



HP Apollo 9000 Series 700
Model 705 and Model 710
Owner's Guide for HP-UX Users



Workstation Systems Division

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Preface

This owner's guide describes how to use your HP Apollo 9000 Series 700 Model 705/710 workstation.

This manual assumes that you have installed your workstation as described in *HP Apollo 9000 Series 700 Model 705 and Model 710 Hardware Installation Guide*.

We've organized this guide as follows:

- Chapter 1** Describes your workstation and familiarizes you with its controls and connectors.
- Chapter 2** Describes how to start up and shut down your workstation, how to log in and log out, and how to use perform some common tasks.
- Chapter 3** Describes how to use the 3.5-inch floppy drive.
- Chapter 4** Describes how to use the CD-ROM drive.
- Chapter 5** Describes how to use the DDS-format tape drive.
- Chapter 6** Describes what to do when you have problems with your workstation.
- Appendix A** Describes SCSI cabling and ID settings.
- Appendix B** Describes how to change the memory and network configurations of your workstation.
- Appendix C** Describes how to find bootable devices attached to your workstation and how to select a boot device.

Audience

This guide is intended for use by users of HP Apollo 9000 Series 700 Model 705 and Model 710 workstations.

Release Document(s)

Please refer to the *Release Document(s)* you received with your system or system software for additional information that we may not have been able to include in this guide at the time of its publication.

Related Manuals

For more information, refer to the following manuals:

- *HP Visual User Environment User's Guide* (B1171-90022)
- *A Beginner's Guide to HP-UX* (B1862-90000)
- *Using the X Window System* (B1171-90037)
- *HP Apollo 9000 Series 700 Model 705 and Model 710 Hardware Installation Guide* (A1991-90000)
- *Audio Users Guide* (A1991-90609)
- *System Administrator's Task Manual HP 9000 Series 700 Computers* (B2355-90003)

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Documentation Conventions


Unless otherwise noted in the text, this guide uses the following symbolic conventions.


literal values Bold words or characters in formats and command descriptions represent commands or keywords that you must use literally. Pathnames are also in bold.


user-supplied values Italic words or characters in formats and command descriptions represent values that you must supply.

sample user input In examples, information that the user enters appears in color.

output Information that the system displays appears in this typeface.

 A colored rectangle with rounded corners and a key label denotes a keyboard key.

 This colored symbol with a label in it denotes an HP VUE screen key. A screen key is a key or button which is drawn on your workstation's graphic display by HP VUE. It works like a keyboard key, except that you must move the mouse cursor over it and press the left mouse button to activate it. The screen key's label describes its function.

 This symbol indicates the end of a chapter or a part of this guide.



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declares that the product

Product Name: Computer Workstation
Product Number: A1991A
Model Number: 705 and 710

conforms to the following Product Specifications:

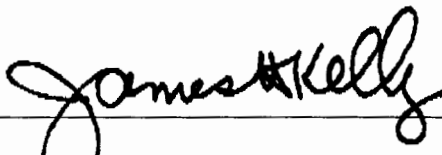
Safety: IEC 950/EN60950
UL 1950
CSA C22.2 – 950M

EMC: CFR 47 Part 15J, FCC Class A
FTZ 1046 Class B
EN 55022 Class B / CISPR 22B
VCCI Class 1 ITE
IEC 801-2 / EN 55101-2
IEC 801-3 / EN 55101-3

Ergonomics: ZH 1/618 10.80

Chelmsford, Ma., USA Date _____

—



Jim Kelly
Quality Productivity Manager, ECMO

Emissions Regulations

Federal Communications Commission (FCC)

The Federal Communications Commission of the U.S. government regulates the radio frequency energy emanated by computing devices through published regulations. These regulations specify the limits of radio frequency emission to protect radio and television reception. All HP Apollo nodes and peripherals have been tested and comply with these limits. The FCC regulations also require that computing devices used in the U.S. display the agency's label and that the related documentation include the following statement.

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.

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Mandatory United Kingdom Datacom Users Instructions Statements (United Kingdom Only)

Interconnection directly, or by way of other apparatus, of ports marked:

“SAFETY WARNING: See instructions for use.”

with ports marked or not so marked may produce hazardous conditions on the network. Advice should be obtained from a competent engineer before such a connection is made.

The connection to the network must be disconnected before the mains plug is removed and the connection to the network must not be hard wired.

The HP 9000 Series 700 is approved under Approval Number NS/G/1234/J/100003 for indirect connection to Public Telecommunications systems within the United Kingdom.

Acoustics

Regulation On Noise Declaration For Machines –3. GSGV

Lpa <70dB
operator position
normal operation
per ISO 7779

Lpa <70dB
am Arbeitsplatz
normaler Betrieb
nach DIN 45635 T.19

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 static strap to ensure that any accumulated electrostatic charge is discharged from your body to ground.
- Connect all equipment together, including the static-free mat, static 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.



Warnings and Cautions

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.

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.



Warnings and Cautions

WARNING:

Lifting the 19-inch monitor requires more than one person because the unit weighs more than 40 pounds (18 kilograms).

WARNUNG:

Der 19-inch (48 cm) Bildschirm muß von mehreren Personen angehoben werden, da die Einheit über 40 Pfund (18 Kilogramm) wiegt.

ADVERTISSEMENT:

Il faut plus d'une personne pour soulever le moniteur de 48 cm (19 pouces) étant donné qu'il pèse plus de 18 kg.

CAUTION:

Monitor output voltage must be the same as the system's input voltage.

VORSICHT:

Die Bildschirm-Ausgangsspannung muß genauso groß sein wie die Eingangsspannung des Systems.

ATTENTION:

La tension de sortie du moniteur doit être la même que la tension d'entrée du système.

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.



Warnings and Cautions

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:

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:

Bildschirmsschaden 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.

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Chapter 1

Introduction

This chapter introduces the HP Apollo 9000 Series 700 Model 705 and Model 710 workstations. Its purpose is to familiarize you with your workstation and its controls and indicators. Included in this chapter are the following topics:

- Product description
- System unit controls
- Understanding the LEDs
- System unit rear panel connectors
- Monitor controls, connectors, and indicators

Product Description

The Model 705 and Model 710 are designed to run the HP-UX operating system.

The Model 705 and Model 710 workstations house up to two internal mass storage devices connected to the internal SCSI interface. The workstations are available in diskless as well as disked configurations. Disked configurations have their hard disk drive bay fitted with either a 210-MB or 420-MB hard disk drive. The second disk bay may be fitted with either a 3.5-inch floppy drive, a CD-ROM drive, a DDS-format tape drive, or a 210-MB or 420-MB hard disk drive. Hard disk drives are pre-formatted.

The Model 705 and Model 710 workstations contain the following key features:

- Operating Systems Native HP/UX
 DOS emulation
- Compatibility Source and binary code compatible with
 Series 700 product family
- Graphics Options 19-inch 1280x1024 8-plane color (Model 710 only)
 16-inch 1024x768 8-plane color (Model 710 only)
 19-inch 1280x1024 8-bit grayscale
- Main Memory Up to 64MB
- Mass Storage 3.5-inch SCSI hard disk drive (210MB or 420MB)
 Optional second hard disk drive (210MB or 420MB)
 Optional 3.5-inch flexible disk drive
 Optional CD-ROM disk drive
 Optional DDS-format 4-mm tape drive
- Network Ethernet IEEE 802.3 LAN ports, jumper selectable to
 either AUI (Thick net) or BNC (Thin net)
- I/O Two 9-pin RS-232 Ports
 One 25-pin HP parallel port
 8-bit, Single-ended SCSI-2 interface
 HP-HIL port for HP-UX keyboards and other HP-HIL
 devices
 Voice quality audio and speaker output
 Voice quality microphone or audio input

System Unit Controls

Before powering on your system, you should become familiar with the system unit controls.

Figure 1–1 shows the Power, TOC (Transfer Of Control), and Service/Normal Mode switches.

Use the Power switch to power the system unit on and off.

Use the TOC switch to reset the operating system. Do not push the TOC switch unless you have first shutdown your system, as described in Chapter 2.

The Service/Normal mode switch should always be in the Normal (right) position. Service mode is used only during manufacturing.

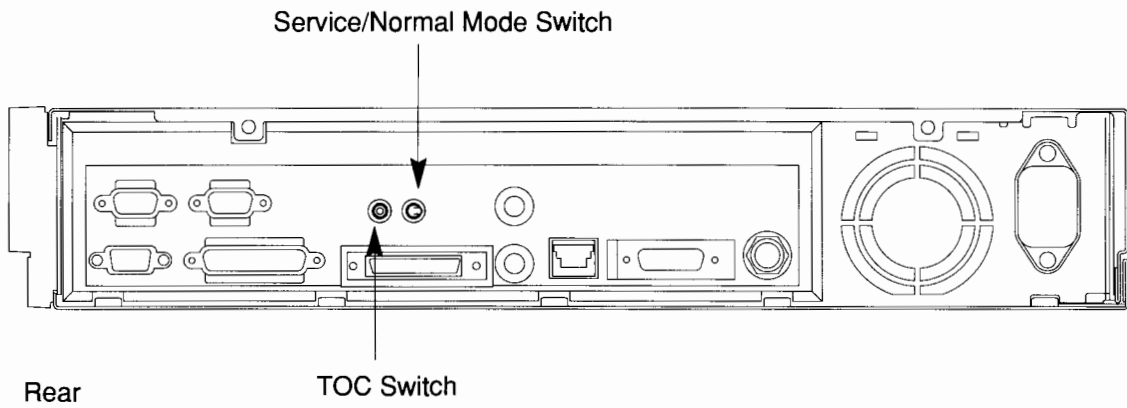
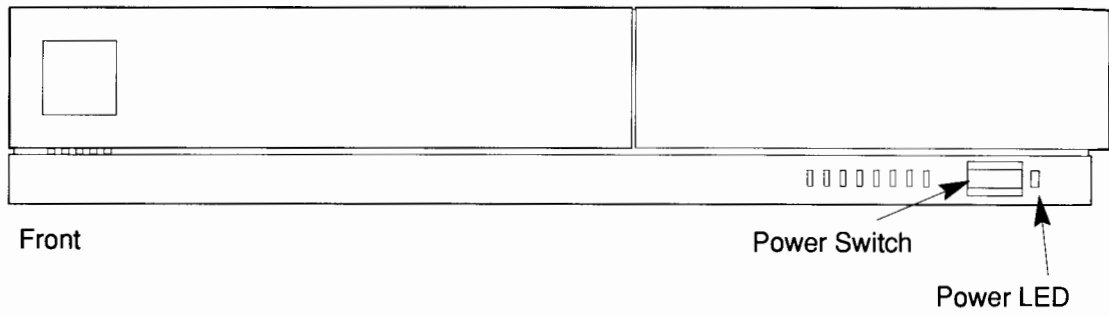


Figure 1-1. System Unit Controls

Understanding the LEDs

There are 9 Light Emitting Diodes (LEDs) located on the front of the system unit, as shown in Figure 1–2. The green one on the far right is the Power LED. It lights when the system unit power is on. The other eight are labeled 8 through 1. The rightmost four amber LEDs (labeled 4, 3, 2, and 1) show that the system is running the operating system and communicating over the network. Along with the leftmost four amber LEDs (5, 6, 7, and 8), they also help you to troubleshoot the workstation by coming on in certain patterns during system failures (see Chapter 6).

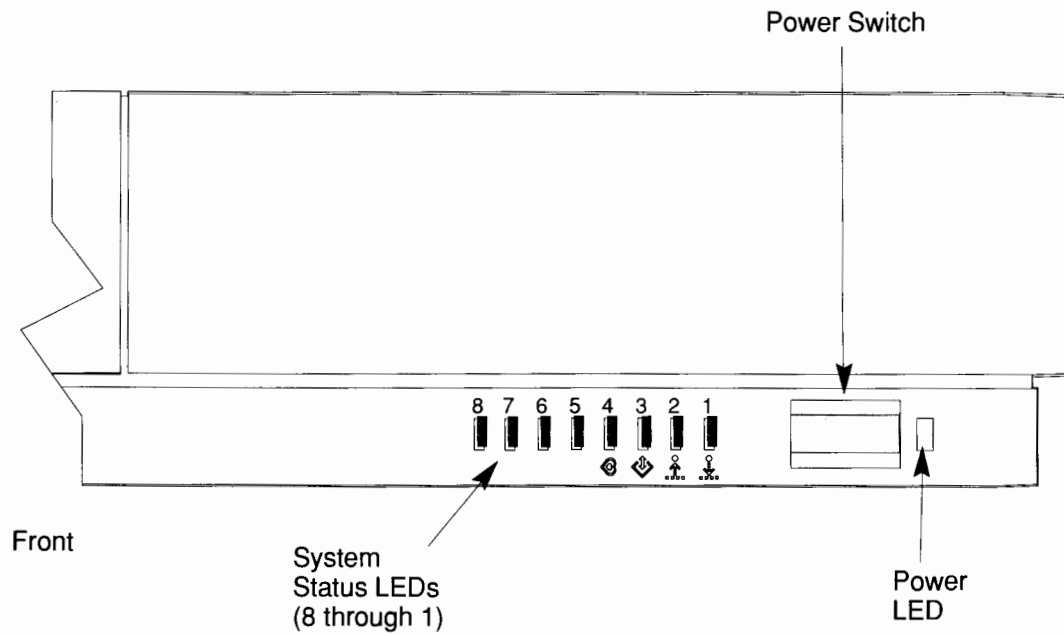


Figure 1–2. Front Panel LEDs

Table 1–1 lists how the LEDs report during normal HP–UX system activity. The green Power LED remains lit while the system is powered on.

Table 1–1. LED Display During Normal System Activity

LED Display	Meaning
8 7 6 5 4 3 2 1 □ □ □ □ ■ □ □ □	Operating System Running
□ □ □ □ □ ■ □ □	Disk Access In Progress
□ □ □ □ □ □ ■ □	Network Receive In Progress
□ □ □ □ □ □ □ ■	Network Transmit In Progress
■ = LED On or Flashing	

System Unit Rear Panel Connectors

This section describes the following connectors on the system unit's rear panel:

- HP parallel I/O connector
- SCSI connector
- 802.3 network connectors
- RS-232 serial input/output connectors
- ac connector
- Video connector
- HP-HIL connector
- Audio connectors

See Figure 1-3 for the locations of these connectors on the rear panel of your workstation.

For information on each rear panel connector, see the appropriate section later in this chapter.

NOTICE: To maintain FCC/EMI compliance, verify that all cables are fully seated and properly fastened.

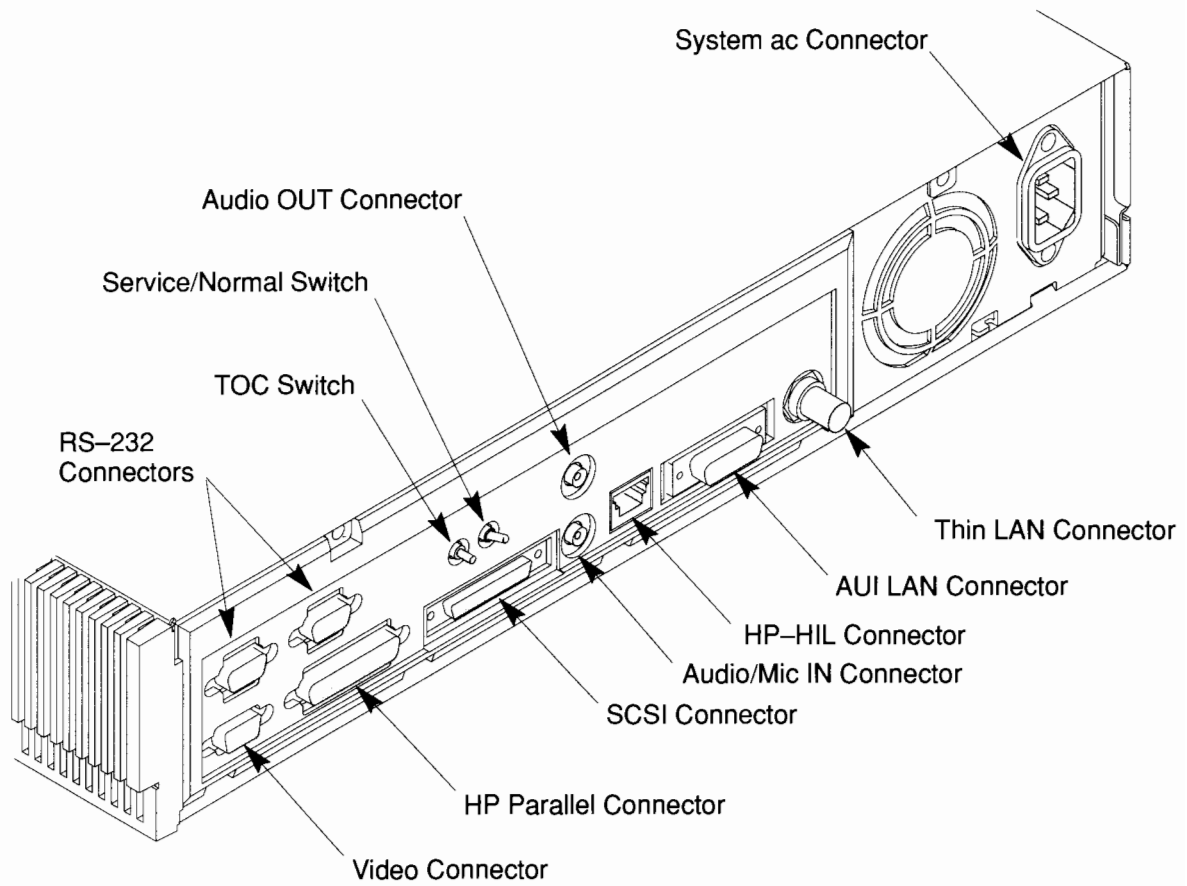


Figure 1-3. Rear Panel Connectors

HP Parallel I/O Connector

The 25-pin HP Parallel I/O interface port is provided for use with devices using the Centronics interface protocols. Figure 1-4 shows the location of the HP parallel I/O connector.

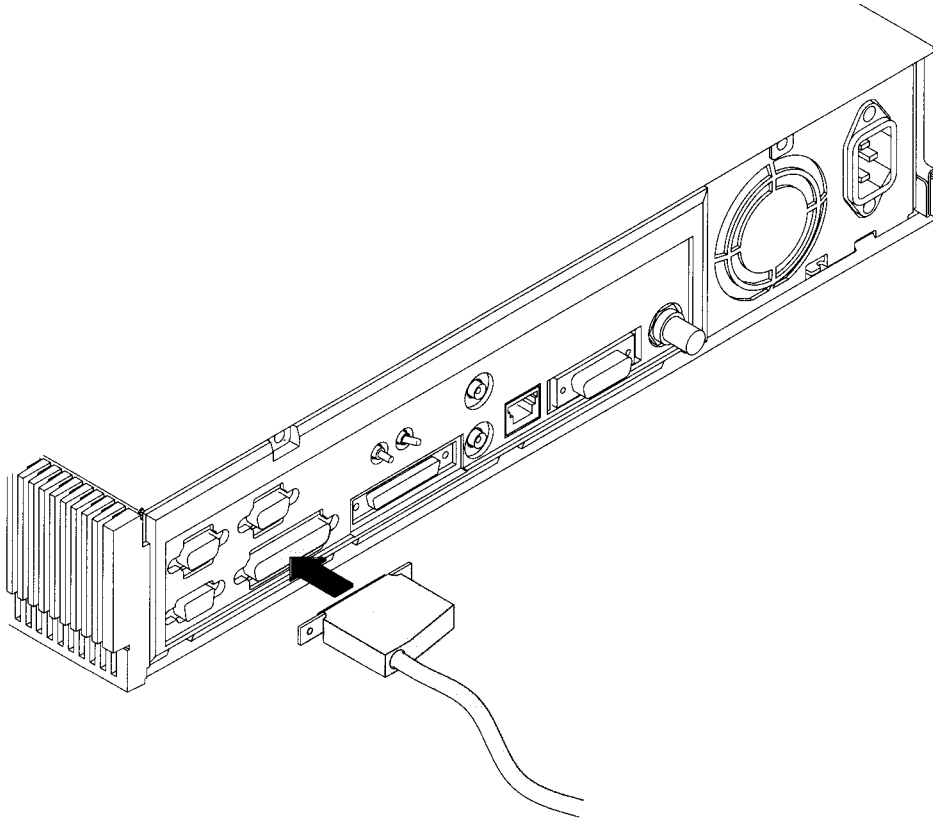


Figure 1-4. Parallel I/O Connector

SCSI Connector

Figure 1-5 shows the location of the SCSI port.

NOTICES: When attaching external SCSI devices, be sure to terminate the last device on the external SCSI bus. If no external SCSI devices are attached, the SCSI terminator that was shipped with the workstation should be connected to the external SCSI connector.

HP does not provide maintenance for SCSI devices not sold by HP. For a list of SCSI devices that are sold by HP, contact your sales representative.

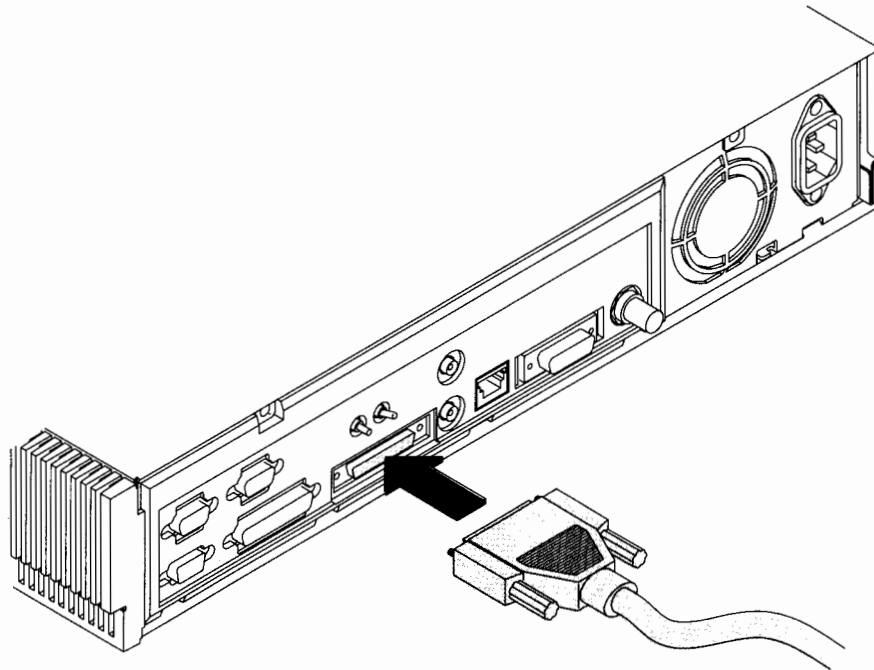


Figure 1-5. SCSI Connector

802.3 Network Connectors

Figure 1-6 shows the location of Thin LAN (BNC) and AUI LAN (Thick net) connectors for the 802.3 (ETHERNET) network.

You use only one of these connectors on the workstation, depending on the type of cabling used at your location.

If you want to change from one LAN type to another, see Appendix B for instructions on changing your hardware configuration.

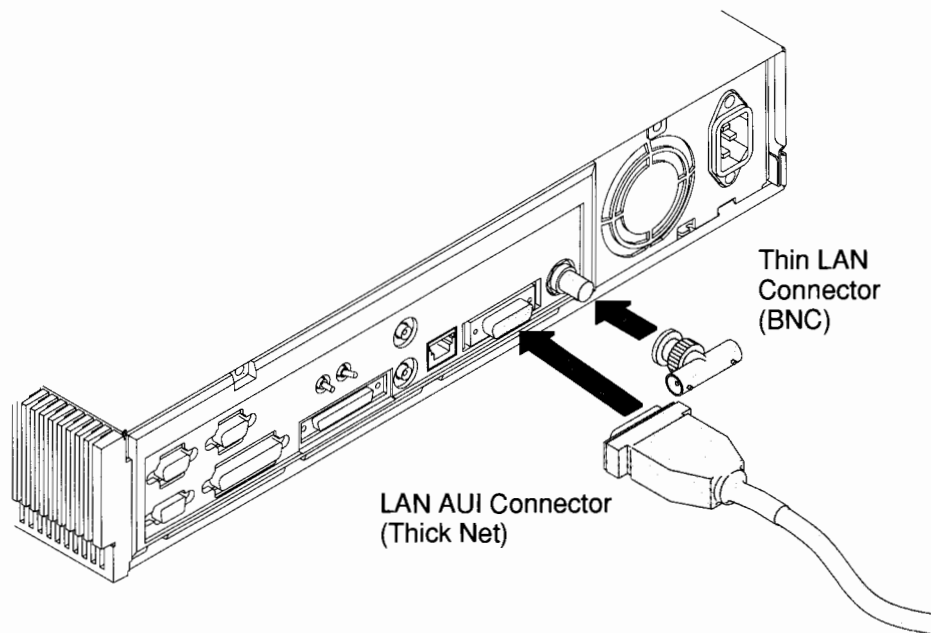


Figure 1-6. 802.3 Network Connectors

RS-232 Serial Input/Output Connectors

You can attach a variety of peripheral devices to the two RS-232 Serial Input/Output (SIO) ports on the workstation. These peripheral devices include printers, plotters, modems, and scanners. Consult the documentation that accompanies each peripheral device for specific information concerning its use.

Both SIO ports are programmable. You can set functions such as bit rate, character length, parity, and stop bits. SIO Ports 1 and 2 are used as interfaces for serial asynchronous devices to the CPU. Both ports operate at up to a 19.2K baud rate. The interface to SIO1 and 2 is by way of RS-232 drivers and receivers.

Table 1-2 shows the SIO connector pin listings. The serial connectors are 9-pin D-sub connectors. Signal names are those specified in the EIA RS-232 standard.

Table 1-2. Serial I/O Pins

Pin No.	Signal	Description
1	DCD	Data Carrier Detect
2	RXD	Receive Data
3	TXD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	RI	Ring Indicator

Figure 1-7 shows the location of the two 9-pin, SIO, RS-232 connectors on the rear of your workstation.

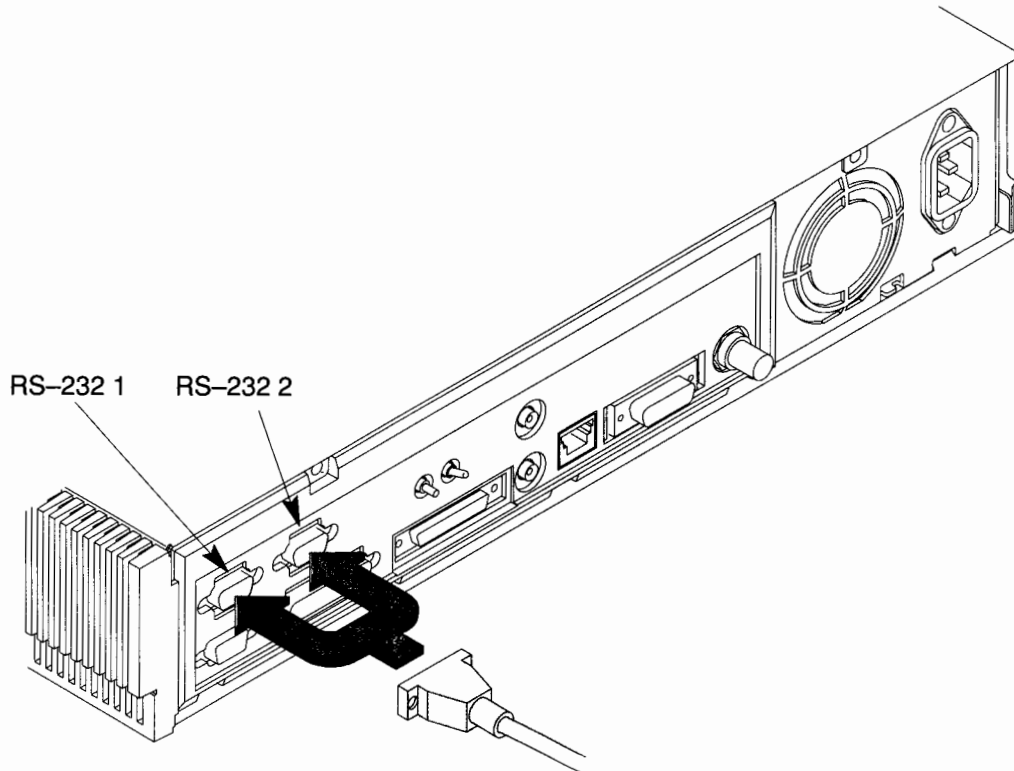


Figure 1-7. RS-232 SIO Connector

ac Connector

Figure 1-8 shows the system ac connector on your workstation.

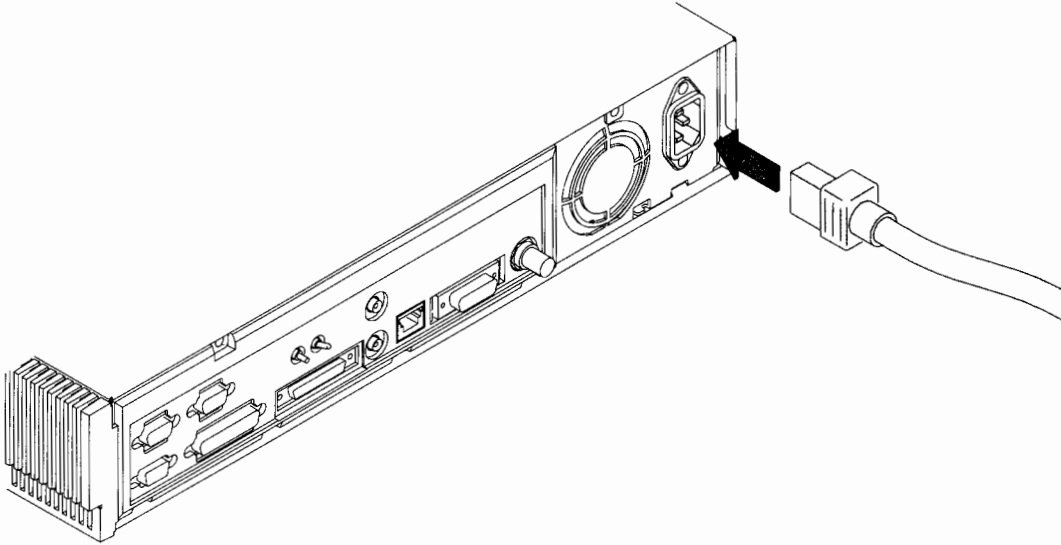


Figure 1-8. ac Connector

Video Connector

Figure 1-9 shows the video connector on your workstation.

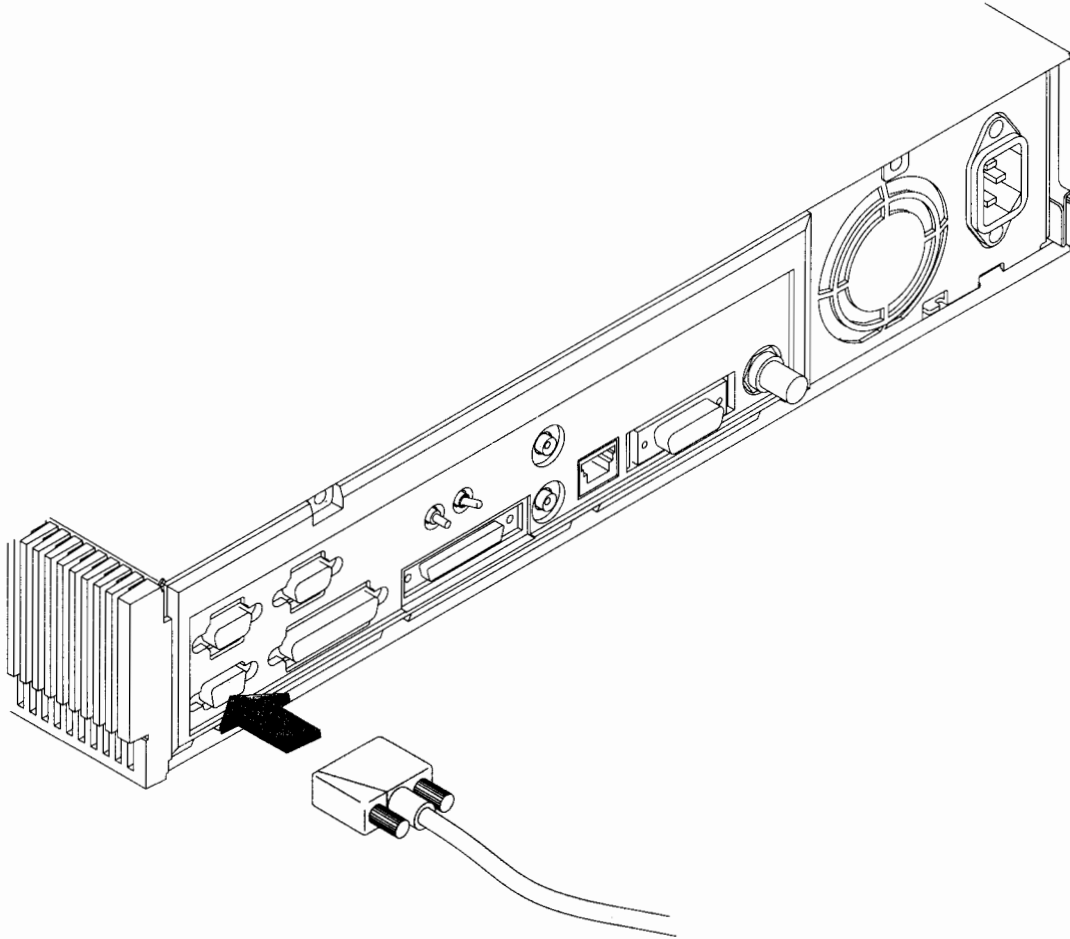


Figure 1-9. Video Connector

HP-HIL Connector

Figure 1-10 shows the HP-HIL connector on your workstation.

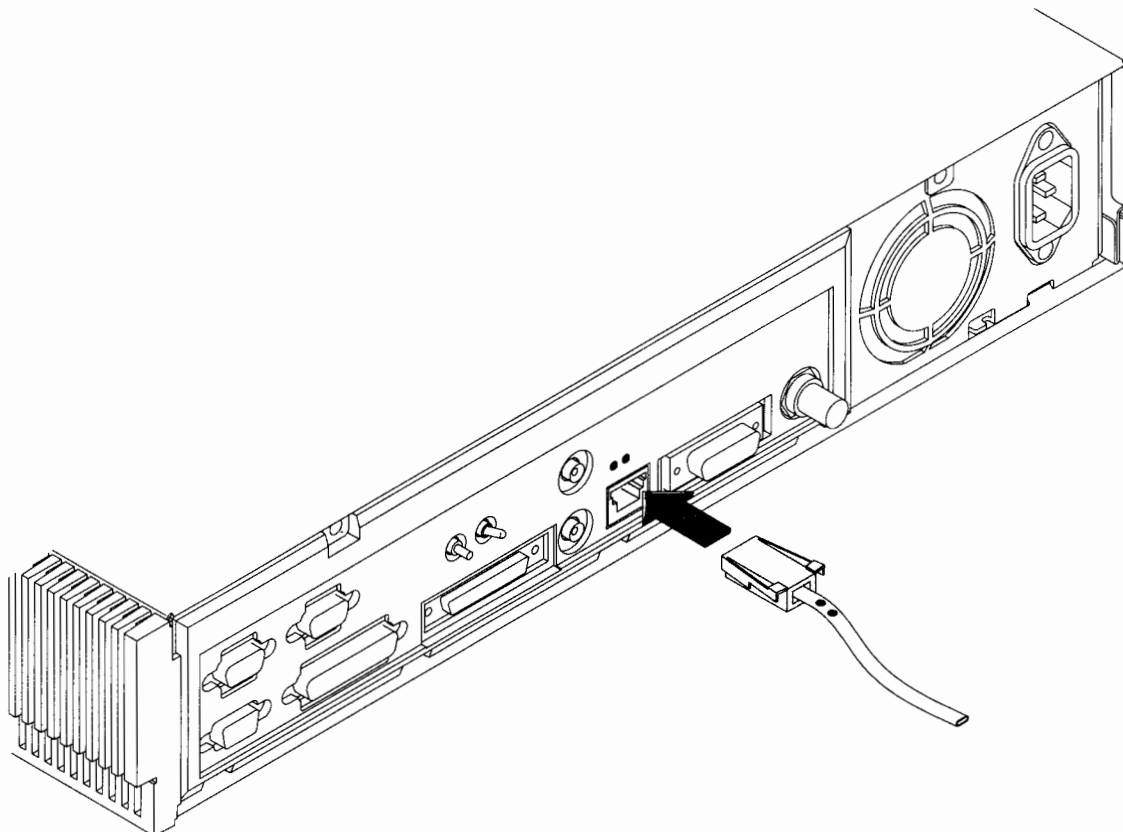


Figure 1-10. HP-HIL Connector

Audio Connectors

Your workstation has audio input and output capability through external input and output connectors and an internal speaker. A microphone for audio input is not supplied with your workstation. The audio connectors are standard audio mini-jacks. For more information on the audio capability of your workstation see the *Audio Users Guide* manual.

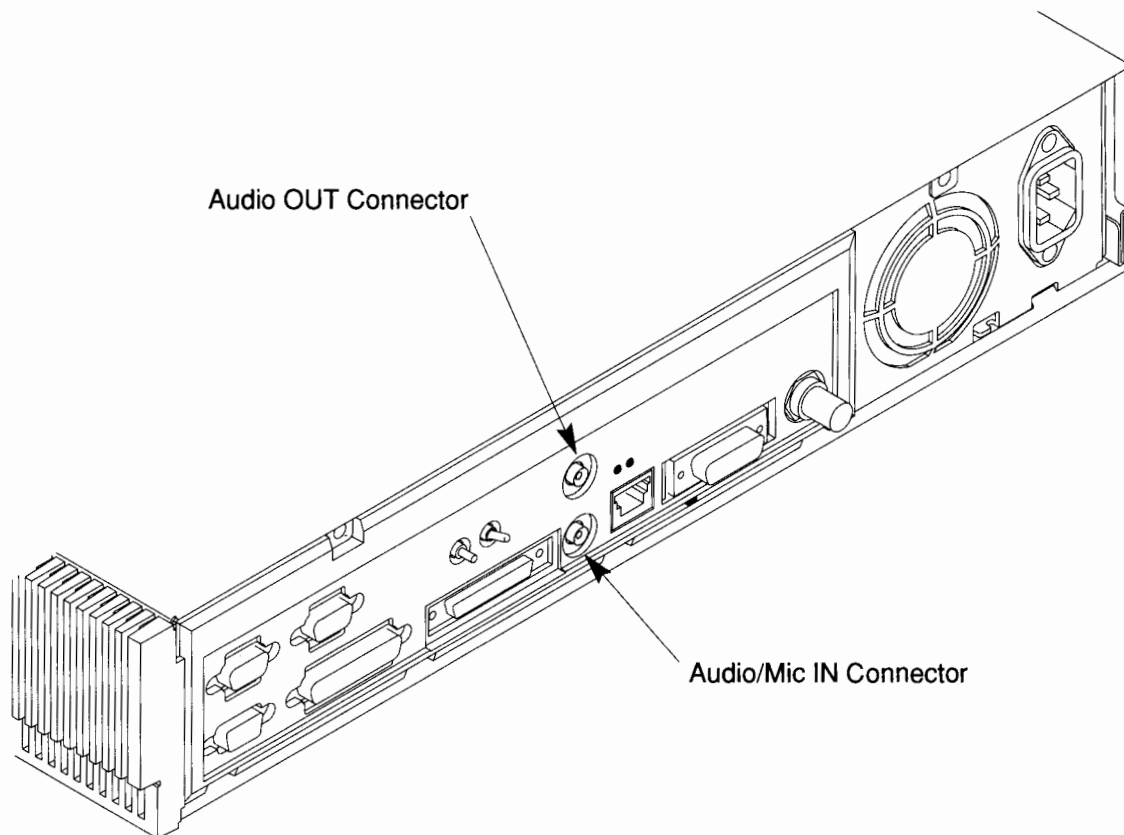


Figure 1-11. Audio Connectors

Monitor Controls, Connectors, and Indicators

Before using your monitor, you should become familiar with its controls, connectors, and indicators.

The Power-On LED, when lit, indicates that the monitor has ac power applied. Use the following controls to adjust your monitor:

- The Power-on button turns the monitor's power on and off.
- The Brightness control adjusts the brightness of the display.
- The Contrast control adjusts the light-to-dark and dark-to-light contrast of the display.
- The Degauss control demagnetizes the monitor. Degaussing disperses any accumulated magnetic change from the face of the monitor. Magnetic disturbances such as picture distortion or color impurity can be caused by either moving the monitor from one place to another or swiveling the monitor on its base.

The following figures illustrate the monitors for your workstation. The two color monitors are for the Model 710 only.

Figure 1-12 shows the 19-inch, color monitor (Model 710 only).

Figure 1-13 shows the 19-inch, grayscale monitor (Model 705 and Model 710).

Figure 1-14 shows the 16-inch, color monitor (Model 710 only).

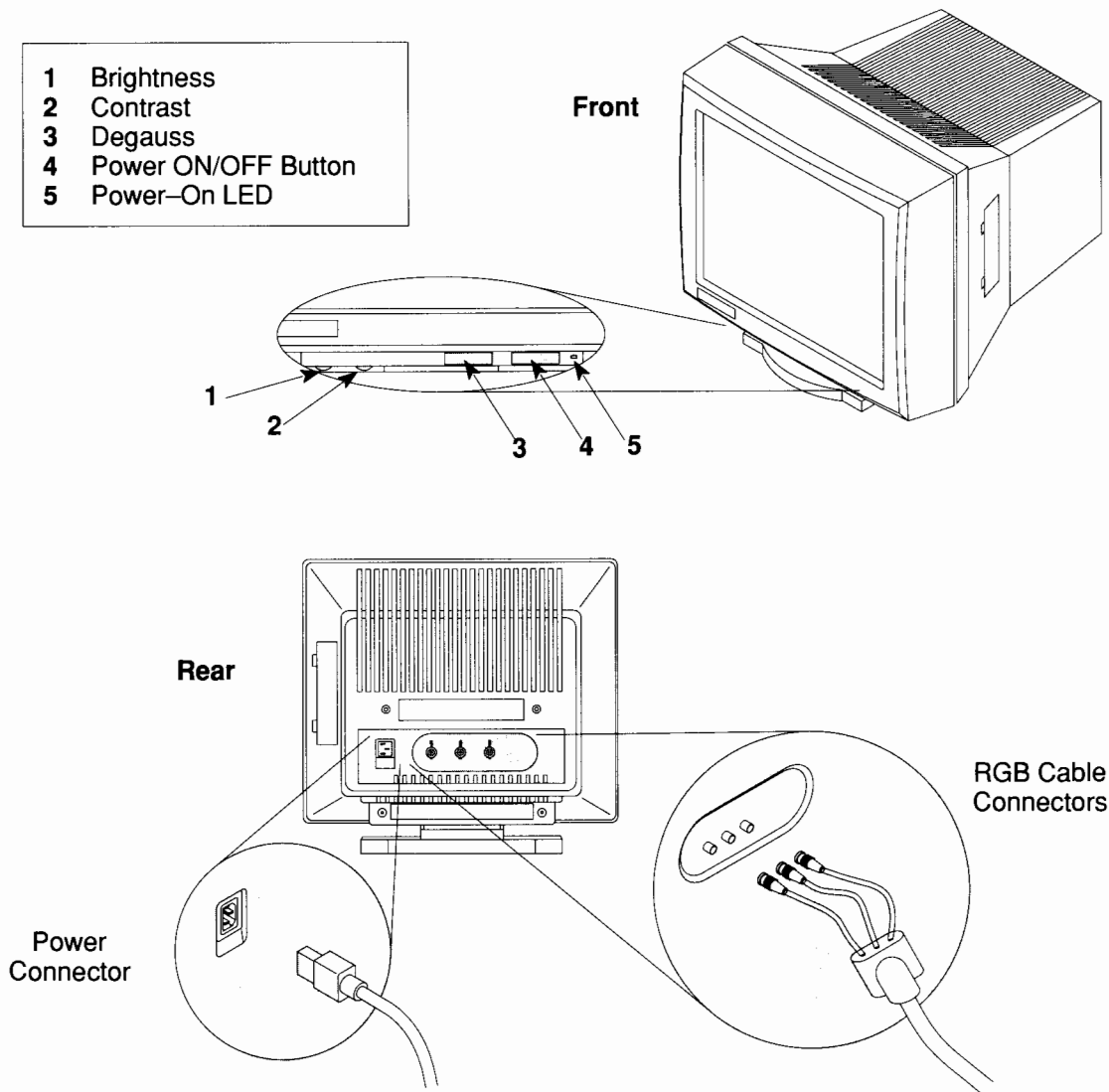


Figure 1-12. 19-Inch, Color Monitor (Model A1097A/A1097B)

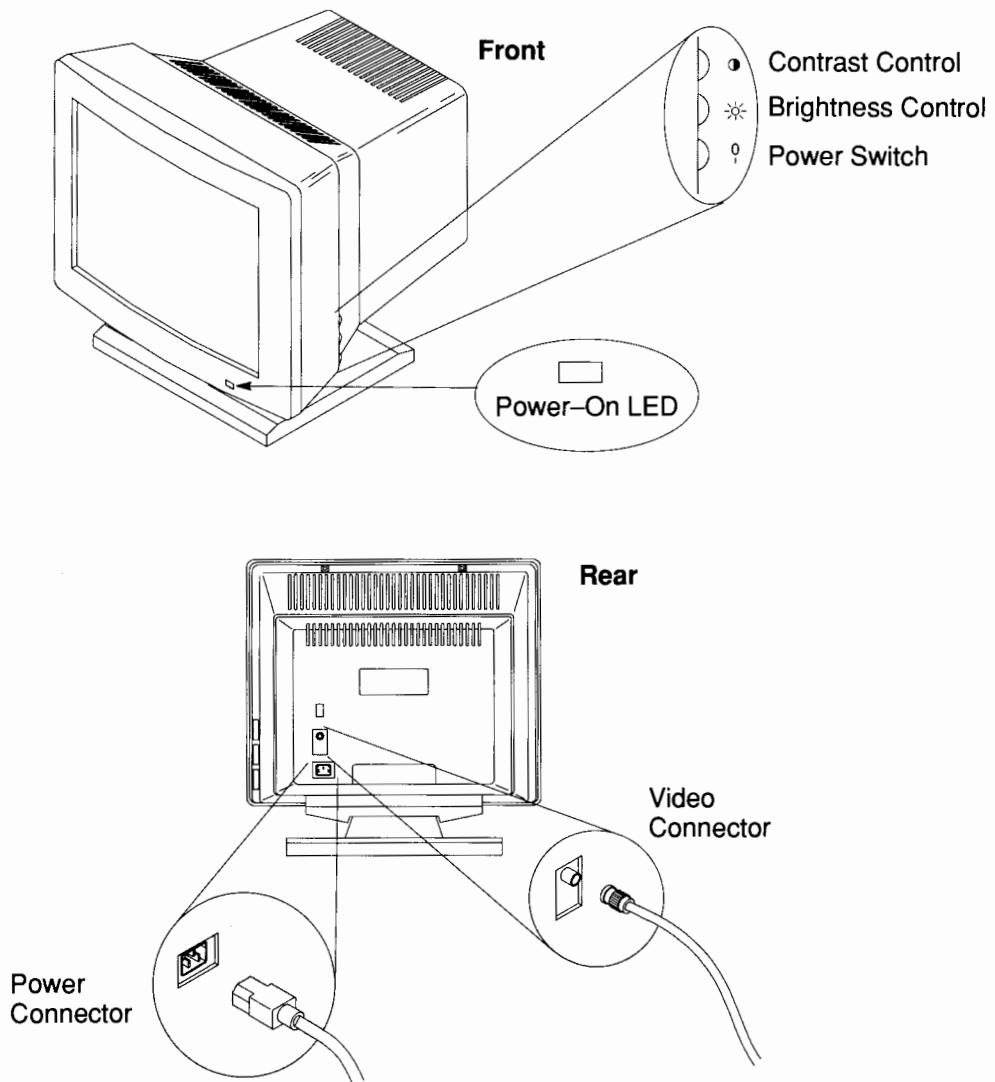


Figure 1-13. 19-Inch, Grayscale Monitor (Model 98774A)

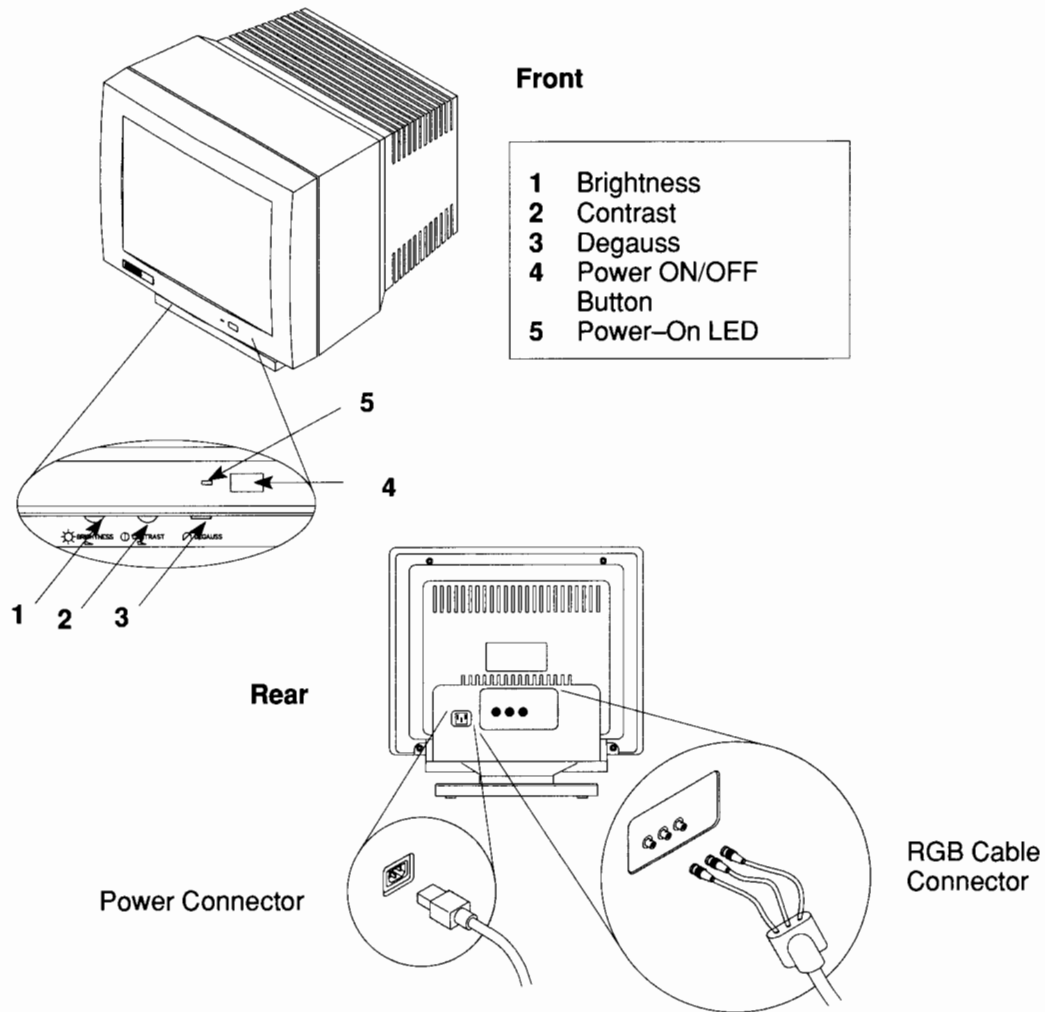


Figure 1-14. 16-Inch, Color Monitor (Model A1497A/A1497B)

Chapter 2

Getting Started

This chapter introduces you to your workstation and the Hewlett–Packard Visual User Environment (HP VUE) by performing the following tasks:

- Starting up your workstation
- Logging in with HP VUE
- Logging in from the command line
- The HP VUE workspace
- Creating a new user account
- Changing a user’s password
- Logging out from HP VUE
- Logging out from a command line
- Shutting down your workstation from HP VUE
- Shutting down your workstation from the command line

Starting Up Your Workstation

If your system has preloaded software (the HP-UX operating system is loaded on the hard disk at the factory), it is shipped with a yellow sticker covering the system's power switch. When powered on, it boots the HP-UX operating system and is ready for use. (If you are powering on your workstation for the first time, you need to answer a few questions, as described in *HP Apollo 9000 Series 700 Model 705 and Model 710 Hardware Installation Guide*.)

If your workstation does not have preloaded software and you ordered the HP-UX software separately, refer to the documentation that came with your HP-UX operating system software for instructions on loading it on your workstation.

If your system does not have a hard disk installed, or if it has a hard disk installed and you want your workstation to be a cluster client node (cnode), refer to the *System Administrator's Task Manual HP 9000 Series 700 Computers* manual for instructions on setting up clusters and cnodes.

Use the following instructions to start up your workstation.

1. Push in the power switch on the monitor. The power LED lights up to indicate that the power is on.
2. Turn on the power to any external peripherals.
3. Push in the power switch on your workstation. The power LED lights up to indicate that the power is on. After about three minutes, many messages appear on your screen. These messages convey information about the various hardware and software subsystems that are being activated by the boot process. Unless something is wrong with your system, you are not asked to respond to any of these messages.

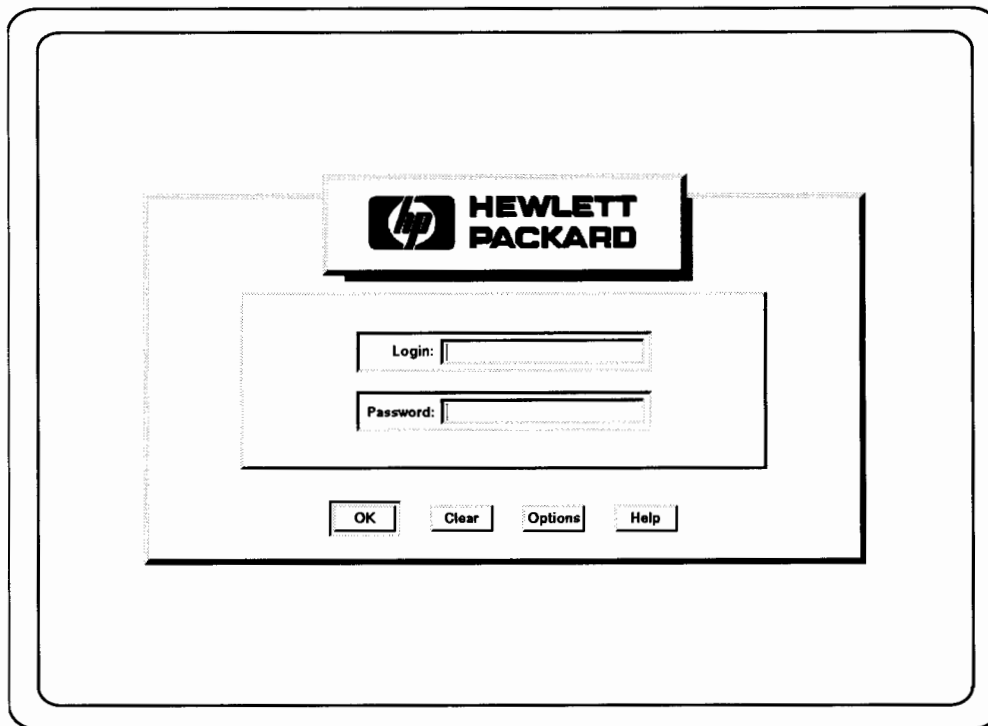
Logging In with HP VUE

Follow the instructions in this section to log in to your workstation through HP VUE.

If your system does not have HP VUE installed, or if you selected **No Windows** or **Fail-Safe** from the options menu of the HP VUE login screen, go to the next section entitled *Logging In From the Command Line* for instructions on logging in.

1. After your workstation has successfully booted HP-UX and started HP VUE, the following login screen appears.

If this screen does not appear, see Chapter 6, “Solving Problems”.



2. You must first login as **root**. To login as **root**, type the following:

```
root 
```

If a window appears over your login screen cautioning you about your workstation's hostname being **unknown**, ignore the message for now and start HP VUE as described in Step 3. Otherwise, skip Step 3 and go directly to Step 4.



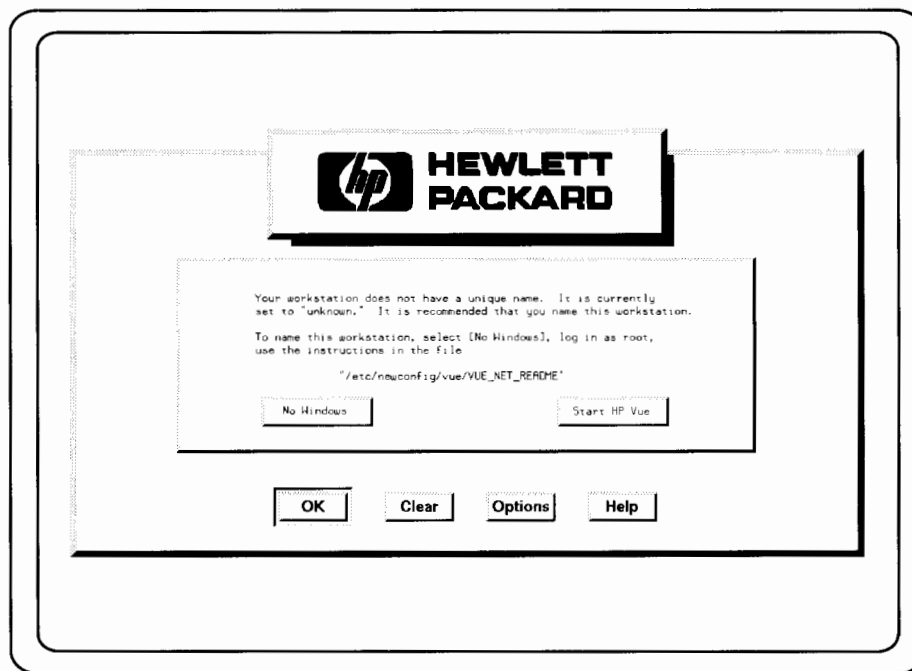
3. Move your mouse pointer to the following screen key and click the left mouse button once:

Start HP VUE

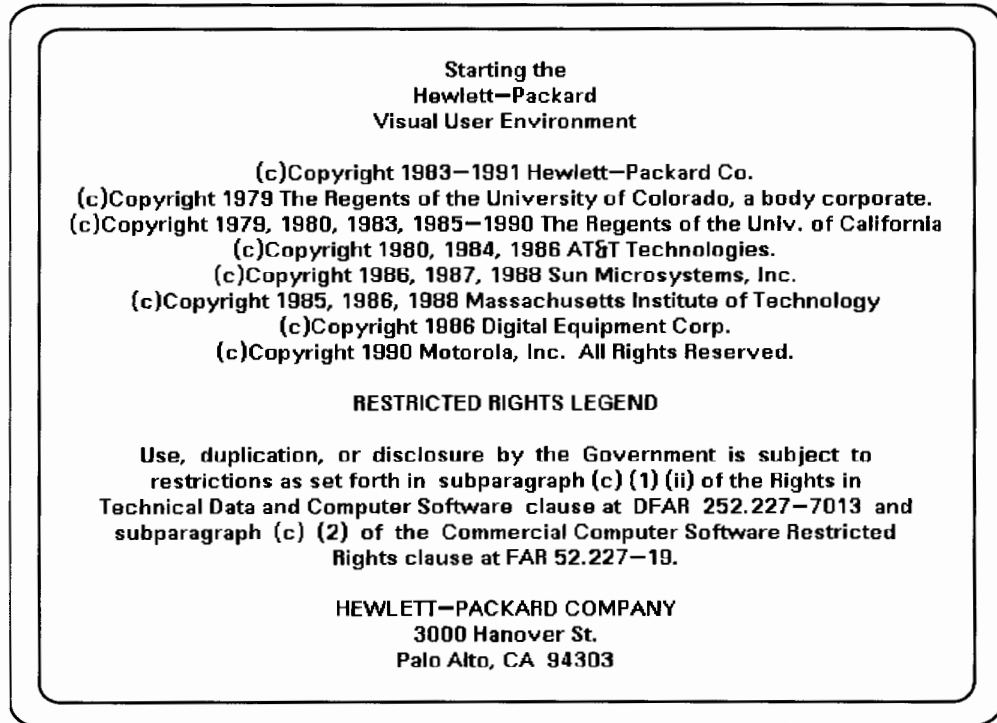
Until you have learned how to read and edit files, do not click on the following screen key:

No Windows

NOTICE: If your systems hostname is unknown, at some later time you should run the program `/etc/setparms` or contact your system administrator to set a hostname.



4. The following copyright screen appears on your screen for approximately one minute.



5. The HP VUE Workspace then appears and you are logged in..

Logging In from the Command Line

This section describes how to login if your system does not have HP VUE installed, or if you selected **No Windows** or **Fail-Safe** from the options menu of the HP VUE login screen.

If your workstation is running HP VUE, go to the previous section entitled *Logging In With HP VUE* for instructions on logging in.

1. You must first login as **root**. To login as **root**, type the following:

```
root 
```

2. The following screen appears:

```
(c)Copyright 1983-1991 Hewlett-Packard Co.  
(c)Copyright 1979 The Regents of the University of Colorado, a body corporate.  
(c)Copyright 1979, 1980, 1983, 1985-1990 The Regents of the Univ. of California  
(c)Copyright 1980, 1984, 1986 AT&T Technologies.  
(c)Copyright 1986, 1987, 1988 Sun Microsystems, Inc.  
(c)Copyright 1985, 1986, 1988 Massachusetts Institute of Technology  
(c)Copyright 1986 Digital Equipment Corp.  
(c)Copyright 1990 Motorola, Inc. All Rights Reserved.
```

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3000 Hanover Street
Palo Alto, CA 94304 U.S.A.

Rights for non-DOD U.S. Government Departments and Agencies are as set forth in FAR 52.227-19(c)(1,2).

3. The following line then appears:

```
Is your console one of the following: a 2392A, 2393A,  
2397A or 700/92? [y/n]:
```

4. Enter the following:

```
y
```

```
RETURN
```

5. The following lines then appear:

```
Value of TERM has been set to "hp".  
WARNING: YOU ARE SUPERUSER !!  
#
```

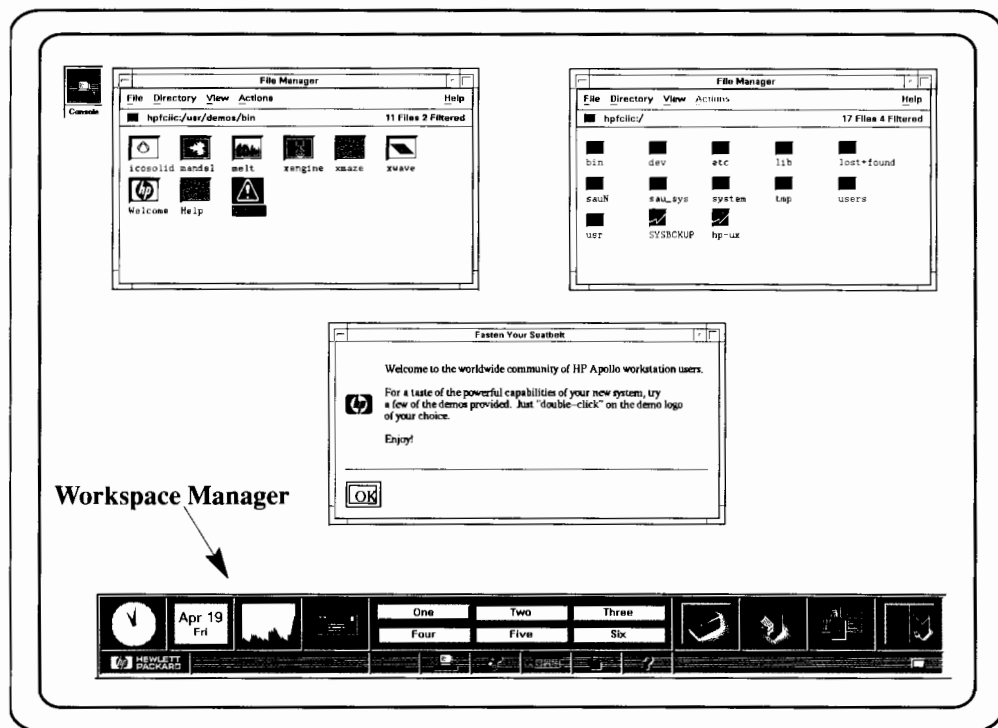
6. You are now logged in.

The HP VUE Workspace

This section gives an overview of the HP VUE environment. For more information on using HP VUE, refer to the *HP Visual User Environment User's Guide*.

After you log in, an HP VUE workspace, similar to the following, appears. There is a **console icon**, two **file manager windows**, a window entitled *Fasten Your Seatbelt*, and the **workspace manager**, which is also called the **control panel**.

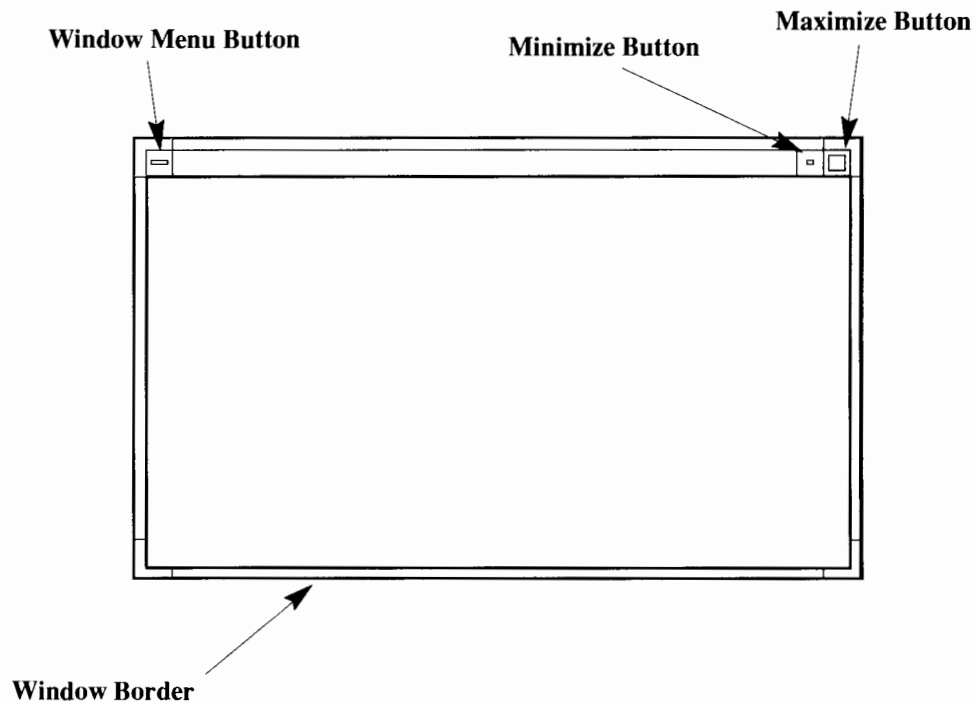
NOTICE: Your initial HP VUE workspace may look slightly different from the one shown.



Understanding HP VUE Windows

This section describes some features of windows in the HP VUE environment.

All windows in HP VUE have some characteristics in common. All windows have a **Window Menu Button**, a **Minimize Button**, a **Maximize Button**, and a **Window Border**. The following illustration shows where each of these window features is located.



Window Menu Button — The **Window Menu Button** creates a menu list from which you can choose a window control action. If you move the mouse pointer to the **Window Menu Button** and press and release the left mouse button once (single-click), a **Window Menu** appears with a list of choices. To select a choice from the menu, move the mouse pointer to the desired menu selection and single-click the left mouse button. To close the **Window Menu** without making a selection, move the mouse pointer outside of the window and single-click the left mouse button.

Minimize Button — The **Minimize Button** changes a window into an **icon**. (An **icon** is a small picture.) When you minimize a window, whatever process is running in that window keeps running, even though you can't see its progress.

To minimize a window, move the mouse pointer to the window's minimize button and single-click the left mouse button. The window disappears and a small icon appears on the side of your HP VUE workspace. To get the window back from an icon, place the mouse pointer on the icon, then quickly press and release the left mouse button twice. (This is called *double-clicking*.) The icon disappears and the window reappears.

Maximize Button — The **Maximize Button** changes the size of the window so that it fills the entire workspace. To maximize a window, move the mouse pointer to the windows maximize button and single-click the left mouse button. The window grows. Single-clicking on the maximize button again restores the window to its original size.

Window Border — The **Window Border** is used for two purposes; to size the window and indicate whether or not the window is the active window.

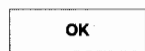
- To **size a window**, move the mouse pointer to a spot on the window border. The mouse pointer changes to an arrow that points either up, down, left, right or in one of the four possible diagonal directions, depending upon where on the window border the mouse pointer is placed. Press and hold the left mouse button. Move the mouse in the direction of the arrow. An outline appears. Move the mouse until the outline is to the appropriate size. Release the mouse button and the window grows to the selected size.
- In the HP VUE environment, one window is always the **active window**. The active window is the one which is receiving input from the keyboard at the present time. When a window is the **active window**, it has a different border color than the other windows on the display.

To make a window the **active window**, place the mouse pointer anywhere inside of the window and single-click the left mouse button.

Using the HP VUE Workspace

This section describes how to perform a few basic tasks in the HP VUE Workspace.

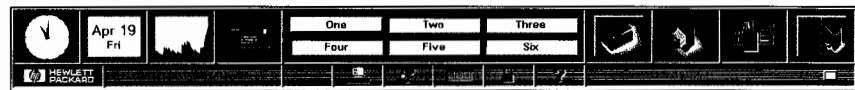
1. Close the *Fasten Your Seatbelt* window by moving the mouse pointer to the following screen key and clicking the left mouse button once:



2. Move the mouse pointer into the file manager window which has `/usr/demos/bin` listed. It contains the icons (small pictures) that correspond to some demonstration programs. To run a demonstration, move the mouse pointer over an icon, and press and release the left mouse button twice quickly.
3. To stop a demo program, move the mouse pointer over the demo's **window menu button** and double-click the left mouse button.
4. Close the file manager window for the demonstrations by double-clicking on its **window menu button**.
5. Move the mouse pointer over the **minimize button** in the other file manager window and double-click on it. This turns the window into an icon.
6. Move the mouse pointer over the console icon, and double-click on it. The **console icon** disappears and is replaced by the **console window**. The console window behaves just like a system console terminal. You type commands into it, and the system executes the commands and sends any system output to the console window. Double-click on the console window's **minimize button** to turn the console window back into an icon.
7. **Terminal windows** are like user terminals connected to your system. This is where you enter keyboard commands to execute programs and control your workstation.

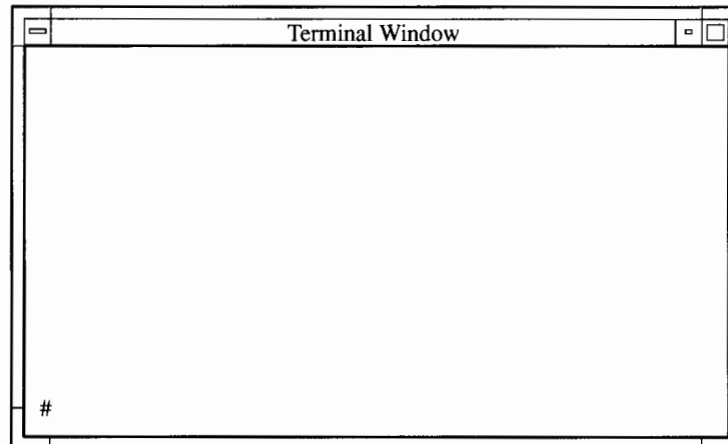
To enter commands from the keyboard always use a terminal window. You may have several terminal windows open at the same time and execute commands in each terminal window separately.

To create a terminal window, move the mouse pointer to the **terminal window button**. (The **terminal window button** is the icon along the bottom of the control panel that looks like a computer terminal, as shown in the following illustration.) Click the left mouse button once. A terminal window appears.



Terminal Window Button

- Place the mouse pointer anywhere in the new terminal window and single-click the left mouse button to make it the active window. Enter your commands from the keyboard.



- Later in this book, you need to know what revision of HP-UX your system is running. Enter the following command line in your terminal window:

```
uname -r 
```

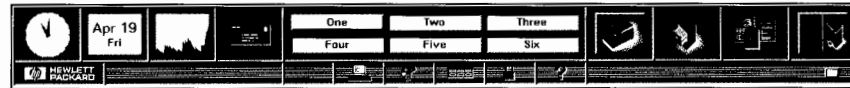
Write down the resulting output for later reference.

- Close the terminal window by double-clicking its window menu button.

Using the HP VUE Online Help

This section describes how to start the help utility and how to use it to read *A Tutorial for New Users*.

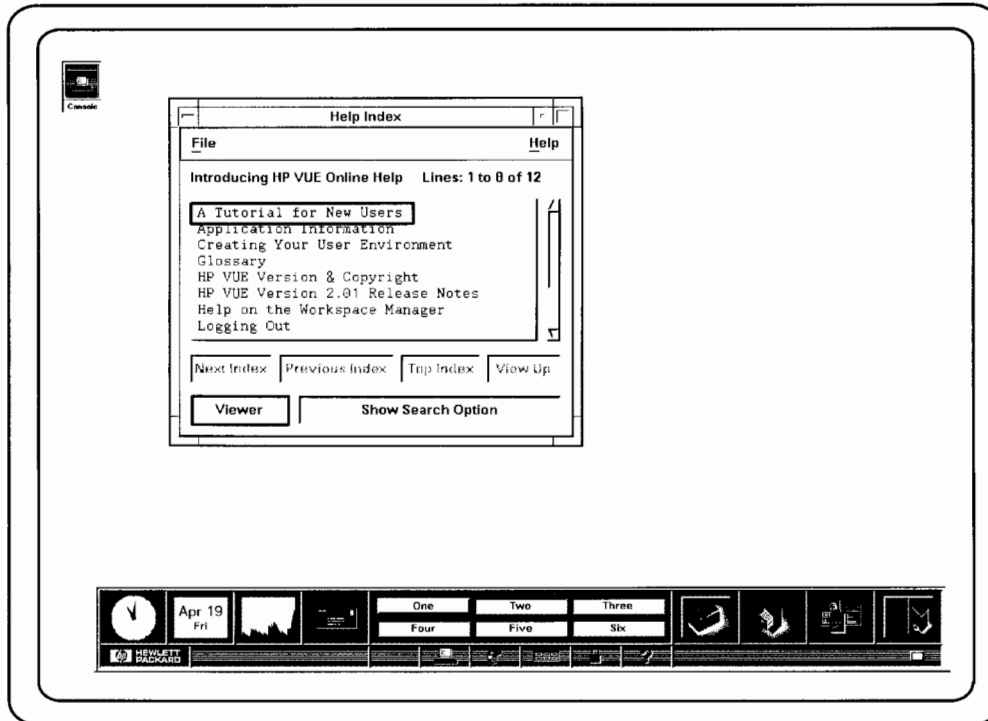
1. Move the pointer to the **help screen button**, which is the icon along the bottom of the control panel with a question mark (?) on it. Click the left mouse button once.



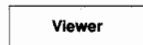
Help Screen Button

2. The Help Index window shown here appears. Move the mouse pointer into the window and onto the following line:

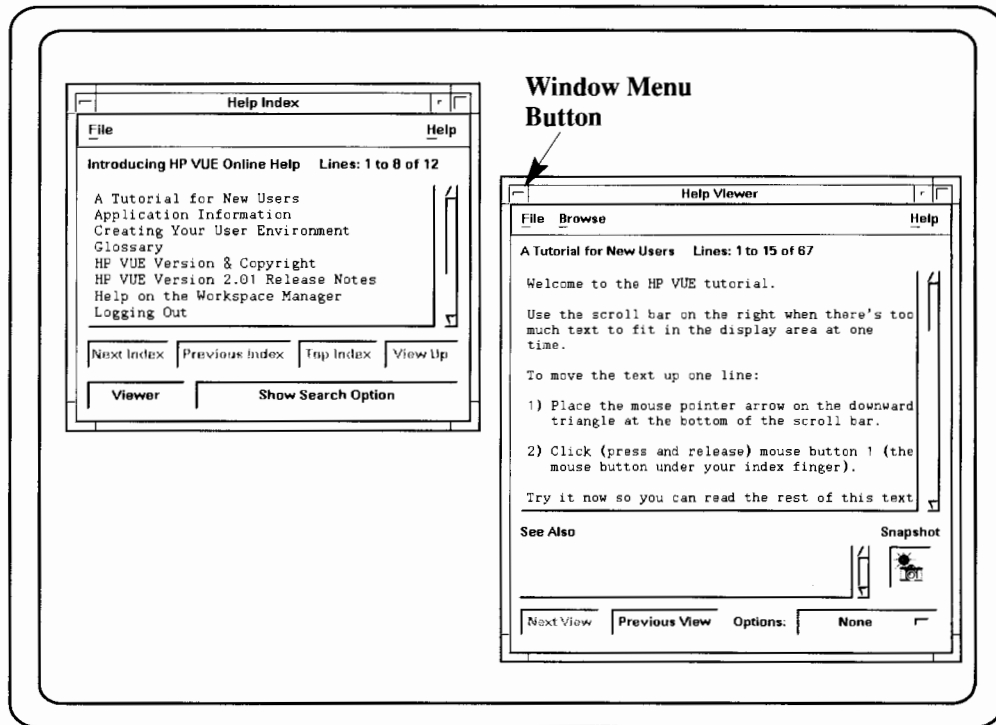
A Tutorial for New Users



Click the left mouse button once to bring the next index into the window. Then, to see the help information, click the left mouse button once on the following screen key:



3. The first part of **A Tutorial for New Users** is displayed in the Help Viewer window. You do not have to read all of the information now.
4. Move the Help Viewer window by placing the mouse pointer on the words **Help Viewer** at the top of the window. Press and hold the left mouse button then move the mouse until the Help Index window is unobscured. Release the left mouse button.



5. Close the Help Viewer and Help Index windows by moving the mouse pointer over the window menu button in the upper left-hand corner of each window and double-clicking the left mouse button.

Creating a New User Account

A new user account is created with a system utility called SAM (System Administration Manager).

If you are using HP VUE, go directly to Step 4 on the next page to start SAM and create a new user account.

If your system does not have HP VUE installed, or if you selected **No Windows** or **Fail-Safe** from the options menu of the HP VUE login screen, go to Step 1 below to start SAM and create a new user account.

1. Login as **root**.

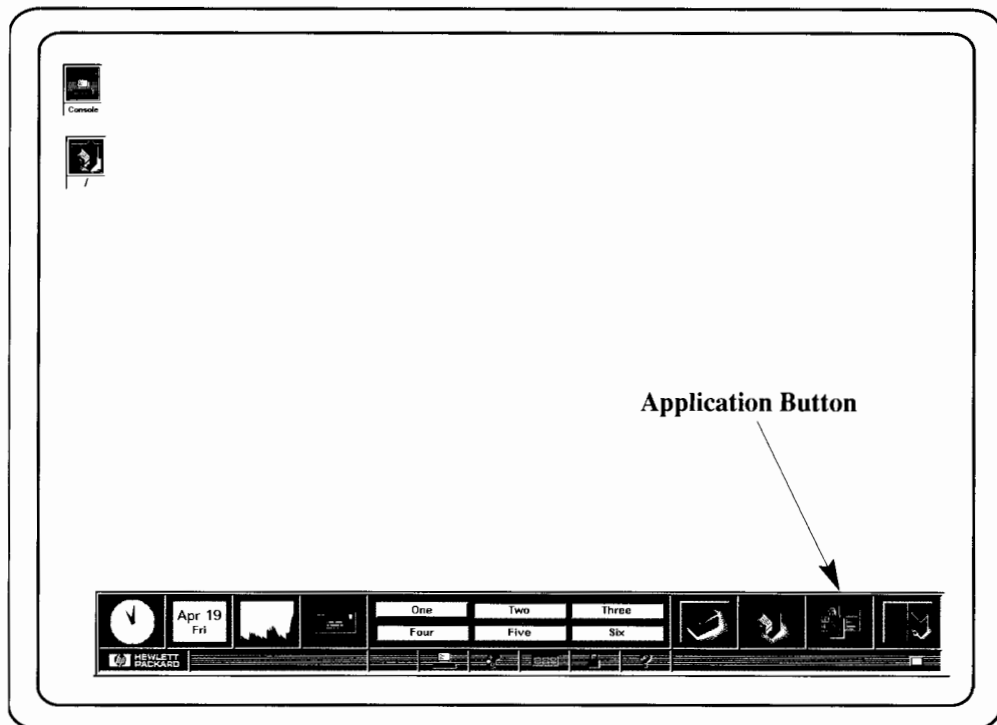
2. Enter the following:

sam

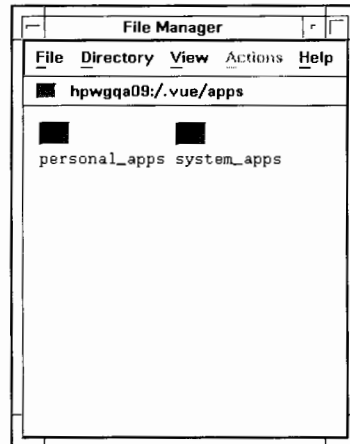


3. Go directly to Step 9 of this section.

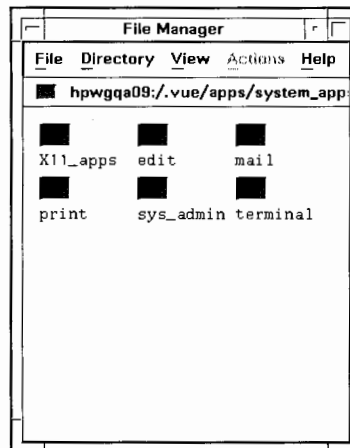
4. Login as **root**.
5. Move the mouse pointer to the control panel's **application button**, which is the icon with the pages on it, and click the left mouse button once.



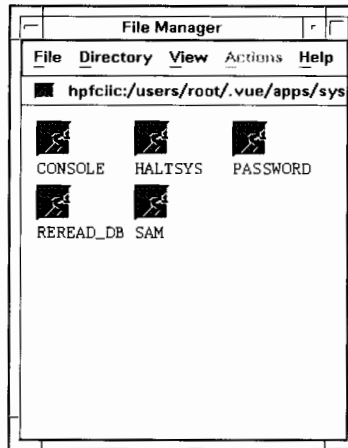
- When the following window appears, move your mouse pointer onto the **system_apps** folder and double-click the left mouse button.



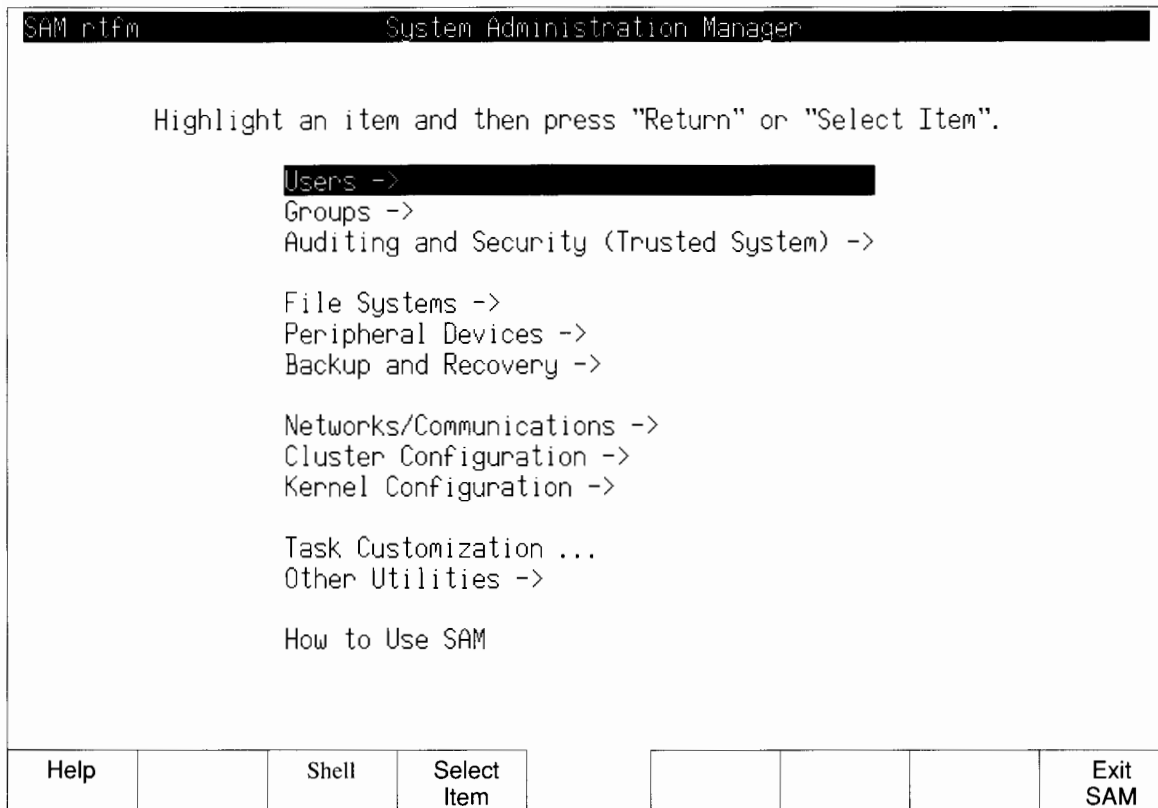
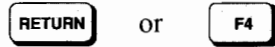
- When the following window appears, move your mouse pointer onto the **sys_admin** folder and double-click the left mouse button.



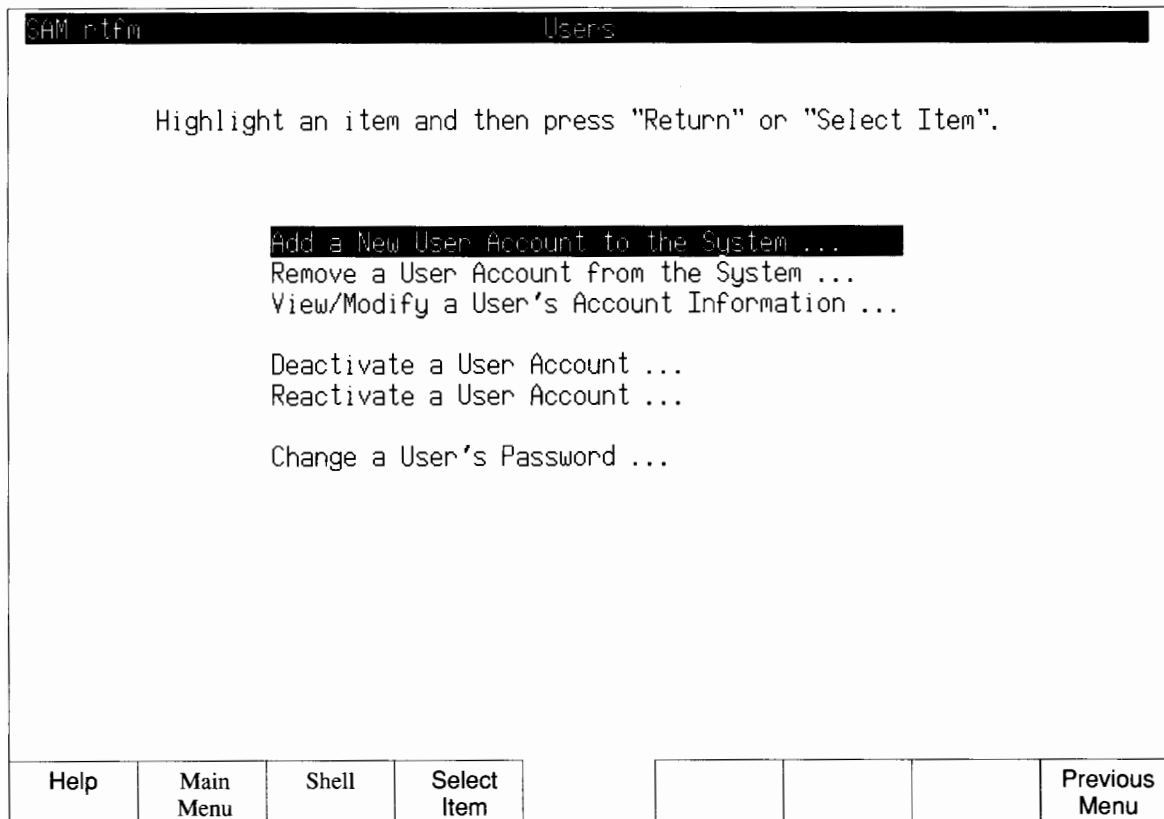
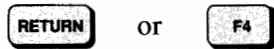
8. When the following window appears, move your mouse pointer onto the **SAM** icon and double-click the left mouse button.



9. The initial SAM screen appears. Use the arrow keys on your keyboard to select **Users**, as shown below, then press either of the following keys:



- 10.** The following screen appears. Use the arrow keys on your keyboard to select **Add a New User Account to the System**, then press either of the following keys:



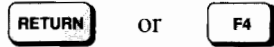
- 11.** The screen shown below appears. Enter a login name for the new user account, then press the following key:



SAM rtfw		Add a New User Account to the System					
Fill in or modify the desired fields and then press "Perform Task".							
Login name							
Primary group name		users					
Home directory		/users/					
Start-up program		/bin/sh					
Real name							(optional)
Office location							(optional)
Office phone							(optional)
Home phone							(optional)
Modify user's defaults? (y or n)		n					
Help	Main Menu	Shell	Perform Task				Exit Task

Getting Started

12. The screen shown below appears. Enter a system password for the new user account, then press the following key:



SAM rtfm Add a New User Account to the System

Fill in or modify the desired fields and then press "Perform Task".

Login name username

Primary group _____

Home directory _____

Start-up program _____

Real name _____ (optional)

Office location _____ (optional)

Office phone number _____ (optional)

Home phone number _____ (optional)

Modify user's defaults? (y or n) n

Enter a password for username.

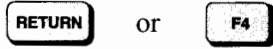
The password will not appear when typed.

Press "Return" or "Done" when you are finished.

Password: _____

Help			Done				Exit Window
------	--	--	------	--	--	--	-------------

13. The screen shown below appears. Re-enter the system password for the new user account, then press the following key:



SAM Add a New User Account to the System

Fill in or modify the desired fields and then press "Perform Task".

Login name user _____

Primary group _____

Home directory _____

Start-up program _____

Real name _____ (optional)

Office location _____ (optional)

Office phone number _____ (optional)

Home phone _____ (optional)

Modify user's defaults? (y or n) n

Re-enter the password for user.

The password will not appear when typed.

Press "Return" or "Done" when you are finished.

Password: _____

Help			Done				Exit Window
------	--	--	------	--	--	--	-------------

14. In a few moments the following screen appears. Press the following key:



```
CAM rtfm          Add a New User Account to the System
Fill in or modify the desired fields and then press "Perform Task".
Login name . . . . . username
Primary group name . . . . . users

Task completed.
username has been added to the system.
-- Press the space bar to continue. --

Office phone . . . . . _____ (optional)
Home phone . . . . . _____ (optional)
Modify user's defaults? (y or n) n
```

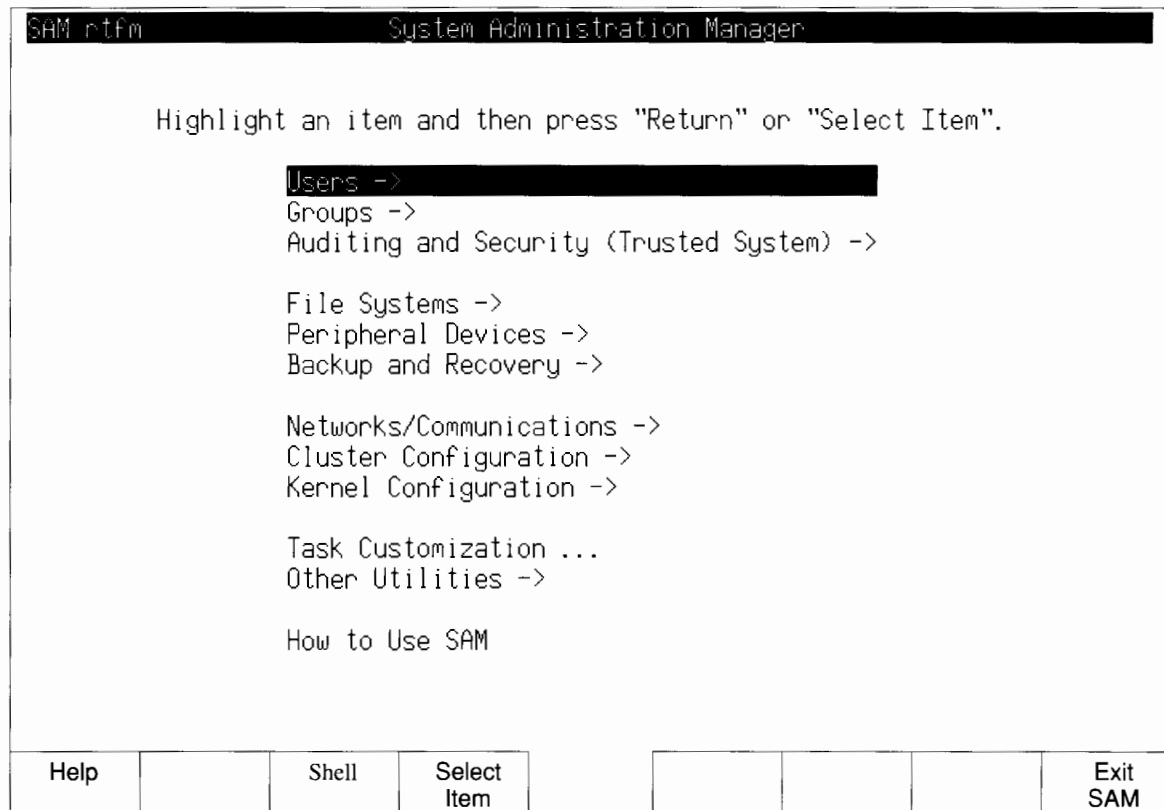
--	--	--	--	--	--	--	--

15. The following screen appears. Press the following key:



SAM nTfm		Add a New User Account to the System					
Fill in or modify the desired fields and then press "Perform Task".							
Login name							
Primary group name							
Home directory							
Start-up program							
Real name							(optional)
Office location							(optional)
Office phone							(optional)
Home phone							(optional)
Modify user's defaults? (y or n)							
Help	Main Menu	Shell	Perform Task				Exit Task

16. The following screen appears. Press the following key:



17. When SAM closes, there is a window with the title *Permanent Terminal Window* left on the screen. Double-click the windows menu button to close it.

18. Double-click on the **sys_admin** File Manager windows menu button to close it.

Changing a User's Password

A user's password is changed with a system utility called SAM (System Administration Manager).

NOTICE: When you logon for the first time, you should add a password for the **root** account to ensure system security.

1. Login as **root**.
2. If you are using HP VUE, go directly to Step 5 on the next page to start SAM and change a user's password.

If your system does not have HP VUE installed, or if you selected **No Windows** or **Fail-Safe** from the options menu of the HP VUE login screen, continue with Step 3 below to start SAM and change a users password.

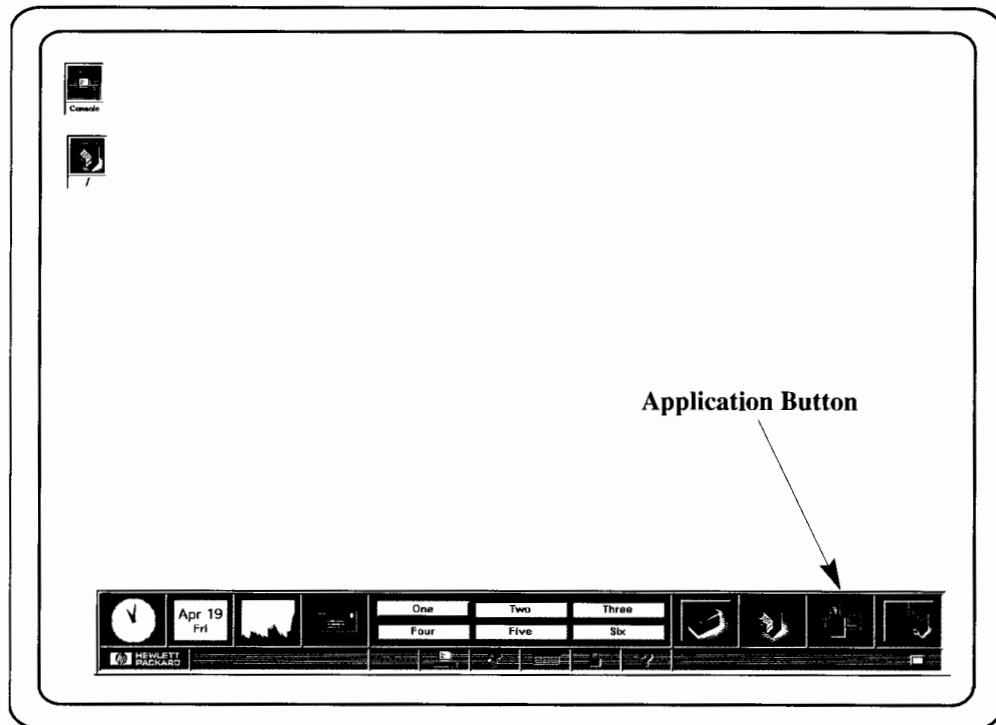
3. Enter the following:

sam

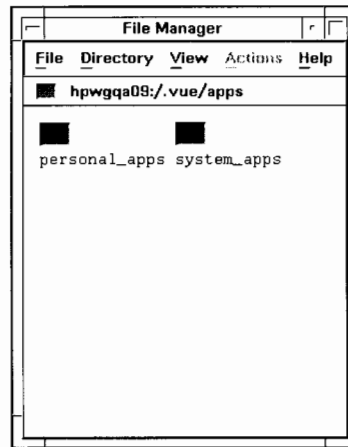


4. Go directly to Step 9 of this section.

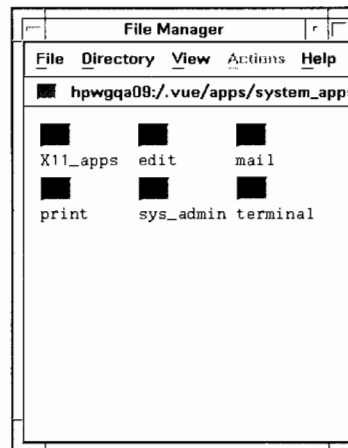
5. Move the mouse pointer to the control panel's **application button**, which is the icon with the pages on it, and click the left mouse button once.



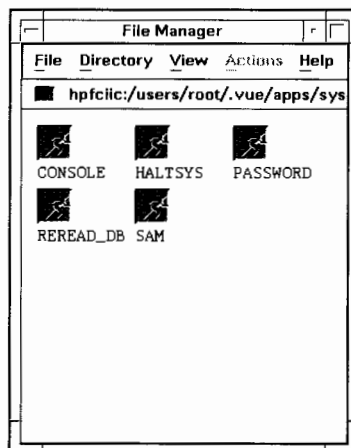
- When the following window appears, move your mouse pointer onto the **system_apps** folder and double-click the left mouse button.



- When the following window appears, move your mouse pointer onto the **sys_admin** folder and double-click the left mouse button.

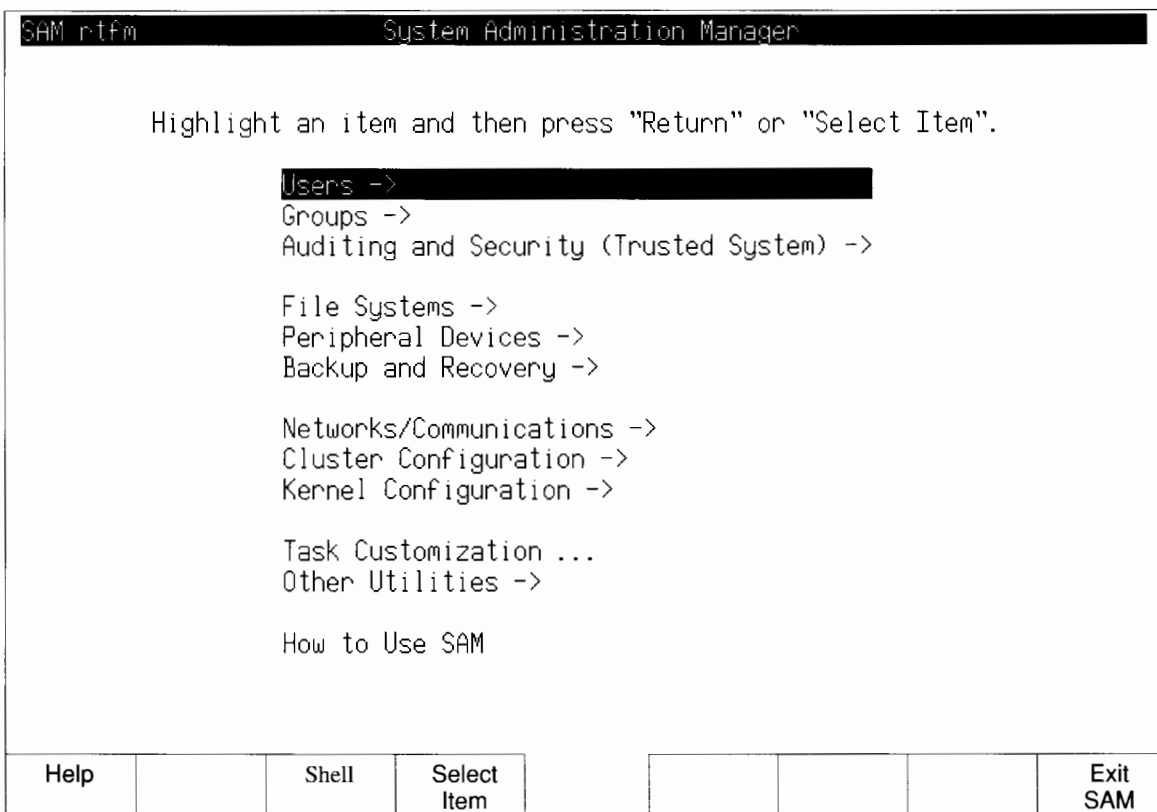
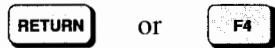


8. When the following window appears, move your mouse pointer onto the **SAM** icon and double-click the left mouse button.

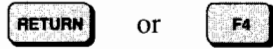


9. The initial SAM screen appears. Note that there are eight boxes at the bottom of the SAM screen. These boxes indicate the actions that function keys F1 through F8 on your keyboard perform during different levels of SAM execution. The labels in the boxes may change from menu to menu within SAM.

Use the arrow keys on your keyboard to select **Users**, then press either of the following keys:

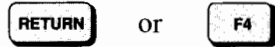


- 10.** The Users screen appears. Use the arrow keys on your keyboard to select **View/Modify a Users Account Information**, as shown, then press either of the following keys:



SAM		Users					
Highlight an item and then press "Return" or "Select Item".							
Add a New User Account to the System ...							
Remove a User Account from the System ...							
View/Modify a User's Account Information ...							
Deactivate a User Account ...							
Reactivate a User Account ...							
Change a User's Password ...							
Help	Main Menu	Shell	Select Item				Previous Menu

11. The following screen appears. Enter the login name of the account for which you want to change the password, then press either of the following keys:



View/Modify a User's Account Information

Fill in the following information to complete the "Change Password" task.

Log Enter the login name of the user to view/modify.
Pri Then press "Return" or "Done". Press "Help" to
view a list of all users.

Home Login name: _____

State _____

Real name _____ (optional)

Office location _____ (optional)

Office phone _____ (optional)

Home phone _____ (optional)

View/Modify additional information for this user? (y or n) n

Help			Done				Exit Window
------	--	--	------	--	--	--	----------------

12. If you are changing the password for root, the following screen appears. Press the following keyboard key:



```
View/Modify a User's Account Information

Fill in the following information. Press the "Enter" key to move to the next
field. Press the "Esc" key to return to the "Main Menu" screen. Press the
"q" key to quit.

Log name: Enter the login name of the user to view/modify.
           Then press "Return" or "Done". Press "Help" to
           view a list of all users.
Priority:
Home directory:
State:
Real name: operation on "root"? (y or n) (optional)
Office location: (optional)
Office phone: (optional)
Home phone: (optional)
View/Modify additional information for this user? (y or n) n
```

- 13.** The following screen appears. Press the down arrow on the keyboard until the cursor rests on the `n` at the end of the bottom line on the screen as shown below.

SAM		View/Modify a User's Account Information					
Fill in or modify the desired fields and then press "Perform Task".							
Login name		<code>root</code>		Account status: ACTIVE			
Primary group name		<code>sys</code>					
Home directory		<code>/</code>					
Start-up program		<code>/bin/sh</code>					
Real name		_____		(optional)			
Office location		_____		(optional)			
Office phone		_____		(optional)			
Home phone		_____		(optional)			
View/Modify additional information for this user? (y or n)				<code>n</code>			
Help	Main Menu	Shell	Perform Task				Exit Task

- 14.** Press the following keyboard key:



15. The following screen appears. Press the down arrow on the keyboard so that the cursor is resting on the n at the end of the bottom line in the small window as shown below.

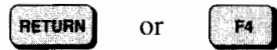
```
SAM View/Modify a User's Account Information
Fill in or modify the desired fields and then press "Perform Task".
Login name . . . . . root Account status: ACTIVE
P
H Modify the desired fields and then press "Done" when
  you are finished.
S User identity (uid) . . . . . 0
R Change user's password? (y or n) . . . . . n (optional)
O
Office phone . . . . . (optional)
Home phone . . . . . (optional)
View/Modify additional information for this user? (y or n) y
```

Help		Done				Exit Window
------	--	------	--	--	--	-------------

16. Press the following keyboard key:



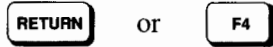
17. The password window appears. Enter a password, then press either of the following keys:



WARNING: Make sure you do not forget the password you use. If you forget the password for **root**, you cannot login as **root**; therefore you cannot set a new password for **root** with the SAM utility. If you forget a user account password, login as **root** and set a new password with the SAM utility.

SAM		View/Modify a User's Account Information	
Fill in or modify the desired fields and then press "Perform Task".			
Login name root		Account status: ACTIVE	
P	Modify	<div style="border: 2px solid black; padding: 5px;"> Enter a password for root. The password will not appear when typed. Press "Return" or "Done" when you are finished. Password: <input type="password"/> </div>	
H	you are		
S	User i		
R	Change		(optional)
O			(optional)
	Office ph		(optional)
Home phone _____		(optional)	
View/Modify additional information for this user? (y or n) <u>y</u>			
Help		Done	Exit Window

- 18.** The Re-enter Password window appears. Re-enter the password, then press either of the following keys:



SAM View/Modify a User's Account Information

Fill in or modify the desired fields and then press "Perform Task".

Login name root Account status: ACTIVE

Modify you are Re-enter the password for root.

Change User i The password will not appear when typed.

Press "Return" or "Done" when you are finished.

Password:

Office ph (optional)

Home phone (optional)

View/Modify additional information for this user? (y or n) y

Help		Done				Exit Window
------	--	------	--	--	--	-------------

19. The following screen appears. Press the following key:



```
SAM View/Modify a User's Account Information
Fill in or modify the desired fields and then press "Perform Task".
Login name . . . . . root Account status: ACTIVE
P
H Modify the desired fields and then press "Done" when
  you are finished.
S User identity (uid) . . . . . 0
R Change user's password? (y or n) . . . . . n (optional)
O
Office phone . . . . . (optional)
Home phone . . . . . (optional)
View/Modify additional information for this user? (y or n) y
```

Help		Done				Exit Window
------	--	------	--	--	--	-------------

20. The following screen appears. Press the following key:



SAM		View/Modify a User's Account Information					
Fill in or modify the desired fields and then press "Perform Task".							
Login name		root	Account status: ACTIVE				
Primary group name		sys					
Home directory		/					
Start-up program		/bin/sh					
Real name			(optional)				
Office location			(optional)				
Office phone			(optional)				
Home phone			(optional)				
View/Modify additional information for this user? (y or n) <u>n</u>							
Help	Main Menu	Shell	Perform Task				Exit Task

21. The Task complete window appears. Press the following key:

SPACEBAR

SAM View/Modify a User's Account Information							
Fill in or modify the desired fields and then press "Perform Task".							
Login name <u>root</u> Account status: ACTIVE							
Primary group name <u>sys</u>							
Task completed. root has been modified. -- Press the space bar to continue. --							
Office phone _____ (optional)							
Home phone _____ (optional)							
View/Modify additional information for this user? (y or n) <u>y</u>							
Help		Shell	Select Item				Exit SAM

22. The following screen appears. Press the following key:



View/Modify a User's Account Information							
Fill i	<div style="border: 2px solid black; padding: 5px;">Enter the login name of the user to view/modify. Then press "Return" or "Done". Press "Help" to view a list of all users. Login name: _____</div>						ask".
Log							
Pri							
Hom							
Sta	_____	_____	_____	_____	_____	_____	_____
Real name	_____	_____	_____	_____	_____	_____	(optional)
Office location	_____	_____	_____	_____	_____	_____	(optional)
Office phone	_____	_____	_____	_____	_____	_____	(optional)
Home phone	_____	_____	_____	_____	_____	_____	(optional)
View/Modify additional information for this user? (y or n) <u>n</u>							
Help			Done				Exit Window

23. The Users screen appears. Press the following key:



The screenshot shows a terminal window titled 'SAM Users'. The window contains a list of menu options. The third option, 'View/Modify a User's Account Information ...', is highlighted with a black background. Below the list is a navigation bar with several buttons: 'Help', 'Main Menu', 'Shell', 'Select Item', and 'Previous Menu'. There are also three empty rectangular boxes between 'Select Item' and 'Previous Menu'.

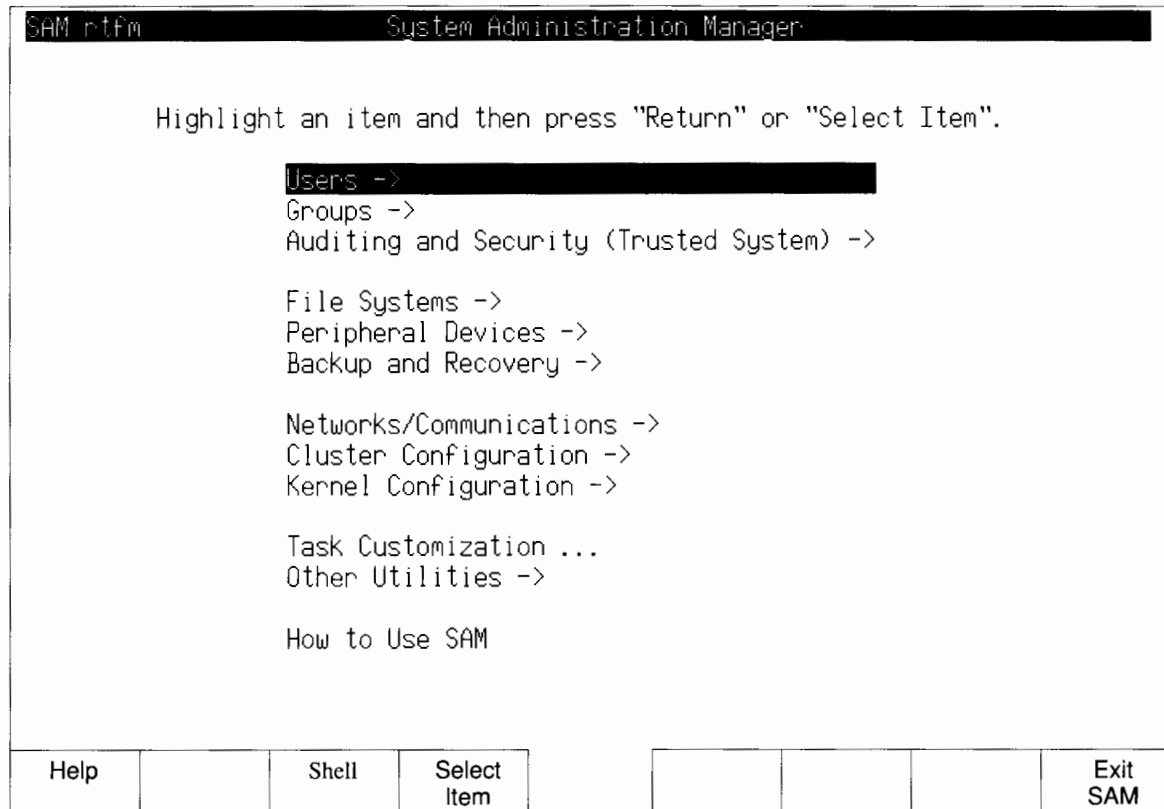
```
SAM Users

Highlight an item and then press "Return" or "Select Item".

Add a New User Account to the System ...
Remove a User Account from the System ...
View/Modify a User's Account Information ...
Deactivate a User Account ...
Reactivate a User Account ...
Change a User's Password ...

Help Main Menu Shell Select Item Previous Menu
```

24. The following screen appears. Press the following key to exit from SAM:



25. When SAM closes, there is a window with the title *Permanent Terminal Window* left on the screen. Double-click the windows menu button to close it.

26. Double-click the window menu button of the **sys_admin** File Manager window to close it.

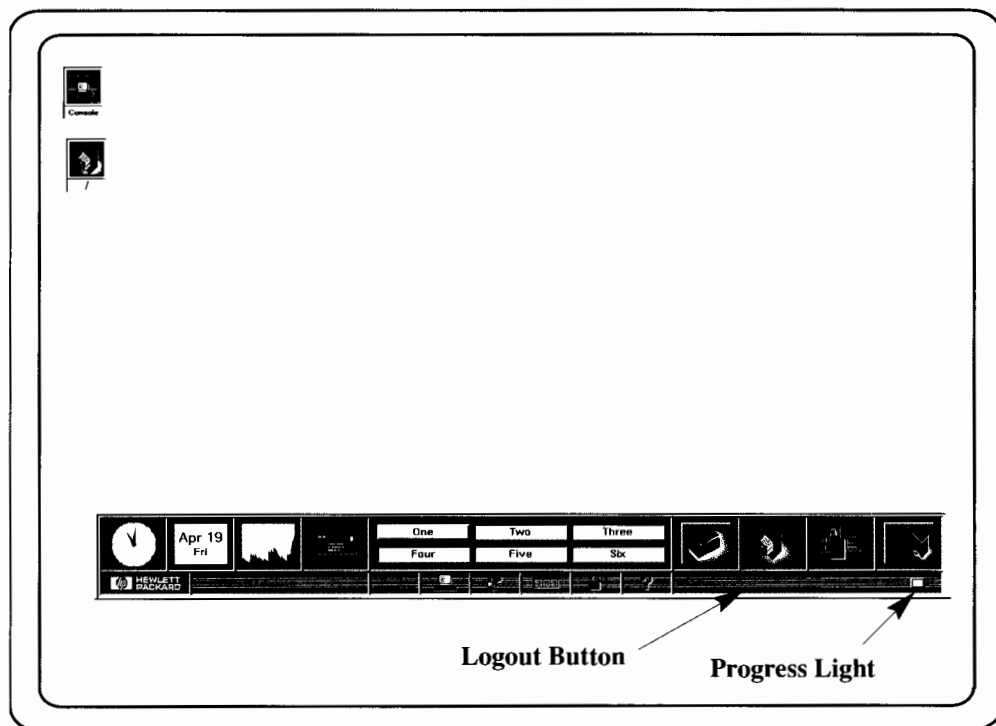


Logging Out from HP Vue

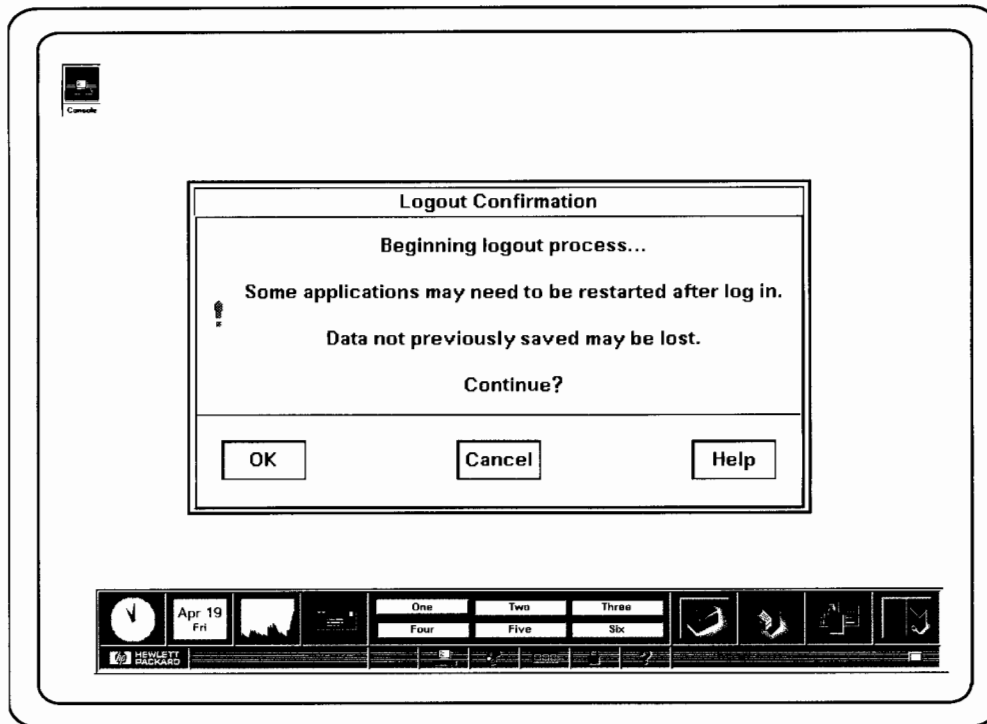
Follow the instructions in this section to log out of your workstation through HP VUE.

1. To log out, move your pointer onto the control panel's lower right-hand bar. This bar is called the **logout button**. Click the left mouse button once.

Notice that the **progress light** on the logout button begins to blink. This indicates that the logout process has begun.



2. The following confirmation box appears:



To confirm your logout, click on the following screen key:



A short time later, the login screen reappears.

WARNING: After you log out, **do not** turn off the power to your workstation. You must first perform the shutdown procedure described later in this chapter. If you do not shut down your workstation properly, you may damage the programs and data on your disk.

Logging Out from a Command Line

This section describes how log out if your system does not have HP VUE installed, or if you selected **No Windows** or **Fail-Safe** from the options menu of the HP VUE login screen.

Enter the following at the shell prompt:

exit 

The system closes your login session and in a few moments responds with the login prompt.

Shutting Down Your Workstation from HP VUE

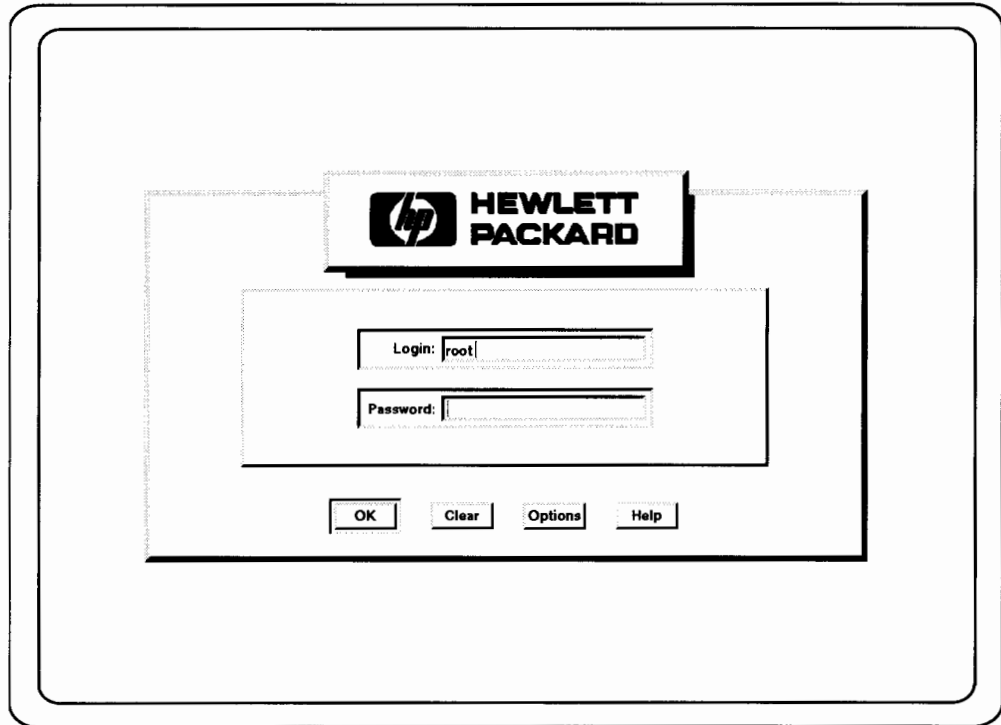
Follow the instructions in this section to shut down your workstation from HP VUE.

If your workstation is running an HP-UX shell (command-line environment), refer to the next section, *Shutting Down Your Workstation from the Command Line*, for instructions on how to shut down your workstation from the command line.

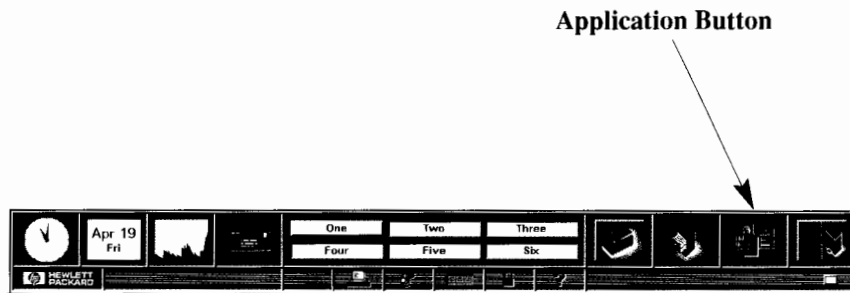
WARNING: Do not turn off the power to your workstation without first performing this shutdown procedure. If you do not shut down your workstation properly, you may damage the programs and data on your disk.

When you need to shut down your workstation so it can be powered off, follow these steps. Doing this ensures that your file system remains intact and that you can power up and log in correctly.

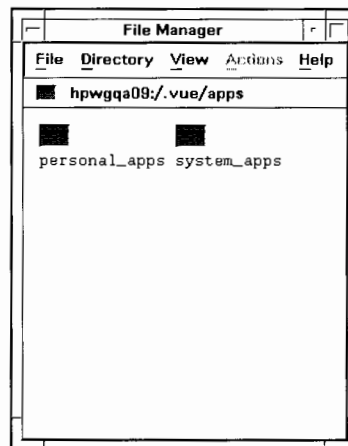
1. Log in as **root**. If you cannot log in as **root**, contact your system administrator.



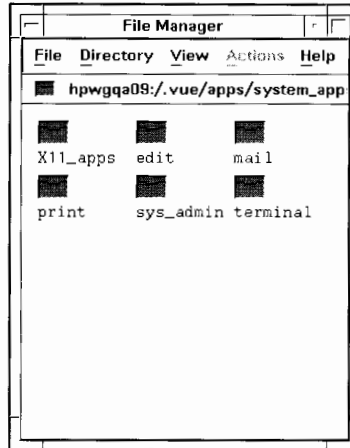
2. Click on the control panel's **application button**, which is the icon with the pages on it.



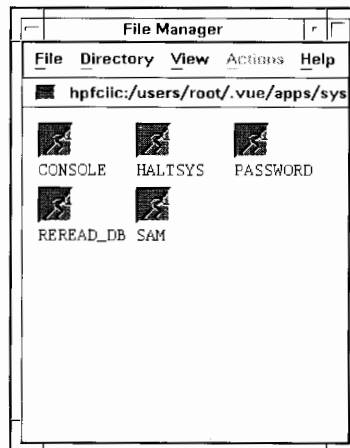
3. When the following window appears, move your pointer onto the **system_apps** folder and double-click the left mouse button.



4. When the following window appears, move your pointer onto the **sys_admin** folder, then double-click the left mouse button.



5. When the following window appears, double-click on the **HALTSYS** icon.

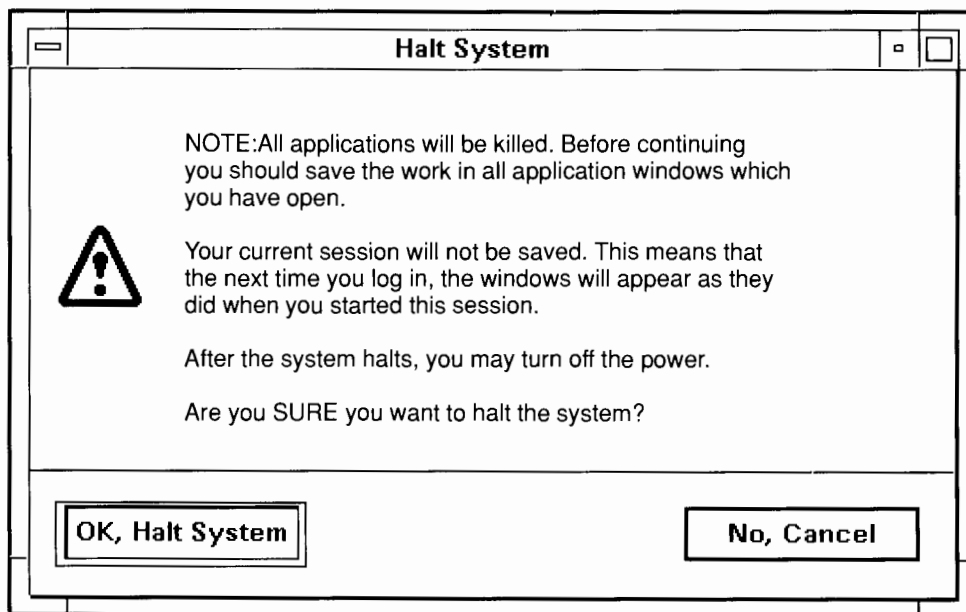


6. When the window shown below appears, click on the following screen key:

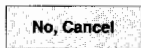
A rectangular button with a thin border containing the text "OK, Halt System".

NOTICE: The message displayed in your Halt System window may be different than shown. This does not affect the shutdown procedure.

Any other users who are logged onto your workstation get a warning that the workstation is soon to be unavailable. One minute later, the system begins its shutdown process.



NOTICE: When the Halt System window appears, if you do not want to shut down your system, click on the following screen key:

A rectangular button with a thin border containing the text "No, Cancel".

7. The shutdown process takes about one minute.

Earlier in this chapter, you used the `uname -r` command to find what revision of the HP-UX operating system is installed on your workstation.

If the HP-UX revision is **8.05**, wait for the following message to appear in the lower left-hand corner of your screen:

```
Halting (in a tight loop) -- OK To Hit Reset Button
```

If the HP-UX revision is **8.07**, wait for the following message to appear in the lower left-hand corner of your screen:

```
Halted, you may now cycle power.
```

When the appropriate message appears, you may either push the power switch on the front of the system unit to turn off your workstation or push the TOC switch (Reset Button) on the back of the system unit to restart your workstation.

Shutting Down Your Workstation from the Command Line

Follow the instructions in this section to shut down your workstation if your system does not have HP VUE installed, or if you selected **No Windows** or **Fail-Safe** from the options menu of the HP VUE login screen.

If your workstation is running HP VUE, refer to the previous section, *Shutting Down Your Workstation from HP VUE*, for instructions on how to shut down your workstation.


WARNING: Do not turn off the power to your workstation without first performing this shutdown procedure. If you do not shut down your workstation properly, you may damage the programs and data on your disk.

When you need to shut down your workstation so it can be powered off, follow these steps. Doing this ensures that your file system remains intact and that you can power up and log in correctly.

1. Log in as **root**. If you cannot login as **root**, contact your system administrator.
2. Set your working directory to the root (/) directory by entering the following on the command line:

```
cd / 
```

3. Execute the following shutdown command:

```
/etc/shutdown -h 0 
```


4. The shutdown process takes about one minute.

Earlier in this chapter, you used the **uname -r** command to find what revision of the HP-UX operating system is installed on your workstation.

If the HP-UX revision is **8.05**, wait for the following message to appear in the lower left-hand corner of your screen:

```
Halting (in a tight loop) -- OK To Hit Reset Button
```

If the HP-UX revision is **8.07**, wait for the following message to appear in the lower left-hand corner of your screen:

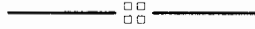
```
Halted, you may now cycle power.
```

When the appropriate message appears, you may either push the power switch on the front of the system unit to turn off your workstation, or push the TOC switch (Reset Button) on the back of the system unit to restart your workstation.

For More Information

To learn more about HP VUE, refer to *HP Visual User Environment User's Guide*.

To learn more about HP-UX, refer to *A Beginner's Guide to HP-UX*.



Chapter 3

Using Your 3.5-Inch Floppy Disk Drive

This chapter describes how to perform the following tasks with your 3.5-inch floppy disk drive:

- Setting the write-protect tab on a diskette
- Inserting and removing a diskette
- Formatting a new diskette
- Building a file system on a new diskette
- Mounting a floppy diskette
- Unmounting a floppy diskette

NOTICE: When examples of user input are given in this chapter, enter them at the command-line prompt in an HP VUE terminal window or HP-UX shell.

Setting the Write-Protect Tab on a Diskette

You can only store or change information on a diskette when the write-protect tab is in the *write* position. So, before trying to write to the diskette, make sure that the write-protect tab is in the *write* position, as shown in Figure 3-1.

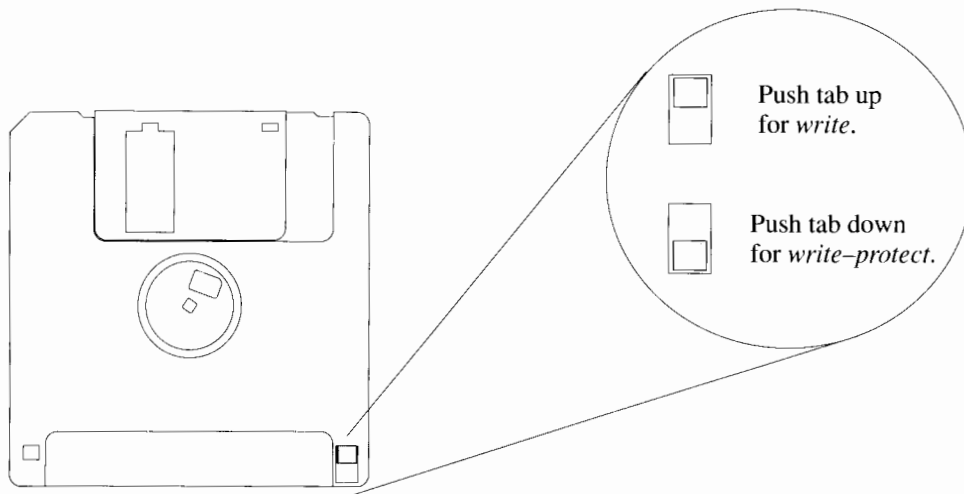


Figure 3-1. Setting the Floppy Diskette Write-Protect Tab

To protect files on a diskette from being overwritten, set the write-protect tab to the *write-protect* position, as shown in Figure 3-1.

NOTICE: The write-protect tab should always be in the *write* position for formatting a new diskette and creating a new file system on a diskette.

Inserting and Removing a Diskette

Follow these steps to insert and remove a diskette from the floppy disk drive:

1. Insert the diskette into the drive, as shown in Figure 3–2.

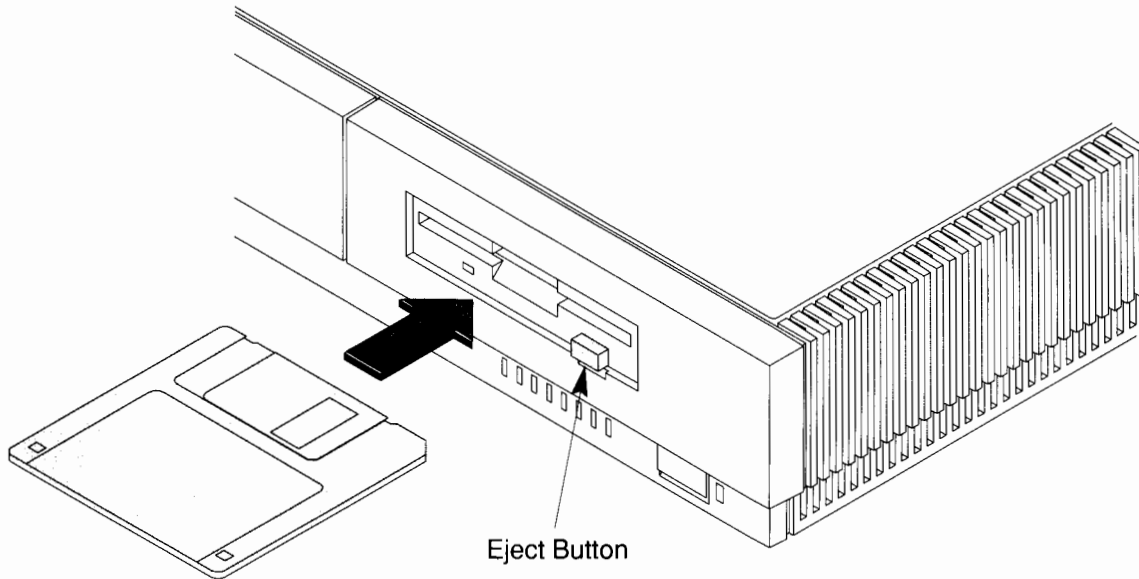


Figure 3–2. Inserting and Removing the Diskette

2. Push the diskette into the floppy drive until it clicks into place.
3. To remove the diskette, push the eject button on the front of the floppy drive (see Figure 3–2), then take out the diskette.

Device files

Device files are special files which tell your system what pathway through your systems hardware to use when communicating with a specific device and what kind of device it is.

For the floppy drive, you will use the device files `/dev/dsk/0s0` and `/dev/rdisk/0s0`. You use the device file `/dev/rdisk/0s0` to format or create a file system on a disk. You use the device file `/dev/dsk/0s0` to transfer data to and from the floppy disk, or to mount it as a file system.

Formatting a New Diskette

Use the following procedure to format a new floppy diskette:

1. Log in as **root**.
2. Insert the diskette into the floppy disk drive.
3. It is best to format with interleave 2 and format option 3. Execute **mediainit** with an interleave of 2 and format option 3 by entering the following:

```
mediainit -i 2 -f 3 /dev/rdisk/0s0 
```

NOTICE: Before using a new unformatted diskette, always format it with **mediainit**.

Building a File System on a New Diskette

The **newfs** command automates the use of the **mkfs** command in order to build a file system on the new disk. The command **newfs** looks up the type of disk on which a file system is being created in the disk description file **/etc/disktab** and calculates the appropriate parameters to use in calling **mkfs**. This call builds the file system and installs the necessary bootstrap programs in the initial 8192 bytes of the floppy disk.

On a drive that is at bus address **0** (the default) and is installed as an **hp9122**, you can build a file system on the diskette as follows:

1. Log in as **root**.
2. Create a file system on the diskette.

You can create the file system on the diskette in one of two ways:

- So that it *does not* allow the diskette to be used as swap and to have as much storage space available as possible.
- So that it *does* allow the diskette to be used as swap and to reduce the amount of storage space available.

Use the following command line to create a file system that has as much storage space available on the diskette as possible:

```
/etc/newfs -n /dev/rdisk/0s0 hp9122_noswap 
```


Use the following command line to create a file system that enables your diskette to be used for swap:

```
/etc/newfs -n /dev/rdisk/0s0 hp9122 
```

NOTICE: Using the `-n` option with `newfs` prevents the bootstrap programs from being installed on the diskette.

The general procedure for creating file systems is discussed in *System Administrator's Task Manual HP 9000 Series 700 Computers*.

Mounting a Floppy Diskette

This section describes how to mount the file system on a floppy diskette.

NOTICE: Before you can use a new diskette as a mounted file system, you must format it and build a new file system on it as described in *Formatting a New Diskette* and *Building a File System on a New Diskette*, earlier in this chapter.


CAUTION: If you wish to use a floppy disk as a mounted file system, you must mount the file system on the floppy disk every time you insert it into the drive. You must also unmount the file system on a floppy disk before you eject it from the drive. Failing to mount or unmount a disk may cause a system error condition, and may require rebooting the system.

Use the following procedure to mount the file system on a floppy diskette:

1. Insert the diskette into the floppy disk drive.
2. The file system on the diskette must be mounted under a pre-existing directory name. If the directory name does not exist, you must create it using the **mkdir** command. To create a directory named **/floppy** to use as a mount point for your floppy diskette, enter the following:


```
mkdir /floppy 
```

3. To mount the file system on the diskette, enter the following:

```
/etc/mount /dev/dsk/0s0 /floppy 
```

This tells the **mount** command to let the system know that a removable file system that is described by the device file **/dev/dsk/0s0** is to be attached at the directory **/floppy**. This directory becomes the name of the root of the newly-mounted file system.

4. Now you can access the diskette as you would any other file system. Enter the following command to change your working directory to the floppy diskette:

```
cd /floppy 
```

Unmounting a Floppy Diskette


This section describes how to unmount the file system on a floppy diskette.

NOTICE: Before you unmount the file system on a floppy diskette, you should make sure that your working directory is set to some directory other than the one under which the file system on the diskette was mounted.

CAUTION: If you wish to use a floppy disk as a mounted file system, you must mount the file system on the floppy disk every time you insert it into the drive. You must also unmount the file system on a floppy disk before you eject it from the drive. Failing to mount or unmount a disk may cause a system error condition, and may require rebooting the system.

Use the following procedure to unmount the file system on a floppy diskette:

1. Unmount the diskette's file system by entering the following:

```
/etc/umount /dev/dsk/0s0 
```

2. Press the eject button on the floppy drive. (See Figure 3-2.)
3. Remove the diskette from the floppy drive.

Ordering Information

To order Hewlett Packard micro flexible diskettes for use in your 3.5-inch floppy disk drive, use the following order numbers:

- HP-92192X High Density Micro Flexible Discs (1.44 MB Formatted Capacity) – box of ten diskettes
- HP-92192A Double-Sided Micro Flexible Discs (720 KB Formatted Capacity) – box of ten diskettes



Chapter 4

Using Your CD-ROM Drive

This chapter describes how to perform the following tasks with your CD-ROM drive:

- Inserting and removing a CD-ROM disk
- Loading and unloading a CD-ROM disk caddy
- Mounting a CD-ROM disk
- Unmounting a CD-ROM disk

NOTICES: When examples of user input are given in this chapter, enter them at the command-line prompt in an HP VUE terminal window or HP-UX shell.

Even though your CD-ROM drive has audio capability, Hewlett Packard does not support audio on CD-ROM drives at this time.

Inserting and Removing a CD-ROM Disk

This section describes how to open the disk caddy and insert or remove a CD-ROM disk.

To open the CD-ROM disk caddy, press inward on the two cover-locking tabs and lift the cover, as shown in Figure 4-1.

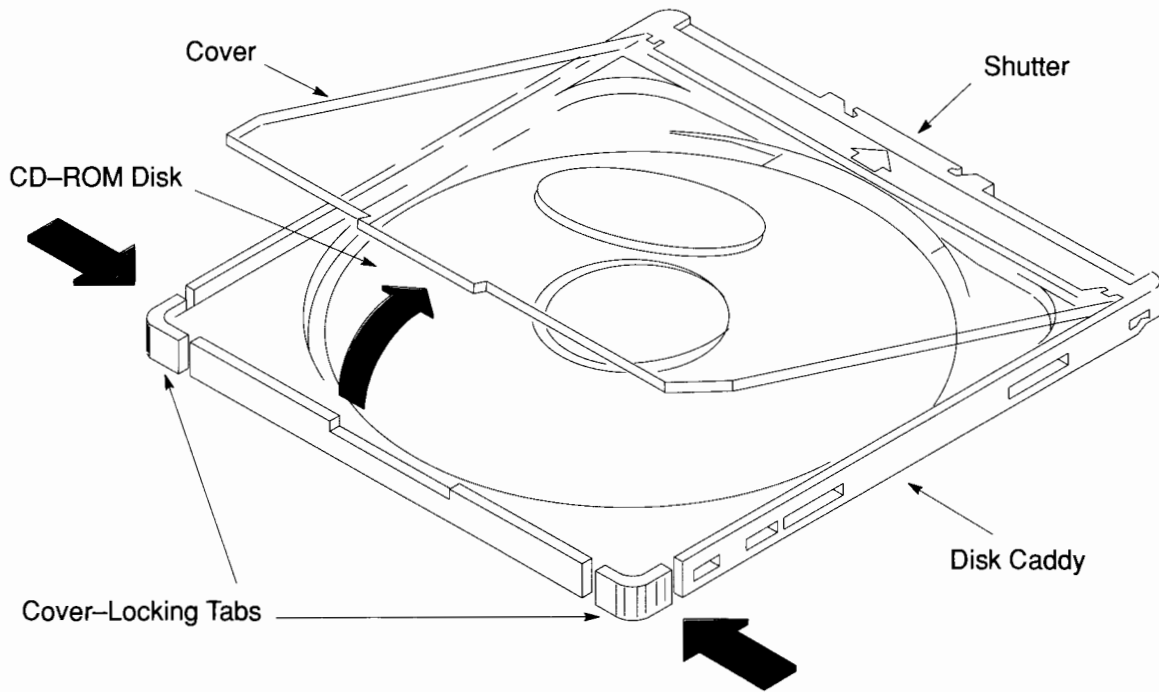


Figure 4-1. CD-ROM Disk and Disk Caddy

To insert a disk in the disk caddy, perform the following steps:

1. Open the disk caddy by pressing inward on the two cover-locking tabs and lifting the cover, as shown in Figure 4-1.
2. Hold the disk by the edges with the label side up.
3. Center the disk on the tray in the disk caddy.
4. Close the cover on the disk caddy, then push lightly on the cover until the cover-locking tabs click into place.



To remove a disk from the disk caddy, perform the following steps:

1. Open the disk caddy by pressing inward on the two cover-locking tabs and lifting the cover, as shown in Figure 4-1.
2. Lift the disk out of the disk caddy. Be careful to touch only the edges of the disk.

Loading and Unloading a CD-ROM Disk Caddy

Your workstation may have either the CD-ROM drive pictured in Figure 4-2 or the CD-ROM drive pictured in Figure 4-3. If your CD-ROM drive is the drive pictured in Figure 4-3, manually open the door on the front while loading a CD-ROM disk caddy and always keep the door closed when not loading or inloading a disk caddy.

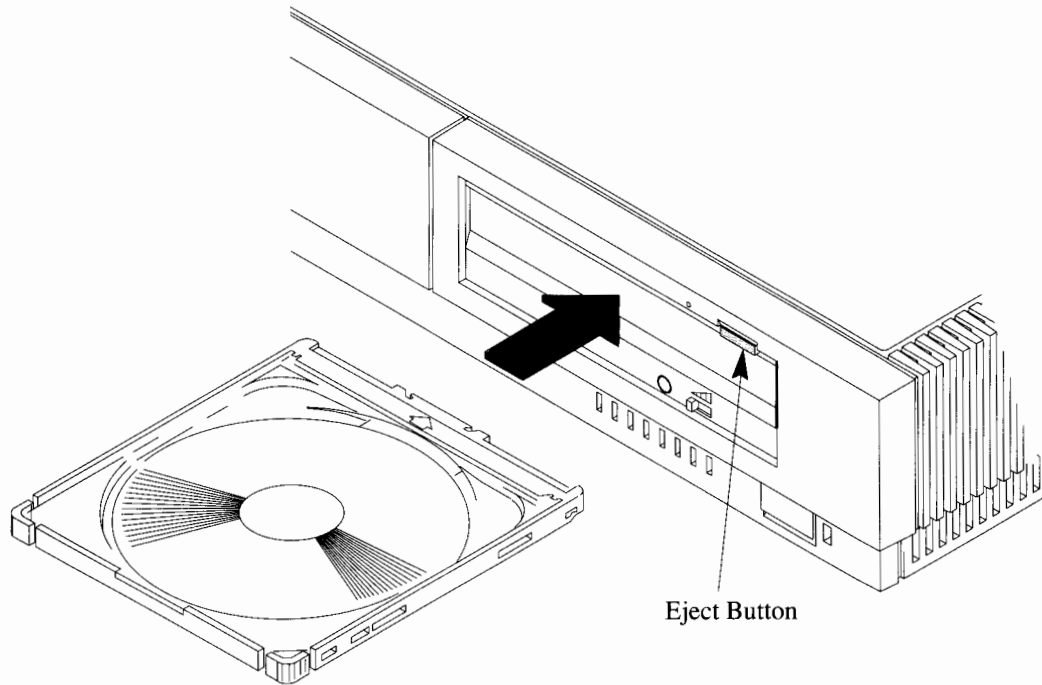


Figure 4-2. Loading a CD-ROM Disk-Caddy

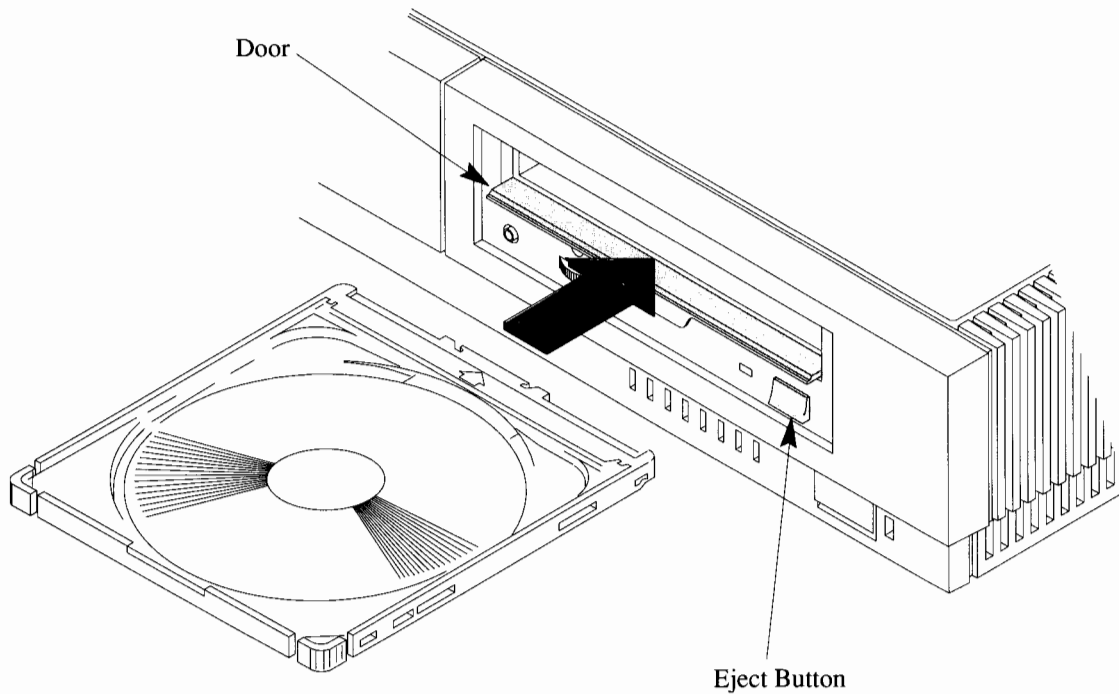


Figure 4-3. Loading a CD-ROM Disk Caddy (Drive with Door)

Perform the following steps to load a disk caddy into the CD-ROM drive:

1. Hold the disk caddy with the cover facing up and the arrow on the top of the caddy pointing toward the CD-ROM drive, as shown in Figures 4-2 and 4-3.
2. Push the disk caddy about one third of the way into the loading slot until you hear a click. The drive automatically pulls the disk caddy the rest of the way into the slot.

CAUTION: Do not force the disk caddy into the drive's loading slot, as this may damage the drive's loading mechanism.

NOTICE: You must mount the disk after loading it into the drive. Refer to the subsection *Mounting a CD-ROM Disk*, later in this chapter, for instructions about mounting a disk.

Perform the following steps to unload a disk caddy from the CD-ROM drive:

1. Press the eject button on the CD-ROM drive. (See Figures 4-2 and 4-3.)
2. Wait until the drive has fully ejected the disk caddy, and then slide it all the way out.

NOTICE: You must unmount the disk before unloading it from the drive. Refer to the subsection *Unmounting a CD-ROM Disk*, later in this chapter, for instructions about unmounting a disk.

If you eject the disk caddy and want to reload it, you must pull the caddy out more than 5 mm (0.2 in.) from the ejected position before reloading it.

Device files

Device files are special files which tell your system what pathway through your systems hardware to use when communicating with a specific device and what kind of device it is.

For the CD-ROM you use the device file `/dev/dsk/2s0`.

Mounting a CD-ROM Disk

This subsection describes how to mount a CD-ROM disk as a file system.


CAUTION: If you wish to use a CD-ROM disk as a mounted file system, you must mount the CD-ROM disk every time you load it into the drive. You must also unmount the CD-ROM disk every time you unload it from the drive. Failing to mount or unmount a disk may cause a system error condition and may also require rebooting the system.

Use the following procedure to mount a CD-ROM disk as a file system:

1. Insert the CD-ROM into the disk caddy, as described in *Inserting and Removing a CD-ROM Disk*, earlier in this chapter.
2. Load the disk caddy into the drive, as described in *Loading and Unloading a CD-ROM Disk Caddy*, earlier in this chapter.
3. The disk must be mounted under a pre-existing directory name. If the directory name does not exist, you must create it with the **mkdir** command. To create a directory named **/cdrom** to use as a mount point for your CD-ROM disk, enter the following:


```
mkdir /cdrom 
```

4. To mount the disk as a file system, enter the following:

```
/etc/mount /dev/dsk/2s0 /cdrom 
```

This tells the **mount** command to let the system know that a removable file system that is described by the device file **/dev/dsk/2s0** is to be attached at the directory **/cdrom**. This directory becomes the name of the root of the newly-mounted file system.

5. Now you can access the CD-ROM disk as you would any other mounted file system. Enter the following command to change your working directory to the CD-ROM disk:

```
cd /cdrom 
```

Unmounting a CD-ROM Disk


This section describes how to unmount a CD-ROM Disk.

NOTICE: Before you unmount a CD-ROM disk, make sure that your working directory is set to some directory other than the one under which the disk was mounted.

CAUTION: If you wish to use a CD-ROM disk as a mounted file system, you must mount the CD-ROM disk every time you load it into the drive. You must also unmount the CD-ROM disk every time you unload it from the drive. Failing to mount or unmount a disk may cause a system error condition and may also require rebooting the system.

Use the following procedure to unmount a CD-ROM disk:

1. Unmount the disk by entering the following:

```
/etc/umount /dev/dsk/2s0 
```

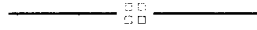
2. Press the eject button on the CD-ROM drive. (See Figures 4-2 and 4-3.)
3. Remove the disk caddy from the drive.

Ordering Information

To order additional disk caddies for use with your CD-ROM drive, use the following order number:

C2293-80001

CD-ROM Disk Caddy



Chapter 5

Using Your DDS–Format Tape Drive

This chapter describes how to use your DDS–format tape drive.

NOTICES: If the front of your DDS–format tape drive is labeled **DCLZ**, see the manual that came with the drive for operating instructions. Otherwise, follow the instructions in this chapter.

When examples of user input are given in this chapter, enter them at the command–line prompt in an HP VUE terminal window or HP–UX shell.

This chapter describes how to perform the following tasks with your DDS–format tape drive:

- Setting the write–protect tab on a data cassette
- Loading and unloading a data cassette
- Creating device files for your DDS–format tape drive
- Using your DDS–format tape drive
- Cleaning your tape drive
- LED indicators
- LED warning conditions
- Cleaning the tape heads

Setting the Write-Protect Tab on a Data Cassette

You can only store information on a data cassette when the write-protect tab is in the *write* position. So, before trying to write to the data cassette, make sure that the write-protect tab is in the *write* position, as shown in Figure 5-1.

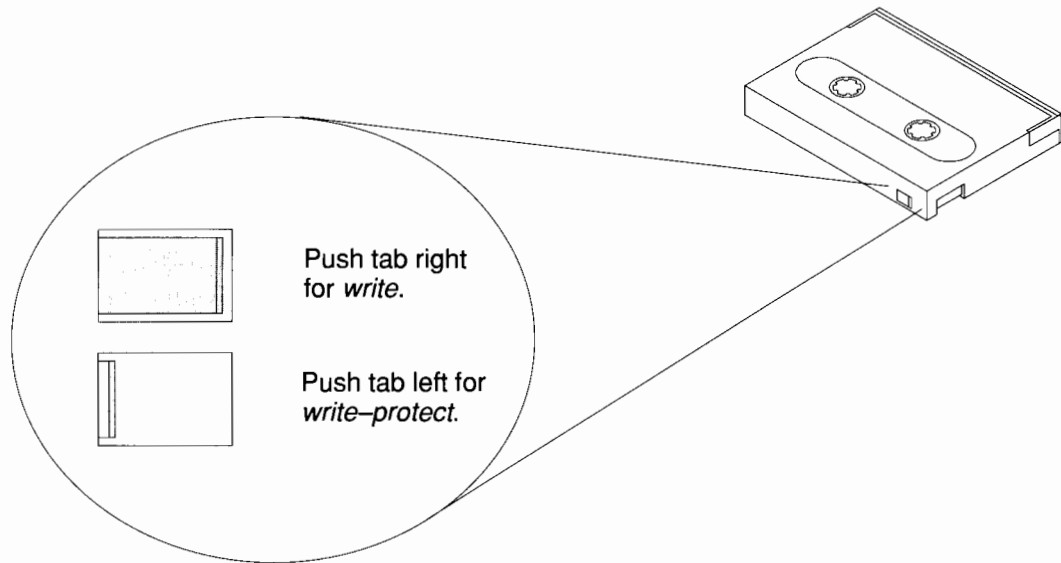


Figure 5-1. Setting the Write-Protect Tab on a DDS-Format Tape

To protect information on a data cassette from being overwritten, set the write-protect tab to the *write-protect* position, as shown in Figure 5-1.

Loading and Unloading a Data Cassette

Follow these steps to load and unload a data cassette from the DDS-format tape drive:

1. Insert the data cassette into the drive, as shown in Figure 5-2.

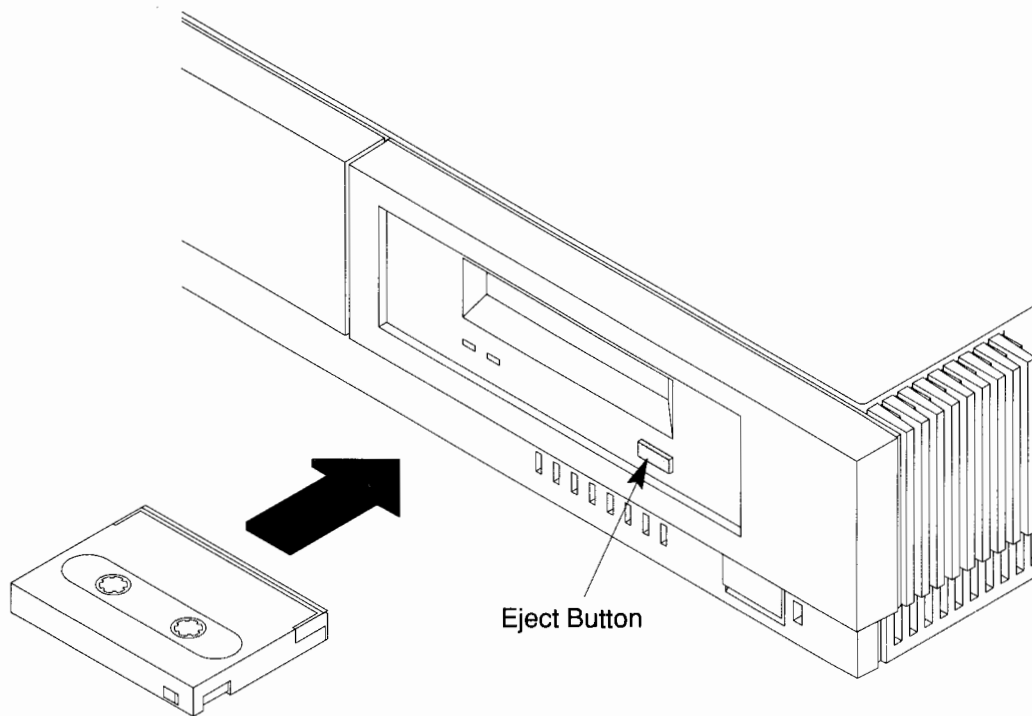


Figure 5-2. Loading a Data Cassette

- 2.** Push the data cassette about three quarters of the way into the drive. The drive automatically pulls the data cassette the rest of the way in and the door will close. When the LEDs on the front of the drive stop flashing, the drive has loaded the data cassette.

- 3.** To remove the data cassette, press and release the eject button on the front of the drive, as shown in Figure 5-2. The LEDs on the drive flash on and off. Ten to twenty seconds later, the data cassette slides partway out of the drive.

- 4.** Remove the cassette from the drive.

Using Your DDS-Format Tape Drive

This section describes how to write to, restore data from, and get a file listing from your DDS-format tape drive using the HP-UX command **ftio**.

This section assumes you created your device files as described in the previous section. If you named your device files differently, please substitute the correct file name where appropriate.

The examples in this section use the device file which causes the tape drive to rewind on close.

For additional information on **ftio**, enter the following:

```
man ftio 
```

You may also communicate with the DDS-format tape drive with the **tar**, **cpio**, **mt** and **fbbackup** commands. For more information on these commands, enter the following:

```
man command 
```

Device files

Device files are special files which tell your system what pathway through your systems hardware to use when communicating with a specific device and what kind of device it is.

Your system has two device files for your tape drive, **/dev/rmt/0m** and **/dev/rmt/0mn**. When you use the **/dev/rmt/0m** device file, the tape drive rewinds the data cassette every time the system releases the drive from its control. If you use the **/dev/rmt/0mn** device file, the drive does not rewind the data cassette. It stays where it was left after the last operation.

The examples in this chapter use the device file **/dev/rmt0m**, which causes the drive to rewind the data cassette.

Writing to a Data Cassette

Use the following instructions to copy data to the tape drive:

1. Check that the write-protect tab on a data cassette is in the *write* position.
2. Load the data cassette into the tape drive.
3. Enter the following command line to write to the tape:

```
ftio -O /dev/rmt/0m pathname RETURN
```

where *pathname* is the pathname of the file or directory which you want to write to the tape.

Restoring Files from a Data Cassette

Use the following instructions to restore data from a data cassette:

1. Load the data cassette into the tape drive.
2. Enter the following command line to restore data:


```
ftio -I /dev/rmt/0m pathname RETURN
```

where *pathname* is the pathname of the file or directory which you want to restore from the tape. If *pathname* is not specified, everything on the data cassette is restored.

List the Files on a Data Cassette

Use the following instructions to list the files on a data cassette.

1. Load the data cassette into the tape drive.
2. Enter the following command line to receive a file listing of the data cassette;

```
ftio -It /dev/rmt/0m 
```

LED Indicators

This section shows the location of the LED indicators and describes the codes which are displayed.

The front panel has two colored LEDs, the Cassette LED and the Drive LED. Figure 5-3 shows their location.

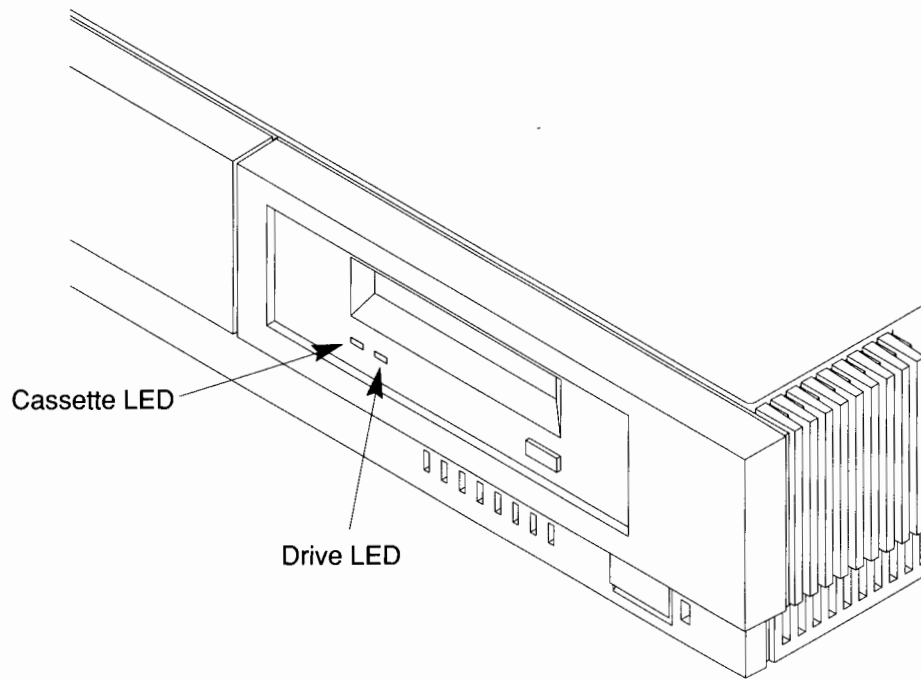


Figure 5-3. DDS-Format Tape Drive LED Indicators

On the LEDs, green indicates normal operation, and amber indicates a warning condition. Pulsing shows activity between the drive and the SCSI bus.

If the Cassette Light (left LED) shows steady amber, this indicates that the cassette is write-protected. If the Drive Light (right LED) shows steady amber, this indicates a fault condition. Table 5-1 lists the LED codes and their meanings.

Table 5-1. LED Display Codes

Read/Write States		
Cassette	Drive	Meaning
		Cassette (un)loading
		Cassette loaded/online
		Cassette loaded/activity
		Cassette loaded/offline
Write-Protect States		
		Cassette (un)loading
		Cassette loaded/online
		Cassette loaded/activity
		Cassette loaded/offline
Error States		
		Media wear (caution)
		High humidity
		Self-test (normal)
		Self-test (failure)

Key	
	OFF
	Green
	Amber
	Pulsing Green
	Pulsing Amber

LED Warning Conditions

This section describes actions to take if the LEDs indicate a warning condition.

High Humidity

If the LEDs display the high humidity signal, the humidity is too high and the drive does not perform any operations until the humidity drops.

Self-Test (Failure)

If the LEDs display the self-test (failure) signal, a fault was diagnosed during the self tests. Note the pattern of the pulses and contact your local service representative.

Media Wear (Caution)

Hewlett-Packard DDS drives continually monitor the number of errors they have to correct when reading and writing to a tape to determine tape wear and tape head cleanliness. If excessive tape wear or dirty tape heads are suspected, the drive warns you by displaying the Media Wear (Caution) signal on the LED indicators.

If the LED indicators on your DDS-format drive display the Media Wear (Caution) condition, follow this procedure:

1. Check the system console for any tape error messages. A hard error during a read or write operation may have occurred.
2. Clean the heads with a cleaning cassette (HP92283K) as described in the *Cleaning the Tape Heads* section, later in this chapter.
3. Repeat the operation you performed when the Media Wear (Caution) signal displayed. If the Media Wear (Caution) signal still displays, then the data cassette should be replaced.
4. If you are performing a backup from disk to tape, discard the data cassette and back up your files using a new data cassette.
5. If you are performing a restore from tape to disk, complete the restore, then discard the data cassette and back up the files to a new data cassette.

Media Life

Hewlett-Packard DDS data cassettes are currently specified to 2000 passes over any part of the tape under optimal environmental conditions (50% Relative Humidity, 22 degrees C). Taking into account the fact that during a tape operation any one area of the tape may have multiple passes over the heads, this translates into approximately 200 to 300 backups or restores.

Under certain conditions, the life of your data cassette is less. Replace your data cassettes after 100 backups or restores if your operating conditions meet any of the following criteria:

The relative humidity in your operating environment is consistently less than 50%.

You know that the backup software you are using makes multiple passes over sections of the tape during backups or restores.

You notice that when you do backups and restores the tape stops and starts frequently.

Cleaning the Tape Heads

You should clean the heads of your tape drive after every 25 hours of tape drive use or if the Media Wear (Caution) signal is displayed on the LED indicators.

NOTICE: Only use HP Cleaning Cassettes (HP92283K) to clean the tape heads. Do not use swabs or other means of cleaning the tape heads.

Follow this procedure to clean the tape heads:

1. Insert the cleaning cassette into the drive. The tape automatically loads the cassette and cleans the heads. At the end of the cleaning cycle, the drive ejects the cassette.
2. Write the current date on the label on the cleaning cassette so that you know how many times you have used it. Discard the cleaning cassette after you have used it 25 times.

Ordering Information

To order Hewlett Packard data cassettes and cleaning cassettes for use in your DDS-format tape drive, use the following order numbers:

HP92283A	60 Meter DDS Data Cassette – box of five
HP92283K	Cleaning Cassette – package of two

NOTICE: Only use data cassettes labeled as DDS (Digital Data Storage) cassettes. Never use audio cassettes labeled DAT (Digital Audio Tape) in your DDS-format drive.



Chapter 6

Solving Problems

This chapter contains information to help you determine what's wrong with your system when you have problems. It contains information about the following:

- Common problems and solutions
- LED error codes
- Dealing with a boot failure
- Running the system verification tests

If you have a problem that isn't listed in this chapter, or if your problem persists, contact your designated service representative. When calling for service, always have your system's model number and serial number ready.

Common Problems and Solutions

The tables in this section list common problems you may encounter with your workstation. The tables also tell you what to do to help solve the problems.

Table 1-1. Problems Powering Up the System

Problem	Solution
<p>The power LED doesn't light.</p> <p>The power LED lights, but the screen is blank or flickers.</p>	<p>Make sure all ac power cables are connected securely to the system.</p> <p>Make sure the power cord is plugged into a working ac outlet.</p> <p>Make sure the power switch is set to the 1 (ON) position.</p> <p>Turn the brightness control on the monitor clockwise. If the screen is still blank, turn off the system and monitor power switches. When the system is completely powered off, check the video cable connections.</p> <p>Note the pattern of the LEDs on the front panel of the system unit. Check the LED error codes in <i>LED Error Codes</i>, later in this chapter.</p>
<p>If problems persist, contact your system administrator or call your designated service representative.</p>	

Table 1-2. Problems with Loading and Booting the Operating System

Problem	Solution
<p>The power LED is lit, and text appears on the screen, but more than two minutes have passed with no sign of system activity.</p> <p>The system stops or hangs while booting.</p>	<p>Make sure that all SCSI devices are set to the proper SCSI ID. (See Appendix A for default SCSI ID settings.)</p> <p>Check that all SCSI devices are correctly cabled. Check that the SCSI bus is correctly terminated. (See Appendix A for information on SCSI cabling and termination.)</p> <p>Note the pattern of the LEDs on the front panel of the system unit. Check the LED error codes in <i>LED Error Codes</i>, later in this chapter.</p> <p>Follow the instructions in <i>Dealing With a Boot Failure</i>, later in this chapter.</p> <p>Note the pattern of the LEDs on the front panel of the system unit. Check the LED error codes in <i>LED Error Codes</i>, later in this chapter.</p>
<p>If problems persist, contact your system administrator or call your designated service representative.</p>	

Table 1-3. Problems with the 802.3 Network

Problem	Solution
Can't reach other systems on the network. Applications that rely on the network won't run.	<p>Check the network connector on the back of the system unit. Make sure that the cable is fastened securely to the appropriate connector.</p> <p>Make sure that the LAN jumpers are set correctly for your installation. (See <i>Changing the 802.3 LAN Configuration</i> in Appendix B.)</p>
If problems persist, contact your system administrator or call your designated service representative.	

Table 1-4. Problems Using the Floppy Disk Drive

Problem	Solution
The floppy drive does not respond to commands.	<p>Re-enter the commands and make sure that you have typed them correctly.</p> <p>Make sure that you specified the device file <code>/dev/dsk/0s0</code> for commands that require a device file name.</p> <p>Follow the instructions in the section entitled <i>Running the System Verification Tests</i>, later in this chapter, to verify that the floppy drive is functioning properly.</p>
If problems persist, contact your system administrator or call your designated service representative.	

Table 1-5. Problems Using the CD-ROM Drive

Problem	Solution
The CD-ROM drive does not respond to commands.	<p>Re-enter the commands and make sure that you have typed them correctly.</p> <p>Make sure that you specified the device file <code>/dev/dsk/2s0</code> for commands that require a device file name</p> <p>Follow the instructions in the section entitled <i>Running the System Verification Tests</i>, later in this chapter, to verify that the CD-ROM drive is functioning properly.</p>
If problems persist, contact your system administrator or call your designated service representative.	



Table 1-6. Problems Using the DDS-Format Tape Drive

Problem	Solution
<p>The DDS-format tape drive does not respond to commands.</p>	<p>Re-enter the commands and make sure that you have typed them correctly.</p> <p>Make sure that you specified the correct device file name for commands that require a device file name</p> <p>Make sure you supplied the correct information when using the mknod command to create the device file.</p> <p>Make sure the write-protect tab is set to <i>write</i> if you are trying to copy data to a data cassette</p> <p>Follow the instructions in the section entitled <i>Running the System Verification Tests</i>, later in this chapter, to verify that the tape drive is functioning properly.</p>
<p>If problems persist, contact your system administrator or call your designated service representative.</p>	

Table 1-7. Problems with System Memory

Problem	Solution
<p>When booting the system, LED error codes that indicate memory errors are displayed on the front panel LEDs.</p>	<p>Check that the memory slots are configured correctly. (See <i>Installing Additional Memory</i> in Appendix A.)</p>
<p>If problems persist, contact your system administrator or call your designated service representative.</p>	

LED Error Codes

This section contains information about the error codes displayed by the LEDs on the system's front panel.

If an error occurs during the power-up diagnostics tests, the diagnostics use the front panel LEDs to display a code for the failing component.

Figure 1-1 shows the location of the system unit's front panel LEDs. There are nine LEDs on the front panel. The green Power LED indicates that the system is powered up. The amber LEDs labeled 1 through 8, right to left, indicate system status and error codes.

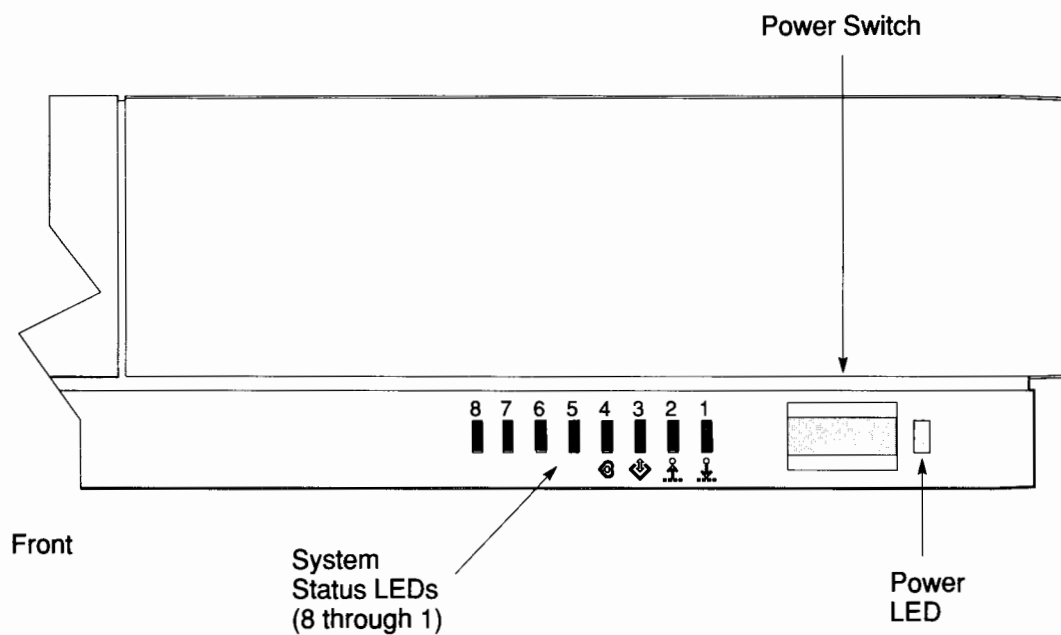






















Figure 1-1. Front Panel LEDs

Table 1-8 shows the LED error codes as they appear on the front panel display. Use these LED codes to determine the failing component.

Table 1-8. LED Error Codes

LED Display	Meaning
8 7 6 5 4 3 2 1 	CPU Board Error
8 7 6 5 4 3 2 1 	CPU Board Error
8 7 6 5 4 3 2 1 	CPU Board Error
8 7 6 5 4 3 2 1 	CPU Board Error
8 7 6 5 4 3 2 1 	Memory SIMMS in Slots 0 and 2 are not of equal size
8 7 6 5 4 3 2 1 	Memory SIMMS in Slots 4 and 6 are not of equal size
8 7 6 5 4 3 2 1 	Memory SIMMS in Slots 1 and 3 are not of equal size
8 7 6 5 4 3 2 1 	Memory SIMMS in Slots 5 and 7 are not of equal size
8 7 6 5 4 3 2 1 	Memory in Slots 0 and 2 is not equal in size to memory in Slots 4 and 6
8 7 6 5 4 3 2 1 	Memory in Slots 1 and 3 is not equal in size to memory in Slots 5 and 7
8 7 6 5 4 3 2 1 	Memory SIMMS in Primary Set are smaller than SIMMS in Secondary Set
8 7 6 5 4 3 2 1 	PDC ROM Checksum Error
8 7 6 5 4 3 2 1 	Memory Slot 0 error
8 7 6 5 4 3 2 1 	Memory Slot 1 error
8 7 6 5 4 3 2 1 	Memory Slot 2 error
8 7 6 5 4 3 2 1 	Memory Slot 3 error
8 7 6 5 4 3 2 1 	Memory Slot 4 error
8 7 6 5 4 3 2 1 	Memory Slot 5 error
 = LED On  = LED Either On or Off	

(Continued)


Table 1–8. LED Error Codes (Cont.)

LED Display	Meaning
8 7 6 5 4 3 2 1 □ ■ ■ □ □ ■ ■ □	Memory Slot 6 error
□ ■ ■ □ □ ■ ■ ■	Memory Slot 7 error
□ ■ ■ ■ ■ ■ □ ■	No memory found
■ □ □ □ □ □ □ □	Unknown I/O device
■ □ □ □ □ □ □ ■	Error while trying to boot from SCSI device
■ □ □ □ □ □ ■ □	Error while trying to boot from LAN
■ □ □ □ □ □ ■ ■	Error trying to access console keyboard
■ □ □ □ □ ■ □ □	Error while trying to access serial console device, Port 1
■ □ □ □ □ ■ □ ■	Error while trying to access serial console device, Port 2
■ □ □ □ □ ■ ■ □	Error while trying to access parallel port
■ □ □ □ □ ■ ■ ■	Error while trying to access graphical console device
■ □ ■ ■ □ □ □ ■	Error reading from Stable Storage
■ □ ■ ■ □ □ ■ □	Unexpected interrupt during PDC execution
■ □ ■ ■ □ □ ■ ■	No working console found
■ □ ■ ■ □ ■ □ □	HPMC handling initiated
■ □ ■ ■ □ ■ □ ■	HPMC due to cache error
■ □ ■ ■ □ ■ ■ □	HPMC due to memory error
■ □ ■ ■ □ ■ ■ ■	HPMC due to bus error
■ □ ■ ■ ■ □ □ □	Nested HPMC occurred
■ □ ■ ■ ■ □ □ ■	Error while writing to EEPROM

Dealing with a Boot Failure

If your usual boot device (typically a disk) is not responding as it should, you must attempt to boot from the disk (or another boot device) by selecting it manually.

To boot a device manually, follow these steps:

1. Turn off the power to the workstation for a few seconds. Then, turn the power back on.
2. Press 

In a few seconds, this message appears:

```
Terminating selection process.
```

A short time later, this message appears:

```
Searching for potential boot devices.
```

```
To terminate search, press and hold the ESCAPE key.
```

```
Device Selection  Device Path  Device Type and Utilities  
-----
```

Your workstation is now searching for devices that may hold file systems from which it can boot HP-UX. As they are found, they appear in a list, similar to the following example:

P0	scsi.6.0	QUANTUM PD210S
P1	scsi.5.0	Quantum PDS210S
P2	scsi.2.0	TOSHIBA CD-ROM DRIVE:XM
P3	lan.123456-789abc	homebase

This process may take several minutes. You can terminate the search at any time by pressing **ESC**.


If no disk devices are listed, then your workstation is failing to communicate with its disks. Recheck the SCSI connections and try again. If there are still no devices listed, there is a serious problem. Contact your designated service representative for assistance.

When the search ends, the following list of actions appears:

b)	Boot from specified device
s)	Search for bootable devices
a)	Enter boot administration mode
x)	Exit and continue boot sequence
?)	Help

Select from menu:

3. If the search locates a disk, attempt to boot from it by entering the **b** (boot) command and a device selection number from the list. For example, if a SCSI disk is listed as item **P0** (as in the previous example list), enter the following:

Select from menu: **b P0** 


It may be several seconds before the boot messages begin to appear on the screen. You may hear sounds coming from the disk drive and see a sequence of changing patterns on the LED display.

4. If your workstation still fails to boot, there is either something wrong with the file system or with the hardware. If you suspect a file system failure, see *Dealing With File System Failures*, later in this chapter. If you think that something is wrong with the hardware, contact your designated service representative.

Running System Verification Tests

This section describes how to run the system verification tests.

Before you run the tests, you must determine what revision of HP-UX your workstation is using. Enter the following:

```
uname -r 
```

The system responds with a line of information similar to the following:

```
A.08.07N
```

If the number displayed is 8.05, follow the instructions in the next subsection, entitled *Verifying Your System Operation with HP-UX Version 8.05*.

If the number displayed is 8.07, follow the instructions in the subsection entitled *Verifying Your System Operation with HP-UX Version 8.07*, later in this chapter.

Verifying Your System Operation with HP-UX Version 8.05

With HP-UX version 8.05, you must use the Extended Self Test (EST) to verify your system. EST tests all the devices on the system to ensure that all drives are installed correctly and that the system is capable of running HP-UX.

To run EST, perform the following steps:

1. Shut down HP-UX.

NOTICE: If you are already at the boot administration level, you do not need to shut down; skip this step and begin with Step 2.

If you are running HP-UX under HP VUE, shut down your system by performing the shutdown procedure described in Chapter 2 of this manual.

If you are running HP-UX without HP VUE, shut down your system by typing the following command:

```
# /etc/shutdown -h
```


You must have superuser privileges to use the `/etc/shutdown` command. If you do not have superuser privileges, contact your system administrator.


2. Power off the workstation, using the power switch on the front of the workstation.

WARNING: Do not power off your workstation without first shutting down HP-UX. Powering off with HP-UX still running could damage the data on the disks associated with your workstation.

3. Power on the workstation. The self test runs automatically. Within a few minutes the following message appears on the screen:

```
Selecting a system to boot.  
To stop selection process, press and hold the ESCAPE  
key.....
```

As soon as the message appears, press and hold the  key.

4. Release  as soon as the following message displays:

```
Selection process stopped.
```

A menu of action choices displays, along with a list of all the disk drives and tapes available on the system.

The menu and prompt look like this:

```
b) Boot from specified device  
s) Search for bootable device  
a) Enter Boot Administration mode  
x) Exit and continue boot sequence  
?) Help  
Select from menu:
```

5. Type the following command at the `Select from menu:` prompt to call up the ISL utility:

```
Select from menu: b scsi,x ipl
```

where x is the address of your root/boot device. In most cases, this is 6.

The `ISL>` prompt then displays.

6. If your workstation has a CD-ROM, insert the test media that came with it. If your workstation has a floppy drive or DDS-format tape drive, insert a writeable scratch disk or tape.
7. Initiate the EST program by typing the following command:

```
ISL> hpux boot disc(;2)/etc/diag/est
```

The program runs automatically and takes about ten minutes to complete.

NOTICE: At one point while EST is running, the screen may flash several times. There may also be times when the screen remains blank for awhile. This is normal. Let EST continue to run for at least ten minutes unless an error message displays.

EST has completed when the following message appears:

```
End of Pass 1:
```

8. If an error message displays, stop EST by *immediately* pressing the following:



The `DEX>` prompt displays. Report the error message to your service representative.

If EST completes with no errors, HP-UX is configured correctly to include your CD-ROM drive. The following messages display when EST is complete:

```
End of Pass 1:
```

```
Selecting a system to boot.
```

```
To stop selection process, press and hold the ESCAPE  
key.....
```

Do not stop the selection process; allow HP-UX boot automatically.

Verifying Your System Operation with HP-UX Version 8.07

HP-UX Version 8.07 uses a new diagnostics product called SupportWave. SupportWave contains the Support Tools Manager so that you can verify your system operation.

As a superuser (logged in as “root”), you can access the Support Tools Manager while in a terminal window. If you are using HP-VUE as your interface, you can also access the Support Tools Manager through the `sys_admin` directory.

Two interfaces are available with the Support Tools Manager: a command line interface (accessed through the `cstm` command) and the graphical user interface (accessed through the `xstm` command).

In a terminal window, to invoke the command line interface, type the following at the # prompt:


```
# cstm 
```

The following screen appears:

```
*****
*****
*****          SUPPORT TOOLS MANAGER          *****
*****
*****          Command Line Interface          *****
*****
*****          Version  A.00.09                *****
*****
*****          Part Number  B2478-10002        *****
*****
*****          (C) Copyright Hewlett Packard Co. 1991 *****
*****          All Rights Reserved            *****
*****
*****
*****
System mapping in progress . . .
CSTM>
```

At the `CSTM>` prompt you can enter several commands. To see what commands are available, type the **help** command.

To verify the system operation, type the following at the `CSTM>` prompt:

```
CSTM> verify all 
```

The following messages appear:

```
Verification has started on device (CPU).  
Verification has started on device (FPU).  
Verification has started on device (0/0/0).  
Verification has started on device (2/0/1.5.0).  
Verification has started on device (2/0/1.6.0).  
Verification has started on device (2/0/2).
```

```
CSTM>Message from (0/0/0):
```

```
This graphics test displays a number of graphics images on the  
screen of the graphics device being tested. If an X server is not  
currently running on that display, X Windows will be started and  
run for the duration of the test.
```

```
CAUTION: This test will fail if any portion of the test window is  
modified or overlaid in any way.
```

```
NOTE: If a VUE login screen is currently displayed on the  
monitor, the test will wait until someone logs in.  
(Type 'R' for Ready, Type 'S' for Skip) [R] >>
```

When you see the `>>` prompt shown above, type the following:

```
r 
```

The following messages and a graphics test window appear:

```
Verification of (2/0/1.5.0) has completed. Result status - (Success).  
Verification of (2/0/1.6.0) has completed. Result status - (Success).  
Verification of (CPU) has completed. Result status - (Success).  
Verification of (FPU) has completed. Result status - (Success).  
Verification of (2/0/2) has completed. Result status - (Success).  
Verification of (0/0/0) has completed. Result status - (Success).
```

To return to the CSTM> prompt, press the following key:



To exit the Support Tools Manager enter the following:

```
CSTM> quit 
```

If any tests failed, further diagnosis is necessary by qualified service personnel.



Appendix A

SCSI Connections

This appendix provides the following information about connecting SCSI devices to HP Apollo 9000 Series 700 Model 705 and Model 710 systems:

- SCSI restrictions
- Connecting to the SCSI port
- Determining SCSI bus length
- Assigning SCSI device IDs

NOTICES: When using external SCSI cabling, you must use a SCSI terminator at the last external device on the SCSI bus. We use terminators sold under the K2291 product number to insure reliable operation of the system.

If there are no external SCSI devices attached to the system, you must still terminate the SCSI bus. The terminator that was shipped with your workstation should be connected to the external SCSI connector on the rear of the system unit.

SCSI Restrictions

The following conditions apply to HP Apollo 9000 Series 700 Model 705 and Model 710 systems:

- Only SCSI cables approved by HP Apollo should be used with the Model 705 or Model 710 and any connected SCSI devices. Always use the shortest possible cable(s) for your configuration.

CAUTION: SCSI cables approved by HP Apollo (listed in Table A-1 and Table A-2) are designed to function within the SCSI tolerances for HP Apollo devices. Use of other cables may result in significant problems with system operation.

- If the system has internal hard disk drives, a floppy disk, a CD-ROM drive, or a DDS-Format tape drive, you must count them as SCSI devices.
- HP-UX supports only **one** of each removable media drive type per system.

Connecting to the SCSI Port

The external SCSI port is identified by its high density connector (SCSI-II compatible). A SCSI cable connects to this port with a high density thumb screw connector, as shown in Figure A-1.

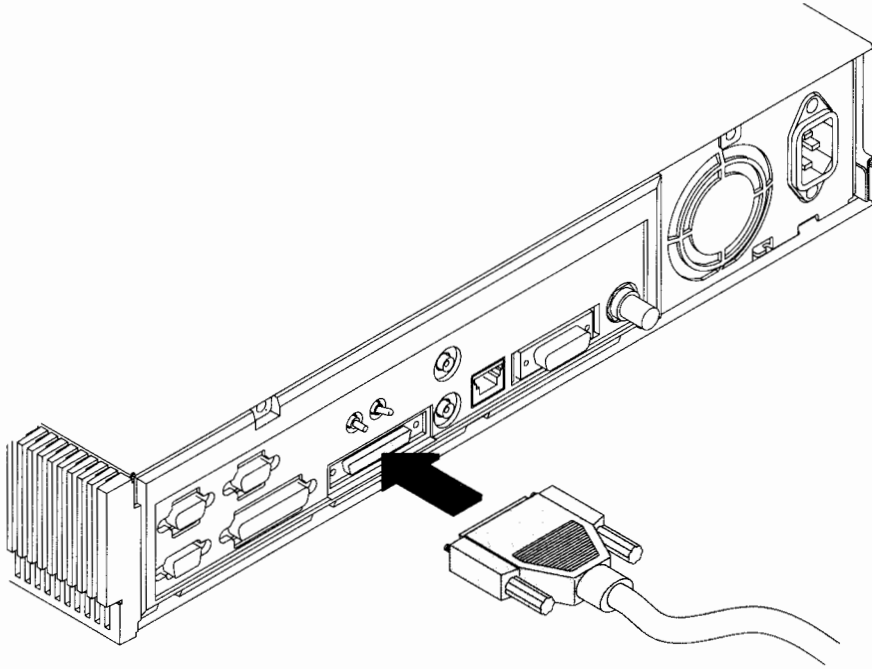


Figure A-1. SCSI Port with Threaded Standoffs

Table A-1 shows the external SCSI cables to order to connect the Model 705 and Model 710 systems to HP Apollo SCSI peripheral storage devices.

NOTICE: All of the listed SCSI devices ship without cables. You must order the correct cables (as listed in tables A-1 and A-2) from Hewlett-Packard.

The last device connected to the SCSI bus must be terminated with a SCSI terminator. All of the devices listed ship without terminators. If you do not already have a SCSI terminator, you must order terminator K2291 from Hewlett-Packard.

Table A-1. SCSI Cables for Connecting Model 705/710 Systems to Their SCSI Peripherals

Connecting From ...	To These SCSI Devices ...	Use These Cables:
Model 705/710 System SCSI Port with threaded standoffs	<div style="display: flex; align-items: center; justify-content: center;"> <div style="font-size: 3em; margin-right: 10px;">{</div> <div style="text-align: center;"> C2213A (with options) C1701A C1512A A1999A C1700A </div> <div style="font-size: 3em; margin-left: 10px;">}</div> </div>	K2296 — 0.9 meter (3 feet) K2297 — 1.5 meter (5 feet)

NOTICE: Always use the shortest cable possible for your particular installation.

Table A-2 shows the cables to use if you are daisy-chaining SCSI devices to each other.

NOTICES: All of the listed SCSI devices ship without cables. You must order the correct cables (as listed in tables A-1 and A-2) from Hewlett-Packard

The last device connected to the SCSI bus must be terminated with a SCSI terminator. All of the devices listed ship without terminators. If you do not already have a SCSI terminator, you must order terminator K2291 from Hewlett-Packard.

Table A-2. SCSI Cables for Daisy-Chaining SCSI Peripherals

Connecting These SCSI Devices . . .	To These SCSI Devices . . .	Use These Cables:			
C1700A C2213A (with options) C1701A C1512A A1999A	<table style="border: none; margin: auto;"> <tr> <td style="font-size: 3em; vertical-align: middle;">{</td> <td style="padding: 0 10px;"> C1700A C2213A (with options) C1701A C1512A A1999A </td> <td style="font-size: 3em; vertical-align: middle;">}</td> </tr> </table>	{	C1700A C2213A (with options) C1701A C1512A A1999A	}	92222A — 0.5 meter (1.6 feet) 92222B — 1.0 meter (3.2 feet) 92222C — 2.0 meter (6.6 feet)
{	C1700A C2213A (with options) C1701A C1512A A1999A	}			

NOTICE: Always use the shortest cable possible for your particular installation.

With the information from Table A-1 and Table A-2, use Table A-3 to determine the total length of the SCSI cabling used for your system and its SCSI peripheral storage devices.

Determining SCSI Bus Length

This section helps you to determine the total length of the SCSI bus including the system unit, external SCSI devices, and SCSI interconnect cables.

Follow these instructions to calculate your total SCSI bus length, using Table A-3.

1. Find all of your external SCSI devices in the first column. In the third column, write the SCSI bus lengths (from the second column) that correspond to your devices.

NOTICE: In the third column, the length for the Model 705/710 System Unit is already listed. This number must always be used for the system unit whether or not it has internal drives installed.

2. In the fourth column, write down the lengths of the SCSI interconnect cables you are using for your installation. (Cable lengths are listed in Tables A-1 and A-2.)

3. Add up all of the numbers in the third column and write that number on the subtotal line at the bottom of the column. Do the same for the fourth column.

4. Add the subtotals together and write the total in the *Total SCSI Bus Length* box.

NOTICE: The total length of the SCSI bus must not exceed 6 meters (19.6 feet). If the number you write for *Total SCSI Bus Length* is greater than 6 meters (19.6 feet), try configuring your installation with shorter cables.

If you have problems, call your designated service representative.

Table A-3. SCSI Bus Length Worksheet

SCSI Device	Internal SCSI Bus Length meters (feet)	Device Internal Length meters (feet)	External Cable Length meters (feet)
Model 705/710 System Unit	0.5 (1.5)	0.5 (1.5)	_____
C1701A	0.3 (1)	_____	_____
C1512A	0.9 (3)	_____	_____
C2213A	1.5 (4.9)	_____	_____
A1999A	0.3 (1)	_____	_____
C1700A	1.1 (3.6)	_____	_____

Subtotals: _____ + _____

Total SCSI Bus Length =

(Total SCSI bus length not to exceed total of 6 meters [19.6 feet])

Assigning SCSI Device IDs

Use Table A-4 to assign a device ID to each SCSI device connected to your workstation.

Table A-4. Model 705/710 SCSI Device IDs

SCSI Device Drives	Device ID (Address) Number (Only 0 through 6 Available)	
	Internal	External
Internal System Drives:		
System SCSI Drive(s)		
1st Winchester Drive (if present, uses ID No.6)	_____	N/A
2nd Winchester Drive (if present, uses ID No. 5)	_____	N/A
Floppy Disk Drive (if present, uses ID No. 0)	_____	N/A
CD-ROM Drive (if present, uses ID No. 2)	_____	N/A
4mm DDS Tape Drive (ID No. 1)	_____	N/A
External Device Drives:		
External SCSI HP 6000 Series: 660A Disk Sub-System, Product No. C12213A		
1st Winchester Drive (ID. No. 4)	N/A	_____
2nd Winchester Drive (ID No. 3)	N/A	_____
3rd Winchester Drive (ID No. 0)	N/A	_____
4mm DDS Tape Drive (ID No. 3)	N/A	_____
Magneto-Optical Drive (ID No. 0)	N/A	_____
600MB CD-ROM (ID No. 2)	N/A	_____
External SCSI HP Standalone		
4mm DDS Tape Drive (ID No. 3)	N/A	_____
Magneto-Optical Drive (C1701A) (ID No. 0)	N/A	_____
CD-ROM Drive (A1999A) (ID No. 2)	N/A	_____
* 20 GB Magneto-Optical Autochanger (C1700A) 1 st (ID No. 3)	N/A	_____
2 nd (ID No. 4)	N/A	_____
3 rd (ID No. 5)	N/A	_____
* The C1700A Magneto-Optical Autochanger uses three SCSI addresses. Therefore it accounts for three of the seven devices allowed on the SCSI bus.		



Appendix B

Changing Your Workstation's Hardware Configuration

This appendix tells you how to change your workstation's hardware configuration by performing the following procedures:

- Opening the system unit
- Closing the system unit
- Installing additional memory
- Changing the 802.3 LAN configuration

CAUTION: Always wear a properly grounded wrist strap when reconfiguring your workstation.

Opening the System Unit

To open the system unit, you need a small flatblade screwdriver, a #2 Phillips head screwdriver with a 4-inch (100 mm) blade. Before opening the system unit, make sure that you have performed the following:

- Shut down the operating system.
- Turned off the power to the workstation.
- Disconnected all power cords and external cables.

CAUTION: Do not attempt to operate the workstation with the top cover removed. The cover is needed for proper air flow for system cooling.



Perform the following steps to open the system unit:

1. If your system has pedestal feet, remove the pedestal feet, as shown in Figure B-1.

NOTICE: To remove a pedestal foot, you must pry up on the tab as shown with a small flatblade screwdriver.

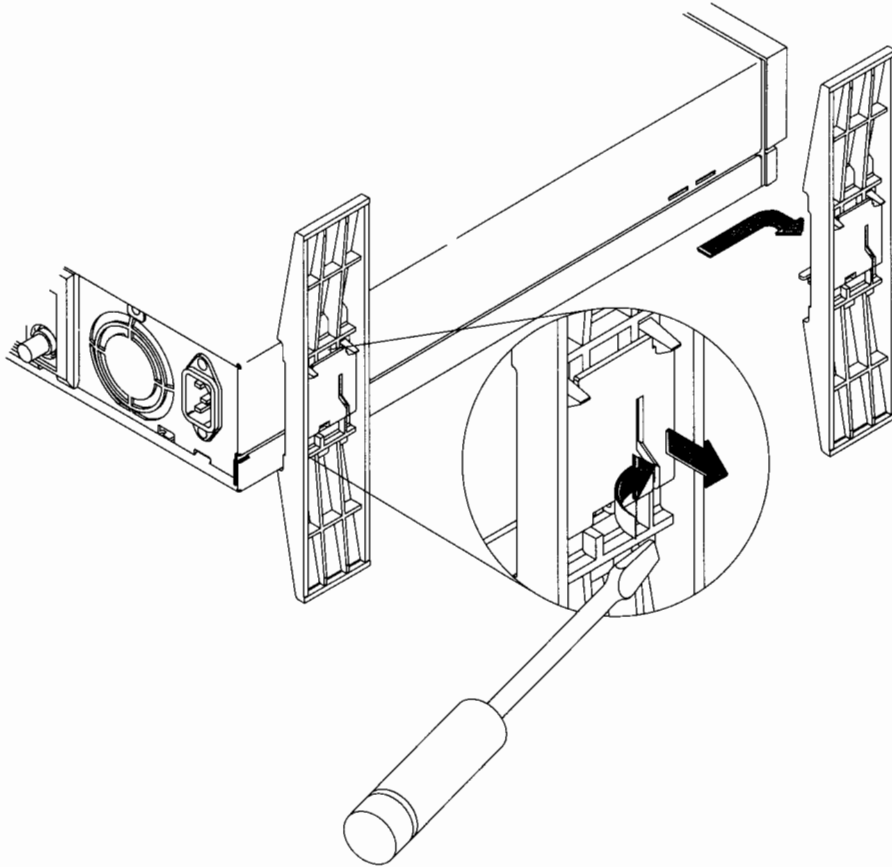


Figure B-1. Removing the Pedestal Feet

2. Use a #2 Phillips screwdriver to remove the two screws that hold the top cover in place, as shown in Figure B-2.

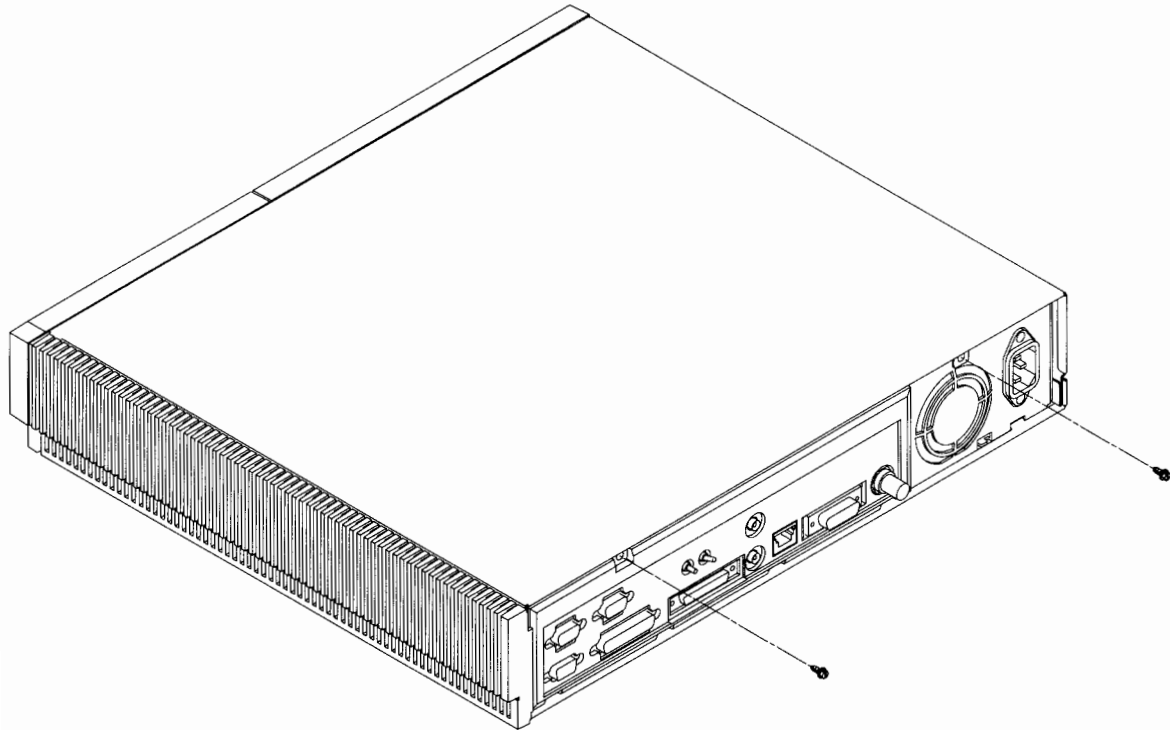


Figure B-2. Removing the Top Cover Screws

3. Lift the cover from the chassis, as shown in Figure B-3.

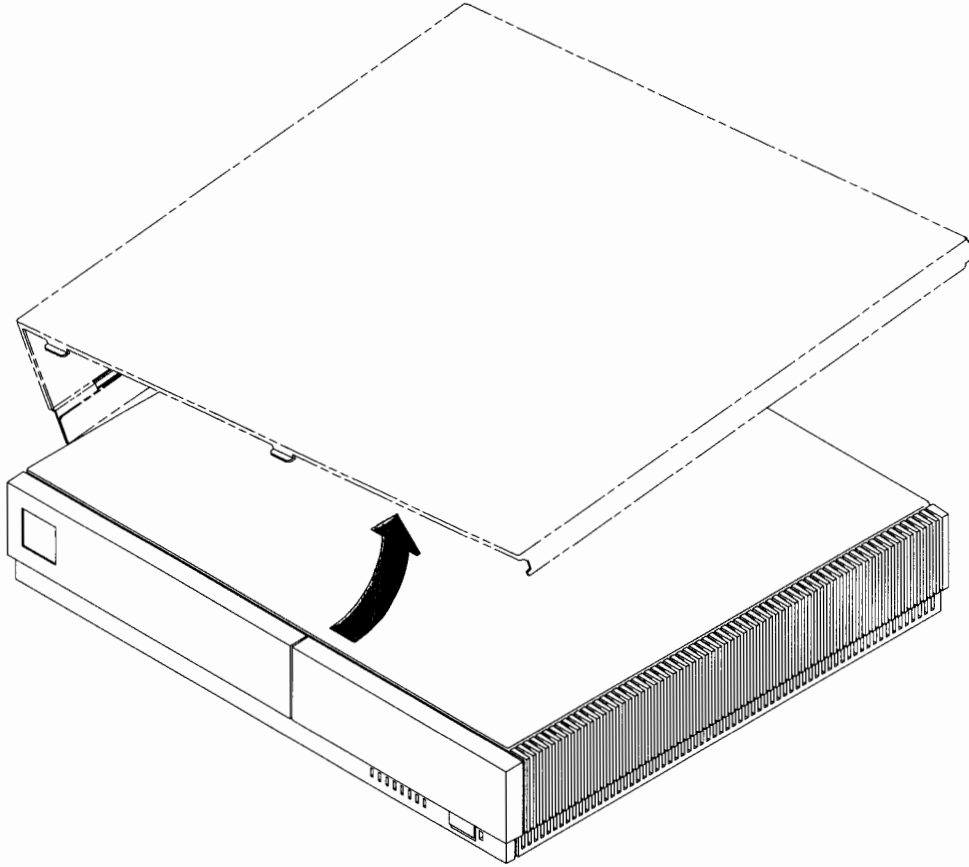


Figure B-3. Removing the Top Cover

4. Lift the monitor support bracket up and out of the system, as shown in Figure B-4.

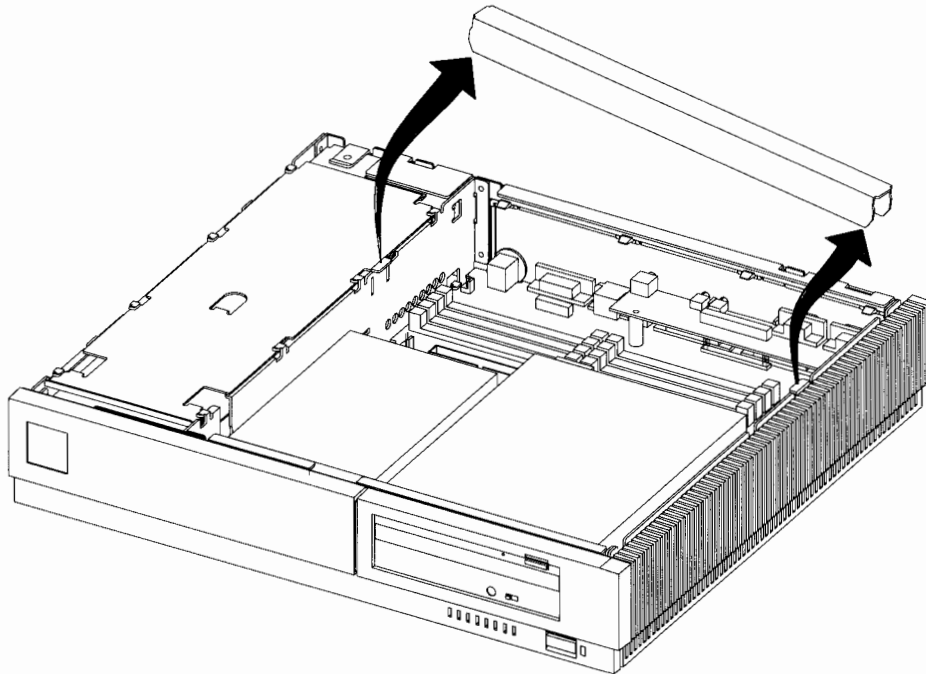


Figure B-4. Removing the Monitor Support Bracket

Closing the System Unit

To close the system, perform the following steps:

- 1.** Replace the monitor support bracket. (See Figure B-4.)

Be certain that all cables and wires are placed away from the top of the monitor support bracket.

- 2.** Replace the top cover.

Position the tabs on the top cover into the corresponding slots in the front bezel, as shown in Figure B-5.

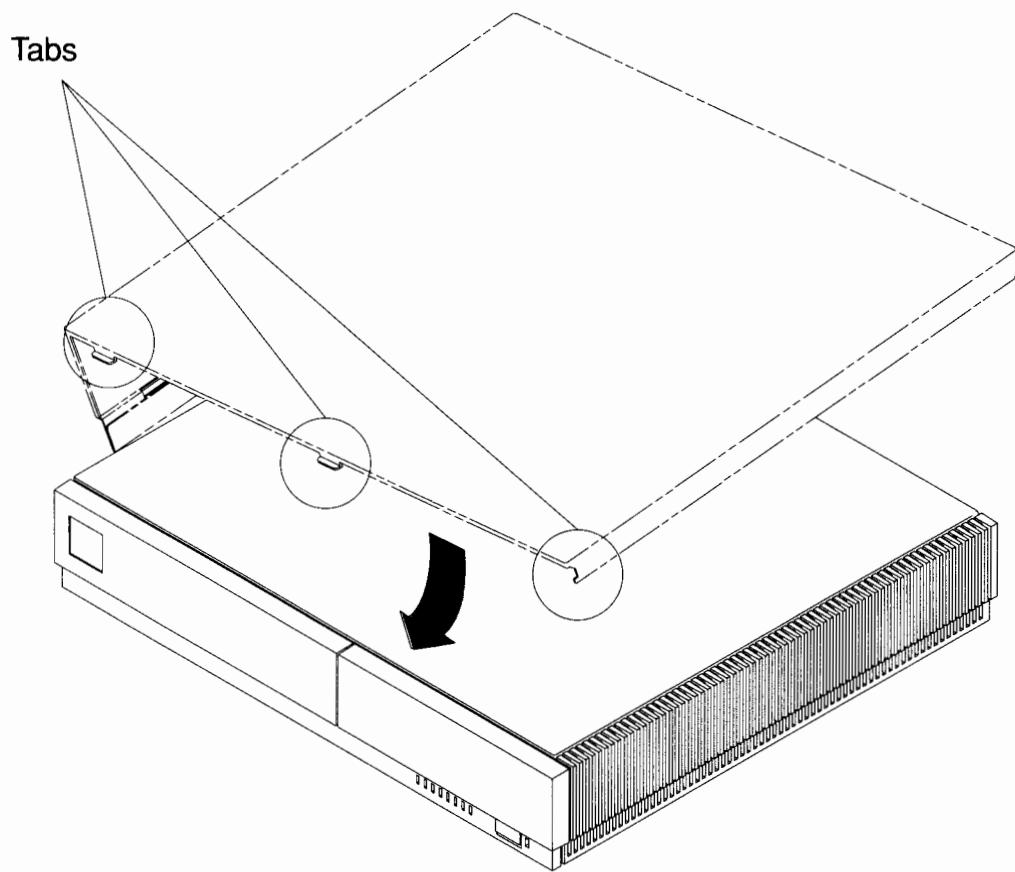


Figure B-5. Replacing the Top Cover

3. Replace the two screws that hold the top cover in place. (See Figure B-2.)

NOTICE: To maintain FCC/EMI compliance, verify that all cover screws are replaced and that all screws are firmly seated.

Installing Additional Memory

The memory must be installed in sets of four SIMMS of the same memory capacity. You may install either one or two sets of boards. The first set is called the *Primary Set* and the second set is called the *Secondary Set*. The Primary Set must always be present in the system. The Secondary Set cannot be larger in size than the Primary Set.

The memory SIMMS are installed in the connectors referred to as Slot 0 through Slot 7. Figure B-6 shows the slot positioning. Figure B-7 shows the SIMM slot assignments for all possible memory configurations.

Slots 0, 2, 4, and 6 are the Primary Set and Slots 1, 3, 5, and 7 are the Secondary Set.

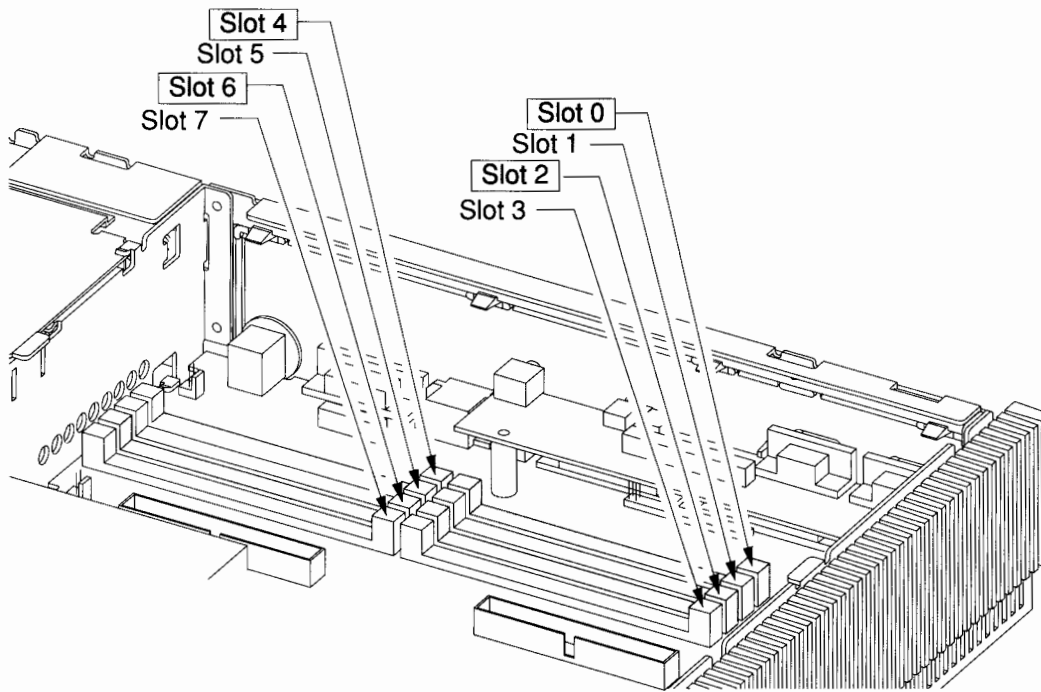
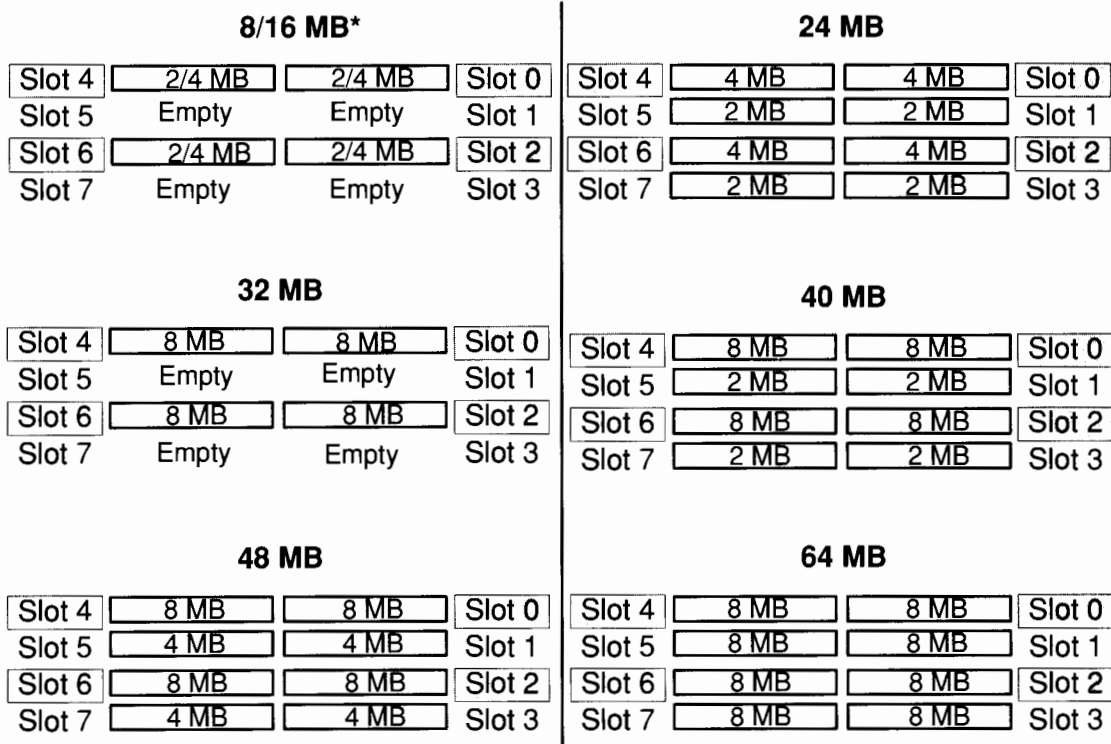


Figure B-6. Memory SIMM Locations

There are six possible memory configurations in the Model 710, and seven possible configurations in the Model 705, as shown below:



*The 8 MB configuration is available in the Model 705 only.

Figure B-7. Allowable Memory Configurations

Perform the following steps to add memory boards to your workstation:

1. Open the system unit according to the directions in the previous *Opening the System Unit* section.
2. If you need to rearrange (remove and replace) any memory boards in your workstation, perform this step. If you do not need to remove any memory boards, skip this step and go directly to Step 3.

To remove a memory board, push the two slot clips out and then tilt its top toward the front of the system unit. Lift the memory board up and out of the connector. Place the memory board on a static-free surface. Figure B-8 shows how to remove the memory board.

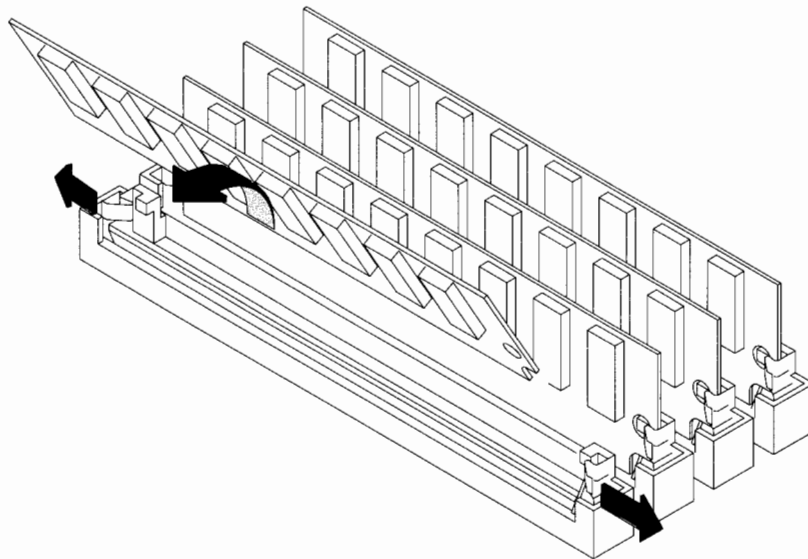


Figure B-8. Removing Memory Boards

3. Install the new memory board with its top edge tilted toward the front of the system unit. Note that the memory board is notched on one end to fit the keyed connector. Press firmly on the memory board to ensure that it is fully seated. Snap the board into place by moving it to a vertical position. Its ends snap into the connectors spring clips. Figure B-9 shows how to install the memory board.

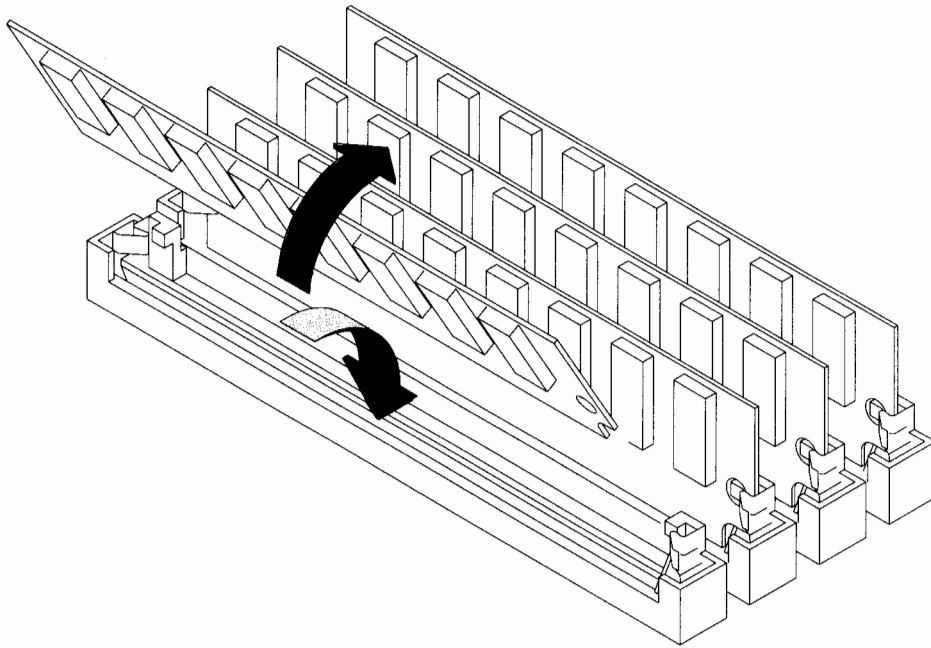


Figure B-9. Installing Memory Boards

4. Close the system unit and reconnect all cables as described in the *Closing the System Unit* section, earlier in this chapter.

Changing the 802.3 LAN Configuration

This section describes how to change your workstation's 802.3 LAN configuration. The LAN configuration was factory set for either the Internal Transceiver (Thin LAN) or the External Transceiver (AUI LAN) setting. You need a DIP extractor tool to change the LAN jumper.

Perform the following steps to change the jumper settings.

1. Open the system unit according to the directions in the previous *Opening the System Unit* section.
2. Use a small pair of needle-nose pliers to change the jumper. (Figure B-10 shows the location and settings of the jumper.)

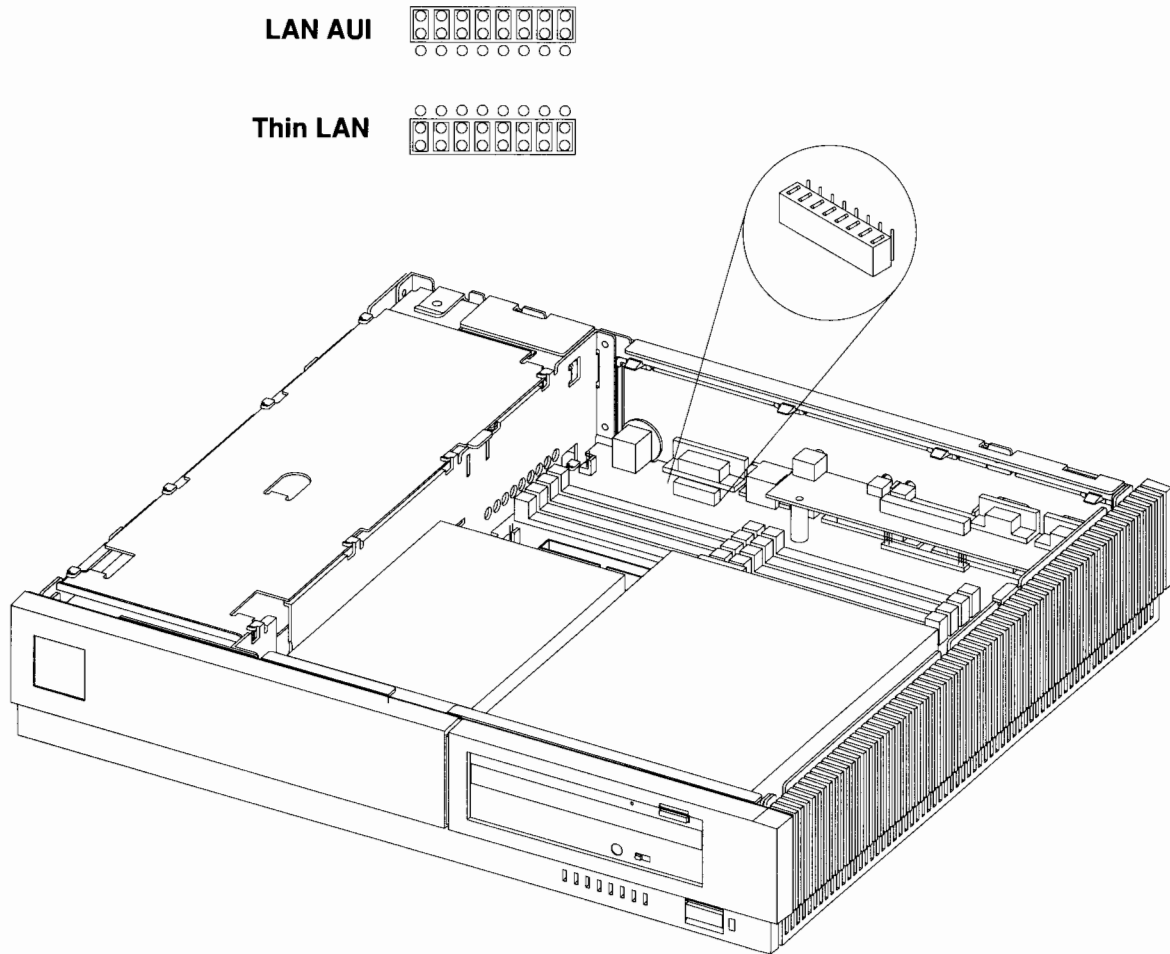
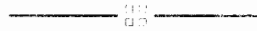


Figure B-10. LAN Configuration Jumper

3. Close the system unit and reconnect all cables as described in the *Closing the System Unit* section, earlier in this chapter.



Appendix C

The Boot Console User Interface

There are times when you want to interact directly with the hardware of your workstation **before** it boots the operating system. Your workstation provides a **boot console user interface** to allow you to perform special tasks, display information, and set certain system parameters, even if the operating system is unavailable.

Here are the special tasks that you can perform:

- Boot your workstation from any specified hardware device.
- Search for hardware devices that contain media from which your workstation can be booted.
- Reset the workstation.

Here are some of the kinds of information that your system displays:


- A list of the commands you may issue from the boot console user interface
- The real-time clock's time and date
- The settings of the Autoboot and Autosearch flags
- The status (on or off) of the secure boot mode
- The station address for the built-in LAN interface
- The primary boot path
- The console path

Here are some of the system parameters that you can set:

- The real-time clock's time and date
- The Autoboot and Autosearch flags
- The status (on or off) of the secure boot mode
- The primary boot path
- The console path

Using the Boot Console User Interface

To use the boot console user interface, follow these steps:

1. Shut down your workstation as described in Chapter 2.
2. Turn off the workstation, for a few seconds. Then, turn it back on.
3. Press  .

In a few seconds, this message appears:

```
Terminating selection process.
```

A short time later, this message appears:

```
Searching for potential boot devices. To terminate search, press  
and hold the ESCAPE key.
```

```
Device Selection      Device Path      Device Type and Utilities  
-----
```


Your workstation is now searching for devices that may hold file systems from which it can boot HP-UX. As they are found, they appear in a list similar to the following example:

```
P0      scsi.6.0          disk_drive_identifier
P1      scsi.5.0          disk_drive_identifier
P2      scsi.4.0          DDS-format_tape_drive_identifier
P3      scsi.3.0          CD_ROM_drive_identifier
P4      lan.123456-789abc cluster_server_identifier
```

This process may take several minutes. When the search ends, this list of actions appears:

```
b)      Boot from specified device
s)      Search for bootable devices
a)      Enter boot administration mode
x)      Exit and continue boot sequence
?)      Help
```

Select from menu:

This is the boot **console user interface menu**.

If your workstation is a member of a **cluster** (a group of computers that share the file system of a **host** by means of a network connection), there may be no disks listed because your workstation has no disks directly attached to it.

Entering the Boot Administration Mode

To change system hardware parameters, you must enter the boot administration mode. From within this mode, you may enter any of the commands used in the task descriptions that follow.

To enter the boot administration mode, type **a** at the menu prompt as shown:

```
Select from menu: a
```

The following prompt is displayed:

```
BOOT_ADMIN>
```

Exiting the Boot Administration Mode

To exit the boot administration mode, take one of the following actions, depending on your need:

- Type **exit** at the `BOOT_ADMIN>` prompt. This returns you to the boot console user interface menu.
- Type **reset**. This restarts the workstation.
- Issue a **boot** command. See the next section, *Booting the Workstation*, for details.
- Turn off the workstation. There is no need to shut down the workstation with the special procedure described in Chapter 2, since the workstation has not yet been booted, and the file system has not been activated.

Getting Help for the Boot Console User Interface Commands

You may issue many different commands in the boot administration mode. For a complete listing, at the `BOOT_ADMIN>` prompt type **h**, **help**, or **?** and a summary of all of the commands is listed.

To get help for a particular command, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> help command_name
```

where *command_name* is the name of one of the listed commands.

The displayed help information usually includes a description of the command, its options, and the format for parameters.

Booting the Workstation

Usually, you start your workstation by turning it on and waiting for HP-UX to boot automatically. However, you may not want for the usual sequence to occur.

For example, you may want to start your workstation from an operating system that is stored on a device that is different from your usual boot device. If your normal operating system kernel or the disk on which it resides becomes damaged or unusable, you may wish to boot from a different disk or perhaps another type of device, such as a DDS-format tape drive.

Here are some situations and examples:

- If you know which device you want to boot from, and you know that it contains a bootable operating system, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> boot device
```

where *device* is one of the following:

- The **hardware path** to the device, specified in Mnemonic Style Notation
- The **P n** designation of the device, as listed in the device search

For example, if you wish to boot an operating system that is stored on a DDS-format tape in a drive that is located at “scsi.1.0” and is designated by the search as device “P2”, type one of the following commands at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> boot scsi.1.0
```

or

```
BOOT_ADMIN> boot P2
```

The operating system on the specified device is used to start your workstation.

- If you wish to interact with the **Initial System Loader (ISL)** before booting your workstation, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> boot device isl
```

This causes the ISL to be loaded from the specified device. After a short time, the following prompt appears on your screen:

```
ISL>
```

ISL is the program that actually controls the loading of the operating system. By interacting with ISL, you can choose to load an alternate version of the HP-UX operating system.

For example, if the usual kernel (`/hp-ux`) on your root disk (`scsi.6.0`) has become corrupted, and you wish to boot your workstation from the backup kernel (`/SYSBCKUP`), type the following at the `ISL>` prompt:

```
ISL> hpux boot disk(scsi.6;0)/SYSBCKUP
```

- If you do not know the locations of the bootable operating systems on the various media in your file system, you can find them with the **search** command.

NOTICE: You may also boot the workstation from the main menu of the Boot Console User Interface by using a command in this form:

```
Select from menu: b device_path
```

where *device_path* is a designator for the path to the device that contains a bootable file system.

Searching for Bootable Media

The initial search conducted by the boot console user interface locates devices that *might* contain bootable media. This search might find a DDS-format tape drive which actually does not contain a bootable tape. To check to see which devices actually contain bootable media, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> search
```

This causes your workstation to search *exhaustively* for bootable media. It searches all types of I/O devices in the following order:

1. Built-in SCSI
2. Built-in LAN

The search may turn up more devices than there are lines on your display. If you are using a text terminal, you may control the progress of the search from your terminal's keyboard by performing the following steps:

- To hold the display temporarily, press **Ctrl** S .
- To continue the display, press **Ctrl** Q .
- To halt the search, press **ESC** .

These flow-control commands do not work with a bitmapped display, but such a display can show more than forty lines of text, so you are unlikely to need them.

NOTICE: If the search discovers ten devices, the label in the **Device Selection** column for the tenth entry is labeled **P9**. Any subsequent entries are labeled **P***.

P* cannot be used as a device designator for boot administration commands because it is ambiguous. To refer to a device labeled **P*** in a search, specify it by means of the entry in the **Device Path** column.

To search to see which devices of *just one type* actually contain bootable media, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> search device_type
```

where *device_type* is one of the following:

scsi is the built-in SCSI bus

lan is all connections to the built-in LAN

NOTICE: You may also search for bootable media from the main menu of the Boot Console User Interface by using a command in one of the following forms:

```
Select from menu: s
```

```
Select from menu: s device_type
```

where *device_type* is the type of device (**scsi** or **lan**) for which you wish to search.

Redisplaying the Results of a Search

The list of bootable devices is stored until you conduct another search or you reboot your system. To see the list of devices again, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> show
```

It is much faster to redisplay the list with **show** than it is to conduct the search again.

Displaying and Setting Paths

A **path** is the hardware address of a device that is attached to the I/O system of your workstation. The **path** command can set any of the paths shown in Table C-1:

Table C-1. System Paths


Path Type	Device
primary or pri	Your workstation's default boot device (usually the root disk)
alternate or alt	Your workstation's alternate boot device (usually a DDS-format tape device)
console or con	Your workstation's primary display device
keyboard or key	Your workstation's primary ASCII input device

To display the current settings for the system paths, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> path
```

The paths are displayed in **Mnemonic Style Notation** as shown in Table C-2.

Table C-2. Mnemonic Style Notation



I/O Type	Specification Format
Built-in SCSI	scsi . <i>scsi_address</i> . <i>logical_unit_number</i>
Built-in LAN	lan . <i>server_address</i> . <i>init_timeout</i> . <i>io_timeout</i>
Built-in HIL	hil
RS-232 Port A	rs232_a . <i>baud_rate</i> . <i>word_length</i> . <i>parity_option</i>
RS-232 Port B	rs232_b . <i>baud_rate</i> . <i>word_length</i> . <i>parity_option</i>
Graphics Slot	graphics
Built-in Parallel Port	parallel

To display the current setting for a particular system path, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> path path_type
```

where *path_type* is one of the path types listed in Table C-1.

For example, to get the path to the primary boot device, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> path primary
```


To set a system path to a new value, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> path path_type path
```

where *path_type* is one of the path types listed in Table C-1 and *path* is the specification of the path in Mnemonic Style Notation (as described in Table C-2). For example, to set the console path to RS-232 Port A with a baud rate of 4800, a word length of 7, and even parity, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> path console rs232_a.4800.7.even
```

For help in using the **path** command, type one of the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> help path
```

```
BOOT_ADMIN> help path_type
```

where *path_type* is one of the path types listed in C-1. The help screens offer complete descriptions of all path options.

Resetting the Workstation

The act of resetting your workstation causes it to restart completely. It's similar to turning the workstation off and then back on again. To reset your workstation, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> reset
```

Displaying and Setting the Real-Time Clock

It is usually a good idea to set the real-time clock in your workstation with the HP-UX **date** command, since that command contains special safeguards that can help you to avoid disruption of time-related processes (like those controlled by the **cron** command). But you may also set the clock from within the boot administration mode.

To display the current setting of the real-time clock, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> date
```

Your workstation reports the information in this form:

```
Mon Jul 1 14:55:05 GMT (19:91:7:1:14:44:5)
```

To set the real-time clock, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> date century:year:month:day:hour:minute:second
```

For example, to set the clock to July 1, 1991, 2:44:05 PM, GMT, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> date 19:91:7:1:14:44:5
```

NOTICE: The boot administration mode's **date** command only understands Greenwich Mean Time (GMT). You must compute GMT relative to your own time zone to get the correct value for *hours* (and, in some time zones, *minutes*).

Displaying and Setting the Autoboot and Autosearch Flags

Autoboot and **Autosearch** are variables stored in your workstation's non-volatile memory. (Non-volatile memory retains its contents even after power is turned off.) If you reset these flags to new values, the change takes effect the next time you reboot the workstation.

To examine the state of the **Autoboot** and **Autosearch** flags, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> auto
```

If **Autoboot** is set to **on**, when your workstation is turned on, it automatically attempts to boot the operating system. If it is set to **off**, your workstation enters the boot console user interface instead.

To change the state of the **Autoboot** flag, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> autoboot state
```

where *state* is **on** or **off**.

If **Autosearch** is set to **on**, when your workstation enters the boot console user interface, a search for all potential bootable devices takes place.

To change the state of the **Autosearch** flag, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> autosearch state
```

where *state* is **on** or **off**.

NOTICE: Set both **Autoboot** and **Autosearch** to **on** if you wish to have your system boot automatically from the first device it finds in its search. If you wish to have your system come up in the Boot Console User Interface instead, set both **Autoboot** and **Autosearch** to **off**.

We do not recommend setting **Autoboot** and **Autosearch** to any other combination of values.

Displaying and Setting the Secure Boot Mode

There may be circumstances in which you would not wish to allow anyone to attempt to boot your workstation from a device other than the device you have specified, nor to control the system from any console other than the one you have designated. This can be an important consideration in secure installations.

If you set up your system in such a way that it is physically impossible for unauthorized persons to disconnect it from its designated boot device, you can guarantee that the boot console user interface cannot be used to boot the system from an unauthorized device or to change the console path. If the secure boot mode is set to **on**, the boot console interface cannot be activated; thus, you are assured that your system's security cannot be compromised through interaction with that interface.

To check the status of the secure boot mode, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> secure
```

The value **on** or **off** is displayed.

To change the value of the secure boot mode, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> secure state
```

where *state* is **on** or **off**.

CAUTION: Once the secure boot mode is set to **on**, the only way to turn it off is to disconnect the boot device. When you turn on your workstation after isolating it from its boot device, the boot console interface reappears. You can then turn the secure boot mode **off**, turn off your workstation, reconnect the boot device, and turn the system back on.

Displaying the LAN Station Address

The **LAN station address** of your workstation is the label that uniquely identifies the LAN connection for your workstation at the **link level** (the hardware level). It is sometimes necessary for you to supply this address to other users. For example, if your workstation is to become a member of a cluster, the cluster administrator needs to know your LAN station address in order to add your workstation to the cluster.

To display your workstation's LAN station address, type the following at the `BOOT_ADMIN>` prompt:

```
BOOT_ADMIN> lan_addr
```

The LAN station address is displayed as a thirteen-digit number in hexadecimal notation, like the following:

```
LAN Station Address: 123456-789abc
```



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