hp x4000 workstation
getting started guide
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**Important Safety Information**

If you have any doubt that you can lift the computer or display safely, do not try to move it without help.

For your safety, always connect the equipment to a grounded wall outlet. Always use a power cord with a properly grounded plug, such as the one provided with this equipment, or in compliance with your national regulations. Your workstation is disconnected from the power by removing the power cord from the power outlet. This means the Workstation must be located close to a power outlet that is easily accessible.

For your safety, never remove your Workstation’s cover without first removing the power cord from the power outlet, and any connection to a telecommunications network. Always replace the cover on the PC Workstation before switching it on again.

---

**WARNING**

To avoid electrical shock, do not open the power supply. There are no user-serviceable parts inside.

This product is a class I laser product. To avoid electrical shock and harm to your eyes by laser light, do not open the laser module. The laser module should be serviced by service personnel only.

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**Important Ergonomic Information**

It is strongly recommended that you read the ergonomics information before using your Workstation. See “Working in Comfort and Safety” on page 24.
Getting Help

Printed Documentation
This x4000 Getting Started Guide is the only printed documentation included with your Workstation. It contains basic setup and installation information, basic troubleshooting guidance, and warranty information.

Downloading Documentation from HP’s Web Site
The HP Workstation web site (www.hp.com/workstations/support) contains a wide range of free information, including downloadable documentation, service and support options, and the latest versions of drivers, utilities BIOS, and firmware.

The web accessible documentation includes the x4000 Technical Reference/ Troubleshooting Guide. This guide has detailed information about your Workstation, including system board switches, power consumption and acoustic noise emission test configurations, troubleshooting, and system architecture.

Additional Web Sites

- www.hp.com/workstations/support contains the latest drivers and BIOS for your Workstation.
- www.hp.com/ergo contains the online version of Working in Comfort. This is also preloaded on the hard disk of your Workstation.

Contacting Customer Service
Refer to “HP Customer Care Center Phone Numbers” on page 44. For the most recent information, visit the HP web site www.hp.com/workstations/support.
1 Setting Up and Using Your Workstation
Setting Up Your Workstation

WARNING

If you have any doubt that you can lift the Workstation and monitor safely, do not try to move them without help.

The following topics explain how to set up your x4000 Workstation. Some steps may not apply to your situation.

- “Prepare your Workspace” on page 8
- “Install Your Graphics Card” on page 9
- “Connect the Components” on page 9
- “Connect the Audio Accessories” on page 11
- “Connect to a Network (LAN)” on page 11
- “Load the Software Applications for Your CD-RW” on page 12
- “Connect the Power Cords” on page 13

Prepare your Workspace

1. Unpack all of the components.
2. Place the monitor on a sturdy desk with easily accessible power outlets and enough space for the keyboard, mouse, and any other accessories.
3. Position the Workstation on a sturdy desk or the floor with the rear connectors easily accessible. The Workstation must be close enough to the peripherals so that the cables can be connected.

Installation Tools

No tools are required to set up your Workstation unless you are installing a graphics card. If you are installing a graphics card, you need a T-15 Torx driver and a flat-blade screwdriver.
Install Your Graphics Card

If your Workstation did not ship with a graphics card already installed, you must install the graphics card. Installation instructions are included with the graphics card.

Connect the Components

Before connecting any cords or cables to your Workstation, please read “Important Safety Information” on page 5.

Figure 1-1 on page 10 shows the back panel of the Workstation. When you connect the components, match the color-codes of the connectors. The connectors are shaped to go in one way only.

1. Connect the mouse.
2. Connect the monitor to the 15-pin display connector and tighten the attachment screws.
3. Connect the three HP Multimedia Keyboard cables:
   • The keyboard connector plugs into the purple connection.
   • The pink microphone connector plugs into the microphone jack.
   • The lime green headphone connector plugs into the output line jack. Don’t plug this connector in if you don’t have speakers!

   NOTE

   The internal speaker is deactivated after you connect the multimedia keyboard output line jack. Therefore, if you connect the keyboard’s headphone connector to the back of the Workstation, you must plug speakers or headphones into the back of the multimedia keyboard to get audio as explained in “Connect the Audio Accessories” on page 11.

4. If you have a printer, connect your printer cable and tighten the attachment screws.
5. If you have any serial devices, connect them to serial port A or B.
NOTE

Use the Universal Serial Bus (USB) connectors for USB accessories. The x4000 Workstation does not support a USB mouse or keyboard. For more details, refer to the x4000 Technical Reference/Troubleshooting Guide at www.hp.com/support/workstations.

Figure 1-1 Location of Rear Panel Connectors

- SCSI
- Mouse (green)
- Keyboard (purple)
- Dual USB (black)
- Serial Port A (turquoise)
- Parallel Port (burgundy)
- Serial Port B (turquoise)
- LAN
- Audio Line Out (green)
- Audio Line In (light blue)
- Microphone (pink)
- Monitor
Setting Up and Using Your Workstation

Setting Up Your Workstation

Chapter 1

Connect the Audio Accessories

Connect the microphone and headphones (or amplified speakers) to the HP Multimedia keyboard as shown in Figure 1-2.

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**WARNING**

Listening to loud sounds for prolonged periods of time may permanently damage your hearing.

---

**NOTE**

The internal speaker is deactivated when you use the output line jack on the rear of the Workstation. If you have connected the keyboard headphones connector to this jack, you must connect speakers or headphones to the keyboard for audio output.

---

**Figure 1-2 Connecting Audio Accessories**

![Connecting Audio Accessories](image)

---

Connect to a Network (LAN)

Your Workstation's 10BT/100TX LAN auto-sensing interface adapter supports both 10M bit/s and 100 M bit/s operation.

Connect the network cable to the LAN connector shown in Figure 1-1 on page 10.
Load the Software Applications for Your CD-RW

If you have a CD-RW in your Workstation, you must install both the Direct CD and Easy CD Creator applications located on the Applications CD-ROM before you can use the write/re-write functionality of the drive.

To install these applications:

2. When the installation window appears, a dialog box prompts you to select your language. Select the language you wish to install.
3. Select one of these choices and follow the on-screen directions for installation:
   - Easy CD Creator
   - Direct CD
4. When the installation wizard returns, you must restart your system before installation is complete. To restart your system:
   a. Select Exit.
   b. Remove the Applications CD-ROM and click Yes to restart your system.

Repeat these instructions to install the second application.

NOTE
If you do not install both Easy CD Creator and Direct CD, you can only use the CD-RW drive's read functionality.
Connect the Power Cords

**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 your national safety standards. You disconnect the Workstation from the power by removing the power cord from the power outlet. This means the equipment must be located close to an easily accessible power outlet.

1. Connect the power cords to the rear of the monitor and the Workstation.
2. Connect the both power cords to a grounded outlet.
Using Your x4000 Workstation

Understanding the Control Panel

The hardware control panel, located on the front of the Workstation, is shown in Figure 1-3.

**Figure 1-3 Hardware Control Panel**

- **Power On/Off button:** Press this button to start the Workstation. You can also wake the Workstation from Hibernate or Stand By mode by pressing this button for less than four seconds. Press this button for more than four seconds to turn the Workstation off.

- **Power LED:**
  - Solid green indicates system on.
  - Solid yellow indicates the Workstation is in Stand By or Hibernate mode. See “Using Power Management” on page 23.
  - Flashing yellow, flashing red, or solid red indicates a system error. See “Understanding the Diag LEDs” on page 35.

- **Reset button:** Press this button to re-initialize all the hardware without cycling power to the system (soft boot). Avoid general use of this button because file damage may occur. Always use the operating system **Shut Down** command before resetting the machine.
• Hard Disk Activity LED — This light flickers when your hard disk is being accessed.

• Network Activity LED — This light flickers anytime the workstation is connected to the network and plugged into the power source, regardless of whether the workstation is turned on.

• Diag LEDs — These four LEDs can be off, green, yellow, or red. The color pattern lets you diagnose problems with your Workstation. For more information, see “Understanding the Diag LEDs” on page 35.

**Starting and Shutting Down Your Workstation**

Your Workstation has Windows 2000 Professional pre-installed. It is initialized the first time you start the Workstation. The software initialization process takes a few minutes. This process sets up your software to use the hardware installed in your computer (you can change the settings after the software has been initialized).

---

**NOTE**

Both Windows 2000 Professional and Windows NT 4.0 operating systems are included on the HP Workstation Recovery CD-ROMs provided with your Workstation. For more information, see “Recovering or Reconfiguring the Operating System” on page 39.

---

**Starting Your Workstation for the First Time**

1. Switch on the monitor.

2. Press the power button on the control panel. When you start your Workstation:

   • The Power-On-Self-Test (POST) runs while the Workstation's logo is displayed. To view the details of this test, press the Esc key. If there is an error in the POST, the error is displayed automatically.

   • The software initializes automatically after POST is complete.

---

**CAUTION**

Do not turn off your Workstation while the software is being initialized.
Setting Up and Using Your Workstation

Using Your x4000 Workstation

- The software license agreement is displayed and you are given an opportunity to read “Working in Comfort” (ergonomics advice for computer users).

3. Answer the operating system setup questions:
   - Computer name. Enter a name for your Workstation.
   - Administrator passwords. You are given the option to assign an Administrator password.

4. When prompted, click Finish to restart the Workstation. After the system restarts, you can log in for the first time.

Creating an Emergency Repair Disk

It is very important to create an Emergency Repair Disk for the operating system. Use new diskettes for this purpose.

For more information on how to create these diskettes, refer to the operating system documentation.

Shutting Down Your Workstation

**CAUTION**

Always power off through the operating system. Do not power off using the power button or reset button except during extreme circumstances when the system will not shut down through the operating system. Using the power button or reset button to power down may cause you to lose unsaved data from open applications.

To shut down your Workstation:

1. Exit all applications.

2. Select **Start > Shut Down**. A dialog box appears with any shut down options that are supported by your operating system.

3. Select one of the options and click **OK**. For more information on shut down options such as Stand by and Hibernate, see “Using Power Management” on page 23 or your Windows documentation.
Using Your HP Multimedia Keyboard

WARNING  Improper and prolonged use of keyboards and input devices can cause repetitive strain injury (RSI) to soft tissues in the hands and arms. If you experience discomfort or pain while using your Workstation, discontinue use immediately and consult your physician as soon as possible. For more information, see “Working in Comfort and Safety” on page 24.

Your HP Workstation may have come with an HP Multimedia keyboard, shown in Figure 1-4 on page 18.

The HP Multimedia keyboard includes soft keys that let you:

- Display and configure the actions assigned to keys.
- Perform one-touch shortcuts to start applications, open files, or open web sites on the Internet.
- Launch the Internet browser supplied with your system.
- Lock or suspend your Workstation.
- Access HP TopTools and customer information.
- Mute or adjust the volume of the audio system.

If you connect headphones (or speakers) and microphone directly to the keyboard, the headphone and microphone connectors on the keyboard must be connected to their associated rear panel jacks. For more information, see “Connect the Audio Accessories” on page 11.

NOTE  The internal speaker is deactivated when you use the output line jack on the rear of the Workstation. If you have connected the keyboard headphones connector to this jack, you must connect speakers to the keyboard for audio output.
• **HP TopTools** opens the HP TopTools PC management tool if you have this loaded on your Workstation. Otherwise, this shortcut key is not programmed and can be configured by pressing the Menu key.

• **Internet** starts your Internet browser.

• **Menu** displays the current soft key assignments for the HP Multimedia keyboard. Follow the on-screen instructions to display the action assigned to an individual key or to change or assign an action to a key. Shortcut keys are provided specifically for user-defined actions.

• **Lock/Suspend** lets you lock the front panel or launch the screen saver. Configure the action of the Lock/Suspend key by pressing the Menu key.

• **HP Customer Information** accesses the HP Customer Information html page. This page provides links to the HP web site.

• **Mute and Volume** mutes the audio (or restores the audio if it has been previously muted) and controls the volume level.

• **Shortcut** starts applications, opens documents, or opens URLs on the Internet. To assign actions to Shortcut keys, press the Menu key and following the on-screen instructions.
Viewing Your Workstation Configuration

The Summary screen gives you a summary of the current configuration of your Workstation (BIOS version, CPU type, memory module size, and installed mass storage devices).

You should check the configuration of your Workstation when you first use it and each time you install, remove, or upgrade accessories.

To check the configuration:

1. Shut down your Workstation as described in “Shutting Down Your Workstation” on page 16.
2. Restart your Workstation.
3. When the start-up logo appears on your display, press Esc. This takes you to the Summary Screen. The Summary Screen is displayed for only a short time.

Configuring Your Workstation

The Setup program lets you configure your Workstation. You can:

• set up the system Administrator and User passwords
• change the system boot order
• solve configuration problems

HP recommends you note any changes you make to the system setup for later reference.

Starting the HP Setup Program

To start the Setup program:

1. Start your Workstation. If your Workstation is already up, restart it.
2. Press F2 while F2 Setup is displayed at the bottom of the screen.
   If you fail to press F2 in time and the start-up process continues, you must allow your system to finish booting up, then restart your Workstation and go through the Power-On-Self-Test (POST) again.

The opening screen of the Workstation’s Setup program is displayed. The Main Menu presents a list of fields, such as the installed BIOS version and the Date and Time.
A band along the top of the screen offers a list of menus. Select one of the following menus by using either the left or right arrow keys.

A band along the bottom of the screen gives instructions on using the keyboard-driven menus.

**Main Menu**

In the Main menu, you can:

- view the BIOS version
- reset configuration data
- set the system time
- set the system date

By default, “Reset Configuration Data” is set to No. Resetting the configuration causes the BIOS to assign resources to all devices instead of using what is stored in memory.

**Advanced Menu**

The Advanced menu offers a list of sub-menus that let you view or configure:

- processor speed
- advanced features of the chip set
- PCI cards
- the Advanced Graphics Port video card
- settings for the integrated:
  - floppy disk drive controller
  - IDE controller and for attached IDE devices
  - SCSI controller
  - 10/100BT network interface
  - serial (A and B) and parallel ports
  - PCI audio controller
Setting Up and Using Your Workstation

Using Your x4000 Workstation

Security Menu

The Security menu offers a list of sub-menus that let you:

• change or set the System Administrator Password, User Password, or Power-on Password (refer to “Setting Passwords” on page 22)
• prevent unauthorized start-up from the floppy, CD-ROM and IDE drives
• prevent unauthorized use of the floppy drive
• prevent a Plug-and-Play operating system from changing the BIOS configuration settings
• prevent unauthorized changes to the boot sector

IPMI Menu

This menu lets you choose to force the BIOS to clear the System Event log.

Boot Menu

This menu lets you select the order of the devices from which you want the BIOS to attempt to start the operating system. The QuickBoot mode option allows the system to skip certain tests while booting. This decreases the time needed to start the system.

Power Menu

This menu lets you enable remote power-on. You can also set the mode of operation if an AC power loss occurs.
Setting Passwords
You can set passwords to provide different levels of protection for your Workstation.

Using the Security menu in the Setup program:

- The Administrator can access and change all settings in the Setup program. The User can only access and modify certain items in the Main menu.
- You can enable the Power-on Password option so that a password is required every time you start the Workstation.

NOTE
You must set an administrative password before you can set a user password.

To set up passwords:

1. Start the Workstation and press F2 when prompted to enter the Setup utility.
2. Select the Security menu.
3. Choose Set Administrator Password or Set User Password. When prompted, enter, then re-enter your password.
4. Select the Exit menu, then Exit Saving Changes.

Removing Passwords
To remove a password:

1. Start the Workstation and press F2 when prompted to enter the Setup utility.
2. Select the Security menu.
3. Select Clear All Passwords.
4. Select the Exit menu, then Exit Saving Changes.
Using Power Management

Power management lets you reduce the Workstation’s overall power consumption by slowing down the Workstation’s activity when it is idle. For more information on power consumption data, refer to the x4000 Technical Reference on HP’s web site (www.hp.com/workstations/support).

Operating systems differ in their power management capabilities. In Windows 2000, you can select from two power management modes:

- **Stand By** is a low power state where the processor is shut off, but the rest of the machine remains powered. Waking up the Workstation from Stand By mode is faster than from Hibernate mode because the RAM contents do not need to be restored. However, when the Workstation is in Stand By mode, it consumes more power than Hibernate mode because the memory remains powered.

- **Hibernate** (if enabled) makes the machine look and behave like it is off except that it remembers the state it was in before hibernation and can be awakened without a full operating system boot. This is because the operating system copies the RAM contents out to a special location on the hard disk before entering hibernation.

  You must enable Hibernate mode through Power Options in the Control Panel before it can be a shut down option.

To wake the Workstation from either mode, press the power button for less than four seconds.

To change your power management settings in Windows 2000:

1. Select **Start > Settings > Control Panel**.
2. Double click on **Power Options**.

For more information on changing your power options, refer to your Windows 2000 documentation.

---

**NOTE**

Windows NT 4.0 does not support these power management modes.
Working in Comfort and Safety

Preparing Your Work Environment

It is important that your work environment contributes to your comfort and productivity:

- **Work Surface Height.** Your work surface should be height adjustable. First adjust the height of your chair so that your feet are firmly on the floor, then adjust the work surface height until your forearms are parallel to the floor when you have your fingers on the keyboard or other input devices.

- **Chair.** Your chair should provide a comfortable sitting position, including features such as a height and tilt adjustment feature, curved seat edge, a stable base (for example, five legs and castors, adjustable back support, a freely rotating swivel, and fully adjustable padded arm rests).

- **Monitor.** Place your monitor so that the top of the screen is at, or slightly below, eye level (up to 15 degrees).
Setting Up and Using Your Workstation

Working in Comfort and Safety

- **Work Surface Arrangement.** Arrange the elements of your HP Workstation system (monitor, document holder, keyboard, mouse and other input devices, and headphones and speakers) to meet your personal requirements. For example:
  - If you primarily use the keyboard, place it directly in front of you, not to the side.
  - If your work involves extensive use of a mouse or other pointing device, place that device directly in front of your left or right arm.
  - If you are using both a mouse and keyboard, place them both at the same work surface height and close together.
  - If you use a palm rest, the height should be flush with the front edge of the keyboard.
  - Also consider where you place other items, such as your telephone or notepad.

---

**WARNING**
Various aspects of using a mouse, keyboard, and other devices may increase your risk of discomfort or injury. Optimize your comfort and safety by positioning these devices properly.

---

**Working Posture**

Sitting in one position for long periods can be uncomfortable. To minimize the potential risk for physical discomfort or injury, it is important that you maintain a proper posture.

- **Head.** When viewing your monitor, your head should not be tilted more than 15 degrees forward. Do not turn your head to either side.
- **Back.** While sitting at your work surface, make sure your back is supported by the chair’s backrest in an erect position or angled slightly backwards.
- **Arms.** Make sure your arms and elbows are relaxed and loose, with your upper arms perpendicular to the floor or tilted downward not more than 15 degrees. Keep your forearms and hands approximately parallel with the floor with elbows bent between 70 and 115 degrees. Keep your elbows close to your sides (less than 20 degrees away from your body).
Setting Up and Using Your Workstation

Working in Comfort and Safety

- **Hands, Wrists, Forearms.** Try to keep your hands, wrists, and forearms in a relaxed neutral position when using your mouse keyboard or other input devices. For example, while using your keyboard and mouse, rest your forearms on your desktop.

- **Legs.** Your thighs should be horizontal or angled slightly downward. Your lower legs should be near a right angle to your thighs. Make sure there is sufficient room under the work surface for your legs.

- **Feet.** If after adjusting your chair you cannot rest your feet comfortably on the floor, use a footrest, preferably one that can be adjusted in height and angle.

**Additional Ergonomic Issues**

- Look away from the screen from time to time to help reduce eyestrain. Focus on distant objects briefly, and blink periodically to lubricate your eyes. Have your eyes checked on a regular basis and ensure your eyeglass prescription is suitable for working on a computer monitor.

- Remember to occasionally shift position and move your body. Keeping your body in one position for long periods is unnatural and stressful. When prolonged work is required, take frequent short breaks. As a rule of thumb, a five or ten minute break every hour is a good idea. Short frequent breaks are more beneficial than longer less frequent breaks. People who work for long periods of time without a break may be more prone to ergonomic injury.

- Changing tasks frequently helps prevent muscle stiffness. Alternate between keyboarding, reading, writing, filing, and moving around in your work environment to help you maintain a relaxed posture. Occasionally stretch the muscles in your hands, arms, shoulders, neck and back. You should stretch at least as often as you take brief task breaks — once every hour.

- Discomfort may be alleviated by using alternative ergonomic designs and accessories such as ergonomically personalized chairs, palm rests, keyboard trays, alternative input devices, prescription eyeglasses, and anti-glare screens. Seek additional information from the sources available to you, including your employer, doctor, office supply store, and the Information Sources listed in the online version of Working in Comfort, (HP_INFO\WIC\language\envir.html) or available on the HP web site www.hp.com/ergo.
Recycling your Workstation

HP has a strong commitment towards environmental conservation. Your Workstation has been designed to respect the environment as much as possible.

HP can take an old Workstation back for recycling when it reaches the end of its useful life through the product take-back program. Collected equipment is sent to one of HP’s recycling facilities. As many parts as possible are reused and the rest are recycled. Special care is taken with batteries and other potentially toxic substances.

For details about HP’s product take-back program, contact your dealer or your nearest HP Sales Office.
Setting Up and Using Your Workstation

Recycling your Workstation
2 Troubleshooting
Troubleshooting

Overview

This chapter contains basic information in the following sections to help you get your Workstation up and running in the unlikely event that you experience a problem:

• “Solving Hardware Problems” on page 31
• “Understanding the Diag LEDs” on page 35
• “Using e-DiagTools for Hardware Problems” on page 37
• “Recovering or Reconfiguring the Operating System” on page 39
• “HP x4000 Technical Characteristics” on page 43
• “HP Customer Care Center Phone Numbers” on page 44

For more detailed help, refer to the x4000 Technical Reference Guide located on the HP web site (www.hp.com/workstations/support).

If you still have problems, run HP e-DiagTools (see “Using e-DiagTools for Hardware Problems” on page 37) and contact Customer Support.
Solving Hardware Problems

Workstation Does Not Start Properly

Display is Blank
If your display is blank after you turn on your Workstation, check that:

• The Workstation and monitor are turned on. (The power lights should be illuminated.)

• Both the Workstation and monitor power cords are firmly connected and plugged in. See “Connect the Power Cords” on page 13 for information on connecting the power cord.

• The outlet power is functioning.

• The monitor is firmly connected to the graphics card connection and the graphics card is firmly seated on the system board. (Reseating the graphics card requires opening the Workstation.)

• The monitor’s contrast and brightness settings are set correctly.

A POST Error Message is Displayed
The Power-on-Self-Test (POST) can detect both an error and a change to the configuration. In either case, a code and short description is displayed. Depending on the message, one or more choices are displayed:

• Press F1 to ignore the message and continue.

• Press F2 to run the Setup program and correct a system configuration error.

• Press Enter to see more details about the message. After viewing these details, you are returned to the original POST display screen.

Keyboard Doesn’t Work
If your keyboard does not work as expected:

• Ensure that all the keyboard cables are firmly connected. See “Connect the Components” on page 9 for information on connecting the keyboard.
Troubleshooting

Solving Hardware Problems

- Ensure the keyboard is connected to the keyboard connector rather than the mouse connector on the rear panel of the Workstation.
- Ensure you are using a PS2 keyboard rather than a USB keyboard.
- Replace the keyboard with a known working unit to ensure the keyboard itself is not defective.

Monitor Doesn’t Work

If the display is blank, refer to “Display is Blank” on page 31.

If the display works properly during the Power-on-Self-Test (POST), but goes blank when Windows starts, the display settings in the operating system may not be compatible with your monitor. To correct this, restart your Workstation in VGA mode:

- Windows NT: Enter VGA mode when prompted during start-up.

After the Workstation is up and running, change the display settings in the control panel (Start > Settings > Control Panel). Refer to your operating system documentation for more information.

Mouse Doesn’t Work

If your mouse does not work as expected:

- Ensure that the mouse cable is firmly connected. See “Connect the Components” on page 9.
- Ensure that the mouse is connected to the mouse connector rather than the keyboard connector on the rear panel of your Workstation.
- Ensure you are using the correct driver. The driver for the HP enhanced mouse is provided with all Windows preloaded systems as well as on the HP Workstation Recovery CD-ROMs. However, drivers are constantly being updated. You can download the latest driver from the HP web site (www.hp.com/workstations/support).
- Clean the mouse ball with a dry, lint-free cloth if the cursor moves sporadically.
- Replace the mouse with a known working unit to ensure the mouse itself is not defective.
Audio Doesn’t Work

The internal speaker is deactivated when you use the output line jack on the rear of the Workstation. If you have connected the multimedia keyboard’s audio out (green) connector to this jack, you must connect speakers or headphones to the multimedia keyboard for audio output. If you don’t have speakers or headphones, disconnect the keyboard’s audio out connector from the back of the Workstation to enable the internal speaker.

CD-RW Doesn’t Work

If you can read a CD in your CD-RW, but you can’t write to a CD, you may be missing the CD-RW application software.

If you have a CD-RW in your Workstation, you must install the software that came with the drive before you can write to the device as described in “Load the Software Applications for Your CD-RW” on page 12.

The CD-ROM and DVD drivers were pre-loaded in your Workstation at the factory, the two CD-RW applications were not.

You Forgot Your Password

Clearing the User Password

If you forgot your User password and remember the Administrator password, you can clear the User password through the setup menu.

To clear the User password:

1. Start the Setup Program as described in “Starting the HP Setup Program” on page 19.
2. Enter the Administrator password when prompted.
4. Select Clear all Passwords.
5. Enter and confirm a new User password if needed.
6. Press ESC to leave the Security menu.
7. Select Exit Saving Changes to save your changes.
Clearing the Administrator Password

To clear the Administrator password:

1. Turn off the Workstation and remove the cover. For instructions on how to remove the Workstation’s cover, see the HP x4000 Technical Reference on the Web at: http://www.hp.com/workstations/support

2. Set switch 1 on the system board switch block to ON.

3. Replace the Workstation cover.

4. Turn on the Workstation and press ESC when prompted to see the summary page.

5. When a message appears indicating that the passwords have been cleared, turn off the Workstation and remove the cover.

6. Set switch 1 on the system board block back to OFF.

7. Replace the Workstation cover.

8. If you want to set new passwords, follow the instructions given in “Setting Passwords” on page 22.
Understanding the Diag LEDs

The Diag LEDs on the front panel of the Workstation can help you identify specific problems with your Workstation:

- During system start up, all four LEDs are green.
- If no problems are detected during start up, all four LEDs turn off.
- If a problem is detected, one or more of the LEDs changes color.

If an error is detected (one or more of the LEDs changes color), see Table 2-1 on page 36 for brief list of combinations that you may see when you initially set up your system. For a complete list and more detailed instructions, refer to the x4000 Technical Reference Guide at www.hp.com/workstations/support.

The LED patterns are defined by:

- R = Red
- Y = Yellow
- G = Green
- • = Off

Unless the LED pattern indicates that the BIOS is in recovery mode (YR•••), or that BIOS recovery is complete (GR•••), you should:

1. Flash the system BIOS and firmware. For complete instructions and the latest BIOS and firmware versions, go to www.hp.com/workstations/support.
2. Attempt the solutions given in Table 2-1 on page 36.

**NOTE**

If your LED pattern does not appear in Table 2-1 on page 36, your problem could still stem from corrupted BIOS or firmware. Always flash the BIOS and firmware before attempting other solutions.

If you still have a problem after flashing the BIOS and firmware and following the suggested solutions in Table 2-1 on page 36, refer to the HP x4000 Workstation Technical Reference at www.hp.com/workstations/support or contact customer support.
# Troubleshooting

## Understanding the Diag LEDs

Table 2-1  **Diag LED Patterns** *(R = Red, Y = Yellow, G = Green, ● = Off)*

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Error</th>
<th>Suggested Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRRYY</td>
<td>Fatal internal processor error (#ERR).</td>
<td>Restart. If it's a random event and not due to hardware, it should not recur.</td>
</tr>
<tr>
<td>RYY●</td>
<td>No memory detected.</td>
<td>Insert or reseat the RIMMs. Reseat the memory expander card.</td>
</tr>
<tr>
<td>RYYY</td>
<td>Corrupted memory.</td>
<td>Reseat the memory expander card. Reseat the RIMMs.</td>
</tr>
<tr>
<td>YR●●</td>
<td>BIOS is in crisis recovery mode.</td>
<td>Wait until the BIOS recovery operation is complete (indicated by LED pattern GR●●). Follow the solution steps for the GR●● pattern.</td>
</tr>
<tr>
<td>YYR●</td>
<td>3.3v circuitry error.</td>
<td>Reseat I/O cards.</td>
</tr>
<tr>
<td>GR●●</td>
<td>BIOS recovery complete.</td>
<td>If you have set system switch 2 on the system board to On, turn it Off and reboot the system.</td>
</tr>
<tr>
<td>GYR●</td>
<td>1.8V power circuitry error.</td>
<td>Reseat the memory expander card.</td>
</tr>
<tr>
<td>GGRY</td>
<td>Battery voltage error. Battery may be at the end of its life.</td>
<td>Reseat the battery. Replace the battery.</td>
</tr>
<tr>
<td>●YRY</td>
<td>12V power circuitry error.</td>
<td>Reseat the I/O cards.</td>
</tr>
<tr>
<td>●YRG</td>
<td>2.5 RDRAM power circuitry error.</td>
<td>Reseat the memory expander card. If the memory expander card has a separate voltage regulator module, reseat the module.</td>
</tr>
</tbody>
</table>
Using e-DiagTools for Hardware Problems

NOTE
Run e-DiagTools before contacting HP for warranty service. e-DiagTools gives you information your support agent needs.

Use e-DiagTools to diagnose hardware-related problems on your HP Workstation. If any of the Diag LEDs on the front panel of your Workstation are on, go to “Understanding the Diag LEDs” on page 35 before attempting to use e-DiagTools.

For more information about this utility, refer to the HP x4000 Workstation Technical Reference, available at www.hp.com/workstations/support.

HP e-DiagTools is pre-installed on your hard disk drive. Your hard disk includes a hardware diagnostic partition containing HP e-DiagTools hardware diagnostic utilities. Do NOT delete this partition.

The HP Workstation Recovery CD-ROMs that came with your Workstation also contain a copy of e-DiagTools in case you are unable to start this utility from your hard disk drive.

Starting e-DiagTools from the Hard Drive's Utility Partition (Recommended Method)

NOTE
This method only works if the diagnostics partition on your hard disk drive is intact.

1. Start or restart your Workstation.
2. Press function key F10 when you see the message “Press F 10 to enter HP Utility Partition or any other key to proceed.”
3. Select the option to run e-DiagTools hardware diagnostics.
Troubleshooting

Using e-DiagTools for Hardware Problems

Starting e-DiagTools from the CD-ROM

Use this method if for any reason you are unable to start this utility from the hard disk drive partition.

1. Insert the CD-ROM in the CD-ROM drive.

2. Restart the Workstation. The Workstation should boot from the CD-ROM rather than the hard drive.

3. Select the option to run the hardware diagnostics.

---

**NOTE**

If you are unable to boot from your CD-ROM drive, restart your Workstation and press **F12** to change the system boot order. You can also change the boot order from the Setup utility (see “Configuring Your Workstation” on page 19). Check the Boot device settings to ensure that your Workstation can boot from the CD-ROM.
Recovering or Reconfiguring the Operating System

The HP Workstation Recovery CD-ROMs let you:

• restore your computer to its original factory configuration
• change or reconfigure the operating system
• reinstall drivers or other factory-supplied software components

The drivers and software utilities, including documentation and navigational aids, help you to recover either the full set of pre-loaded software or subset of it.

Some of the available functions on the HP Workstation Recovery CD-ROMs are:

• Install Windows 2000 — returns your HP Workstation to its original state (Windows 2000 Recovery CD only).
• Install Windows NT — installs a factory-configured Windows NT operating system on your Workstation (Windows NT Recovery CD only).
• Windows Minimal Installation — installs Windows 2000 or NT with a minimal set of drivers (appropriate for advanced users only).
• Windows Master Files — allows you to copy Windows 2000 or NT master files to the \i386 directory on your hard disk.
• Help — displays the help text.

NOTE

Some of the operations you can perform using the HP Workstation Recovery CD-ROMs permanently erase the current contents of your hard disk. You should always back up your data and personal files before using the HP Workstation Recovery CD-ROMs.
Troubleshooting
Recovering or Reconfiguring the Operating System

Preparing to Recover Windows NT or Windows 2000

Before you perform a recovery:

- Ensure the Workstation model matches the HP Workstation Recovery CD-ROM labels (the operating system recovery is locked to the specific Workstation model).
- Back up all data files and, if necessary, software applications.
- Upgrade to the latest BIOS version. For instructions, refer to www.hp.com/workstations/support.
- Clear any BIOS-level passwords. See “Setting Passwords” on page 22.
- In the Security menu, set all Hardware Protection items to “Enabled” or “Unlocked” (if applicable). See “Security Menu” on page 21.
- In the Boot menu, ensure booting from the CD-ROM is enabled and the CD-ROM drive is configured to boot before the hard disk drive in the Boot Device Priority List. See “Boot Menu” on page 21.
- Ensure that you have the Certificate of Authenticity from Microsoft available. (This is a label on the cover of your Workstation.)

NOTE Windows NT 4.0 will not install with 4 GB of memory. If you have 4 GB of memory, you must remove 4 RIMMS from slot pairs 3 and 4 (see the memory loading label on the chassis cover). After Windows NT 4.0 is loaded, you can reinstall this memory.
Performing a Full Recovery of Windows NT or Windows 2000

Depending on the hardware configuration, a full system recovery takes 30 minutes to 2 hours.

CAUTION

Remember, this procedure erases everything from the hard drive. Make sure you have backed up all data files and software applications.

1. Shut down the operating system and turn off your Workstation.
2. Unplug the Workstation from the power source.
3. If any non-standard components were added after you received the Workstation, you must restore it to its original factory configuration (remove the components).
4. Plug the Workstation into the power source.
5. Insert the HP Workstation Recovery CD-ROM containing your operating system, either Windows 2000 or Windows NT, into the CD-ROM drive and start the Workstation.
6. The computer boots from the CD-ROM and displays a DOS-style menu.
7. Follow the on-screen instructions.
8. Several reboots are carried out. This is normal. Do not interrupt the process. Wait until a message indicates the operation has been successfully completed.

The operating system and drivers are now installed.
Troubleshooting
Recovering or Reconfiguring the Operating System

NOTE The full recovery function restores a factory disk image of your computer. We recommended you install the latest drivers, available at www.hp.com/workstations/support.

NOTE If you have accessories that you removed, replace them now. You must also re-install the drivers for these accessories.

All data files and software applications that were saved before performing the full recovery also need to be restored.
HP x4000 Technical Characteristics

**NOTE**

Operating temperature and humidity ranges may vary depending on the mass storage devices installed. High humidity levels can cause improper operation of disk drives. Low humidity ranges can aggravate static electricity problems and cause excessive wear of the disk surface.

When you turn off your Workstation with the power button on the front panel, the power consumption falls below 10W, but is not zero. To reach zero power consumption when the computer is off, either unplug the Workstation from the power outlet or use a power strip with a switch.

<table>
<thead>
<tr>
<th>Table 2-2</th>
<th>x4000 Technical Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>Minimum configuration: 40.20 lb. (18.24 kg)</td>
</tr>
<tr>
<td></td>
<td>Maximum configuration: 45.40 lb. (20.60 kg)</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Width: 8.22 in. (20.90 cm)</td>
</tr>
<tr>
<td></td>
<td>Height: 19.02 in. (48.30 cm)</td>
</tr>
<tr>
<td></td>
<td>Depth: 18.62 in. (47.3cm)</td>
</tr>
<tr>
<td>Footprint</td>
<td>153.06 in. (988.57 cm)</td>
</tr>
<tr>
<td>Power Supply</td>
<td>Input voltage: 90 - 250 VAC</td>
</tr>
<tr>
<td></td>
<td>Input frequency: 50/60 Hz</td>
</tr>
<tr>
<td></td>
<td>Typical input power: 365 W</td>
</tr>
<tr>
<td></td>
<td>Max avg input power: 500 W</td>
</tr>
<tr>
<td></td>
<td>Maximum output power: 465 W</td>
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<tr>
<td>Storage Humidity</td>
<td>90% (relative, non-condensing)</td>
</tr>
<tr>
<td>Operating Humidity</td>
<td>15 to 80% (relative, non-condensing)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40°C (-40°F) to 70°C (158°F)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>5°C (41°F) to 35°C (95°F)</td>
</tr>
<tr>
<td>Altitude</td>
<td>Operating: 0 to 10,000 ft. (3100 m)</td>
</tr>
<tr>
<td></td>
<td>Non-operating: 0 to 15,000 ft. (4500 m)</td>
</tr>
</tbody>
</table>
HP Customer Care Center Phone Numbers

HP Customer Care Centers can help you solve issues related to HP products and, if necessary, initiate appropriate service procedures. In the U.S.A, telephone support is available 24 hours a day, 7 days a week. In other locations, it is available during normal office hours.

**NOTE**

Before dispatching an HP Service Representative or replacement part, HP will attempt to resolve your support issue via the telephone.

These phone numbers were correct when this document was printed. The most recent support numbers can be found at [www.hp.com/support](http://www.hp.com/support).

<table>
<thead>
<tr>
<th>North &amp; Latin America</th>
<th>Europe, Middle East &amp; Africa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>Austria</td>
</tr>
<tr>
<td>0810 555 5520 (Argentina)</td>
<td>+43 (0) 810 00 6080</td>
</tr>
<tr>
<td>(5411) 4778 8380 (other</td>
<td></td>
</tr>
<tr>
<td>locations)</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>Belgium</td>
</tr>
<tr>
<td>(11) 3747 7799 (Sao Paulo)</td>
<td>Dutch +32 (0)2 626 8806</td>
</tr>
<tr>
<td>0800 157751 (other</td>
<td>French +32 (0)2 626 8807</td>
</tr>
<tr>
<td>locations)</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>Denmark</td>
</tr>
<tr>
<td>905 206 4663</td>
<td>+45 39 29 4099</td>
</tr>
<tr>
<td>Chile</td>
<td>English International</td>
</tr>
<tr>
<td>800 360 999</td>
<td>+44 (0)207 512 52 02</td>
</tr>
<tr>
<td>Mexico</td>
<td>Finland</td>
</tr>
<tr>
<td>01 800 472 6684</td>
<td>+358 (0)203 47 288</td>
</tr>
<tr>
<td>United States</td>
<td>France</td>
</tr>
<tr>
<td>(970) 635-1000</td>
<td>+33 (0)1 43 62 34 34</td>
</tr>
<tr>
<td>Venezuela</td>
<td>Germany</td>
</tr>
<tr>
<td>800 47 777</td>
<td>+49 (0)180 52 58 143</td>
</tr>
<tr>
<td>207 8488 (Caracas)</td>
<td>(24PF/min)</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>Israel</td>
</tr>
<tr>
<td>Australia</td>
<td>Tel. +972 (0)9 9524848</td>
</tr>
<tr>
<td>(03) 8877-8000</td>
<td>Fax. +972 (0)9 9524849</td>
</tr>
<tr>
<td>China</td>
<td>Middle-East</td>
</tr>
<tr>
<td>+86 (0) 10 6564 5959</td>
<td>Tel. 971 4 883 8454</td>
</tr>
<tr>
<td></td>
<td>Fax 971 4 883 9495</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>Netherlands</td>
</tr>
<tr>
<td>+85 (2) 2802 4098</td>
<td>+31 (0)20 606 8751</td>
</tr>
<tr>
<td>India</td>
<td>Norway</td>
</tr>
<tr>
<td>+91 (11) 682 6035</td>
<td>+47 22 11 6299</td>
</tr>
</tbody>
</table>
## HP Customer Care Center Phone Numbers

<table>
<thead>
<tr>
<th>Country</th>
<th>Phone Number</th>
<th>Country</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>+62 (21) 350 3408</td>
<td>Poland</td>
<td>Tel. +48 22 865 9800</td>
</tr>
<tr>
<td>Japan</td>
<td>+81 3 5344 7181</td>
<td>Portugal</td>
<td>+351 21 3176333</td>
</tr>
<tr>
<td>Korea, Republic of</td>
<td>+82 (2) 3270 0700</td>
<td>Russian</td>
<td>Federation +7 095 797 3520 (Moscow) +7 812 346 7997 (St. Peter)</td>
</tr>
<tr>
<td>Malaysia</td>
<td>+60 (3) 2695 2566</td>
<td>South Africa</td>
<td>+27-11 258 9301 (outside RSA) 086 000 1030 (inside RSA)</td>
</tr>
<tr>
<td>Penang</td>
<td>1300 88 00 28</td>
<td>Spain</td>
<td>+34 902 321 123</td>
</tr>
<tr>
<td>New Zealand</td>
<td>+64 (9) 356 6640</td>
<td>Sweden</td>
<td>+46 (0)8 619 2170</td>
</tr>
<tr>
<td>Philippines</td>
<td>+63 (2) 867 3551</td>
<td>Switzerland</td>
<td>+41 (0)848 80 11 11</td>
</tr>
<tr>
<td>Singapore</td>
<td>+65 272 5300</td>
<td>Turkey</td>
<td>+90 212 221 69 69</td>
</tr>
<tr>
<td>Taiwan</td>
<td>+886 (2) 2717 0055</td>
<td>United Kingdom</td>
<td>+44 (0)207 512 52 02</td>
</tr>
<tr>
<td>Thailand</td>
<td>+66 (2) 661 4000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viet Nam</td>
<td>+84 (0) 8 823-4530</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Troubleshooting

HP Customer Care Center Phone Numbers
A Warranty and Regulatory Information
# Declaration of Conformity

according to ISO/IEC Guide 22 and EN 45014

| Manufacturer: | Hewlett-Packard Company  
|              | 3404 East Harmony Rd.  
|              | Fort Collins, CO 80528  
|              | USA |

**Declares that the:**

| Product Name: | HP Workstation |
| Model Numbers: | A6068A |
| Base Product Numbers: | A1280A |
| Product Options: | all |

**conforms to the following specifications:**

**Safety**

- IEC 60825-1:1993/EN60825-1:1994+A11 Class 1 for LEDs
- USA 21CFR Subpart J – for FC Laser module
- China GB4943-1995
- Russia GOST R 50377-92

**EMC.**

- CISPR 22: 1997 / EN 55022: 1998 Class A
- US FCC Part 15, Class A
- China GB9254-1999
- Japan VCCI Class A
- Russia GOST R 29216-94
- Taiwan CNS13438:1997 Class A

**and is certified by:**

- UL Listed to UL1950, 2nd edition, File E146385
- cUL Listed to CSA 22.2 No. 950-M93
- T_V Certified to EN60950 2nd edition with A1+A2+A3+A4
- HP Fort Collins CCQD HTC

**supplementary information:**

The product herewith complies with the requirements of the following Directives and carries the CE marking accordingly:

- the EMC directive 89/336/EEC and 92/31/EEC and 93/68/EEC

This product was tested in a typical Hewlett-Packard workstation configuration.

Original signed by: Ruth Lutes, Site Quality Manager

**For Compliance Information ONLY, contact:**

- European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department HQ-TRE Standards Europe, Herrenberger Strasse 130 Boeblingen (FAX: +49-7031-14-3143)
- Americas Contact: Hewlett-Packard, Fort Collins Site Quality Manager, Mail Stop 64, 3404 E. Harmony Road, Fort Collins, CO 80528, U.S.A.
Regulatory Information

FCC (for USA only)

Federal Communications Commission Radio Frequency Interference Statement

NOTE:
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules and the Canadian Department of Communications. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Hewlett-Packard's FCC Compliance Tests were conducted with HP-supported peripheral devices and HP shielded cables, such as those you receive with your system. Changes or modifications not expressly approved by Hewlett-Packard could void the user's authority to operate the equipment.

Notice for Canada

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numérique de la Class A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Safety Warning for the USA and Canada

If the power cord is not supplied with the computer, select the proper power cord according to your local national electric code.
USA: use a UL listed type SVT detachable power cord.
Canada: use a CSA certified detachable power cord.

For your safety, never remove the PC's cover without first removing the power cord and any connection to a telecommunication network. Always replace the cover before switching on again.
Warranty and Regulatory Information

Regulatory Information

Si le cordon secteur n'est pas livré avec votre ordinateur, utiliser un cordon secteur en accord avec votre code électrique national. USA: utiliser un cordon secteur “UL listed,” de type SVT. Canada: utiliser un cordon secteur certifié CSA.

Pour votre sécurité, ne jamais retirer le capot de l'ordinateur sans avoir préalablement débranché le cordon secteur et toute connection à un réseau de télécommunication. N'oubliez pas de replacer le capot avant de rebrancher le cordon secteur.

Notice for the Netherlands

Bij dit apparaat zijn batterijen geleverd. Wanneer deze leeg zijn, moet U ze niet weggooien maar inleveren als KCA.

Notice for Germany


Noise Declaration for Germany

Lärmangabe nach Maschinenlärmerverordnung - 3 GSGV (Deutschland) LpA < 70 db am Arbeitsplatz normaler Betrieb nach EN27779: 11.92.

Notice for Japan (Class A)

この装置は、情報処理装置等電波障害自主規制協議会（V C C I）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。
Notice for Korea
사용시 안내문 (A급 기기)

이 기기는 업무용으로 진지파장해질정을 받은 기기이오나, 만약 잘못 구입하셨을 때에는 구입한 곳에서 비업무용으로 교환하시기 바랍니다.

Notice for Taiwan
警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。
HP Hardware Warranty

Important: This is your hardware product warranty statement. Please, read it carefully.

Warranty terms may be different in your country. If so, your Authorized HP Dealer or Hewlett-Packard Sales and Service Office can give you details.

HP products may contain remanufactured parts equivalent to new in performance or may have been subject to incidental use.

HP products external to the system processor unit — such as external storage subsystems, displays, printers, and other peripherals — are covered by the applicable warranties for those products; HP software is covered by the HP Software Product Limited Warranty.

FOR CONSUMER TRANSACTIONS IN AUSTRALIA AND NEW ZEALAND:
THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

HP Year 2000 Warranty

This HP Year 2000 Warranty is in addition to the HP Standard Commercial Warranties contained in Exhibit E16, HP Terms and Conditions of Sale and Service. HP warrants that each HP hardware, software, and firmware Product delivered under this HP Year 2000 Warranty will be able to accurately process date data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000, including leap year calculations, when used in accordance with the Product documentation provided by HP (including any instructions for installing patches or upgrades), provided that all other products (e.g. hardware, software, firmware) used in combination with such HP Product(s) properly exchange date data with it.

If the Specifications require that specific HP Products must perform as a system in accordance with the foregoing warranty, then that warranty will apply to those HP Products as a system, and Customer retains sole responsibility to ensure the Year 2000 readiness of its information technology and business environment.

The duration of this warranty extends through January 31, 2001. The remedies available under this warranty will be defined in, and subject to, the terms and limitations of the warranties contained in HP’s standard commercial warranties. To the extent permitted by local law, this warranty applies only to branded HP Products and not to products manufactured by others that may be sold or distributed by HP. This HP Year 2000 Warranty applies only to HP Products shipped after the effective date, July 01, 1998, of this warranty. Nothing in this

Appendix A
warranty will be construed to limit any rights or remedies provided elsewhere in the HP Terms and Conditions of Sale and Service with respect to matters other than Year 2000 compliance.

**Three Year Limited Hardware Warranty**

Hewlett-Packard (HP) warrants this hardware product against defects in materials and workmanship for a period of three years from receipt by the original end-user purchaser.

The three year warranty includes on-site service during the first year of use (free parts and labor), and parts service provided by an HP Service Center or a participating Authorized HP Computer Dealer Repair Center, during the second and third years of use.

If HP receives notice of above defined defects during the warranty period, HP will either, at its option, repair or replace products, which prove to be defective.

Should HP be unable to repair or replace the product within a reasonable amount of time, the customer's alternate exclusive remedy shall be a refund of the purchase price upon return of the product.

The system processor unit, keyboard, mouse, and Hewlett-Packard accessories inside the system processor unit — such as video adapters, mass storage devices, and interface controllers — are covered by this warranty.

This warranty is extended worldwide under certain conditions (please check with your local HP office) to products purchased from HP or an Authorized HP Computer Dealer which are reshipped by the original purchaser either for use by the original purchaser or provided as an incidental part of systems integrated by the original purchaser. When available in the country of use, service is provided in the same manner as if the product was purchased in that country and can only be provided in countries where the product is designed to operate. If the product is not normally sold by HP in the country of use, it must be returned to the country of purchase for service. Response time for on-site service, and parts delivery turn-around time for parts service, are subject to changes from standard conditions based upon non-local parts availability.

**Limitation of Warranty**

The above warranty shall not apply to defects resulting from: misuse; unauthorized modification; operation or storage outside the environmental specifications for the product; in-transit damage; improper maintenance; or defects resulting from use of non-HP software, accessories, media, supplies, consumables, or such items not designed for use with the product.

Reloading the bundled or pre-loaded software on your Workstation is not covered by the HP warranty.
Warranty and Regulatory Information

HP Hardware Warranty

HP MAKES NO OTHER EXPRESS WARRANTY, WHETHER WRITTEN OR ORAL, WITH RESPECT TO THIS PRODUCT. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS IS LIMITED TO THE THREE-YEAR DURATION OF THIS WRITTEN WARRANTY. SOME STATES OR PROVINCES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

This warranty gives you specific legal rights, and you may also have other rights, which vary, from state to state, or province to province.

Limitation of Liability and Remedies

THE REMEDIES PROVIDED ABOVE ARE THE CUSTOMER’S SOLE AND EXCLUSIVE REMEDIES. IN NO EVENT SHALL HP BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON WARRANTY, CONTRACT, TORT, OR ANY OTHER LEGAL THEORY.

The foregoing limitation of liability shall not apply in the event that any HP product sold hereunder is determined by a court of competent jurisdiction to be defective and to have directly caused bodily injury, death, or property damage; provided, that in no event shall HP’s liability for property damage exceed the greater of $50,000 or the purchase price of the specific product that caused such damage.

Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages — including lost profit — so the above limitation or exclusion may not apply to you.

Obtaining On-Site Warranty Service

To obtain on-site warranty service, the customer must contact an HP Sales and Service Office (in the US, call the HP Customer Support Center at (970) 635-1000) or a participating Authorized HP Computer Dealer Repair Center. The customer must be prepared to supply proof of the purchase date.

The system processor unit, keyboard, mouse, and Hewlett-Packard accessories inside the system processor unit — such as video adapters, mass storage devices, and interface controllers — are covered by this warranty.

During the on-site warranty period, customer-replaceable components may be serviced through expedited part shipment. In this event, HP will prepay shipping charges, duty, and taxes; provide telephone assistance on replacement of the component when necessary; and pay shipping charges, duty, and taxes for any part that HP asks to be returned.

On-site visits caused by non-Hewlett-Packard products — whether internal or
external to the system processor unit — are subject to standard per-incident travel and labor charges.

On-site service for this product is restricted or unavailable in certain locations. In HP Excluded Travel Areas — areas where geographical obstacles, undeveloped roads, or unsuitable public transportation prohibit routine travel — service is provided on a negotiated basis at extra charge.

Response time for HP on-site service in an HP Service Travel Area is normally next business day (excluding HP holidays) for HP Travel Zones 1-3 (generally 100 miles or 160 km from the HP office). Response time is second business day for Zones 4 and 5 (200 miles, 320 km); third business day for Zone 6 (300 miles, 480 km); and negotiated beyond Zone 6. Worldwide Customer Support Travel information is available from any HP Sales and Service Office.

Travel restrictions and response time for dealer or distributor service are defined by the participating dealer or distributor.

Service contracts which provide after-hour or weekend coverage, faster response time, or service in an Excluded Travel Area are often available from HP, an authorized dealer, or authorized distributor at additional charge.

Customer Responsibilities

The customer may be required to run HP-supplied diagnostic programs before an on-site visit or replacement part will be dispatched.

The customer must verify that the latest version of the BIOS is installed on the product. The customer may be asked to install the latest version of the BIOS before an HP Sales and Service Center Representative or HP Authorized Support Provider representative is dispatched to the customer's site.

Product upgrades, such as new revisions of drivers or BIOS, are not eligible for on-site services under warranty. These revisions are available for you to download at the recommendation of HP or your reseller support representative. If you need professional services to assist you with the upgrades, contact your reseller or HP.

The customer is responsible for the security of its proprietary and confidential information and for maintaining a procedure external to the products for reconstruction of lost or altered files, data, or programs.

The customer must provide: access to the product; adequate working space and facilities within a reasonable distance of the product; access to and use of all information and facilities determined necessary by HP to service the product; and operating supplies and consumables such as the customer would use during normal operation.

A representative of the customer must be present at all times. The customer must state if the product is being used in an environment which poses a potential
Warranty and Regulatory Information

HP Hardware Warranty

health hazard to repair personnel; HP or the servicing dealer may require that the product be maintained by customer personnel under direct HP or dealer supervision.

Obtaining Parts Warranty Service

When parts warranty service applies, the customer may be required to run HP-supplied diagnostic programs before a replacement part will be dispatched. The customer must be prepared to supply proof of purchase.

The customer shall return some defective parts upon HP demand. In that case, HP will prepay shipping charges for parts returned to the HP parts service center.

HP Telephone Support Services

HP free telephone support for your Workstation is available during the first year from date of purchase. This service will also provide technical assistance with the basic configuration and setup of your HP Workstation and for the bundled or pre-loaded operating system.

HP does NOT provide telephone support for Workstations configured as network servers. We recommend HP NetServers for your network server requirements.

(Rev. 17/03/98)
HP Software Limited Warranty

THIS HP SOFTWARE LIMITED WARRANTY SHALL COVER ALL SOFTWARE, INCLUDING OPERATING SYSTEM SOFTWARE, THAT IS PROVIDED TO YOU AS PART OF THE HP PRODUCT. IN CASE OF CONFLICT BETWEEN HP AND NON-HP WARRANTY TERMS THESE HP WARRANTY TERMS SHALL PREVAIL.

HP Software Warranty

HP warrants for a period of ninety (90) days from the date of purchase that all pre-installed HP software will execute their programming instructions when all files are properly installed. HP does not warrant that the software will be uninterrupted or error free. In case of software failure to execute its programming instructions during the warranty period, customer’s remedy will be the replacement of software provided by HP or a refund upon return of the product and all copies of software, installation instructions and remote assistance (by phone and/or by email).

Other Software (if supplied) All other software is warranted by the software vendor and is not warranted by HP.

Operating System

Microsoft Operating Systems and Software

HP warrants for a one (1) year period from the date of the purchase the installation and configuration of the pre-installed version of the operating system and software. HP does not warrant that the functionality of the operating system and software will be uninterrupted or error free. During the warranty period, in the event of a software failure to execute its programming instructions during the installation and/or configuration, HP will provide customers with remote assistance (by phone and/or by email) for re-installation and configuration.

All other Operating Systems Other Operating Systems are warranted by the Operating System vendor and are not warranted by HP.

Removable Media (if supplied)

HP warrants the removable media, if supplied, upon which this product is recorded to be free from defects in materials and workmanship under normal use for a period of ninety (90) days from the date of purchase. Customer’s remedy in case of defect will be the replacement of media provided by HP or a refund upon return of the product and destruction of all other non-removable media copies of the software.
Warranty and Regulatory Information

HP Software Limited Warranty

HP Service Procedures

Notice of Warranty Claims. Customer must notify HP in writing of any warranty claim not later than thirty (30) days after the expiration of the warranty period.

Limitation of Warranty. HP makes no other express warranty, whether written or oral with respect to this product. Any implied warranty of merchantability or fitness for a particular purpose is limited to the 90-day duration of this written warranty. HP is not liable in case of misuse, unauthorized modification, improper maintenance, or defects resulting from unauthorized use with non HP equipment.

Limitation of Liability and Remedies. The remedies provided above are customer's sole and exclusive remedies. In no event shall HP be liable for any direct, indirect, special, incidental or consequential damages (including lost profit) whether based on warranty, contract, tort or any other legal theory.

This warranty in no way effects Customers right under statutory law.

Obtaining Warranty Service. Warranty Service may be obtained from the nearest HP sales office or in other locations indicated on HP's Web Site.

HP Software License Agreement

Your HP product contains software programs.

Carefully read this license agreement and limited warranty statement before proceeding to operate this equipment. Rights in the software are offered only on the condition that the customer agrees to all terms and conditions of the license agreement. Proceeding to operate the equipment indicates your acceptance of these terms and conditions. If you do not agree with the terms of the license agreement, you must now either remove the software from your hard disk drive and destroy the master diskettes, or return the complete HP product and software for a full refund. Proceeding with configuration signifies your acceptance of the license terms.

Unless otherwise stated below, this HP software license agreement shall govern the use of all software that is provided to you as part of the HP product and shall supersede any other software warranty statement that may be included in this HP product or may be found online.

Operating system and software applications by Microsoft are licensed to you under the Microsoft License Agreement contained in the Microsoft documentation or displayed on your screen when Microsoft Software Products
are launched. Other non-HP Software and Operating Systems are covered by the appropriate vendor license. The following License Terms govern the use of the HP software:

**USE.** Customer may use the software on any one HP product. Customer may not network the software or otherwise use it on more than one HP product. Customer may not reverse assemble or decompile the software unless authorized by law.

**COPIES AND ADAPTATIONS.** Customer may make copies or adaptations of the software a) for archival purposes or (b) when copying or adaptation is an essential step in the use of the software with an HP product so long as the copies and adaptations are used in no other manner.

**OWNERSHIP.** Customer agrees that he/she does not have any title or ownership of the software, other than ownership of the physical media. Customer acknowledges and agrees that the software is copyrighted and protected under the copyright laws. Customer acknowledges and agrees that the software may have been developed by a third party software supplier named in the copyright notices included with the software, who shall be authorized to hold the Customer responsible for any copyright infringement or violation of this Agreement.

**PRODUCT RECOVERY CD-ROM.** If your HP product was shipped with a product recovery CD-ROM: (i) The product recovery CD-ROM and/or support utility software may only be used for restoring the hard disk of the HP product with which the product recovery CD-ROM was originally provided. (ii) The use of any operating system software by Microsoft contained in any such product recovery CD-ROM shall be governed by the Microsoft License Agreement.

**TRANSFER OF RIGHTS IN SOFTWARE.** Customer may transfer rights in the software to a third party only as part of the transfer of all rights and only if Customer obtains the prior agreement of the third party to be bound by the terms of this License Agreement. Upon such a transfer, Customer agrees that his/her rights in the software are terminated and that he/she will either destroy his/her copies and adaptations or deliver them to the third party.

**SUBLICENSING AND DISTRIBUTION.** Customer may not lease, sublicense the software or distribute copies or adaptations of the software to the public in physical media or by telecommunication without the prior written consent of Hewlett-Packard.

**TERMINATION.** Hewlett-Packard may terminate this software license for failure to comply with any of these terms provided Hewlett-Packard has requested Customer to cure the failure and Customer has failed to do so within thirty (30) days of such notice.

**UPDATES AND UPGRADES.** Customer agrees that the software does not include updates and upgrades which may be available from Hewlett-Packard under a separate support agreement.

**EXPORT CLAUSE.** Customer agrees not to export or re-export the software or any copy or adaptation in violation of the U.S. Export Administration regulations.
Warranty and Regulatory Information

HP Software Limited Warranty

or other applicable regulation.

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Support Policy for Microsoft Operating System Service Packs. HP provides end user support for HP Workstations that use Microsoft Operating Systems, including support pack releases by Microsoft. This support will be available within 30 days of the software being released.