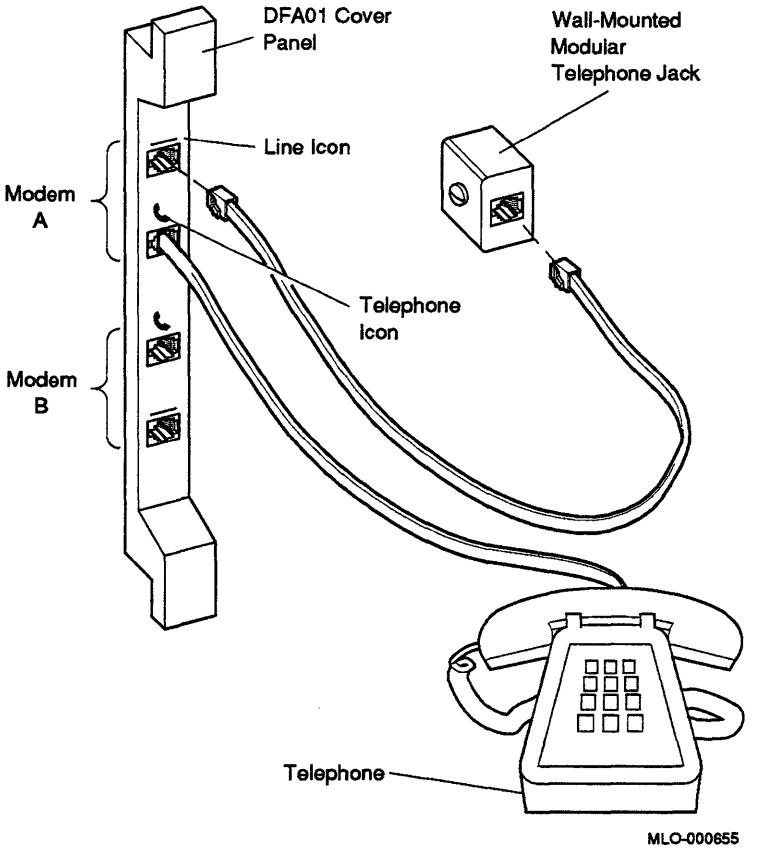
Figure 14: Installing the Telephone Cord (Single-Line and Multiline Service)



3. Insert the other end of the cord into the wall-mounted telephone jack.

4. To install voice communication on modem A, take the end of the telephone line that you disconnected from the wall jack in step 1 and insert it into the second jack from the top of the module cover as shown in Figure 15. That jack is marked with the telephone icon.

Figure 15: Connecting a Modem to a Telephone (Single-Line and Multiline Service)



If you do not plan to use modem B, do not perform the following step.

5. Set up modem B by following the same procedure you used to set up modem A. Notice, however, that the jack positions on the module cover

are reversed for modem B. The bottom jack is marked with a line icon; the second jack from the bottom is marked with a telephone icon.

a. Connect the wall-mounted modular jack to the bottom jack on the module cover.

b. Connect the telephone line to the second jack from the bottom of the module cover.

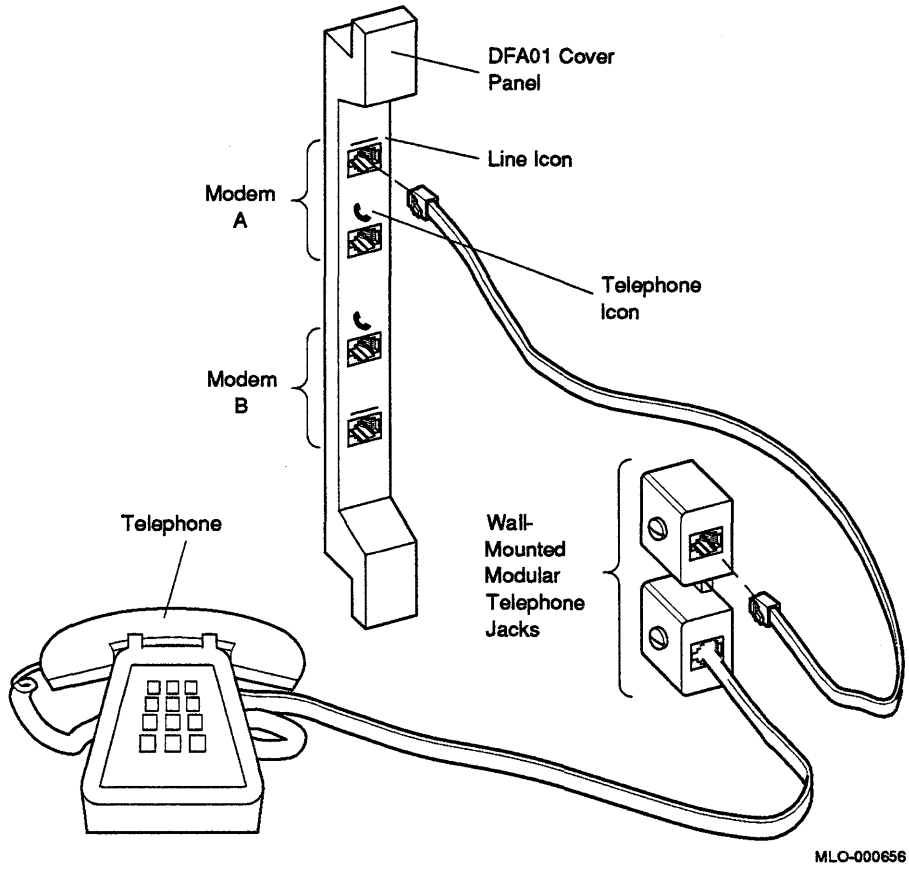
7.5.3 RJ41S/CA41A and RJ45S/CA45A Data-Jack Telephone Service

Use the following procedure to connect the DFA01 modem to RJ41S/CA41A or RJ45S/CA45A data-jack telephone service. You need a standard eight-wire telephone cord (not supplied with the modem). If you plan to use modems A and B, you need two telephones, one for each modem.

Do not unplug the telephone line from the wall-mounted modular telephone jack.

1. Insert one end of the telephone cord into the top jack on the module cover (modem A) as shown in Figure 16. The top jack is marked with the line icon.
2. Insert the other end of the telephone cord into a second wall-mounted modular telephone jack.

Figure 16: Connecting a Modem to a Wall-Mounted Jack (Data-Jack Service)—Telephone to Wall-Jack Connection



If you require voice communication on modem A, refer to step 4.

If you do not plan to use modem B, skip step 3 and proceed with step 4.

3. If you plan to use modem B:

   a. Insert a second eight-wire telephone line into the bottom jack on the module cover, marked with a line icon. (Notice that the jack positions are reversed for modem B.)

   b. Insert the other end of the cord into a wall-mounted modular telephone jack.

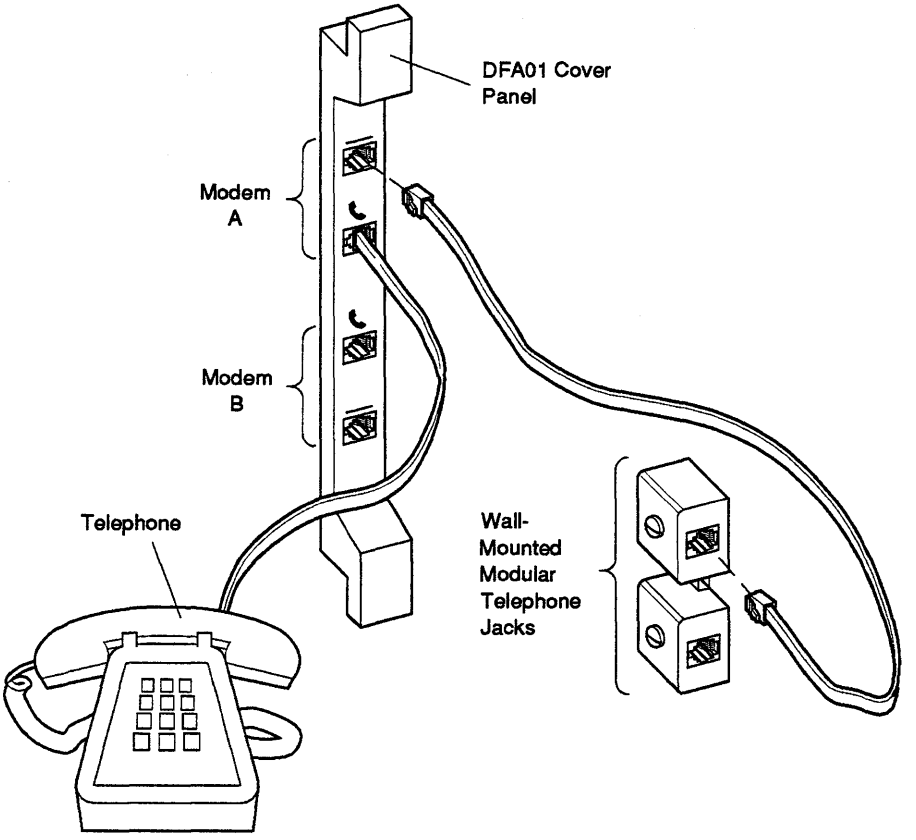
   If you require voice communication on modem B, refer to step 4.

4. If you require voice communication with a modem, you can install it in one of two ways:

   - The first way of installing voice communication is established for modems A and B in the preceding steps. The telephone is connected to the wall-mounted modular telephone jack, which is in turn connected to the module cover (see Figure 16).

- The second way of installing voice communication is by connecting the telephone to the module cover, which is in turn connected to the wall-mounted modular telephone jack as shown in Figure 17.

Figure 17: Connecting a Modem to a Wall-Mounted Jack (Data-Jack Service)—Telephone to DFA01 Connection



a. Leave connected the eight-wire telephone cord that attaches the module cover to a wall-mounted modular telephone jack.

b. Disconnect the telephone line from the wall-mounted modular telephone jack. Leave the telephone line connected to the telephone.

c. Connect the telephone line from the telephone to the module cover.

   - To install voice communication on modem A, insert the telephone line into the second jack from the top of the module cover, marked with the telephone icon.
   - To install voice communication on modem B, insert the telephone line into the second jack from the bottom of the module cover, marked with the telephone icon.

7.5.4 Setting Up Terminal Lines

Before you can use the DFA01 modem, you must set up the operating system software to recognize the modem.

Set up the operating system software to support the following four terminal lines for the modem.

- Modem A—primary channel
- Modem A—on-line control channel (OLC)
- Modem B—primary channel
- Modem B—on-line control channel (OLC)

Refer to the operating system documentation to determine how to make permanent terminal line definitions, so that every time the system is turned on the terminal lines are configured for proper operation.

You may need to define the following terminal line characteristics.

- Modem control—to support full EIA modem control.
- Speed, parity and data bits—terminal lines should be set to 2400 baud, parity disabled, and 8 data bits to coincide with the modem power-on defaults.
- Dial up—to support dial-up operation.
- Hang up—to disable automatic hang up of the lines when logging out or when completing a dialog with the modem using terminal emulation software.

  With automatic hang up disabled, you can modify the modem operating parameters (from application software or when using a terminal emulator). You can then exit the program without the modem resetting those parameters to power-on default values.

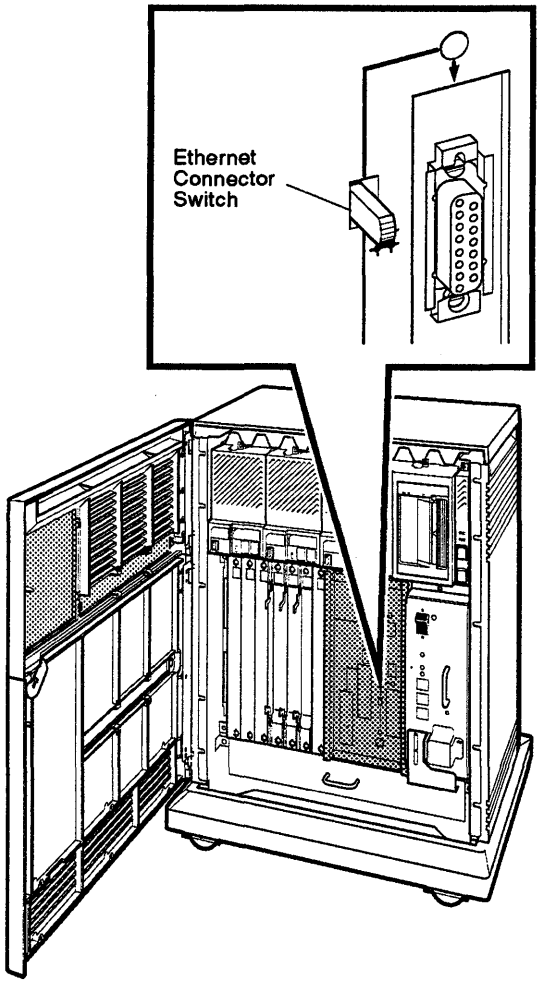
7.6 Connecting to an Ethernet Network at the Console Module

An Ethernet Connector switch on the console module (Figure 18) selects a standard or ThinWire connector. You must select one or the other.

- To select the ThinWire connector, slide the switch down. Then go to Section 7.6.1.
- To select the standard connector, slide the switch up. Then go to Section 7.6.2.

An indicator next to the selected connector lights when your system is turned on, indicating an active connection.

Figure 18: Ethernet Connector Switch on the Console Module



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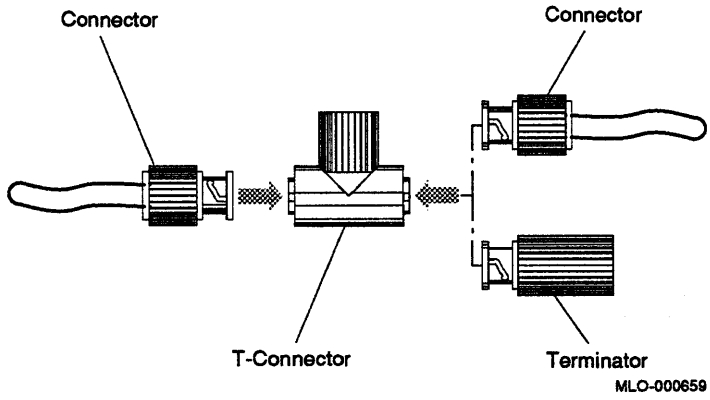
7.6.1 Making a ThinWire Network Connection at the Console Module

To make a ThinWire network connection at the console module:

1. Find the T-connector and two terminators. They are on the ThinWire connector, below the Ethernet connector switch.

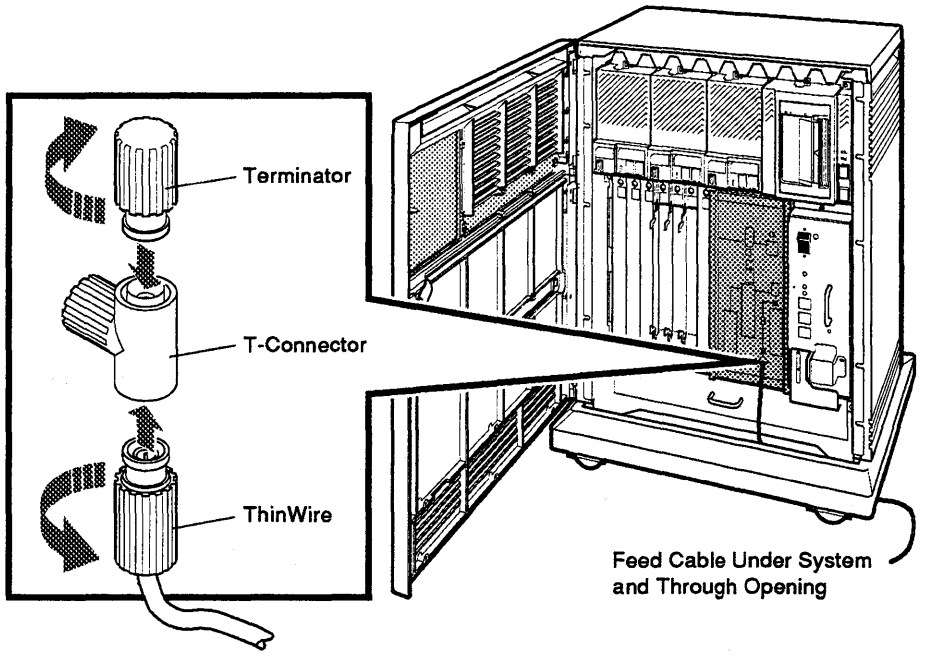
   Figure 19 shows how the T-connector, terminators and ThinWire cable connectors fit together.

Figure 19: ThinWire Cable, T-Connector and Terminator



2. Remove the terminator from the bottom of the T-connector shown in Figure 20. Push in and turn it counterclockwise until it unlocks.

Figure 20: Making a ThinWire Ethernet Connection at the Console Module



3. Make sure the T-connector is inserted into the ThinWire connector. Turn the T-connector clockwise to make sure it is locked.
4. Connect the ThinWire cable to the T-connector as shown in Figure 20.
   - If your system requires one connection to the network:
     a. Connect the ThinWire cable to the lower end of the T-connector.
     b. Verify that a terminator is connected to the other end of the T-connector.

     Push in and turn the connector or terminator clockwise until it locks in place.
   - If your system is a link in a network and connects to two additional components:
     a. Connect a ThinWire cable to one end of the T-connector.

b. Remove the terminator from the other end and connect a second ThinWire cable to it.

Push in and turn the connectors clockwise until they lock in place.

5. Connect the ThinWire cable to one of the following devices.
   - A ThinWire Ethernet Multiport Repeater (DEMPR), which can in turn be connected to a baseband Ethernet cable, and which can connect up to eight ThinWire segments in a local area network
   - A ThinWire Ethernet Singleport Repeater (DESPR), which can in turn be connected to a baseband Ethernet cable, and connects to one ThinWire segment
   - A ThinWire Ethernet adapter in another system or workstation

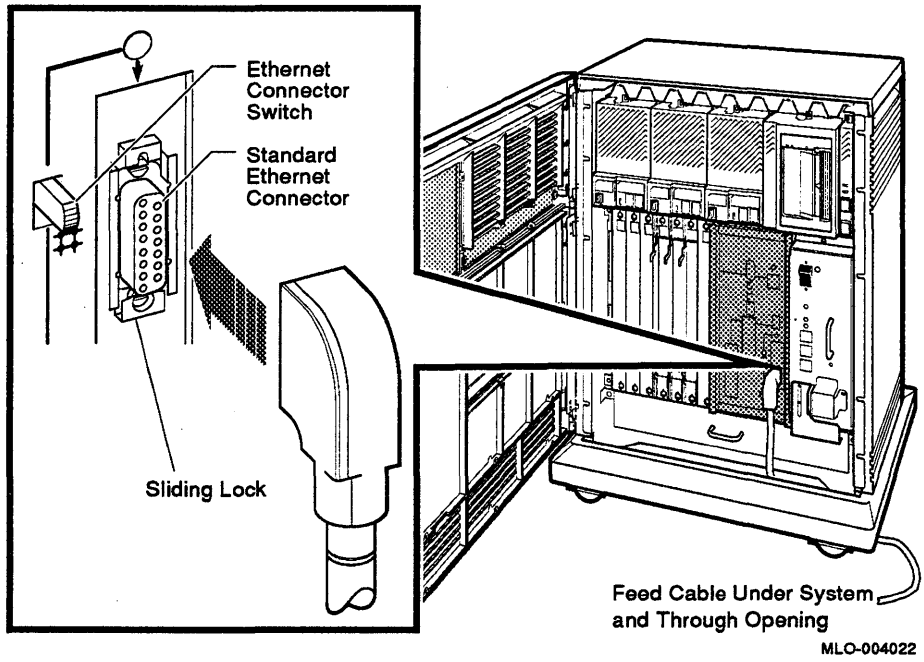
NOTE: *Contact your network manager or Digital service representative if you have questions about network configurations.*

7.6.2 Making a Standard Network Connection at the Console Module

To make a standard network connection at the console module:

1. Find the Ethernet transceiver cable. It has a right-angle plug at one end and a socket at the other end.
2. Make sure the sliding lock on the standard Ethernet connector on the console module (Figure 21) is in the up position. Then feed the plug end of the cable under the system from the back or side and insert it into the connector. Slide the lock down to secure the connection.

Figure 21: Making a Standard Ethernet Connection at the Console Module



3. Connect the other end of the cable to one of the following devices.
   - An H4000 or H4005 transceiver on a traditional baseband Ethernet cable
   - A DELNI interconnect, which can in turn be connected to a baseband Ethernet cable, and which can connect up to eight systems in a local area network
   - A DESTA adapter, which lets you connect the Ethernet transceiver cable to ThinWire cabling
   - A standard adapter in another system or workstation

NOTE: *Contact your network manager or Digital service representative if you have questions about network configurations.*

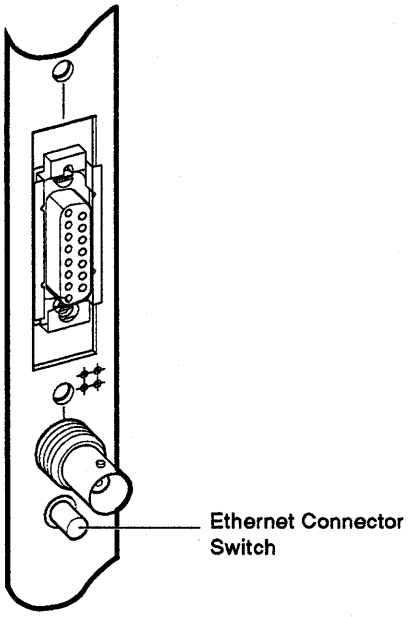
7.7 Connecting to an Ethernet Network at the DESQA Module

The DESQA module has an Ethernet Connector switch (Figure 22) that lets you select a ThinWire or a standard connector. You must select one or the other.

- To select the ThinWire connector, set that switch to the out position. Then go to Section 7.7.1.
- To select the standard connector, set that switch to the in position. Then go to Section 7.7.2.

An indicator next to the selected connector lights when your system is turned on, indicating an active connection.

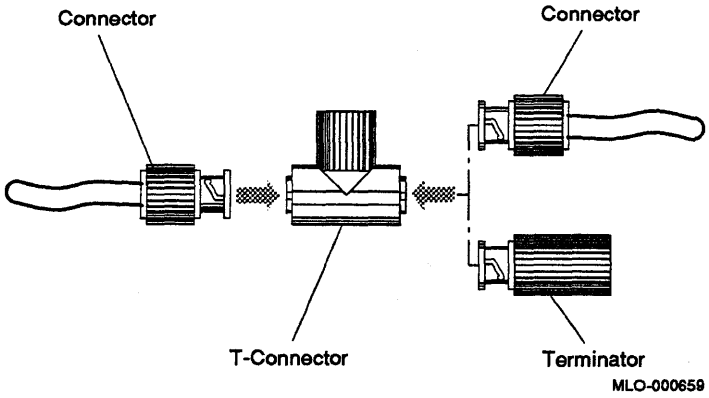
Figure 22: DESQA ThinWire/Standard Ethernet Connector Switch



7.7.1 Making a ThinWire Network Connection at the DESQA Module

A T-connector and two terminators are on the DESQA module. Figure 23 shows how the T-connector, terminators and ThinWire cable connectors fit together.

Figure 23: ThinWire Cable, T-Connector and Terminator

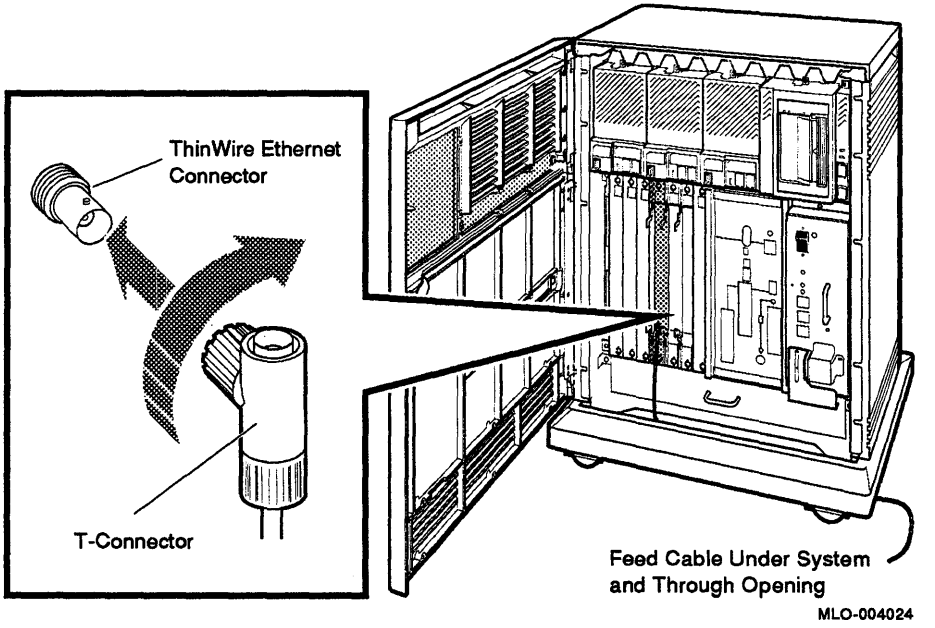


To make a ThinWire network connection at the DESQA module:

1. Remove the T-connector from the module. Push in and turn it counterclockwise until it unlocks.
2. Remove the terminators from the T-connector. Push in and turn them counterclockwise until they unlock.

3. Connect the ThinWire cable to the T-connector as shown in Figure 24.

Figure 24: Making a ThinWire Ethernet Connection at the DESQA Module



- If your system requires one connection to the network:

  a. Connect the ThinWire cable to the upper end of the T-connector.

  b. Connect a terminator to the other end of the T-connector.

  Push in and turn the connector or terminator clockwise until it locks in place.

- If your system is a link in a network and connects to two additional components:

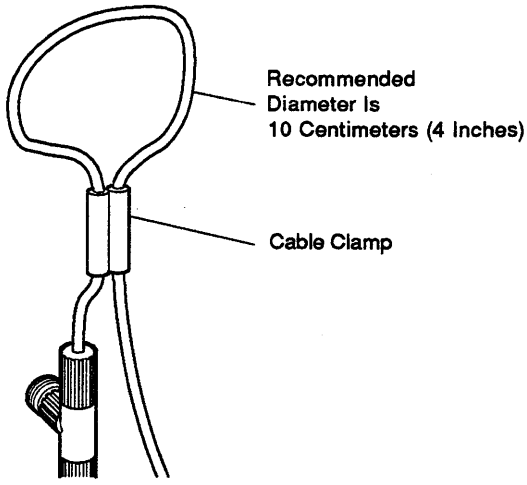
  a. Connect a ThinWire cable to one end of the T-connector.

  b. Connect a second ThinWire cable to the other end of the T-connector.

  Push in and turn the connectors clockwise until they lock in place.

4. Insert the T-connector into the ThinWire connector on the module as shown in Figure 24. Push in and turn the T-connector clockwise until it locks in place.
5. Use the cable clamp shipped with the module to form the upper cable in a loop approximately 10 centimeters (4 inches) in diameter as shown in Figure 25.

Figure 25: Forming the Upper Cable in a Loop at the DESQA Module



6. Connect the ThinWire cable to one of the following devices.
   - A ThinWire Ethernet Multiport Repeater (DEMPR), which can in turn be connected to a baseband Ethernet cable, and which can connect up to eight ThinWire segments in a local area network
   - A ThinWire Ethernet Singleport Repeater (DESPR), which can in turn be connected to a baseband Ethernet cable, and connects to one ThinWire segment
   - A ThinWire Ethernet adapter in another system or workstation

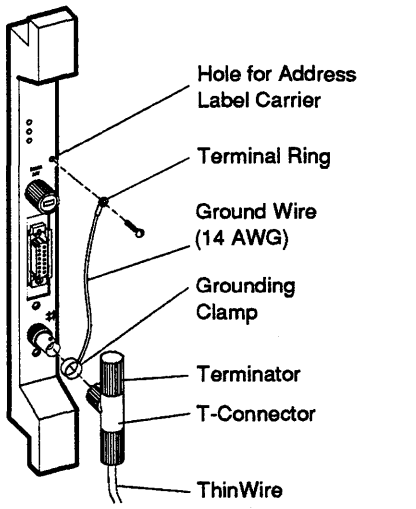
NOTE: *Contact your network manager or Digital service representative if you have questions about network configurations.*

When the ThinWire cable is connected to a DEMPR or DESPR, the ground is provided by the DEMPR or DESPR chassis. If you are using a single-segment ThinWire local area network (LAN) with no DEMPR or DESPR, you may need to ground the ThinWire connector on the DESQA module.

CAUTION: *Each ThinWire segment must have only one grounding point.*

To ground a single-segment ThinWire network on the DESQA module, connect a grounding clamp (90–08927–00) and an unshrouded T-connector (12–25534–01) as shown in Figure 26. Contact your Digital sales representative concerning those parts.

Figure 26: Grounding ThinWire Ethernet at the DESQA Module

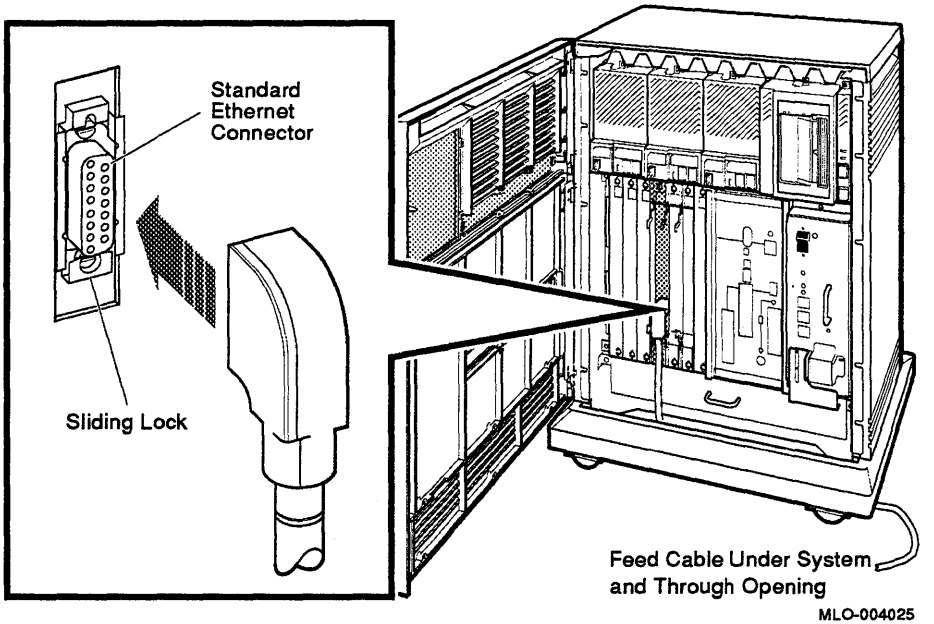


7.7.2 Making a Standard Network Connection at the DESQA Module

To make a standard network connection at the DESQA module:

1. Find the Ethernet transceiver cable. It has a plug at one end and a socket at the other end.
2. Make sure the sliding lock on the standard Ethernet connector on the module is in the up position.
3. Feed the plug end of the cable under the system from the back or side and insert it into the connector as shown in Figure 27. Slide the lock down to secure the connection.

Figure 27: Making a Standard Ethernet Connection at the DESQA Module



4. Connect the other end of the cable to one of the following devices.
   - An H4000 transceiver on a traditional baseband Ethernet cable
   - A DELNI interconnect, which can in turn be connected to a baseband Ethernet cable, and which can connect up to eight systems in a local area network

NOTE: *Contact your network manager or Digital service representative if you have questions about network configurations.*

8 Connect an Expander, If Required

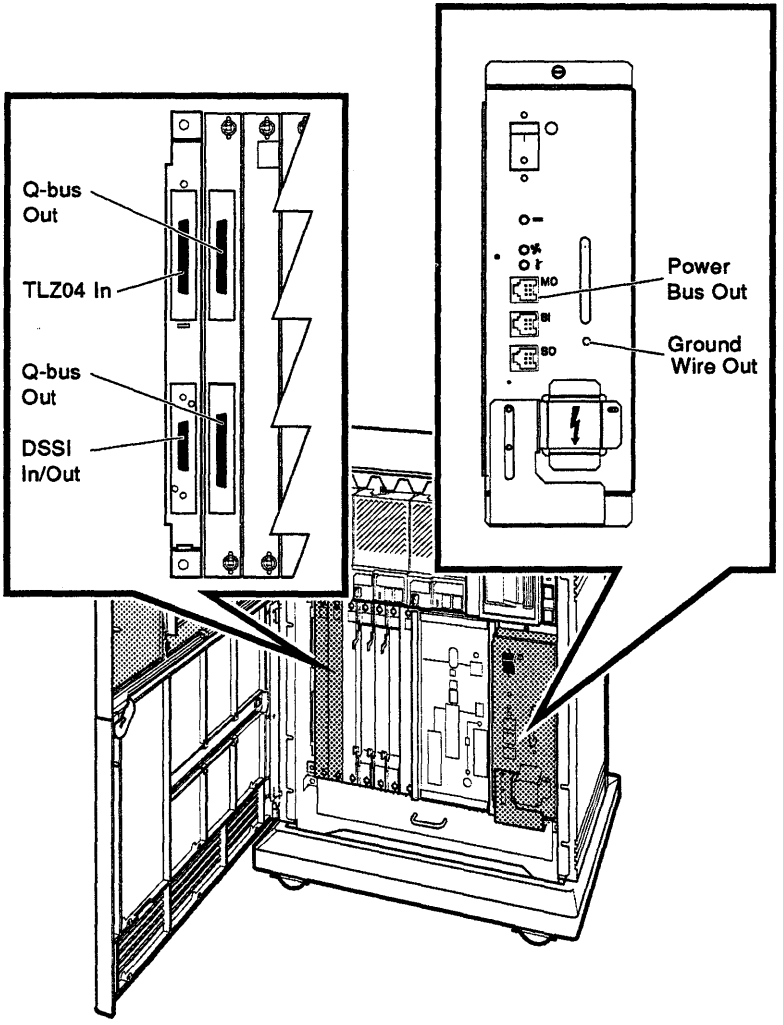
If you are not installing an expander with your system, skip to step 9.

If you are installing an expander with your system:

1. Install the expander as described in the document (addendum or manual) shipped with the expander.

2. Return to this manual to connect the expander cable(s) to one or more of the system connections shown in Figure 28.

Figure 28: System Connections for Expanders



As applicable (follow the instructions that apply to your system), connect one or more of the following expander cables to your system.

- Q-bus cables (Section 8.1)
- DSSI cable (Section 8.2)
- TLZ04/RRD-series external cable (Section 8.3)
- Power control bus cable (Section 8.4)
- Ground cable (Section 8.5)

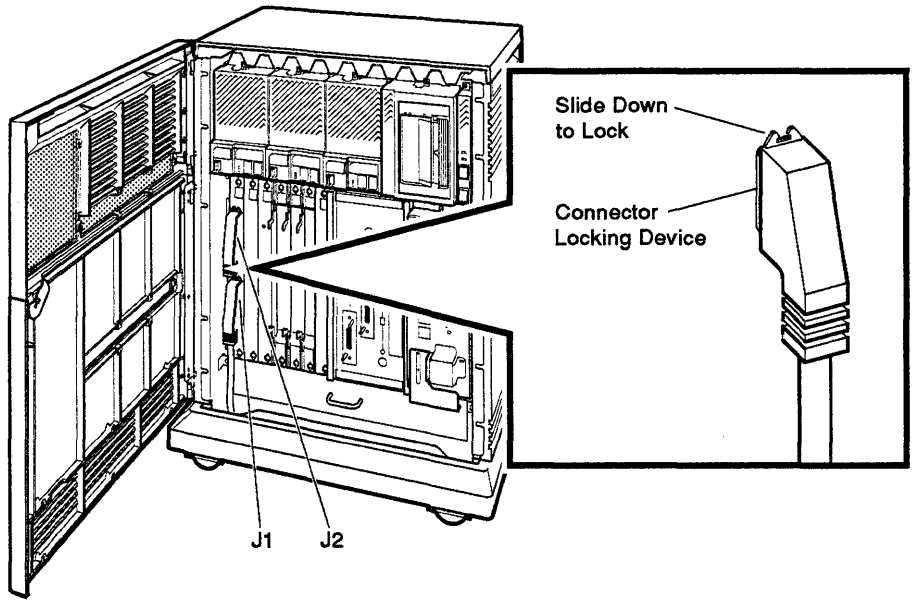
Then:

1. Complete the installation of the expander as described in the expander document.
2. Complete the installation of your system by completing the steps remaining in this manual.

8.1 Q-bus Cables

Connect the two Q-bus cables (BC04V–09) to the two Q-bus Out connectors on your system. Those connectors should be in the last (leftmost) backplane slot used in your system. The module containing those connectors is labeled M9404–PA.

Figure 29: Connecting the Q-bus Cables



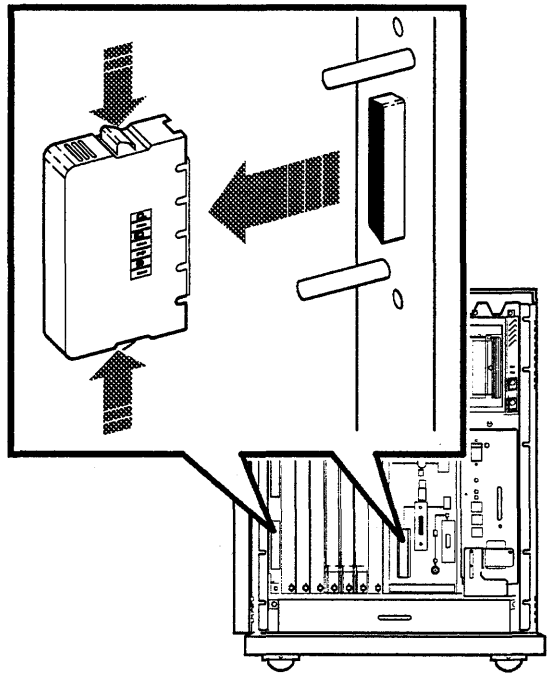
1. Feed the plug end of one of the cables under the system from the back or side and up through the opening. Then insert the plug end into the lower Q-bus Out connector (J1). Secure the connection by sliding the lock down.
2. Feed the socket end of the other cable under the system from the back or side and up through the opening. Then insert the socket end into the upper Q-bus Out connector (J2). Secure the connection by sliding the lock down.

8.2 DSSI Cable

Connect the DSSI cable (BC21M–09) to one of two DSSI In/Out (Bus 0 and Bus 1) connectors on your system.

1. For the R400X expander, remove the DSSI terminator (12–29258–01) from the DSSI In/Out (Bus 1) connector, labeled X, on the console module.

Figure 30: Removing the DSSI Terminator



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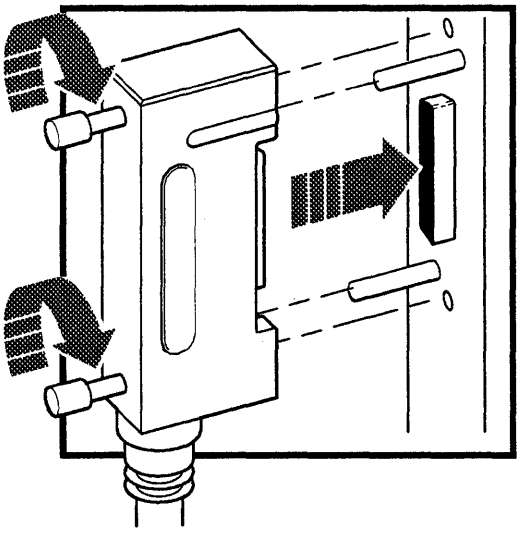
Squeeze the spring clips at the top and bottom of the terminator as you pull it straight out.

For the B400X expander, remove the DSSI terminator (12–29258–01) from the DSSI In/Out (Bus 0) connector, which is the lower connector on the left side of the card cage.

2. Connect the DSSI cable (BC21M–09) to the DSSI In/Out (Bus 0 or Bus 1) connector by fitting the cable connector over the two guide pins.

Figure 31: Connecting the DSSI Cable



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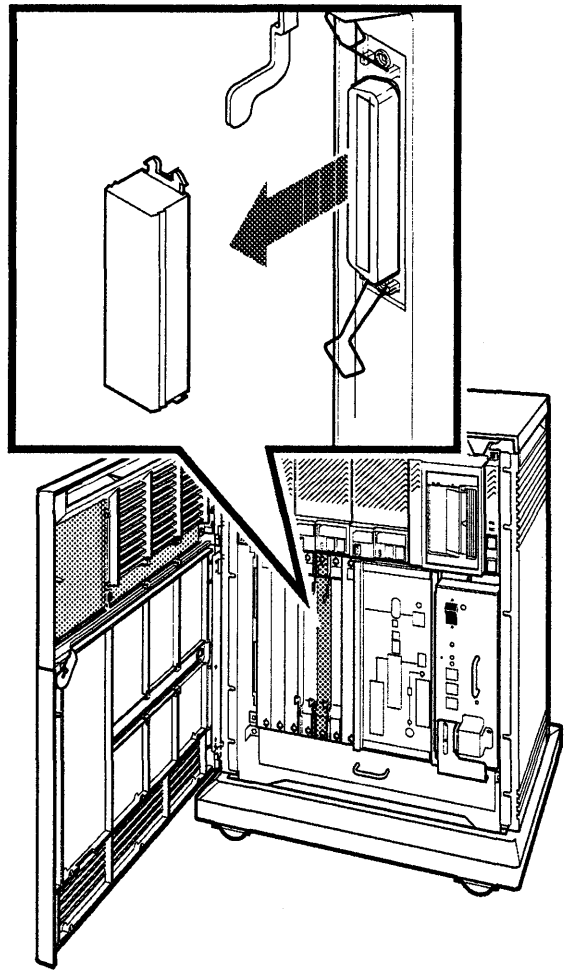
Tighten the cable connector screws by hand, then use a screwdriver to secure the connection.

3. If applicable, install the terminator (removed in step 1) on the expander as shown in the expander installation document.

8.3 TLZ04/RRD-Series External Cable

1. Remove the terminator (H8574–A) from the lower connector on the KZQSA module (M5976–SA).

Figure 32: Removing the KZQSA Terminator



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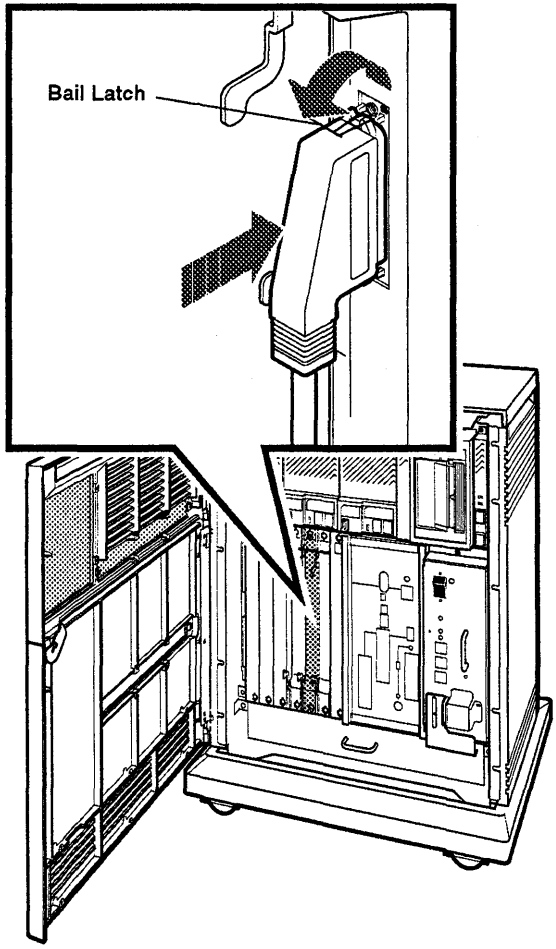
2. Connect the TLZ04/RRD-series external cable (BC06P–06), shipped with the expander, to that connector.

Figure 33: Connecting the TLZ04/RRD-Series External Cable



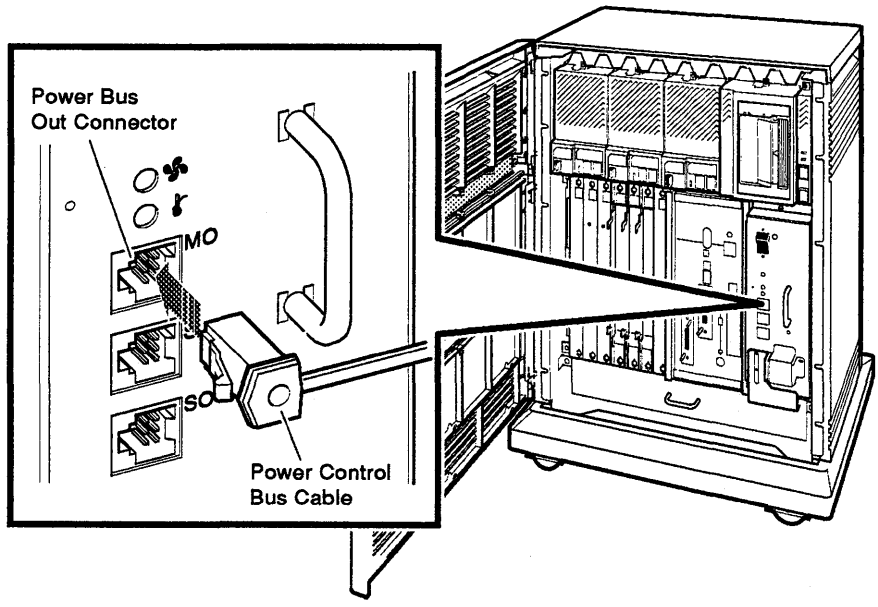
Secure the connection by pressing the connector bail latches into place.

3. If applicable, install the terminator (removed in step 1) on the expander, as shown in the expander installation document, or on an external RRD-series drive, as shown in the owner's manual for that drive.

8.4 Power Control Bus Cable

Connect the Power Control Bus cable (17–02638–01) to the Power Bus Out (MO) connector.

Figure 34: Connecting the Power Control Bus Cable



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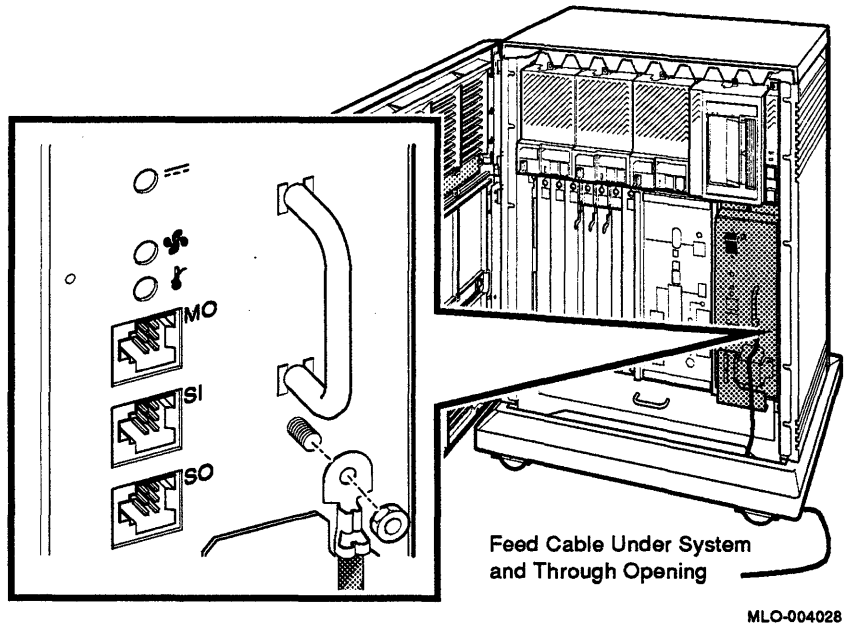
The Power Bus Out connector is on the power supply. It is the topmost of three connectors stacked well below the Power (1/0) switch.

NOTE: *The Power Control Bus cable is not used in dual-host systems.*

8.5 Ground Cable

Connect the Ground cable (12–13756–A8) to the Ground Wire Out bolt.

Figure 35: Connecting the Ground Cable



The Ground Wire Out bolt is on the power supply. It is to the right of the three Power Bus connectors.

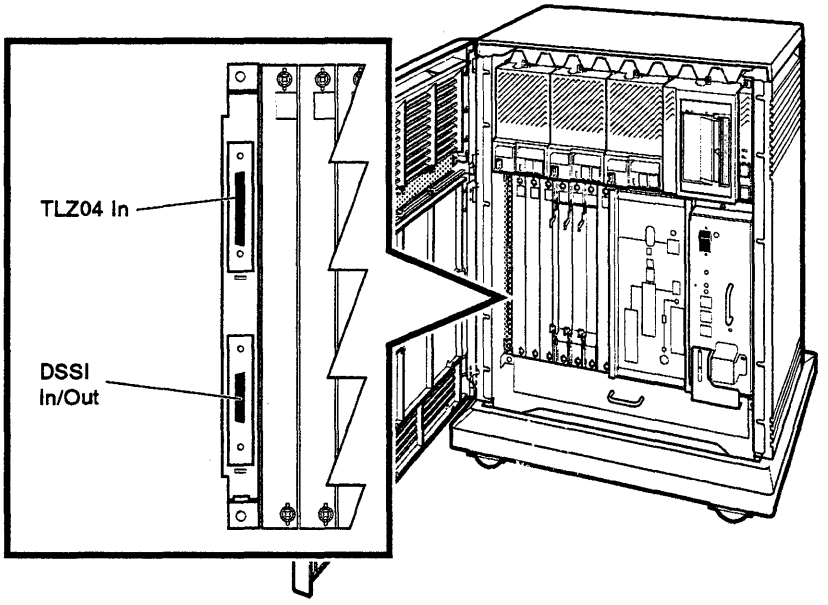
9 Connect the TLZ04 Internal Cable, If Required

If a TLZ04 tape drive is not installed in your system, skip to step 10.

If a TLZ04 tape drive is installed in your system:

1. Find the TLZ04 In connector shown in Figure 36 and the TLZ04 internal cable (BC06P–2F) shipped with your system.

Figure 36: TLZ04/KZQSA System Connection

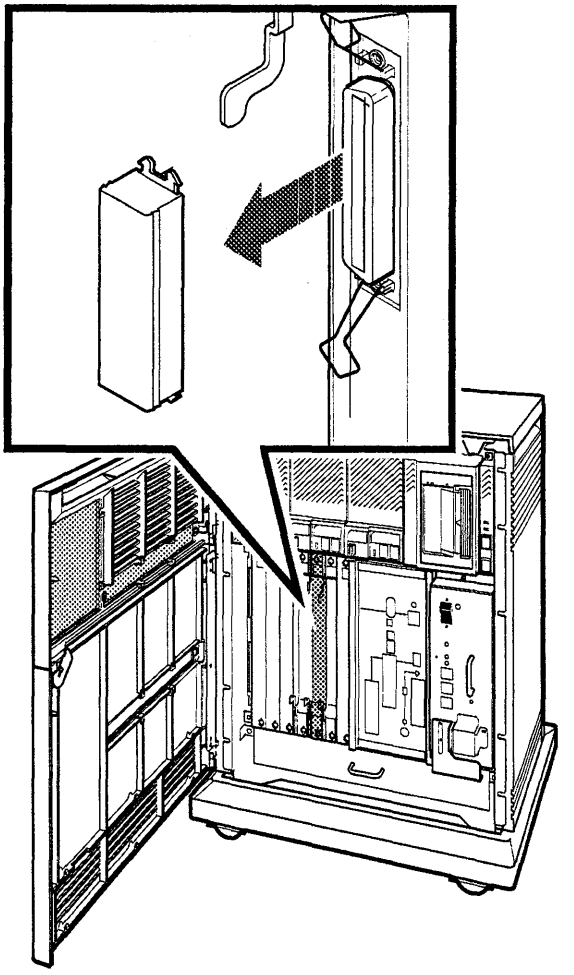


2. Remove the protective cover from the TLZ04 In connector.
3. Insert the connector on one end of the cable into the TLZ04 In connector.

   Secure the cable connection by pressing the bail latches on the connector until they snap into place.

4. Remove the terminator from the upper connector on the KZQSA module (M5976–SA) as shown in Figure 37.

Figure 37: TLZ04/KZQSA Module Connection—Removing the Terminator



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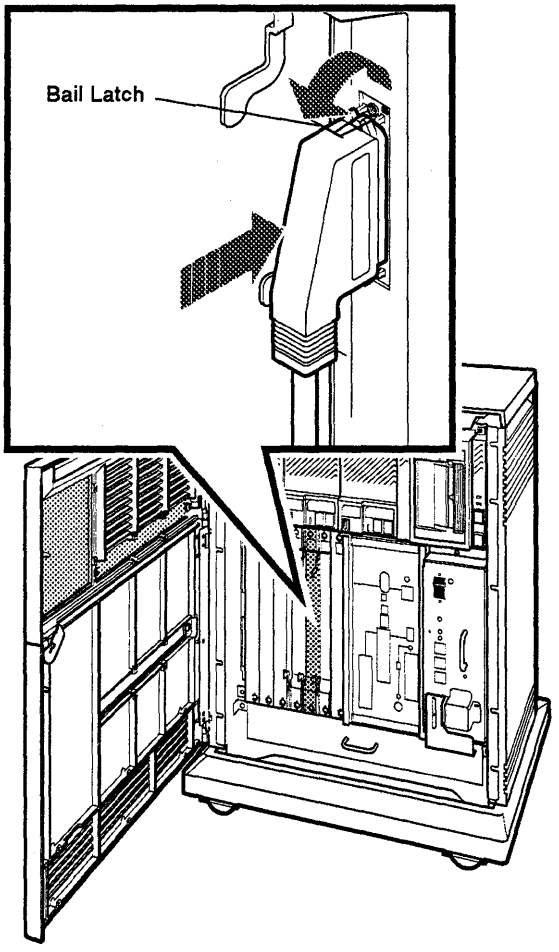
5. Insert the other cable connector into the connector on the KZQSA module as shown in Figure 38.

Figure 38: TLZ04/KZQSA Module Connection—Connecting the Cable



Secure the cable connection by pressing the bail latches on the connector until they snap into place.

10 Connect the DSSI Cable—Dual Host Only

If you are not installing a dual-host system, skip to step 12.

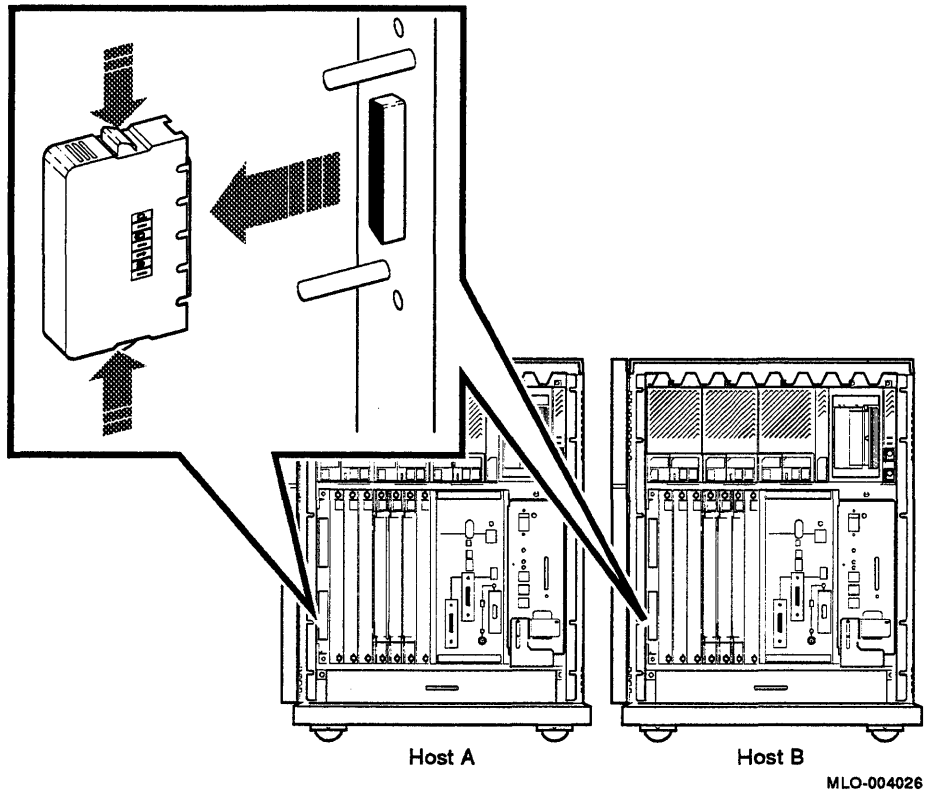
If you are installing a dual-host system, follow the instructions for this step and the next (step 11).

NOTE: *If you are installing an expander with your dual-host system, for alternate configurations refer to the VAX 4000 Dual Host Systems manual.*

For ease of discussion, call one of the systems host A, the other host B.

1. Remove the DSSI terminator from the host A, Bus 0 (DSSI In/Out) connector shown in Figure 39. Squeeze the spring clips at the top and bottom of the terminator as you pull it straight out.

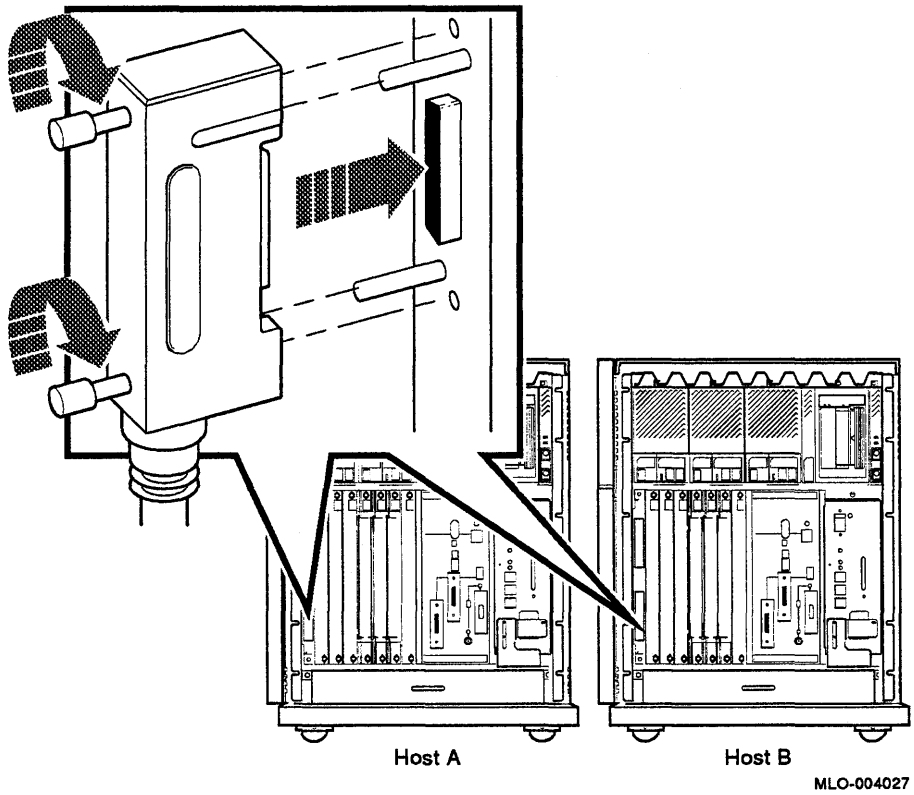
Figure 39: Removing the DSSI Terminators



2. Repeat the previous step for host B.
3. Find the 2.74-meter (9-foot) DSSI cable labeled BC21M–09, shipped with your system.

4. Feed either end of that cable under host A from the back or side. Then insert the cable connector into the Bus 0 (DSSI In/Out) connector by fitting the cable connector over the two guide pins shown in Figure 40.

Figure 40: Connecting the DSSI Cable



Tighten the screws by hand, then use a screwdriver to secure the connection.

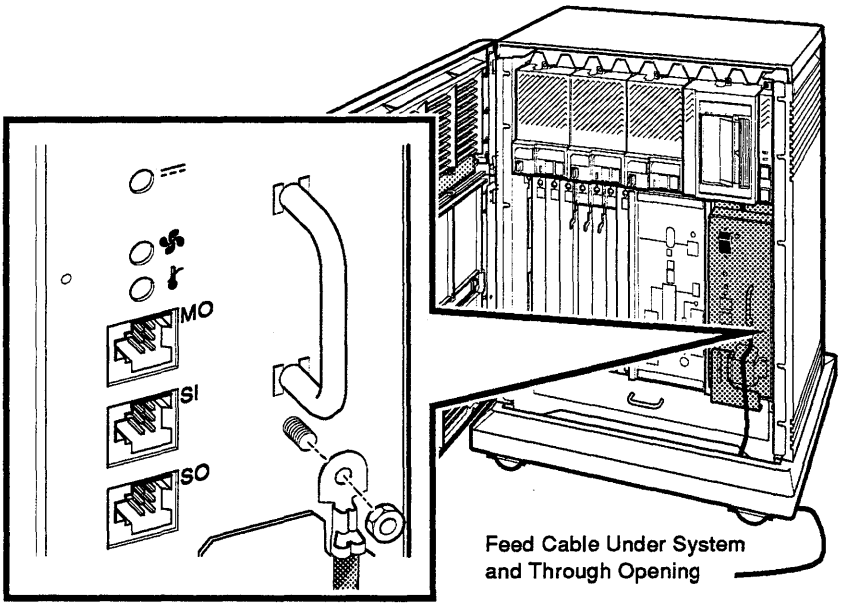
5. Repeat the previous step for host B using the opposite end of the DSSI cable.

11 Connect the Ground Cable—Dual Host Only

To connect the ground cable:

1. Find the ground cable (12–13756–A8) shipped with your system. It has a ground lead on each end.
2. Feed the ground cable under host A from the back or side and up through the opening in the front as shown in Figure 41.

Figure 41: Connecting the Ground Cable



3. Locate the Ground Wire Out bolt on host A. It is under the handle on the power supply as shown in Figure 41.
4. Remove the nut from that bolt.
5. Slide the ground-lead ring terminal over the bolt.
6. Replace and tighten the nut.
7. Repeat steps 2 through 6 for host B using the other end of the ground cable.

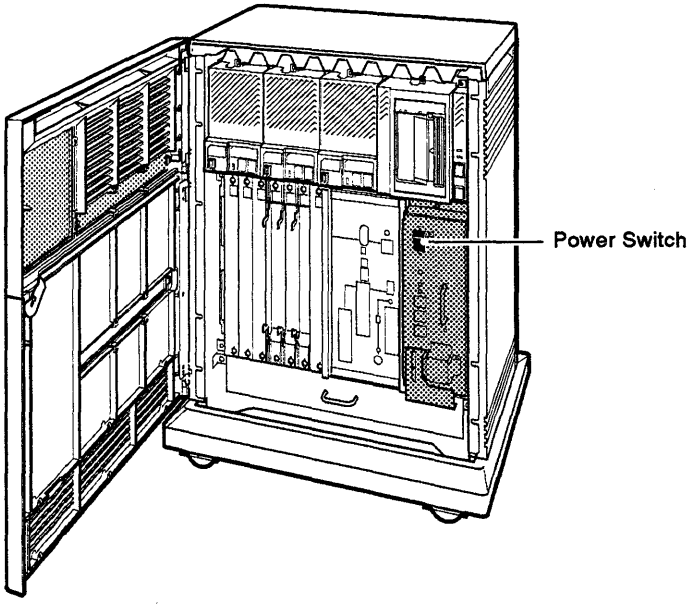
12 Connect the System Power Cable

NOTE: *Your system contains an automatic voltage-selection power supply. Voltage selection is not required prior to installation.*

Connect the power cable to your system as follows.

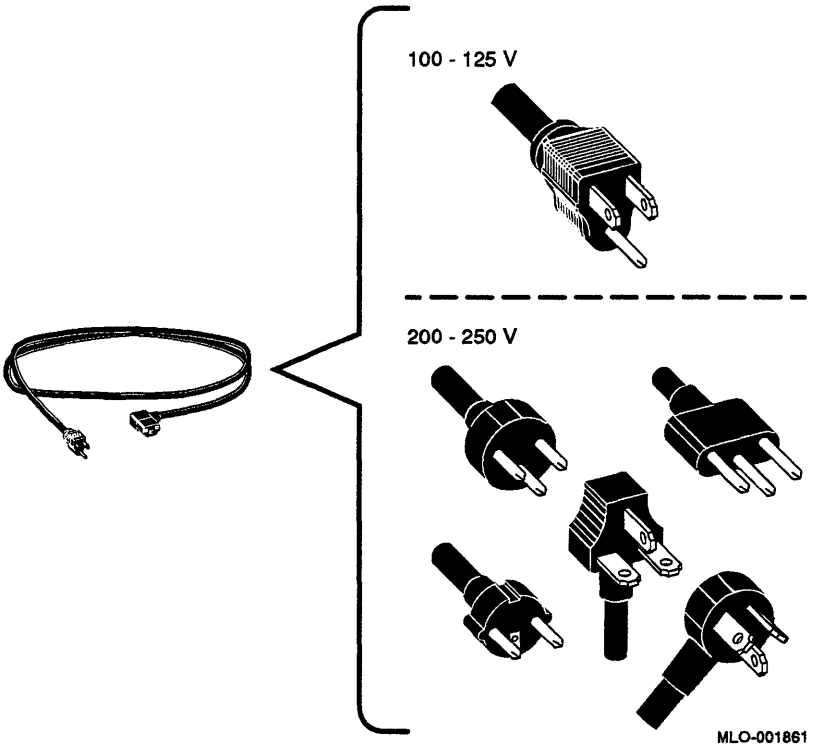
1. Make sure the system Power switch shown in Figure 42 is set to off (0).

Figure 42: System Power Switch



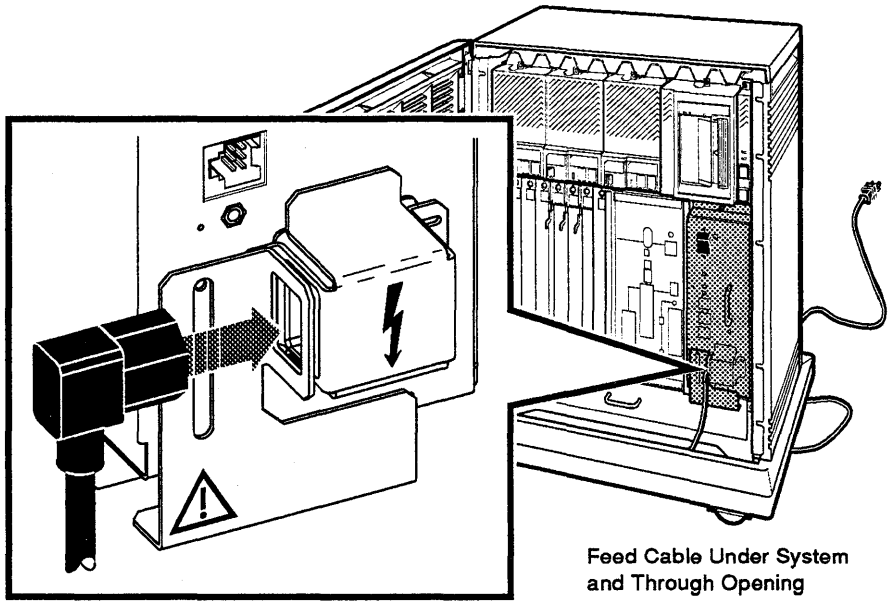
2. Make sure all devices connected to the system are turned off.
3. Find the power cable shipped with your system.
4. Make sure the plug end of that cable matches your wall outlet or other power source. Several types of plugs are shown in Figure 43.

Figure 43: Power Cable Plugs



5. Feed the opposite end of the cable under the system from the back or side and insert it into the power supply as shown in Figure 44.

Figure 44: Connecting the Power Cable to the System



6. Insert the plug end of the cable into your wall outlet or other power source.

You are now ready to turn on your system and select a language.

13 Turn On the System and Select a Language

The language you select controls only the language of the console program which is part of the firmware in the CPU. That firmware lets you give commands to the system and also generates error messages.

NOTE: *For a dual-host system: You must turn on each host separately. If you want a language other than English (United States / Canada), you must select a language for each host.*

Turn on the system(s) and select a language for each as follows.

1. Turn on your console terminal and wait until it performs its self-tests successfully.
2. If a B400X or R400X expander is connected to your system, turn on the expander.

   The AC indicator on the expander power supply should glow orange.
3. Turn on your system by setting the Power switch to on (1).

   The AC Present indicator, next to that switch, should glow orange.

   NOTE: *If your system contains a B400X or R400X expander linked by a Power Control Bus cable, turning on the system turns on the expander as well.*

   Within a few moments a language selection menu should appear on your console terminal as shown in Figure 45.

   NOTE: *If you are using an older terminal that does not support multiple languages, the language selection menu does not appear and the system defaults to English (United States/Canada).*

Figure 45: Language Selection Menu

```
KA670-A Vn.n VMB n.n

 1) Dansk
 2) Deutsch (Deutschland/Österreich)
 3) Deutsch (Schweiz)
 4) English (United Kingdom)
 5) English (United States/Canada)
 6) Español
 7) Français (Canada)
 8) Français (France/Belgique)
 9) Français (Suisse)
10) Italiano
11) Nederlands
12) Norsk
13) Português
[B14) Suomi
15) Svenska
 (1..15):
```

4. Select a language by typing the number corresponding to your choice and pressing Return.

NOTE: *If you do not select a language within 30 seconds, the system defaults to English (United States/Canada).*

Within a few moments, the console terminal should display a series of numbers as the system tests itself. The example in Figure 46 shows that display after successful power-on tests.

Figure 46: Successful Power-On Tests

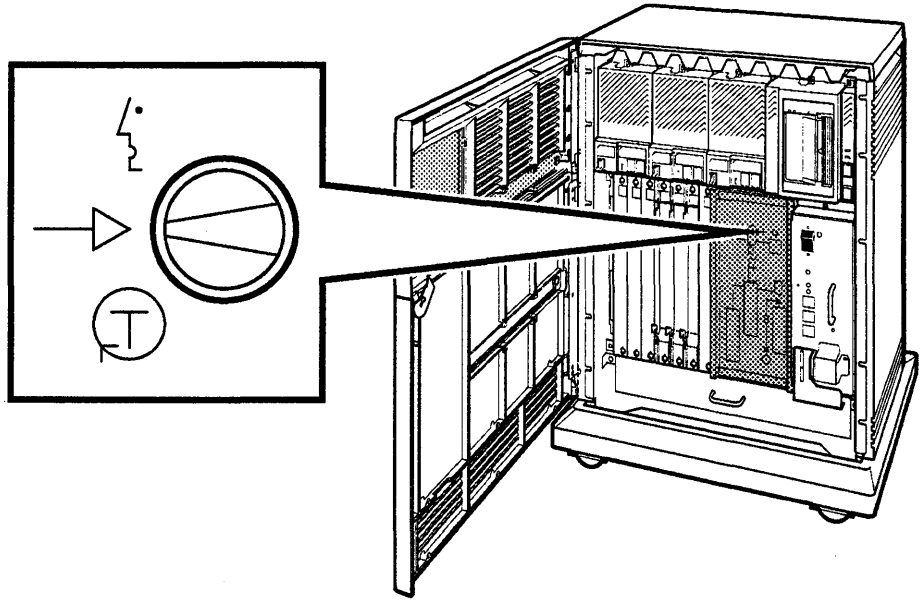
```
KA670-A Vn.n, VMB n.n

Performing normal system tests.
66..65..64..63..62..61..60..59..58..57..56..55..54..53..52..51..
50..49..48..47..46..45..44..43..42..41..40..39..38..37..36..35..
34..33..32..31..30..29..28..27..26..25..24..23..22..21..20..19..
18..17..16..15..14..13..12..11..10..09..08..07..06..05..04..03..
Tests completed.
>>>
```

If the self-tests do not start or do not complete successfully as shown in Figure 46, your system may have a problem. For instructions on finding the source of the problem, refer to your system *Troubleshooting and Diagnostics* manual which is included in the Customer Hardware Information Kit.

5. If the self-tests complete successfully and you want to save the language you selected (so you need not select it each time you turn on the system), turn the Power-On Mode switch to Run mode, which is indicated by an arrow on the console module as shown in Figure 47.

Figure 47: Saving the Language



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Now you are ready to close the system door.

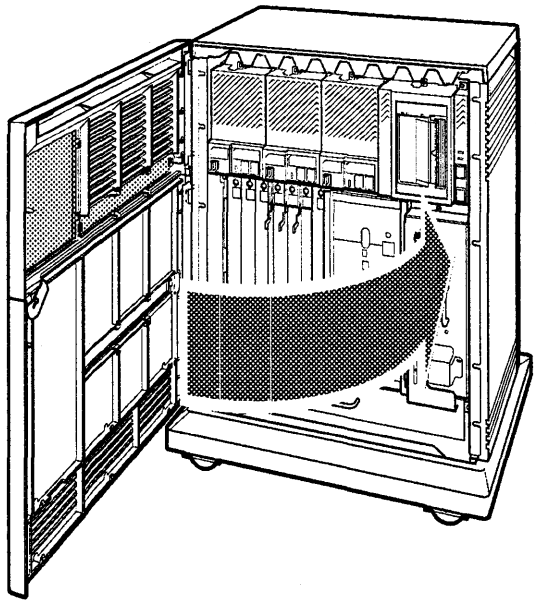
14 Close the System Door

If you plan to run diagnostic software immediately following the installation, leave the upper part of the door open.

If you plan to start up factory-installed software immediately following the installation, leave both parts of the door open.

Close the door as shown in Figure 48.

Figure 48: Closing the System Door



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1. Push gently at the top right of the upper part of the door and the bottom right of the lower part of the door.
2. Turn the key to the middle position (both parts locked) or to the top position (upper part unlocked).

15 After Installation

Digital strongly recommends that you run the diagnostic software for your system before you install system software or start factory-installed software the first time. The diagnostics:

- Verify the system configuration.
- Check to see if each device is working properly.

The diagnostic software is on a tape cartridge labeled MV DIAG CUST TK50. Your system *Troubleshooting and Diagnostics* manual tells you how to run the diagnostic software.

You should now read your system *Operation* manual to learn how to use the system. You must know how to operate the system controls and the ISE or tape drive before you install system software or run diagnostic software.

If you have factory-installed software on your system, see Appendix A for the startup procedure. Otherwise, install the software that you ordered with your system.

NOTE: *Systems with VMS factory-installed software have a yellow sticker on the front panel of the ISE containing that software.*

Appendix A
Starting and Modifying VMS Factory-Installed Software

This appendix tells you how to start and modify VMS factory-installed software (FIS), which is on your system disk if you ordered one or more ISEs.

FIS must be modified to accommodate customized passwords and system environmental particulars. You make the modifications during a startup procedure that is executed when you start FIS the first time.

The requirements for modifying FIS depend on how your system will be used. For example, your system can be configured as a:

- Standalone system
- Dual-host system
- Simple VAXcluster network
- System in a more complex VAXcluster network with distributed resource sharing and sophisticated disk management

CAUTION: *If you want to modify FIS to obtain a dual-host or VAXcluster system, you should have a good understanding of DSSI architecture and VAXcluster software operation. If you do not have that understanding, you should read the manuals listed in Section A.1 or call your Digital service representative.*

A.1 Pre-Startup Requirements

Before you begin the startup procedure, you should:

1. Determine how your system will be configured.
2. Read through the startup procedure to make sure you have the correct information to enter for your configuration.

3. If your system will be part of a cluster or network, ask your network coordinator or system administrator for your system:

   DECnet node name

   DECnet node address

   Cluster group number

   Cluster password

4. If you are not familiar with networking and clustering, examine the following manuals.

   VMS VAXcluster Manual

   Guide to DECnet–VAX Networking

   VMS Networking Manual

A.2 Startup Procedure

If you have a dual-host system, you can start with either host.

1. Enter the console mode:

   a. Set the system Power switch to off (0).

   b. Set the Break Enable/Disable switch to enable (up, position 1).

   c. Set the system Power switch to on (1).

      Wait for the system to complete its self-tests and display the console prompt (>>>).

2. Make sure the system disk is on line and is not write-protected:

   - The Run/Ready button should be in (lit).
   - The Write-Protect button should be out (not lit).

3. If your system will be configured as a cluster with a nonzero allocation class, see your system *Operation* manual for information on how to program parameters for ISEs.

   Also, if you are using a nonzero allocation class and have ISEs on both busses (0 and 1), you must set ISE unit numbers for one of the busses.

4. Define the system disk as the default boot device:

   If the ISE with the FIS is in the system:

   ```
   >>> SET BOOT DIA0 Return
   ```

If the ISE with the FIS is in an expander connected to Bus 1 (for example, an R400X expander):

```
>>> SET BOOT DIB0 Return
```

5. Boot the FIS.

```
>>> BOOT Return
```

6. Set the Break Enable/Disable switch to disable (down, position 0).

   The system displays a banner and then prompts you for the date and time.

```
VAX/VMS Version V5.3-2  Major version id = 1 Minor version id = 0

Please enter date and time (DD--MMM-YYY HH:MM):
```

7. Enter the date and time in the format shown. For example:

```
Please enter date and time (DD--MMM-YYY HH:MM): 14-JAN-1990 12:00 Return
```

   Some messages are displayed, followed by a prompt:

```
================================================
Modifying Factory Installed Software for Customer Use

%SET-I-NEWAUDSRV, identification of new audit server.....
%LICENSE-F-EMTLDB, license database contains no license records
   .
   .
   .
Do you want to enter Customer's cluster and password information(Y/N)?
```

8. Refer to the appropriate subsection to complete the startup procedure for a:

   Standalone system, Section A.2.1

   Simple VAXcluster system, Section A.2.2

   Dual-host system or complex VAXcluster network, Section A.2.3

A.2.1 Modifying FIS for a Standalone System

The following procedure modifies FIS for a standalone system.

```
Do you want to enter Customer's cluster and password information(Y/N)?
```

1. Enter Y (type Y and Return).

   The procedure asks you to confirm the date and time.

```
The system time is dd-mmm-yyyy   hh:mm:ss:ss
Is this correct? (Y/N)
```

2. Enter N only if the date and time are incorrect. If you enter N, the procedure reprompts you to enter the correct date and time and to review it.

   If you enter Y, the system displays the following prompt.

   ```
   Will this node be a cluster member (Y/N)?
   ```

3. Enter N.

   If DECwindows is on the system disk, you will see the following prompt.

   ```
   Do you want DECwindows as the default windowing system? (Y/N)
   ```

4. Enter Y if you want DECwindows as the default windowing system; otherwise enter N.

   The system displays prompts asking for account passwords.

5. Enter the account passwords as shown below.

   NOTE: *The passwords shown are samples. You should enter your own passwords. Remember to record them. If you forget a password, you cannot log in.*

   ```
   Enter new password for account SYSTEM: PANCAKES Return
   Re-enter the password for account SYSTEM: PANCAKES Return
   %UAF-I-MDFYMSG, user record(s) updated

   Enter new password for account SYSTEST: BRATHWURST Return
   Re-enter the password for account SYSTEST: BRATHWURST Return
   %UAF-I-MDFYMSG, user record(s) updated

   Enter new password for account FIELD: ZIRHUMBA Return
   Re-enter the password for account FIELD: ZIRHUMBA Return
   %UAF-I-MDFYMSG, user record(s) updated
   ```

   The procedure verifies the passwords and rejects any that can be easily guessed. The following status messages are displayed if the passwords are acceptable.

   ```
   %VMS-I-PWD_OKAY, account password for SYSTEM verified
   %VMS-I-PWD_OKAY, account password for SYSTEST verified
   %VMS-I-PWD_OKAY, account password for FIELD verified
   ```

   The following status message is then displayed.

   ```
   Creating RIGHTS database file, SYS$SYSTEM:RIGHTSLIST.DAT
   ```

   Ignore any messages of this type.

   ```
   %SYSTEM-F-DUPIDENT, duplicate identifier
   ```

The following status message is displayed when the FIS setup procedure completes.

```
%UAF-I-RDBDONEMSG, rights database modified
```

The system then displays messages that remind you to perform certain tasks after the software is installed:

- Register any Product Authorization Keys (PAKs).
- Back up the system disk.
- Tailor the system disk.

Finally, the system displays the following message, followed by other status messages.

```
Running AUTOGEN -- Please wait
```

At this point the system shuts itself down and then reboots from the default boot device. The process takes several minutes, and the system displays a series of informational messages:

```
SHUTDOWN -- Perform an Orderly System Shutdown
   .
   .
   .
VAX/VMS Version V5.3-2  Major version id = 1 Minor version id = 0
   .
   .
   .
SYSTEM         job terminated at 24-AUG-1989 14:47:28.34

Accounting information:
Buffered I/O count:       133    Peak working set size:       401
Direct I/O count:          12    Peak virtual size:          2379
Page faults:              325    Mounted volumes:               0
Charged CPU time: 0 00:00:55.23  Elapsed time:      0 00:01:31.24
```

6. Press Return.

   The system prompts you for a username and password.

7. Log in to the SYSTEM account as follows.

```
Welcome to VAX/VMS

USERNAME:  SYSTEM Return
PASSWORD:  PANCAKES Return

%LICENSE-I-NOLICENSE, no license is active for this software product
%LOGIN-LOGOPRCON, login allowed from OPA0:

         Welcome to VAX/VMS
$
```

The system prompt ($) indicates the completion of the startup procedure.

If you do not enter the correct password, the system displays the following message.

```
User authorization failure
```

If you forget your password, follow the instructions for breaking into the system given in *Guide to Setting Up a VMS System*.

8. You should now perform the following operations.
   - Register any PAKs you received with your system.
   - Back up the system disk.
   - Delete any unwanted files.

To register PAKs:

```
$ @SYS$UPDATE:VMSLICENSE Return
```

If you make a mistake while entering a PAK, continue the data entry sequence and reject the data at the end of the sequence when the system asks you to confirm the data. Your system then gives you the opportunity to reenter the data correctly. See the *VMS License Management Utility Manual* for any additional information you may need.

Your system *Operation* manual provides information on backing up the system disk and deleting unwanted files. Read carefully to determine the exact sequence of backup and tailoring functions needed, based on the amount of tailoring required and the backup resources available to you.

See the *VMS Installation and Operations Manual* for more information on entering PAKs, customizing and testing your system, startup and shutdown, and backup procedures.

Later you can use the NETCONFIG.COM and CLUSTER_CONFIG.COM command procedures to include your system in a network and cluster, provided you have the appropriate software licenses and PAKs. See the *VMS VAXcluster Manual*, the *Guide to DECnet–VAX Networking*, and the *VMS Networking Manual* for more information.

A.2.2 Modifying FIS for a Simple VAXcluster Network

If you want to use your system as part of a simple VAXcluster network, where disks are shared between different systems in the same network, you need a node name and node ID which you can obtain from your network coordinator.

The following procedure configures FIS for use as a server in a simple VAXcluster network. The configuration can be modified later, if required, using standard procedures.

```
Do you want to enter Customer's cluster and password information(Y/N)?
```

1. Enter Y (type Y and Return).

   The procedure asks you to confirm the date and time.

   ```
   The system time is dd-mmm-yyyy   hh:mm:ss:ss

   Is this correct? (Y/N)
   ```

2. Enter N only if the date and time are incorrect. If you enter N, the procedure reprompts you to enter the correct date and time and to review it.

   If you enter Y, the system displays the following prompt.

   ```
   Will this node be a cluster member (Y/N)?
   ```

3. Enter Y.

   A series of system prompts are displayed.

4. Respond to those prompts as listed below.

   ```
   What is the node's DECnet node name?
   ```

   Enter the DECnet node name, for example, JUPITR. That name may be from one to six alphanumeric characters in length and may not include dollar signs or underscores.

   ```
   What is the node's DECnet node address?
   ```

   Enter the DECnet node address, for example, 2.2. You can obtain that address from your network coordinator.

   ```
   Will the Ethernet be used for cluster communications (Y/N)?
   ```

   Enter Y. The Ethernet is required for cluster (SCS internode) communications in local-area and mixed-interconnect configurations.

   ```
   Enter this cluster's group number:
   ```

   Enter a number in one of the ranges, 1 to 4095 or 61440 to 65535. You can obtain that number from your network coordinator.

   ```
   Enter the cluster's password:
   ```

   Enter the cluster password, which must be from 1 to 31 alphanumeric characters in length and may include dollar signs and underscores. You can obtain that password from your network coordinator.

   ```
   Re-enter the cluster's password for verification:
   ```

Reenter that password.

```
Will JUPITR be a disk server (Y/N)?
```

Enter Y. In local-area and mixed-interconnect configurations, the system disk is served to the cluster. See the *VMS VAXcluster Manual* for information on served cluster disks.

```
Will JUPITR serve HSC disks (Y)?
```

Enter N.

```
Will JUPITR serve RFxx disks (Y)?
```

Enter Y.

```
Enter a value for JUPITR's ALLOCLASS parameter:
```

Enter zero or the desired allocation class for your system.

```
Does this cluster contain a quorum disk (Y/N)?
```

Enter N.

If DECwindows is on the system disk, you will see the following prompt.

```
Do you want DECwindows as the default windowing system? (Y/N)
```

NOTE: *It is easy to set DECwindows as the default windowing system at a later stage. To do that, you must modify the VMS system generation parameter, WINDOW_SYSTEM, generate a new set of bootstrap parameters, and boot the system again. See the VMS Installation and Operations Manual, the Guide to Setting Up a VMS System, or the VMS System Generation Utility Manual for more information.*

Enter Y if you want DECwindows as the default windowing system; otherwise enter N.

The system displays prompts asking for account passwords.

5. Enter them by responding to the system prompts as follows.

NOTE: *The passwords shown are samples. You should enter your own passwords. Remember to record them. If you forget a password, you cannot log in.*

```
Enter new password for account SYSTEM: PANCAKES Return
Re-enter the password for account SYSTEM: PANCAKES Return
%UAF-I-MDFYMSG, user record(s) updated
```

```
Enter new password for account SYSTEST: BRATHWURST Return
Re-enter the password for account SYSTEST: BRATHWURST Return
%UAF-I-MDFYMSG, user record(s) updated

Enter new password for account FIELD: ZIRHUMBA Return
Re-enter the password for account FIELD: ZIRHUMBA Return
%UAF-I-MDFYMSG, user record(s) updated
```

The procedure verifies the passwords and rejects any that can be easily guessed. The following status messages are displayed if the passwords are acceptable.

```
%VMS-I-PWD_OKAY, account password for SYSTEM verified
%VMS-I-PWD_OKAY, account password for SYSTEST verified
%VMS-I-PWD_OKAY, account password for FIELD verified
```

The following status message is then displayed.

```
Creating RIGHTS database file, SYS$SYSTEM:RIGHTSLIST.DAT
```

Ignore any messages of this type.

```
%SYSTEM-F-DUPIDENT, duplicate identifier
```

The following status message is displayed when the FIS setup procedure completes.

```
%UAF-I-RDBDONEMSG, rights database modified
```

Then the system displays messages that remind you to perform certain tasks after the software is installed.

- Register any Product Authorization Keys (PAKs).
- Back up the system disk.
- Tailor the system disk.

Finally, the system displays the following message, followed by more status messages.

```
Running AUTOGEN -- Please wait
```

At this point, the system shuts itself down and then reboots from the default boot device. The process takes several minutes, and the system displays a series of informational messages:

```
SHUTDOWN -- Perform an Orderly System Shutdown

VAX/VMS Version V5.3-2  Major version id = 1 Minor version id = 0
   .
   .
   .
SYSTEM         job terminated at 24-AUG-1989 14:47:28.34
```

```
Accounting information:
Buffered I/O count:         133    Peak working set size:       401
Direct I/O count:            12    Peak virtual size:          2379
Page faults:                325    Mounted volumes:               0
Charged CPU time: 0 00:00:55.23    Elapsed time:      0 00:01:31.24
```

6. Press Return.

   The system prompts you for a username and password.

7. Log in to the SYSTEM account as shown below.

```
Welcome to VAX/VMS

USERNAME: SYSTEM Return
PASSWORD: PANCAKES Return

%LICENSE-I-NOLICENSE, no license is active for this software product
%LOGIN-LOGOPRCON, login allowed from OPA0:

         Welcome to VAX/VMS
$
```

   The system prompt ($) indicates the completion of the startup procedure.

   If you do not enter the correct password, the system displays the following message.

```
User authorization failure
```

   If you forget your password, follow the instructions for breaking into the system given in *Guide to Setting Up a VMS System*.

8. You should now perform the following operations.

   - Register any PAKs you received with your system.
   - Back up the system disk.
   - Delete unwanted files.

To register PAKs:

```
$ @SYS$UPDATE:VMSLICENSE Return
```

If you make a mistake while entering a PAK, continue the data entry sequence and reject the data at the end of the sequence when your system asks you to confirm the data. Your system then gives you the opportunity to reenter the data correctly. See the *VMS License Management Utility Manual* for any additional information you may need.

Your system *Operation* manual provides information on backing up the system disk and deleting unwanted files. Read carefully to determine the exact sequence of backup and tailoring functions needed, based on the amount of tailoring required and the backup resources available to you.

See the *VMS Installation and Operations Manual* for more information on entering PAKs, customizing and testing your system, startup and shutdown, and backup procedures.

In a VAXcluster network, queues for printer and batch processing operations can be configured to work on other systems in the cluster. See your network coordinator for details of queues that are available in your network. If you are setting up a new network, see the *VMS VAXcluster Manual* for a discussion on setting up remote printer and batch processing queues.

You can use the NETCONFIG.COM command procedure to include your system in a network, provided you have the appropriate software licenses and PAKs. See the *VMS VAXcluster Manual*, the *Guide to DECnet–VAX Networking*, and the *VMS Networking Manual* for more information.

A.2.3 Modifying FIS for a Complex Network or Dual-Host System

In a complex network or dual-host system you may want to enter the disk allocation class and quorum disk information for the network. That information lets disks be shared on a selective basis between some systems on the network. Quorum disk information also allows more rigorous definition of cluster operations during the removal of systems from the network.

In addition, queues for printer and batch processing operations can be set up, allowing work to be executed on other systems in the network.

See the *VMS VAXcluster Manual*, the *Guide to DECnet–VAX Networking*, and the *VMS Networking Manual* for information on setting up systems as members of complex networks and setting up remote printer and batch processing queues.

A.2.3.1 Configuring for a Dual-Host System

The *VMS Installation and Operations* manual tells you how to configure a dual-host system for cluster operation. You can set up your system for operation as a:

- Pair of boot servers for a new local area cluster to which you intend to add satellites
- Two-node cluster to which you do not intend to add satellites
- Pair of boot servers that you want to add to an existing cluster

NOTE: *You must assign the same allocation class to both systems and to the ISEs. The allocation class must be different from that of other systems and*

hierarchical storage controllers (HSCs) in a cluster. Refer to your system Operation manual for information on setting parameters for ISEs.

The following software licenses are required to configure a dual-host system.

Host A	Host B
VMS	VMS
VAXcluster	VAXcluster
DECnet full-function	DECnet end-node

A.2.3.2 Checking Your Modification Work

You can use two commands to check your work after you modify FIS for a dual-host system.

- Use SHOW DEVICE D to list the ISEs. Make sure the number of ISEs listed matches the number in your dual-host system.

  Too many ISEs indicates an incorrect allocation class setting for an ISE.

  Too few ISEs indicates an incorrect unit number for an ISE.

- Use SHOW DEVICE DI/FULL to check that the alternate host name for your dual-host system is displayed.

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