



Getting Started

Hardware and Software Setup
HP workstation c8000

Document Part Number: AB629-90001

January 2004

This guide provides an overview of the system front and rear panel connectors, instructions on how to set up and configure your system, troubleshooting tips, and a list of available documentation.

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Getting Started: Hardware and Software Setup
HP workstation c8000
First Edition (January 2004)

Document Part Number: AB629-90001



WARNING: Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.



CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

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Important Safety Warnings



WARNING: *Avoiding Electrical Shocks.* To avoid electrical shock, do not open the power supplies. There are no user-serviceable parts inside.

To avoid electrical shock and harm to your eyes by laser light, do not open the DVD laser module. The laser module should be serviced by service personnel only. Do not attempt to make any adjustment to the laser unit. Refer to the label on the DVD for power requirements and wavelength. This product is a class I laser product.



WARNING: *Removing and Replacing the Cover.* For your safety, never remove the system side cover without first disconnecting the power cord from the power outlet and removing any connection to a telecommunications network. If a Power Protection Device is fitted to your system, you must shut down your computer using its on/off switch, then remove the power cord before removing the system's side cover. Remove the Power Protection Device cables before any servicing operation. Always replace the side cover before switching the system on again.



WARNING: *Battery Safety Information.* There is a danger of explosion if the battery is incorrectly installed. For your safety, never attempt to recharge, disassemble, or burn an old battery. Replace the battery with the same or equivalent type, as recommended by the manufacturer.

The battery in this system is a lithium battery that does not contain any heavy metals. However, to protect the environment, do not dispose of batteries in household waste. Return used batteries either to the shop from which you bought them, to the dealer from whom you purchased your system, or to HP so that they can either be recycled or disposed of in the correct way. Returned batteries will be accepted free of charge.



WARNING: *Avoiding Burn Injuries.* Some parts inside the computer will be hot. Wait approximately three to five minutes for them to cool down before touching them.



WARNING: *Metallic Particulates.* Metallic particulates can be especially harmful around electronic equipment. This type of contamination may enter the data center environment from a variety of sources, including, but not limited to, raised floor tiles, worn air conditioning parts, heating ducts, rotor brushes in vacuum cleaners or printer component wear. Because metallic particulates conduct electricity, they have an increased potential for creating short circuits in electronic equipment. This problem is exaggerated by the increasingly dense circuitry of any electronic equipment.

Over time, very fine whiskers of pure metal can form on electroplated zinc, cadmium, or tin surfaces. If these whiskers are disturbed, they may break off and become airborne, possibly causing failures or operational interruptions. For over 50 years, the electronics industry has been aware of the relatively rare, but possible, threat posed by metallic particulate contamination. During recent years, a growing concern has developed in computer rooms where these conductive contaminants are formed on the bottom of some raised floor tiles.

Although this problem is relatively rare, it may be an issue within your computer room. Since metallic contamination can cause permanent or intermittent failures on your electronic equipment, Hewlett-Packard strongly recommends that your site be evaluated for metallic particulate contamination before installation of electronic equipment.



CAUTION: *Avoiding Static Electricity.* Static electricity can damage electronic components. Turn OFF all equipment and disconnect the power cable before installing an accessory card. Don't let your clothes touch any accessory card. To equalize the static electricity when replacing an accessory card, rest the accessory card bag on top of the system unit while you are removing the card from the bag. Handle the card as little as possible and with care.



CAUTION: *Information on Ergonomic Issues.* It is strongly recommended that you read the ergonomics information, available in the "Safety and Comfort Guide", before using your system. This guide is available on the *Documentation and Utility CD* provided with your system, and at www.hp.com/ergo.

NOTE: *Recycling Your System.* HP has a strong commitment toward the environment. Your HP system has been designed to respect the environment as much as possible. HP can also take back your old system for recycling when it reaches the end of its useful life. HP has a product take-back program in several countries. The collected equipment is sent to HP recycling facilities in Europe or the U.S.A. As many parts as possible are reused. The remainder is recycled. Special care is taken for batteries and other potential toxic substances, these are reduced into non-harmful components through special chemical processes. If you require more details about the HP product take-back program, contact your local dealer or your nearest HP Sales Office.

Finding Information

E-Support

For online access to technical support information and tools, go to <http://www.hp.com/support>. Support resources include web-based troubleshooting tools, technical knowledge databases, driver and patch downloads, online communities, and proactive notification services.

The following sites are also available to you.

- www.hp.com — Provides useful product information.
- www.hp.com/go/bizsupport — Provides additional support information.
- www.hp.com/support/workstation_manuals — Provides the latest online documentation.
- <http://welcome.hp.com/country/us/eng/wwcontact.html> — Provides a listing of the worldwide technical support phone numbers.

Additional Documentation

The following documents are on the *Documentation and Utility CD* provided with your system and at www.hp.com/go/bizsupport:

- *Getting Started Guide* — how to set up and configure your system; basic troubleshooting; warranty statements.
- *Technical Reference Guide* — how to install and replace parts; advanced troubleshooting; advanced configuration information.
- *Safety and Comfort Guide* — how to use your system safely and avoid injury or discomfort.
- *OS Recovery Instructions* — how to restore your system to the original shipping configuration (instructions accompany CD/DVD).
- *One-Year Limited Warranty and Technical Support* — information on your system warranty and how to contact technical support.
- *Safety and Regulatory Information*.

Parts and Accessories

For complete and current information on supported accessories and components, visit:

<http://partsurfer.hp.com>

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Hardware Setup

This section provides instructions on:

- attaching the pedestal
- choosing a location
- connecting devices
- identifying features of the front and rear panel

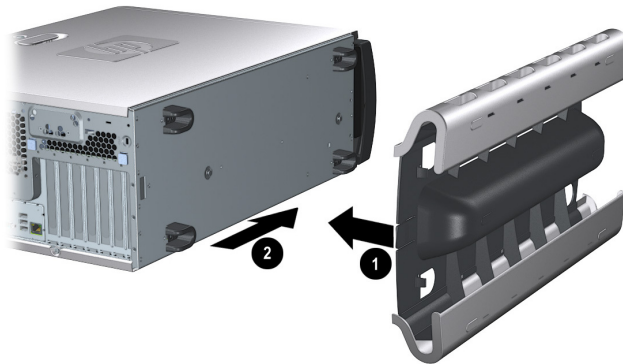
Attaching the Pedestal (tower configuration only)



CAUTION: Before operating the HP workstation c8000, you must attach the pedestal to the base of the system to ensure that the system is stable.

To attach the pedestal:

1. Place the system on its side with the bottom of the chassis at the edge of a table.
2. Align the pedestal ❶ so the D-shaped holes on the pedestal line up with the U-shaped hooks on the base of the chassis.
3. Slide the pedestal towards the front of the system chassis ❷ until it snaps into place.



Attaching the pedestal

Choosing a Location

Position the system so that its rear connectors are easily accessible:

- *If the system is a tower configuration*, place the system in an area with easily accessible power outlets and enough space for the keyboard, mouse, and any other accessories.
- *If the system is to be rack-mounted*, refer to the mounting instructions provided with your system.

Connecting Devices

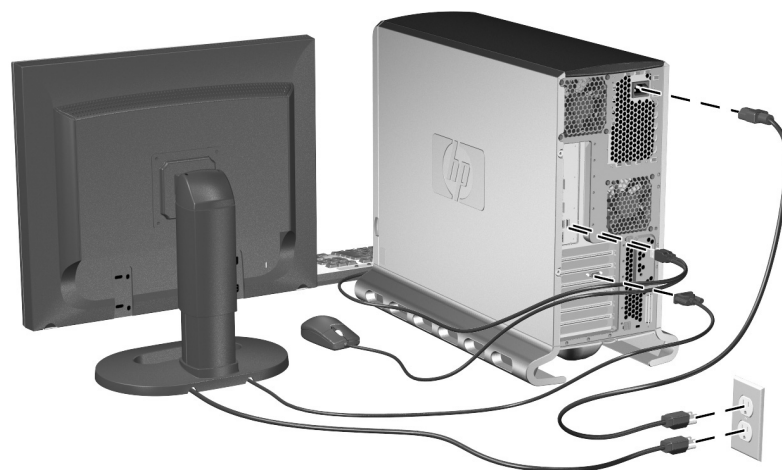
Before you connect any cords or cables to your system, please read the “Important Safety Warnings” in the front of this manual.

The connectors are shaped to go in one way only. Refer to the label on the back of the workstation for the position of each connector.



Cables and connectors

Connect the devices as shown.



Connecting devices

Power, Keyboard, and Mouse

To connect the power, keyboard, and mouse:

1. Connect the power cords to the rear of the monitor and the computer.
2. Connect both power cords to a grounded outlet, for tower systems, or to a power distribution unit (PDU) on the rack, for racked systems.
3. Plug the keyboard and mouse into the USB ports on the back of the system.



WARNING: For your safety always connect equipment to a grounded wall outlet. Always use a power cord with a properly grounded plug, such as the one provided with the equipment, or one in compliance with national safety standards. Locate the equipment close to an easily accessible power outlet to ensure that the equipment can be unplugged quickly, if necessary.

Graphics Cards

The c8000 workstation is available with a range of graphics cards.

- Graphics cards may include a 15-pin connector, an 18-pin connector, or both. Only one connecting cable is needed for each monitor.
- If your workstation did not ship with a pre-installed graphics card, you must install the card and load the drivers. Refer to the documentation included with your graphics card for instructions.
- Vertical refresh frequencies of 85Hz and higher provide flicker-free viewing.
- The graphics card automatically limits itself to resolutions and frequencies supported by DDC-2B or DDC-2B+ compliant monitors.
- For a complete and current list of supported cards with supported display resolutions and frequencies, see:

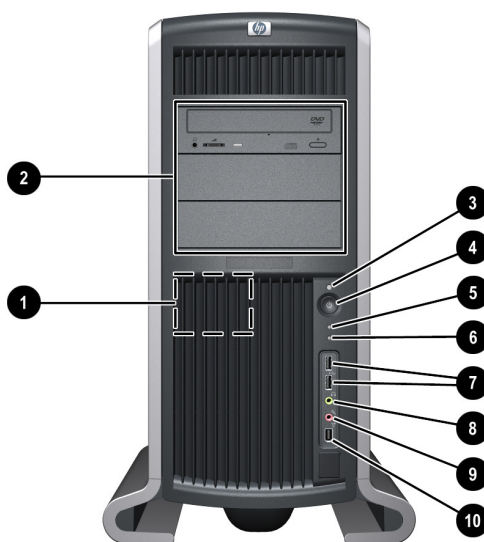
<http://partsurfer.hp.com>

Front Panel Features

The HP workstation c8000 front panel has the features identified in the following figures.

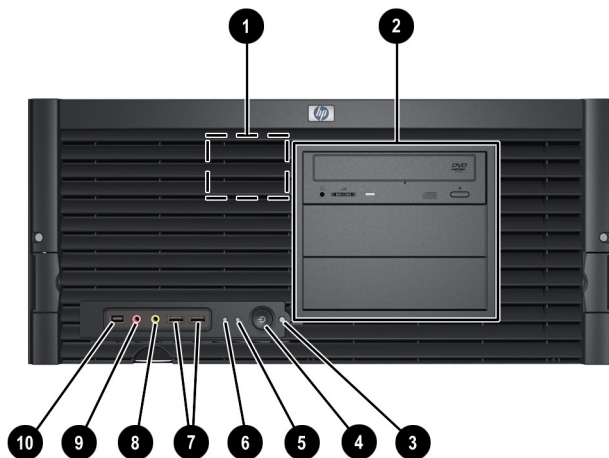
Also note that:

- A pull-out information tab is on the side of the system. This tab contains the UUID, product and serial numbers. See the figures on [page 2-4](#).
- For more information about the system LEDs, see [“Troubleshooting with the System LEDs”](#) on [page 4-6](#) and the *HP workstation c8000 Technical Reference Guide*.



Front panel, tower configuration

① System speaker	⑥ LAN activity LED
② Three optical drive bays	⑦ Two USB connectors
③ System status LED	⑧ Headphone (option)
④ Power button	⑨ Microphone (option)
⑤ Disk activity LED	⑩ IEEE-1394 FireWire (option)

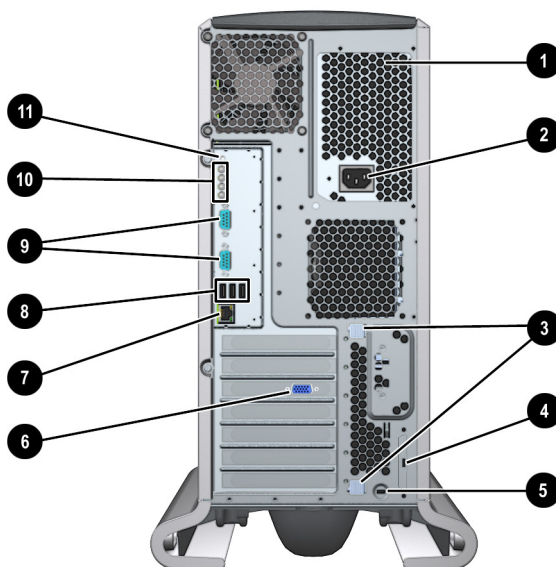


Front panel, rack-mount configuration

❶ System speaker	❹ LAN activity LED
❷ Three optical drive bays	❺ Two USB connectors
❸ System status LED	❽ Headphone (option)
❹ Power button	❾ Microphone (option)
❺ Disk activity LED	❿ IEEE-1394 FireWire (option)

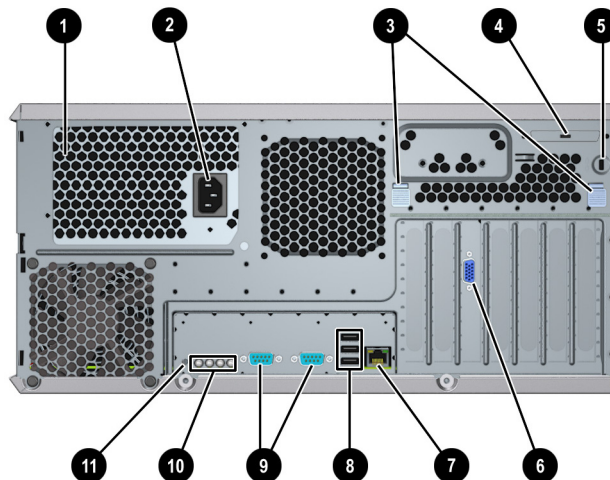
Rear Panel Features

The HP workstation c8000 rear panel has the following connectors and features:



Rear panel, tower configuration

① Power supply LED (inside power supply)	⑦ LAN connector and LEDs
② Power cord connector	⑧ Three USB connectors
③ PCI/AGP retention release	⑨ Two serial connectors (top connector is serial port A; bottom connector is serial port B)
④ External SCSI connector (option)	⑩ Diagnostic LEDs
⑤ Security cable slot	⑪ Transfer-of-control (TOC) button
⑥ Monitor connector (on graphics card)	



Rear panel, rack-mount configuration

- | | |
|--|---|
| ❶ Power supply LED (inside power supply) | ❷ LAN connector and LEDs |
| ❷ Power cord connector | ❸ Three USB connectors |
| ❸ PCI/AGP retention release | ❹ Two serial connectors (left connector is serial port A; right connector is serial port B) |
| ❹ External SCSI connector (option) | ❺ Diagnostic LEDs |
| ❺ Security cable slot | ❻ Transfer-of-control (TOC) button |
| ❻ Monitor connector (on graphics card) | |

Software Setup

The HP workstation c8000 comes in several different configurations. Please pay careful attention to the directions in this chapter and make the selections that match the options you purchased.

This section provides instructions on:

- starting the system
- initializing the software
- turning off the system
- locating information on advanced configuration

Starting the System

The first time you start the system, the software is initialized as explained on page 2-3.

To start your system:

1. Turn on the monitor *before* you start your system.
2. Press the power button on the front panel. The system starts.

During system startup, the display may remain blank for up to one minute. This is normal. The following should occur:

- a. System status LED on the front panel turns on and blinks green.
 - b. Diagnostic LEDs 1-4 on the rear panel create a scrolling pattern.
3. If you are prompted for a password, type it and press **Enter**.

Initializing the Software

The c8000 workstation can be configured with the operating system (OS) pre-installed or packaged separately.

- If you purchased a system with the OS pre-installed, the initialization process starts when you start the workstation for the first time.

The software initialization process takes a few minutes. You can change the settings after the software has been initialized.



CAUTION: Do NOT turn off the system while the software is being initialized, as this could cause unexpected results.

The initialization process:

- Displays the license agreement.
- Asks questions about the system, including product and serial numbers. This information is on the pull-out information card (see figures on [page 2-4](#)).
- If you purchased a system and the OS is not pre-installed, install the OS now, following the instructions on the *HP-UX CD* envelope.
- If you purchased a system with a DVD+RW drive, install the DVD+RW software provided with the system now. Follow the instructions provided with your system.

Locating your Product and Serial Number

The product and serial numbers are located on the Pull-out Information Tab on the side of your workstation. These numbers are required to initialize your system at first boot.



Pull-out information card (tower)



Pull-out information card (rack-mounted)

Turning Off the System

To turn off the system:

1. Exit all applications.
2. Execute **/etc/shutdown**.
3. When prompted, press and release the power button.

NOTE: You can also shut down the system by holding the power button down for 5 seconds. This results in a “hard” power down, which shuts the system down immediately and does not notify the OS. *This method is recommended only when the system is locked up and not functioning.*

If the system locks up, hold down the power button until the system shuts down. This may result in a loss of data and require an OS repair. If necessary, run **fsck**, the HP-UX filesystem check command, when you restart the system.

CAUTION: If the system is in the process of starting up, do not power off the system, as this can corrupt or compromise the operating system and require you to reinstall the OS.

Configuring the System

The Boot Console Handler (BCH) lets you configure your system.

The BCH has two purposes:

- It lets the system know which path to boot from.
- It allows you to view and modify system parameters.

You can access the BCH directly or via a serial console connection.

For details on accessing the BCH, refer to “System Configuration” in the *HP c8000 workstation Technical Reference Guide*.

New Component Setup

Installing Hardware Components

If you purchased an accessory card, a graphics card, or other hardware components that were not installed in your system at the factory, you must install those components after you perform the initial software setup ([page 2-3](#)).

You do not need any tools for basic system setup tasks. However, you may need tools for adding some components. See the *HP workstation c8000 Technical Reference Guide* for more information.

To prevent possible damage from static electricity, you will need:

- static-free mat
- static strap



WARNING: For hardware installation procedures, you must power off the system, unplug the power cord from the outlet, and wait for all of the system LEDs to go off.

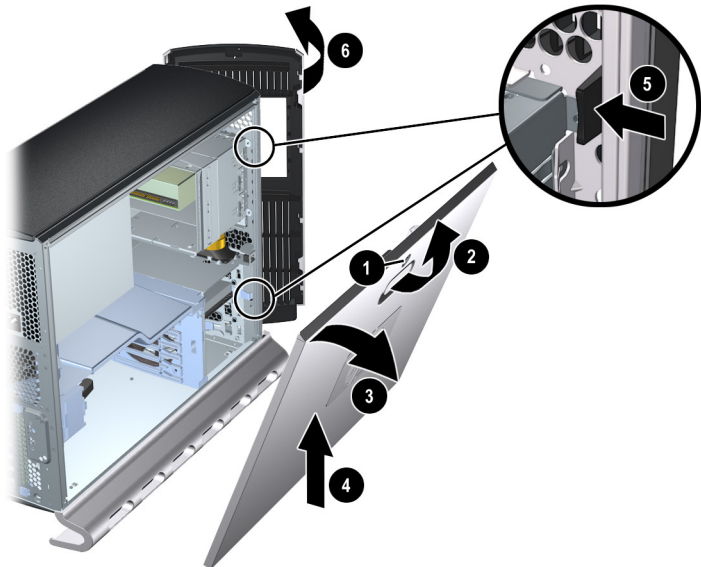


WARNING: If you have any doubt that you can lift the system or monitor safely, do not try to move them without help.

NOTE: To maintain FCC/EMI (Electromagnetic Interference) compliance, replace all covers and make sure all screws are properly seated after you replace components.

To install or replace components:

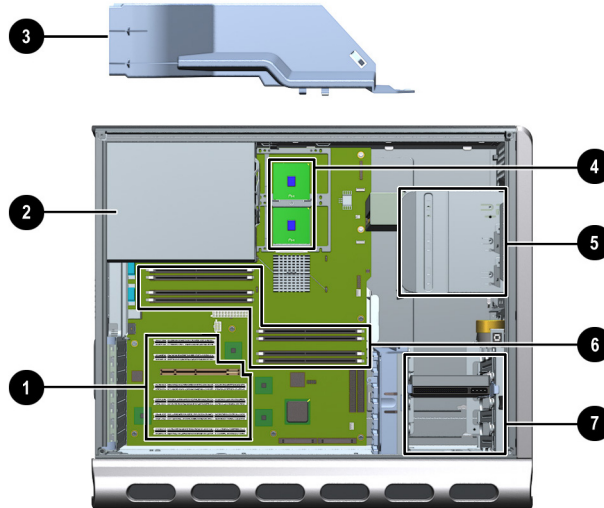
1. If you have already connected and turned on the system, turn off the system and disconnect all cables and power cords.
2. Check the materials list that shipped with your system to verify that you have all of the components. Remove the main system access panel:
 - a. Unlock the panel if it is locked ❶.
 - b. Pull out on the latch to release it ❷.
 - c. Rotate the panel ❸ and lift it off ❹.
3. Remove the front system access panel:
 - a. Press the two clips on the inside of the case to release the front panel ❺.
 - b. Rotate the panel and lift it off ❻.



Removing the system access panels

4. Install the new components.

The following diagram shows the location of internal components. For detailed instructions on installing hardware components, see the *HP c8000 Technical Reference Guide*.



Location of Internal Components

❶ PCI and AGP slots	❺ Optical drive bay(s)
❷ Power supply	❻ Memory slots
❸ Air flow guide and fan	❼ Hard drive bay(s)
❹ Processor(s)	

5. Replace the system access panels.

6. Connect all cables and power cords and turn on the system.

Updating Firmware and Drivers for New Hardware

New hardware devices may require an upgrade to the system firmware or drivers. To download the latest drivers and firmware for your system, go to the HP support site:

www.hp.com/go/bizsupport

Follow the menu prompts to navigate to the support page:

1. Select **download drivers/software**.
2. Select **HP workstation c8000** from the drop-down list.
3. Choose the driver or firmware release you need to download.
4. Click the **i** information icon for instructions on how to download, unpack, and install the driver or firmware upgrade.

At this site you can also read firmware upgrade instructions and register to obtain information on new driver availability automatically.

Troubleshooting

This chapter contains basic information to help you get your system up and running in the unlikely event that you experience a problem. Topics include:

- System does not start properly
- Keyboard problems
- Mouse problems
- Monitor remains blank when the system is on
- Unknown Password(s)
- Troubleshooting with the LEDs
- Software Diagnostics Tools
- Restoring the OS
- Where to get help

NOTE: For technical assistance, call 1-800-593-6631 (USA) or go to www.hp.com/country/us/en/wwcontact.html to contact HP in your region.

E-Support

For online access to technical support information and tools, go to <http://www.hp.com/support>. Support resources include web-based troubleshooting tools, technical knowledge databases, driver and patch downloads, online communities, and proactive notification services.

General Troubleshooting

The following sections provide general troubleshooting information for your system.

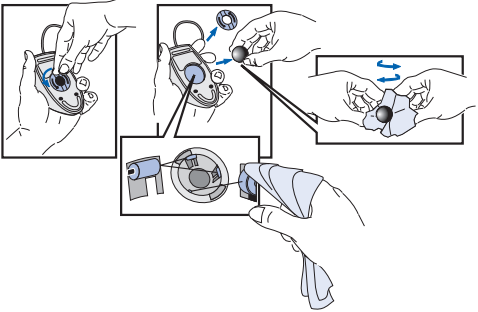
System Does Not Start Properly

<i>Make sure...</i>	<i>How</i>
The system power cord is properly connected.	Verify that the power supply LED is on. If the power supply LED is not on, verify that the power cord is connected and that the electrical outlet is turned on.
The LEDs are not displaying an error message.	Check the system status LED on the front panel. If it is blinking orange or red, see <i>Troubleshooting in the HP workstation c8000 Technical Reference Guide</i> for additional information.

Keyboard Problems

<i>Make sure...</i>	<i>How</i>
The keyboard cable is correctly connected.	Plug the cable into any USB port. Ports are labeled for easy identification. Reboot the workstation.
The keyboard is free of debris.	Ensure that all keys are at the same height, and none are stuck down.
The keyboard itself is not defective.	Either replace the keyboard by a known working unit or try the keyboard with another system.

Mouse Problems

<i>Make sure...</i>	<i>How</i>
The mouse cable is correctly connected.	Plug the cable into any USB port. Ports are labeled for easy identification.
The mouse is clean.	Clean the mouse ball as shown below. 
The mouse itself is not defective.	Replace the mouse with unit that is known to work or try the mouse with another system.

If the system starts and you still have a problem, see [“Software Diagnostics Tools”](#) on page 4-9.

Monitor Remains Blank When System is On

NOTE: After you turn on the system, it normally takes about a minute for text to appear on the monitor.

<i>Make sure...</i>	<i>How</i>
The monitor power cord is correctly connected.	Ensure the power cord is plugged into a working grounded power outlet and into the monitor.
The monitor is switched to ON (LED is on).	Refer to the monitor manual for an explanation of the LED signals.
The graphics card is installed and the monitor (video) cable is correctly connected.	Ensure the monitor (video) cable is properly connected to both the system and the monitor. Ensure the cable is connected to the graphics card's connector.
The monitor's brightness and contrast settings are correctly set.	Check the settings using the on-screen display or controls on the front of the monitor.

If the system starts and you still have a problem, see [“Software Diagnostics Tools”](#) on page 4-9.

You Forgot the BCH Password(s)

If you forget your passwords, they can be reset using a jumper on the system board. See the *HP workstation c8000 Technical Reference Guide*.

Troubleshooting with the System LEDs

Several LEDs are on the front and rear panels of the system. The following sections describe their functions. (For the precise locations of these LEDs, see the figures on page 1-5 through page 1-8.)

System Status LED (front panel)

The **System Status LED** indicates the state of the system.

System Status LED	State
Off	System is off
Green	System is running normally
Blinking green	System is booting
Blinking orange	System WARNING
Blinking red	System FAULT

See [“Diagnostic LEDs \(rear panel\)”](#) on page 4-8 for additional information on warnings and faults.

Disk Activity LED (front panel)

The Disk Activity LED on the front panel indicates the state of hard drive and optical drive activity on the system.

Disk Activity LED	State
Off	Off or no current disk/drive activity
Blinking (green)	Disk/drive is being accessed

NOTE: The Activity LED automatically communicates with hard drives, optical drives and optical drives connected to the built-in SCSI controller. To communicate with drives attached to PCI-card controllers, connect the card to the system board using an LED activity cable.

LAN LEDs (front and rear panels)

The LAN Activity LED on the front panel of the system blinks when network activity is present.

The two LAN LEDs on the rear panel of the system provide additional information about LAN activity. These LEDs are part of the LAN connector.

LAN LED	Location	Color	State
Activity	Tower: Right	Off	No LAN connection
	Rack-mounted: Top	Yellow	Link established
		Blinking	Activity on LAN port
Gbit	Tower: Left	Off	10Mbps
	Rack-mounted: Bottom	Orange	100Mbps
		Green	Link at 1000Mbps

Diagnostic LEDs (rear panel)

The four diagnostic LEDs located on the rear panel of your system are labeled one through four. If the system LED on the front panel of the system is blinking orange or red, the diagnostic LEDs on the rear panel provide additional information about the error. The “Troubleshooting” chapter of the *HP workstation c8000 Technical Reference Guide* provides a table with a list of faults associated with the various possible LED lighting sequences.

System Board LEDs (visible from rear)

Three additional LEDs can help you troubleshoot the system. These LEDs are located on the system board close to the back of the system and can be viewed through three small holes adjacent to the diagnostic LEDs. The “Troubleshooting” chapter of the *HP workstation c8000 Technical Reference Guide* provides additional information.

System Event Log

If the LEDs indicate an error, the system event log (SEL) will provide a more detailed explanation of the failure. For information on accessing and reading the SEL, see the *HP workstation c8000 Technical Reference Guide*.

Software Diagnostics Tools

This section includes an overview of the Offline Diagnostics Environment (ODE). Before you run the HP diagnostic software, note any Diagnostic LED codes.

Offline Diagnostics Environment

For instructions on how to run ODE from the *HP IPF Offline Diagnostics and Utilities* CD, refer to the *HP workstation c8000 Technical Reference Guide*.

The ODE uses a command line interface, which allows you to select specific tests and/or utilities to execute on a specific hardware module.

The ODE includes a variety of diagnostics tools. Depending on your system and configuration, these may include some or all of the following tools, as well as additional tools specific to your system:

- CPUDIAG is a CPU diagnostics tool.
- MEMDIAG is a memory diagnostics tool.
- PERFVER is a utility for testing peripherals attached to the boot path.

To access a detailed list of tools provided on your system, from the ODE Main Menu:

1. Select **View Release Notes and Documentation Menu**.
2. Browse the documentation and release notes.

Recovering the OS

Your system ships with a CD or DVD that allows you to reinstall your OS and drivers or other factory-supplied software components. The drivers and software utilities, including documentation and navigational aids, help you to recover the pre-loaded software.

Instructions for your HP Recovery CD or DVD for HP-UX are located on the sleeve. For additional information, go to:

■ www.hp.com/go/bizsupport



CAUTION: Using the Recovery CD permanently erases the contents of your hard disk. Back up all data and personal files before using the Recovery CD.

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