Setup and Troubleshooting

HP xw4200, xw6200, xw8200, and xw9300 Workstations

Legal and notice information

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1 Locating HP Resources

Table 1-1 Locating HP Resources

What Do You Need Help With?	Where to Find It?
Locating additional information.	For online access to technical support information and tools, visit www.hp.com/support. Support resources include web-based troubleshooting tools, technical knowledge databases, driver and patch downloads, online communities, and proactive notification services.
Locating HP user documentation, white papers, and third-party documentation.	For the latest online documentation, visit www.hp.com/support/workstation_manuals.
Finding regulatory information.	Refer to the Safety & Regulatory Information Guide on the Documentation and Diagnostics CD for product Class information. You can also refer to the label on the workstation chassis.
Locating parts and accessories.	For complete and current information on supported accessories and components, visit http://partsurfer.hp.com.
Exploring the contents on the *Documentation and Diagnostics* CD.	For information on using the CD as a documentation tool or a diagnostics tool, see "Using the Documentation and Diagnostics CD" on page 8 of this chapter. The *Documentation and Diagnostics* CD includes: • a copy of the *Setup and Troubleshooting* Guide • a link to the latest *Service and Technical Reference* Guide • a copy of the *Safety and Comfort* Guide • a copy of the *Safety & Regulatory Information* Guide • HP Insight Diagnostics utility
Signing up for product notifications.	Subscriber's Choice is an HP program that allows you to sign up to receive driver and software alerts, proactive change notifications (PCNs), the HP newsletter, and more. Sign up today at www.hp.com/go/subscriberschoice.
Locating workstation QuickSpecs.	The Product Bulletin contains QuickSpecs for HP workstations. QuickSpecs provide an overall specification review of your product. It includes information about its features including the operating system, power supply, memory, processor, and many other components of the system. To access the QuickSpecs, visit http://h18000.www1.hp.com/products/quickspecs/productbulletin.html.
Locating warranty information.	Each system comes with a printed copy of the warranty statement.

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Table 1-1 Locating HP Resources

What Do You Need Help With?	Where to Find It?
Locating information about the system board.	The inside of the access panel contains an illustration of the system board layout. Also, you can find additional information by reviewing the *Service and Technical Reference* Guide that can be found on the *Documentation and Diagnostics* CD or on the Web.
Locating diagnostics tools.	The *Documentation and Diagnostics* CD contains the HP Insight Diagnostics utility. To use this utility, see "HP Insight Diagnostics" on page 23.
Locating the latest drivers.	Verify you have the latest drivers for your system by visiting http://welcome.hp.com/country/us/en/support.html.
Determining the meaning of beep and LED codes.	See "Diagnostic Lights and Audible (Beep) Codes" on page 30 for detailed information about beep and LED codes applicable to the workstation.
Locating the serial number and COA label (if applicable).	The serial number labels can be found on the top panel or on the side of the unit and at the rear of the unit. The COA label is generally located on the top panel or access panel near the serial number label.
Reinstalling the operating system.	See "Software Setup" on page 23 for more information on how to load the operating system.
Finding information on how to contact technical support.	Before you call technical support, see "Self Troubleshooting" on page 23 for self-troubleshooting information. To facilitate your call, see "Calling Technical Support" on page 33 for a listing of information you need to have available before you call.
	For U.S. and Canada, call 1-800-HPINVENT. For a listing of all worldwide technical support phone numbers, visit http://welcome.hp.com/country/us/eng/wwcontact.html.

Using the Documentation and Diagnostics CD

Accessing Documentation

To access the documentation contents of the *Documentation and Diagnostics* CD, follow the steps below that are applicable to your workstation.

Windows-based Workstations

Insert the CD into the CD-ROM drive. The CD will Autorun. If there is no CD-ROM drive activity for two minutes or more, the Autorun feature may not be enabled on the workstation. To run the CD, follow these steps:

1. Click **Start > Run**.

2. Type:

   X:\index.htm (where X is the drive letter designator for the CD-ROM drive)

3. Click **OK**.

Linux-based Workstations

If the workstation is running a Linux operating system, browse the CD and click on the index.htm file to launch the CD interface. To view the documents on the CD, download and install Adobe® Acrobat® Reader for Linux from www.adobe.com.

Accessing Diagnostics

To use the HP Insight Diagnostics utility, insert the *Documentation and Diagnostics* CD into your system and reboot. Follow the onscreen menu options and directions to begin your testing.

NOTE: Should you not have the *Documentation and Diagnostics* CD available, you can download the image from www.hp.com/go/workstationsupport.

1. Click on your workstation model link then click the **download drivers and software** link.

2. Select your language and then click the appropriate operating system link.

3. From the **download drivers and software** screen, click the **Diagnostics** link and then click the appropriate diagnostic program link.

Locating HP Resources

2   Hardware Setup

Quick Setup

After unpacking your workstation, locate an accessible workspace to set up the workstation and connect the mouse, keyboard, monitor(s), and power cables to your workstation. Connect the power cables from the monitor and workstation to a power outlet.

Figure 2-1 Cable Connections

NOTE: Connect other components, such as a printer, according to the instructions included with the device.For more information on your workstation, refer to the *Documentation and Diagnostics* CD or visit www.hp.com/go/workstationsupport.

Ventilation

Proper ventilation for your system is very important. Refer to the following notes and illustrations to properly position your system for maximum airflow

- Place the computer in an area that is relatively cool with adequate ventilation.

- Operate the computer on a sturdy, level surface. Leave a 10.2-cm (4-inch) clearance on all vented sides of the computer and above the monitor to permit the required airflow.

- Never restrict the airflow into the computer by blocking any vents or air intakes. Do not place the keyboard, with the keyboard feet down, directly against the front of the desktop unit as this also restricts airflow.
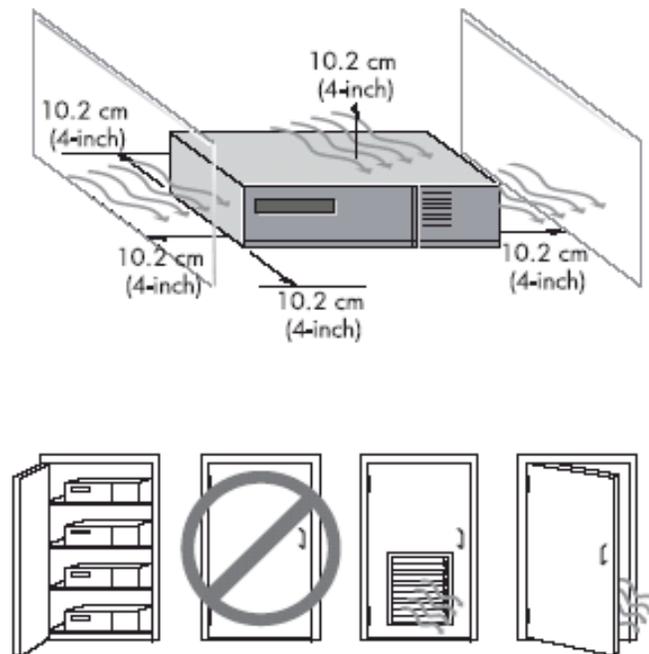
Figure 2-2 Ventilation Guidelines

Front Panel Components

xw4200 Front Panel Components
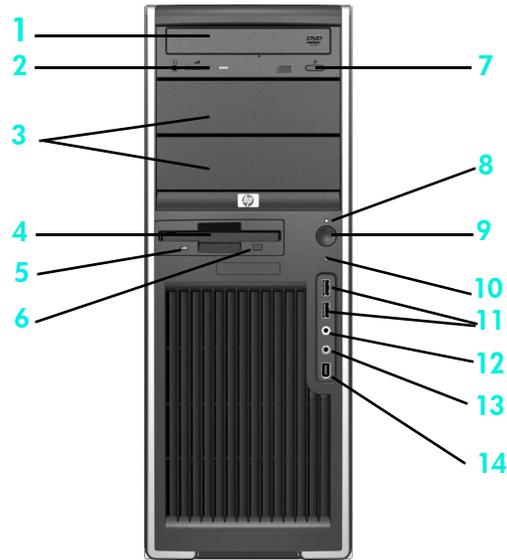
Figure 2-3 xw4200 Front Panel Components

Table 2-2 xw4200 Front Panel Components

Item	Description	Item	Description
1	Optical Drive*	8	Power On Light
2	Optical Drive Activity Lights	9	Power Button
3	5.25 Inch Drive Bays	10	Hard Drive Activity Light
4	Diskette Drive (optional)	11	USB (Universal Serial Bus) Ports
5	Diskette Drive Activity Light	12	Headphone Connector
6	Diskette Eject Button	13	Microphone Connector
7	Optical Drive Eject Button	14	IEEE-1394a Connector**

NOTE: * An optical drive is a CD-ROM, CD-R/RW, DVD-ROM, DVD+R/RW, or CD-RW/DVD combo drive.

NOTE: ** IEEE-1394a is an optional feature. If the unit was purchased without this option, then this connector will be covered with a black label.

Hardware Setup

Front Panel Components   13

xw6200 Front Panel Components
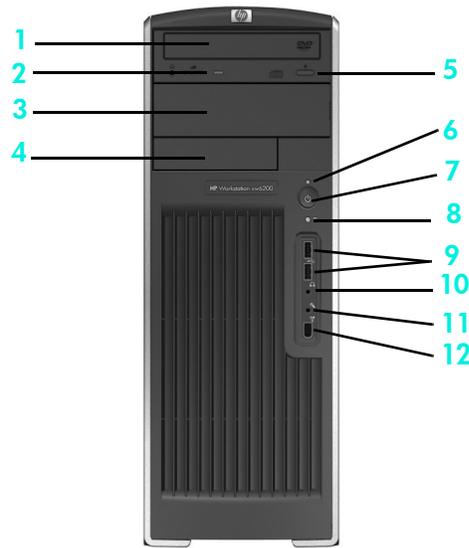
Figure 2-4 xw6200 Front Panel Components

Table 2-3 xw6200 Front Panel Components

Item	Description	Item	Description
1	Optical Drive*	7	Power Button
2	Optical Drive Activity Lights	8	Hard Drive Activity Light
3	5.25 Inch Drive Bays	9	USB Ports (2)
4	Diskette Drive (optional)	10	Headphone Connector
5	Optical Drive Eject Button	11	Microphone Connector
6	Power On Light	12	IEEE-1394a Connector**

NOTE: * An optical drive is a CD-ROM, CD-R/RW, DVD-ROM, DVD+R/RW, or CD-RW/DVD combo drive.

NOTE: ** IEEE-1394a is an optional feature. If the unit was purchased without this option, then this connector will be covered with a black label.

xw8200 and xw9300 Front Panel Components
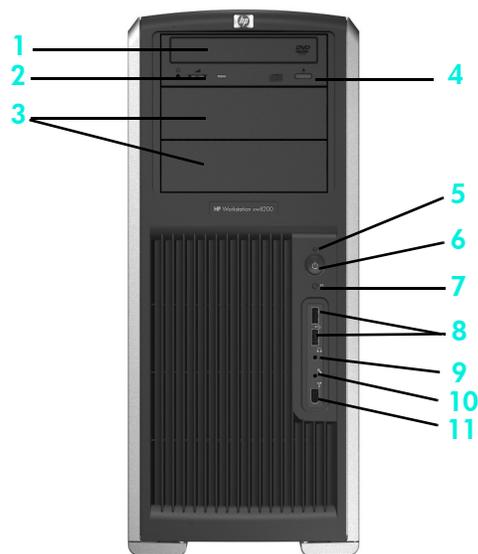
Figure 2-5 xw8200 and xw9300 Front Panel Components

Table 2-4 xw8200 and xw9300 Front Panel Components

Item	Description	Item	Description
1	Optical Drive*	7	Hard Drive Activity Light
2	Optical Drive Activity Lights	8	USB Ports (2)
3	5.25 Inch Drive Bays**	9	Headphone Connector
4	Optical Drive Eject Button	10	Microphone Connector
5	Power On Light	11	IEEE-1394a Connector
6	Power Button		

NOTE: * An optical drive is a CD-ROM, CD-R/RW, DVD-ROM, DVD+R/RW, or CD-RW/DVD combo drive.
NOTE: **The lowest 5.25 inch bay on the xw9300 only supports an optional 3.5 floppy diskette drive or a hard drive.

Hardware Setup

Front Panel Components   15

Rear Panel Components

xw4200 Rear Panel Components
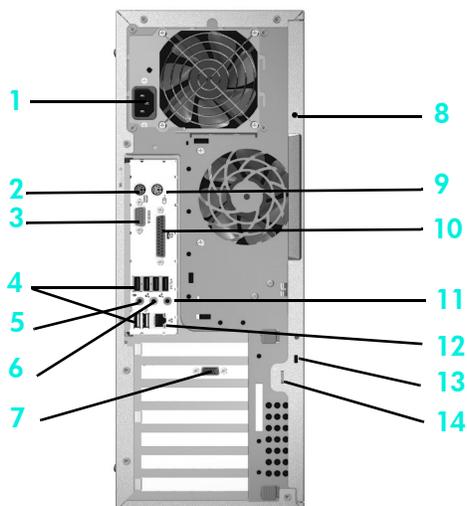
Figure 2-6 xw4200 Rear Panel Components

Table 2-5   xw4200 Rear Panel Components

Item	Description	Item	Description
1	Power Cord Connector	8	Universal Chassis Clamp Opening
2	Keyboard Connector (purple)	9	Mouse Connector (green)
3	Serial Connector (teal)	10	Parallel Connector (burgundy)
4	USB Ports (6)	11	Audio Line-In Connector (light blue)
5	Microphone Connector (pink)	12	RJ-45 Network Connector
6	Audio Line-Out Connector (lime)	13	Cable Lock Slot
7	Graphics Adapter (blue)	14	Padlock Loop

NOTE: The rear panel connectors are labeled with industry-standard icons and colors to assist you in connecting your peripheral devices.

xw6200 Rear Panel Components

Figure 2-7 xw6200 Rear Panel Components

Table 2-6 xw6200 Rear Panel Components

Item	Description	Item	Description
1	Keyboard Connector (purple)	9	Mouse Connector (green)
2	Serial Connector (teal)	10	Parallel Connector (burgundy
3	USB Ports (6)	11	RJ-45 Network Connector
4	Microphone Connector (pink)	12	Audio Line-In Connector (light blue)
5	Audio Line-Out Connector (lime)	13	Graphics Adapter (blue)
6	Power Cord Connector	14	Cable Lock Slot
7	Universal Chassis Clamp Opening	15	Mouse Connector (green)
8	Access Panel Key		

NOTE: The rear panel connectors are labeled with industry-standard icons and colors to assist you in connecting your peripheral devices.

Hardware Setup

Rear Panel Components   17

xw8200 Rear Panel Components

Figure 2-8 xw8200 Rear Panel Components

Table 2-7 xw8200 Rear Panel Components

Item	Description	Item	Description
1	Power Cord Connector	9	Access Panel Key
2	Keyboard Connector	10	Padlock Loop
3	Serial Connector (teal)	11	Cable Lock Slot
4	USB Ports (6)	12	Mouse Connector (green)
5	IEEE 1394 Connector	13	Parallel Connector (burgundy)
6	Microphone Connector (pink)	14	RJ-45 Network Connector
7	Audio Line-Out Connector (lime)	15	Audio Line-In Connector (light blue)
8	Universal Chassis Clamp Opening	16	Graphics Adapter (blue)

NOTE: The rear panel connectors are labeled with industry-standard icons and colors to assist you in connecting your peripheral devices.
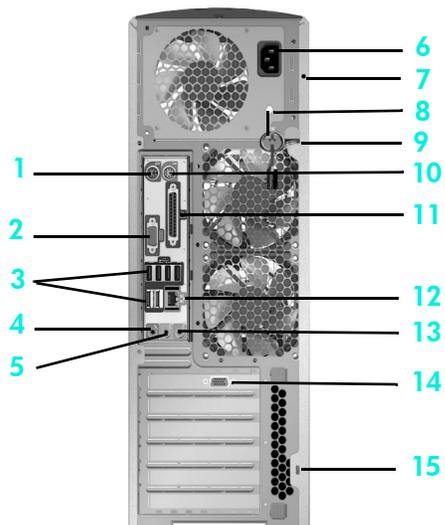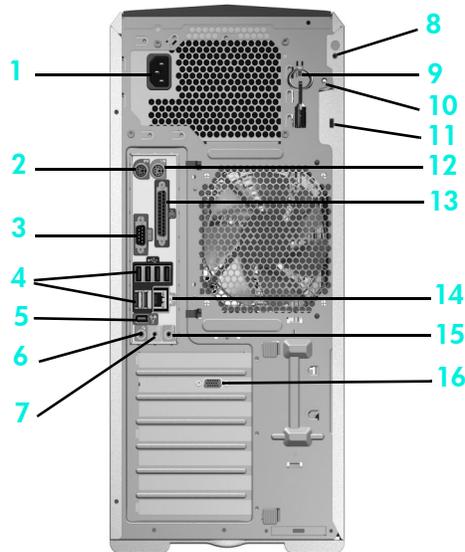
xw9300 Rear Panel Components
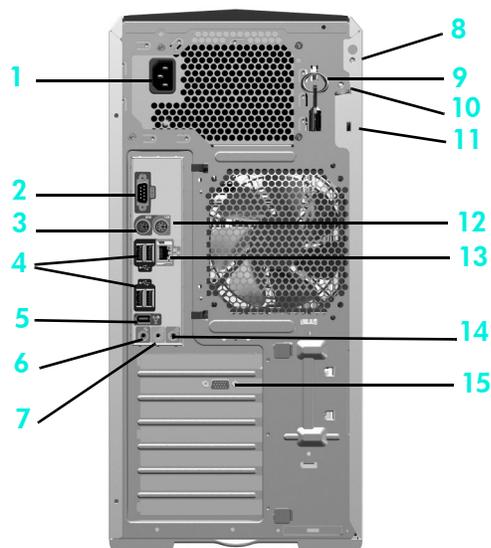
Figure 2-9 xw9300 Rear Panel Components

Table 2-8 xw9300 Rear Panel Components

Item	Description	Item	Description
1	Power Cord Connector	9	Access Panel Key
2	Serial Connector (teal)	10	Padlock Loop
3	Keyboard Connector	11	Cable Lock Slot
4	USB Ports (4)	12	Mouse Connector (green)
5	IEEE 1394 Connector	13	RJ-45 Network Connector
6	Microphone Connector (pink)	14	Audio Line-In Connector (light blue)
7	Audio Line-Out Connector (lime)	15	Graphics Adapter (blue)
8	Universal Chassis Clamp Opening		

NOTE: The rear panel connectors are labeled with industry-standard icons and colors to assist you in connecting your peripheral devices.

Hardware Setup
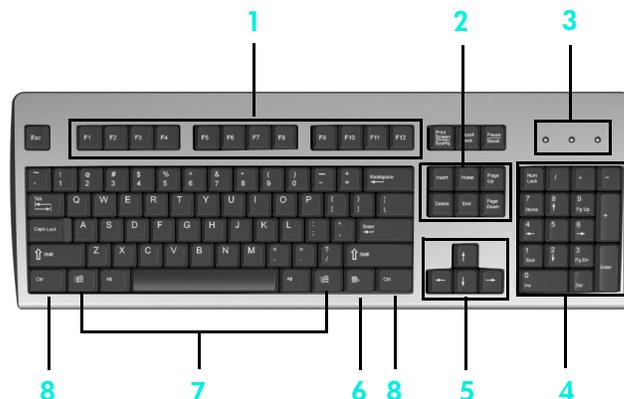
Keyboard

Figure 2-10 Standard Keyboard

Table 2-9 Standard Keyboard Key Descriptions

Item	Component	Description
1	Function Keys	Perform special functions, depending on the software application being used.
2	Editing Keys	Includes Insert, Home, Page Up, Delete, End, and Page Down.
3	Status Lights	Indicate the status of the workstation and keyboard settings (Num Lock, Caps Lock, and Scroll Lock).
4	Numeric Keys	Used like a calculator keypad.
5	Arrow Keys	Used to navigate through a document or website. These keys allow you to move left, right, up, and down, using the keyboard instead of the mouse.
6	Application Key*	Used (like the right mouse button) to open pop-up menus in a Microsoft™ Office application. May perform other functions in other software applications.
7	Windows® Logo Keys*	Used to open the Start menu in Microsoft Windows. Used in combination with other keys to perform other functions. (Available only on systems with Microsoft Windows pre-installed.)
8	Ctrl Key	Used in combination with another key; its effect depends on the application software you are using.

NOTE: * Keys available in select geographic regions.

Using the Windows Logo Key

Use the Windows Logo key in combination with other keys to perform certain functions available in the Windows operating system.

NOTE: The Windows logo key does not function on Linux systems.

Table 2-10 Windows Logo Key Functions

Key	Description
Windows Logo Key	Displays or hides the Start menu
Windows Logo Key + **d**	Displays the Desktop
Windows Logo Key + **m**	Minimizes all open applications
Shift + Windows Logo Key + **m**	Undoes Minimize All
Windows Logo Key + **e**	Launches My Computer
Windows Logo Key + **f**	Launches Find Document
Windows Logo Key + **Ctrl** + **f**	Launches Find Computer
Windows Logo Key + **F1**	Launches Windows Help
Windows Logo Key + **l**	Locks the computer if you are connected to a network domain, or allows you to switch users if you are not connected to a network domain
Windows Logo Key + **r**	Launches the Run dialog box
Windows Logo Key + **u**	Launches the Utility Manager
Windows Logo Key + **Tab**	Activates the next Taskbar button

Special Mouse Functions

Most software applications support the use of a mouse. The functions assigned to each mouse button depend on the software applications you are using.

NOTE: Some mouse software applications may interfere with the functionality of the keyboard and mouse if the keyboard and mouse are connected to your workstation through a KVM (keyboard, video, mouse) switch. If you are experiencing "no-response" from your keyboard and mouse, you may need to uninstall the mouse software or connect the keyboard and mouse directly to the keyboard and mouse connectors on the workstation.

Hardware Setup

Serial Number and COA Label Location

Figure 2-11 Each workstation has two unique serial number labels **1** and a certificate of authentication (COA) label **2** (for Windows-preinstalled systems only). In general, the serial number labels can be found on the top panel or on the side of the unit and at the rear of the unit. Keep this number available for use when contacting customer service for assistance. The COA label is generally located on the top panel or access panel near the serial number label.
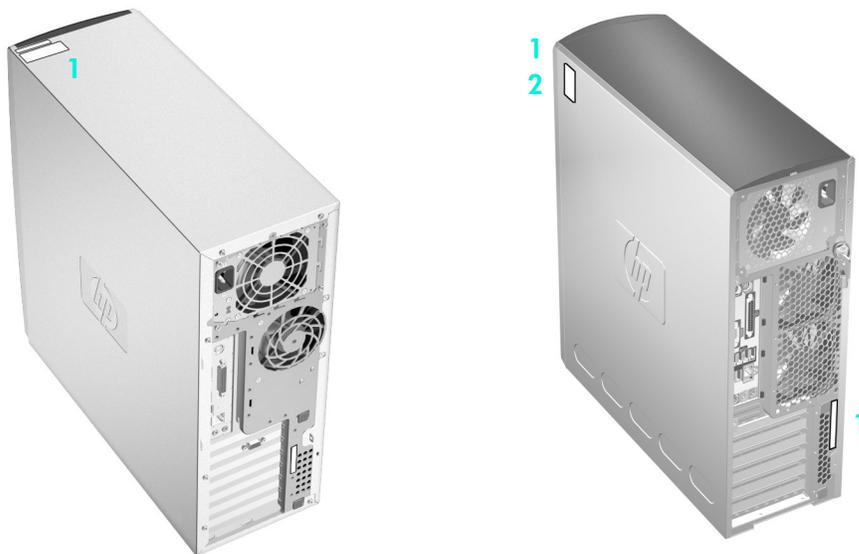

Figure 2-12 Serial Number and COA Label Locations

3 Software Setup

CAUTION: Do not add optional hardware or third-party devices to the workstation until the operating system is successfully installed. Doing so may cause errors and prevent the operating system from installing correctly.

Installing and Customizing Windows XP Workstations

If your unit is a Windows–preinstalled workstation, follow the instructions in this section to setup up your OS and software.

Starting up the Operating System

The first time you turn on the workstation, the operating system is installed automatically. This process takes about 5 to 10 minutes. Carefully read and follow the instructions on the screen to complete the installation.

CAUTION: After the automatic installation has started, DO NOT TURN OFF THE WORKSTATION UNTIL THE PROCESS IS COMPLETE. Turning off the workstation during the installation process may damage the software that runs the workstation or prevent its proper installation.

NOTE: After you have selected a language during initial boot of the OS, the language will be locked in by the UIA sector of their HDD. If the system is restored for some reason, the restore CD will check for the language stored in the UIA and will restore only the original preinstalled language. In the case where a new HDD is installed and the there is no UIA or the UIA is empty, then the Recovery CD will install any language requested. If the wrong OS is accidently unbundled during the initial boot, technical support will have to be contacted to get a "key" to unlock it and then you will be able to restore the OS to the correct language.
A language selection is not required for the 64-bit operating system.

For complete operating system installation and configuration instructions, refer to the operating system documentation that was provided with the workstation. Additional information is available in the online help after you install the operating system.

Software Setup

Restoring the Software

Restore the original operating system and factory-installed software by using the *Restore Plus!* CD and the OS CD(s) that came with the workstation. Carefully read and follow the instructions provided with the *Restore Plus!* CD.

NOTE: If you are restoring on a 64-bit operating system, you will be prompted for the second restore CD.

NOTE: If you restore your system using the *Restore Plus!* CD, some settings, such as your power management settings (such as the Energy Star® settings) will need to be reapplied.

Installing or Upgrading Device Drivers

When installing optional hardware devices after the operating system installation is complete, you must also install the drivers for each device.

If prompted for the I386 directory, replace the path specification with C:\i386, or use the **Browse** button in the dialog box to locate the I386 folder. This action points the operating system to the appropriate drivers.

NOTE: If the workstation has an optical RW drive, you must install the appropriate application to be able to write to the drive. To install the application, use the optical software application CD and load the appropriate applications.

Energy Star

The Energy Star® program is a government-backed initiative to promote energy efficiency by identifying ways to reduce energy consumption at home or in the office. Select HP workstations participate in the Energy Star program.

NOTE: Energy Star is not supported on Linux-based workstations.

For those workstations supporting Energy Star and have it enabled, the power management features will be set as follows:

- Monitor—goes into Standby mode after 20 minutes of inactivity.
- System—goes into Standby mode after 20 minutes of inactivity.
- Hard Drive—goes into power savings mode after the system goes into Standby mode.

NOTE: Should you have to restore the operating system, Energy Star settings (if applicable) will need to be reset after the restore.

> **NOTE:** For more information on Energy Star, refer to the *Service and Technical Reference* Guide web link located on the *Documentation and Diagnostics* CD (www.hp.com/support/workstation_manuals).

Accessibility

HP is committed to designing products, services, and programs with improved usability and accessibility for all customers.

HP products with Microsoft Windows XP preinstalled are designed for accessibility, and these products are tested with industry-leading Assistive Technology products.

HP Accessibility—connecting everyone to the power of technology.

Customizing the Monitor Display

You can manually select or change the monitor model, refresh rates, screen resolution, color settings, font sizes, and power management settings. To do so, right-click on the Windows Desktop, then click **Properties** to change display settings. For more information, refer to the online documentation provided with the graphics controller utility or the documentation that came with your monitor.

Installing and Customizing Linux–preinstalled Workstations

If you have a Linux-preinstalled workstation, follow the instructions in this section to setup up your OS and software.

After the boot process completes, you can view additional HP Linux documentation by simply opening your Internet browser (the browser is automatically set to use the local HP documentation page as its default). You can also access Linux Web links for Red Hat (Internet access required) by using your Internet browser.

> **NOTE:** For additional information concerning the setup of Linux–preinstalled or Linux–enabled workstations, refer to the
> *HP User Manual for Linux*, located at www.hp.com/support/linux_user_manual.

For additional information about HP and Linux, visit www.hp.com/linux.

Software Setup

Starting up the Linux Operating System

The first time the workstation is booted, the Red Hat First Boot utility displays. This program allows you to enter your password, network, graphics, time, and keyboard settings for your workstation.

CAUTION: Once the automatic installation has begun, DO NOT TURN OFF THE WORKSTATION UNTIL THE PROCESS IS COMPLETE. Turning off the workstation during the installation process may damage the software that runs the workstation or prevent its proper installation.

NOTE: When you enable the YPBind feature in the Network tab of the Linux Setup Tool, you may get a blank screen for about 15-30 seconds after you have selected and saved all of your settings and have exited the utility. This is normal. The boot process continues its execution after the screen returns.

Restoring the Linux Operating System

NOTE: To restore the Linux OS, the HP Driver CD and Red Hat box set are required.

Download the latest HP Driver CD to get any new enhancements.

Downloading the Latest HP Driver CD

To download the latest HP Driver CD:

1. Download the ISO image to a local hard drive from the HP support website for the appropriate workstation platform (such as www.hp.com/support/xw4200).

   a. Click the **download drivers and software** link.

   b. Select the Linux OS that matches your box set.

   c. Select the latest version from the **Utility Tools** section.

   d. Download and unpack it (`tar zxvf filename.tgz`).

2. Copy the ISO image to CD-R bootable media. On another Linux workstation, use the `cdrecord` utility. Identify the device address for the CD burner (`cdrecord --scanbus`). The default is usually 2, 0, 0.

   Example:
   ```
   cdrecord -v -eject dev=2,0,0 CD0_golden.iso
   ```

Installing with the HP Driver CD

To install with the HP Driver CD:

1. Boot the workstation from the Red Hat box set Binary CD 1.

2. Insert the Linux operating system CDs from the Red Hat box set as prompted.

3. Continue following the prompts until the operating system is successfully installed.

4. Configure the X server to start on reboot.

5. Reboot the workstation.

6. Follow the prompts to set up your system with the Red Hat First Boot utility.

7. When prompted in First Boot to add additional CDs, insert the HP Driver CD into the CD-ROM tray of the workstation.

8. Click **Install** next to "Additional CDs."
   The HP Driver CD window opens.

9. Click **Press to begin install...**

10. When the install is done, you will have two options, "Reboot now..." on the left-side and "Press to continue, reboot later..." on the right-side.

11. Click **Reboot now...**

Upgrading Device Drivers

If you need to upgrade a Linux device driver, visit the HP website at:
www.hp.com/go/workstationsupport

Installing and Customizing Linux–enabled Workstations

Linux–enabled workstations are not pre-installed with Linux. They require the HP Installer Kit for Linux and the purchase of a Red Hat box set. The Installer kit includes the HP CDs necessary to complete the installation of all versions of the Red Hat box set which have been verified to work on HP workstation hardware.

Verifying Hardware Compatibility

To see which Linux versions have been verified to work on HP workstation hardware:

1. Go to www.hp.com/support/workstation_manuals.

2. Select your HP workstation model.

3. Click the **Hardware Support Matrix for Linux** link.

Installing the Linux Operating System

To install the Linux operating system on your Linux–enabled system:

1. Follow the instructions for Restoring the Linux Operating System in the previous section.

2. Follow the instructions for Starting up the Linux Operating System in the previous section.

NOTE: For additional information concerning the setup of Linux–preinstalled or Linux–enabled workstations, refer to the *HP User Manual for Linux*, located at www.hp.com/support/linux_user_manual. For additional information about HP and Linux, visit www.hp.com/linux.

Upgrading Device Drivers

If you need to upgrade a Linux device driver, visit the HP website at:
www.hp.com/go/workstationsupport

After First-Boot

After successfully booting your system for the first time, HP recommends you do the following:

- Verify you have the latest system BIOS loaded by visiting http://welcome.hp.com/country/us/en/support.html. See Upgrading the BIOS later in this chapter for more details.
- Verify you have the latest drivers for your system by visiting http://welcome.hp.com/country/us/en/support.html.
- Review the Preface of this document to become familiar with your available HP resources.

Also, consider the following:

- Subscribe to Driver Alerts at www.hp.com/subscriberchoice.
- Purchase a subscription to the Support Software CD kit. See the Subscribing to Software Support later in this chapter for ordering information.

Hyper-Threading Technology

Hyper-Threading Technology is a high performance technology, developed by Intel®, that allows a single processor to execute multiple threads of instructions simultaneously. Hyper-Threading Technology enables the Intel processor to utilize its execution resources more efficiently, delivering performance increases and improving user productivity. Not all system applications benefit from the Hyper-Threading Technology. Not all systems support Hyper-Threading Technology.

To see if Hyper-Threading Technology can benefit you, test your system by turning the feature on. The BIOS setup menu can be used to turn this feature on or off. To do this, run the BIOS setup during boot up and select **Advanced > Device Options > Hyper-Threading**, then choose whether to enable or disable the Hyper-Threading Technology.

NOTE: If your workstation does not support Hyper-Threading Technology, the Hyper-Threading menu item will not be available on the **Computer Setup** menu.

NOTE: To enable hyper–threading, Linux systems require the latest system BIOS and an SMP kernel (for systems installed with a single processor). For additional information concerning the setup of Linux–preinstalled or Linux–enabled workstations, refer to the
HP User Manual for Linux, located at www.hp.com/support/linux_user_manual.

For more information about the Hyper-Threading Technology, you can visit the Intel® website at www.intel.com.

Turning off the Workstation

To properly turn off the workstation, first shut down the operating system software.

CAUTION: Manually forcing the workstation off can cause loss of data.

To manually turn off power to the workstation, press and hold the power button for four seconds. However, manually turning off the power bypasses the standby state and can result in loss of data.

To reconfigure the power button to work in On/Off mode, run Computer Setup (F10). Refer to the *Service and Technical Reference* Guide web link located on the *Documentation and Diagnostics* CD (www.hp.com/support/workstation_manuals) for more information about using Computer Setup.

Upgrading the BIOS

After the first boot, it is a good practice to verify your system is operating with the latest BIOS.

To check the current BIOS on the system, press **F10** during POST. At the end of POST, the F10 Setup Utility displays and lists the BIOS version under **File > System Information**.

To check the latest BIOS available:

1. Access the HP website at http://welcome.hp.com/country/us/en/support.html to access the **Support & Drivers** page.
2. Select the **Download drivers and software** option and enter the system model number (such as xw8200) and press **Enter**.

NOTE: If variations of the model are found, you will be asked to select a more specific model.

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3. From the product page, select the appropriate operating system.
4. From the **Select a Category** area, click the **BIOS** link and note the version of the latest system BIOS.

If the BIOS on the website is the same as the version on the system, no further action is required.

If the BIOS on the website is a later version, then flash the system BIOS using the later version.

1. From the HP website, click the **Download** button next to the appropriate system BIOS.
2. From the **File Download** window, click **Open**.
3. From the **InstallShield Wizard** window, click **Next**.
4. Accept the license agreement and click **Next**.
5. Enter the location where you want the files to be saved to. Click **Next**.

At this point, there are several options available to flash the system BIOS. You can save the files to bootable devices such as a 3.5 inch diskette, a CD-ROM, or a USB device. The shortest and most efficient way is to use the HPQFlash utility that is available on your system.

To run HPQFlash, browse to the folder where you saved the BIOS softpaq earlier. Locate and click on the `HPQFlash.exe` file to initiate the HPQFlash utility. Follow the on-screen instructions. The current system BIOS and the system BIOS that is about to be loaded is displayed. You will be notified after the BIOS flash is complete.

<div style="writing-mode: vertical">Software Setup</div>

Subscribing to Software Support

You can also obtain the latest support software through a subscription to the Support Software CD Kit using the Support Software Management order form available at the following website:

http://h18007.www1.hp.com/support/files/workstations/us/purchase.html

HP ProtectTools Embedded Security

The HP ProtectTools Embedded Security solution includes the following key components:

- ProtectTools Embedded Security – a hardware module, known as the Trusted Platform Module (TPM), that is integrated in the computer system itself

- ProtectTools Embedded Security Manager – this software has three key functions:

  - Controlling the basic operation of ProtectTools Embedded Security (enabling, ownership, and more)

  - Enhancing file and folder encryption capabilities

  - Supporting protected digital certificate operations for many existing applications such as Microsoft Outlook or Netscape Messenger

HP ProtectTools Embedded Security is a hardware security chip that offers security and encryption features and provides a tamper-proof storage area for protecting public and private keys. The chip is factory-installed and should not be accessed or removed except by HP authorized service providers.

It is critical to do a backup of the Embedded Security credentials if data is being encrypted with the Embedded Security chip. The backup is required to restore your settings and data whenever the system board or Embedded Security chip is changed. To perform the backup, use the HP ProtectTools Embedded Security Backup Wizard that is part of the HP ProtectTools Security Manager utility.

4 Troubleshooting

Self Troubleshooting

This section provides some self-help tools and troubleshooting tables that you can use to troubleshoot your system.

HP Insight Diagnostics

HP Insight Diagnostics is an offline diagnostic utility that allows you to perform system testing. With this utility, you can test your system hardware and view the hardware configuration information for your system.

To use the HP Insight Diagnostics utility, insert the *Documentation and Diagnostics* CD into your system and reboot. Follow the onscreen menu options and directions to begin your testing.

NOTE: Should you not have the *Documentation and Diagnostics* CD available, you can download the image from www.hp.com/go/workstationsupport.
1. Click on your workstation model link then click the **download drivers and software** link.
2. Select your language and then click the appropriate operating system link.
3. From the **download drivers and software** screen, click the **Diagnostics** link and then click the appropriate diagnostic program link.

For more information on using HP Insight Diagnostics, click the **Help** tab from within the program or refer to the *Service and Technical Reference* Guide web link located on the *Documentation and Diagnostics* CD.

HP Troubleshooting Resources and Tools

HP Help and Support Center

The HP Help and Support Center is a customized HP user interface that enhances the Windows XP Help and Support Center Help feature. This customized utility allows you to access specific information about your HP workstation such as configuration information by clicking **Start > Help and Support Center**. The interface also provides customized help and support links to the HP website related to your HP workstation.

Troubleshooting

High Performance Tuning Framework

HP Performance Tuning Framework enables optimal configuration of HP Personal Workstations delivering stability and best performance.

HP Performance Tuning Framework will guide your system setup allowing a "custom" configuration that best matches the workstation to user requirements. This customization ensures availability of the latest graphics cards and drivers and removes some memory restraints.

The Framework's extensible design permits new configuration functionality and application support to be easily integrated over time. To facilitate the delivery of such new features, the Framework automatically updates itself when newer versions become available.

For more information about HP Performance Tuning Framework and instruction on how to use it, visit

http://www.hp.com/workstations/software/framework/index.html.

E-Support

For online access to technical support information and tools, go to 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/support/workstation_manuals—Provides the latest online documentation.

- http://www.hp.com/go/workstationsupport—Provides technical support information for your workstation.

- http://welcome.hp.com/country/us/eng/wwcontact.html—Provides a listing of the worldwide technical support phone numbers.

Troubleshoot a Problem

To help you troubleshoot issues with your system, HP provides the Business Support Center (BSC). The BSC is a portal to an extensive selection of online tools. To access the BSC, visit www.hp.com/go/workstationsupport. Select your product by clicking on the appropriate product link.

From the left-hand **Business Support Center** menu window, select the **troubleshoot a problem** link. From the **troubleshoot a problem** page, select the appropriate link from under the **useful documents** area.

Instant Support/Active Chat

HP Instant Support is a set of Web-based support tools that automate and speed the resolution of desktop computing, tape storage and printing problems.

Active Chat enables you to electronically submit a support ticket to HP over the Web. When you submit a support ticket, Active Chat will collect information about the computer and pass it to an online support specialist. The collection of information may take up to 30 seconds depending on the computer configuration. Once you have submitted a support ticket, you will receive a confirmation message containing your case ID, the support hours for your location and the estimated time of response.

Fore more information about HP Instant Support and Active Chat and how to use them, visit HP at http://www.hp.com/hps/hardware/hw_professional.html.

Customer Advisories

Customer advisories provide clients important information about their system. To search for applicable customer advisories for your system, visit www.hp.com and use the search tool. To maximize your search efforts, use the "+" symbol to locate valid words. For example, to search for customer advisories for the xw8200, enter "+xw6000 +customer +advisory" and hit **Enter**. You can also use the "-" (minus) symbol to exclude certain words. You can also register Subscribers Choice to automatically receive PCNs related to your system. Review the preface of this guide for information on how to register to Subscriber's Choice.

Product Change Notifications

Product Change Notifications (PCNs) provide customers with a notice of changes to their product. You can visit www.hp.com and perform a search for PCNs related to your system. You can also register Subscribers Choice to automatically receive PCNs related to your system. Review the preface of this guide for information on how to register to Subscriber's Choice.

Helpful Hints

If you encounter some minor problem with your workstation, monitor, or software, refer to the following list of general suggestions before taking further action.

At Startup

- Check that the workstation and monitor are plugged into a working electrical outlet.

- Remove all diskettes from your system before turning it on.

- Check to see that the workstation is turned on and the green power light is on.

- If you have installed an operating system other than the factory-installed operating system, check to be sure that it is supported on your system.

- Check to see that the monitor is turned on and the green monitor light is on.

- Turn up the brightness and contrast controls of the monitor if the monitor is dim.

- If your workstation has multiple video sources installed and a single monitor, the monitor must be connected to the monitor connector on the source selected as the primary VGA adapter. During startup, the other monitor connectors are disabled; if the monitor is connected into one of these ports, it will not function. You can select the default VGA source in Computer Setup (F10).

During Operation

- Look for blinking LEDs on the front of the workstation. The blinking lights are error codes that will help you diagnose the problem. See the interpreting diagnostic lights and audible codes sections in this chapter for more information.

- Press and hold any key. If the system beeps, then your keyboard is operating correctly.

- Check all cable connections for loose connections or incorrect connections.

- Wake the workstation by pressing any key on the keyboard or the power button. If the system remains in suspend mode, shut down the system by pressing and holding the power button for at least four seconds, then press the power button again to restart the system. If the system will not shut down, unplug the power cord, wait a few seconds, then plug it in again. If it does not restart automatically, press the power button to start the workstation.

- Reconfigure your workstation after installing a non–plug and play expansion board or other option. See Hardware Installation Problems for instructions.

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- Be sure that all the needed device drivers have been installed. For example, if you have connected a printer, you need to install a printer driver.

- If you are working on a network, plug another workstation with a different cable into the network connection. There may be a problem with the network plug or cable.

- If you recently added new hardware, remove the hardware and see if the workstation functions properly.

- If you recently installed new software, uninstall the software and see if the workstation functions properly.

- If the screen is blank, plug the monitor into a different video port on the workstation if one is available. Or, change out the monitor with a monitor that you know is working properly.

- For more detailed information, refer to the troubleshooting chapter in the *Service and Technical Reference* Guide web link located on the *Documentation and Diagnostics* CD.

POST Error Messages

You can also find additional information about POST error messages in the *Service and Technical Reference* Guide for your workstation. The *Service and Technical Reference* Guide is available as a Web link located on the *Documentation and Diagnostics* CD (www.hp.com/support/workstation_manuals).

Basic Troubleshooting

This section concentrates on problems that you might encounter during the initial set up process. Additional troubleshooting information is available in the *Service and Technical Reference* Guide web link located on the *Documentation and Diagnostics* CD and at the following HP website:

www.hp.com/go/workstationsupport.

General Problems

You may be able to easily resolve the general problems described in this section. If a problem persists and you are unable to resolve it yourself or if you feel uncomfortable about performing the operation, you can contact an HP customer care center, or you can contact an authorized dealer or reseller. For a list of support telephone numbers for your region, visit the HP website at:

http://welcome.hp.com/country/us/eng/wwcontact.html.

Table 4-11 Troubleshooting General Problems

Problem	Cause	Solution
Workstation appears locked up and will not turn off when the power button is pressed.	Software control of the power switch is not functional.	Press and hold the power button for at least four seconds until the workstation turns off.
Workstation will not respond to USB keyboard or mouse.	Workstation is in standby mode.	Press the power button to resume from standby mode.

CAUTION: When attempting to resume from standby mode, do not hold down the power button for more than four seconds. Otherwise, the workstation will shut down and you will lose your data.

Table 4-11 Troubleshooting General Problems

Problem	Cause	Solution
Workstation date and time display is incorrect.	RTC (real-time clock) battery may need to be replaced. **NOTE:** Connecting the workstation to a live AC outlet prolongs the life of the RTC battery.	First, reset the date and time using Computer Setup (F10). If the problem persists, replace the RTC battery. See the *Service and Technical Reference Guide* for instructions on installing a new battery, or contact an authorized dealer or reseller for RTC battery replacement.
Workstation appears to pause periodically.	Network driver is loaded and no network connection is established.	Establish a network connection, or use Computer Setup (F10) to disable the network controller.
Cursor will not move using the arrow keys on the keypad.	The **Num Lock** key may be on.	Press the **Num Lock** key. The Num Lock light should not be on if you want to use the arrow keys. The Num Lock key can be disabled (or enabled) in Computer Setup (F10).
Cannot remove workstation cover or access panel.	Solenoid hood lock, featured on some systems, is locked.	Unlock the solenoid hood lock using Computer Setup (F10). The solenoid hood lock FailSafe Key, a device for manually disabling the solenoid hood lock, is available from HP. You will need the FailSafe Key in case of forgotten password, power loss, or workstation malfunction. (Not applicable to the xw8200 and xw9300)
	The panel is locked. (xw6200, xw8200, and xw9300)	Use the key located on the back of the unit to unlock the panel.
Poor performance is experienced.	Processor is hot.	1. Make sure the airflow to the workstation is not blocked. 2. Make sure the fans are connected and working properly. 3. Make sure the processor heatsink is installed properly.
	Hard drive is full.	Transfer data from the hard drive to create more space on the hard drive.

Table 4-11 Troubleshooting General Problems

Problem	Cause	Solution
Workstation powered off automatically and the Power LED blinks Red two times, once every second, followed by a two second pause. (On the xw4200 and xw9300, two audible beeps will also be emitted.)	Processor thermal protection activated: A fan may be blocked or not turning. OR The heatsink is not properly attached to the processor.	1. Ensure that the workstation air vents are not blocked and the cooling fan is running. 2. Open hood, press power button, and see if the processor fan spins. If the processor fan is not spinning, make sure the fan's cable is plugged onto the system board header. Ensure the fan is fully/properly seated or installed. 3. If fan is plugged in and seated properly, but is not spinning, then replace the processor heatsink assembly. 4. Reseat processor heatsink and verify that fan assembly is properly attached. 5. Contact an authorized reseller or service provider.
System does not power on and the LEDs on the front of the workstation are not blinking.	System unable to power on.	Press and hold the power button for less than 4 seconds. If the hard drive LED turns green, then: 1. Remove the expansion cards one at a time and try holding the power button again for less than 4 seconds. 2. Replace the system board. OR Press and hold the power button for less than 4 seconds. If the hard drive LED does not turn on green then: 1. Check that unit is plugged into a working AC outlet. 2. Open hood and check that the power button harness is properly connected to the system board. 3. Check that both power supply cables are properly connected to the system board. 4. Check the Power Supply Built-In-Self-Test (BIST) LED located inside the power supply (look directly at the rear of the chassis). 5. Replace the system board.

Hardware Installation Problems

You may need to reconfigure the workstation when you add or remove hardware, such as an additional diskette drive. If you install a plug and play device, some operating systems automatically recognize the device and configure the workstation. If you install a non–plug and play device, you must reconfigure the workstation after installing the new hardware.

Table 4-12 Troubleshooting Hardware Installation Problems

Problem	Probable Cause	Recommended Solution
A new device is not recognized as part of the system.	Device is not seated or connected properly.	Ensure that the device is properly and securely connected and that pins in the connector are not bent down.
	Cable(s) of new external device are loose or power cables are unplugged.	Ensure that all cables are properly and securely connected and that pins in the cable or connector are not bent down.
	Power switch of new external device is not turned on.	Turn off the workstation, turn on the external device, then turn on the workstation to integrate the device with the workstation system.
	When the system advised you of changes to the configuration, you did not accept them.	Reboot the workstation and follow the instructions for accepting the changes.
	A plug and play board may not automatically configure when added if the default configuration conflicts with other devices.	Use Computer Setup (F10) to reconfigure or disable devices to resolve the resource conflict.
Workstation will not start.	Wrong memory modules were used in the upgrade or memory modules were installed in the wrong location.	1. Review the documentation that came with the system to determine if you are using the correct memory modules and to verify the proper installation. 2. Observe the beeps and LED lights on the front of the workstation. See "Interpreting Diagnostic Lights and Audible Codes" to determine possible causes. 3. If you still cannot resolve the issue, contact Customer Support.
Power LED blinks Red five times, once every second, followed by a two second pause, and the workstation beeps five times.	Memory is installed incorrectly or is bad.	1. Reseat DIMMs. Power on the system. 2. Replace DIMMs one at a time to isolate faulty module. 3. Replace third-party memory with HP memory. 4. Replace the system board.
Power LED blinks Red six times, once every second, followed by a two second pause, and the workstation beeps six times.	Video card is not seated properly or is bad, or system board is bad.	For systems with a graphics card: 1. Reseat the graphics card. Power on the system. 2. Replace the graphics card. 3. Replace the system board.

Troubleshooting

Diagnostic Lights and Audible (Beep) Codes

This section covers the front panel light (LED) error and operation codes as well as the audible codes that may occur before or during the Power-On Self-Test (POST).

Table 4-13 Diagnostic Lights and Audible Codes

Activity	Beeps	Possible Cause	Recommended Action
Green Power LED On.	None	Workstation on.	None
Green Power LED blinks every two seconds.**	None	Workstation in Suspend to RAM mode (select models only) or normal Suspend mode.	None
Green Power LED is off.**	None	Workstation in Suspend to Disk or "Hibernate" mode.	None
Green Power LED blinks three times, once per second.**	None	Workstation in Suspend to RAM mode (select models only) or normal Suspend mode.	None
Green Power LED blinks four times, once per second.**	None	Workstation in Suspend to Disk or "Hibernate" mode.	None

NOTE: **When the Unique Sleep State Blink Rates is disabled in Computer Setup (F10), these reflexes are observed on the green power LED.

NOTE: For the following LED activity and beeps, the beeps will be heard through the on–board speaker and not the chassis speaker. Blinks and beeps will be repeated for 5 cycles, after that, only the blinks will continue to repeat.

Activity	Beeps	Possible Cause	Recommended Action
Red Power LED blinks two times, once every second, followed by a two- second pause.	2 (only on xw4200 and xw9300)	Processor thermal protection activated: A fan may be blocked or not turning. OR The heatsink/fan assembly is not properly attached to the processor.	1. Ensure that the workstation air vents are not blocked and the cooling fan is running. 2. Open hood, press power button, and see if the processor fan spins. If the processor fan is not spinning, make sure the fan's cable is plugged onto the system board header. Ensure the fan is fully/properly seated or installed. 3. If fan is plugged in and seated properly, but is not spinning, then replace processor fan. 4. Reseat processor heatsink and verify that fan assembly is properly attached. 5. Contact an authorized reseller or service provider.
Red Power LED blinks three times, once every second, followed by a two- second pause.	3 (only on xw4200 and xw9300)	Processor not installed (not an indicator of bad processor).	1. Check to see that the processor is present. 2. Reseat the processor.

Table 4-13 Diagnostic Lights and Audible Codes

Activity	Beeps	Possible Cause	Recommended Action
NOTE: For the following LED activity and beeps, the beeps will be heard through the on–board speaker and not the chassis speaker. Blinks and beeps will be repeated for 5 cycles, after that, only the blinks will continue to repeat.			
Red Power LED blinks four times once every second, followed by a two-second pause.(only on xw4200 and xw9300)	4	Power failure (power supply is overloaded)	1. Open the hood and ensure the 4-wire (xw4200) or the 8-pin/wire (xw6200, xw8200, and xw9300) power supply cable is seated into the connector on the system board. 2. Check if a device is causing the problem by removing ALL attached devices (such as hard, diskette, or optical drives, and expansion cards.) Power on the system. If the system enters the POST, then power off and replace one device at a time and repeat this procedure, until failure occurs. Replace the device that is causing the failure. Continue adding devices one at a time to ensure all devices are functioning properly. 3. Replace the power supply. 4. Replace the system board.
Red Power LED blinks five times, once every second, followed by a two-second pause.	5	Pre-video memory error	1. Reseat DIMMs. Power on the system. 2. Replace DIMMs one at a time to isolate faulty module. 3. Replace third-party memory with HP memory. 4. Replace the system board.
Red Power LED blinks six times, once every second, followed by a two-second pause.	6	Pre-video graphics error.	For systems with a graphics card: 1. Reseat the graphics card. Power on the system. 2. Replace the graphics card. 3. Replace the system board.
Red Power LED blinks seven times, once every second, followed by a two- second pause.	7	System board failure (ROM detected failure prior to video).	Replace the system board.

Table 4-13 Diagnostic Lights and Audible Codes

Activity	Beeps	Possible Cause	Recommended Action
NOTE: For the following LED activity and beeps, the beeps will be heard through the on–board speaker and not the chassis speaker. Blinks and beeps will be repeated for 5 cycles, after that, only the blinks will continue to repeat.			
Red Power LED blinks eight times, once every second, followed by a two-second pause.	8	Invalid ROM based on bad checksum.	1. Reflash the ROM using a ROMPaq diskette. See the "ROM Flash" section of the *Service and Technical Reference* Guide web link located on the *Documentation and Diagnostics* CD www.hp.com/support/workstation_manuals 2. Replace the system board.
Red Power LED blinks nine times, once every second, followed by a two-second pause.	9	System powers on but does not boot.	
System does not power on and LEDs are not blinking.	None	System unable to power on.	Press and hold the power button for less than 4 seconds. If the hard drive LED turns green, then: 1. Remove the expansion cards one at a time and try holding the power button again for less than 4 seconds. 2. Replace the system board. OR Press and hold the power button for less than 4 seconds. If the hard drive LED does not turn on green then: 1. Check that unit is plugged into a working AC outlet. 2. Open hood and check that the power button harness is properly connected to the system board. 3. Check that both power supply cables are properly connected to the system board. 4. Check the Power Supply Built-In-Self-Test (BIST) LED located inside the power supply (look directly at the rear of the chassis). 5. Replace the system board.

Calling Technical Support

At times you may encounter an issue that requires technical support. If after using the self-troubleshooting tools you still cannot resolve your issue, note the following to help you locate the necessary information that will assist technical support in resolving the situation.

- Be in front of your workstation when you call.

- Write down the workstation and monitor (if equipped) serial numbers, product numbers, model names, and model numbers before calling and have them readily available.

- Note any applicable error messages.

- Note any add-on options.

- Note the operating system.

- Note any third-party hardware or software.

- Note any blinking LEDs on the front of the workstation.

- Note the applications you were using when you noted the issue.

- Be prepared to spend the time necessary troubleshooting the problem with the service technician.

NOTE: When calling in for service or support, you may be asked for the Product Number (example: P8814A) of your workstation. If your workstation has a Product Number, it is generally located next to the 10- or 12-digit Serial Number of your workstation.

NOTE: See "Serial Number and COA Label Location" on page 22. for the location of the Serial Number label on your workstation. In general, the Serial Number and Product Number label are located at the rear of the workstation.

To contact technical support, call 1-800-HPINVENT or visit http://welcome.hp.com/country/us/eng/wwcontact.html for a listing of the worldwide technical support phone numbers.

Troubleshooting

A   Features and Accessories

Security Features

The following security features are available for your workstation.

- solenoid hood lock—this is an optional software-controllable cover lock, controlled by the setup password, that prevents unauthorized access to the internal components.

NOTE: This feature is not available on the xw8200 or xw9300.

- cable lock provision—your workstation is equipped with a cable lock slot for an optional cable lock. This allows you to secure the unit to a fixed or heavy object such as a desk.

- padlock loop—your workstation has a standard padlock loop available so that you can secure the access panel to the system chassis with a padlock.

- access panel lock—on some workstations, the access panel comes with a keylock to prevent internal access to your system. The keys for the keylock are located on the back of your workstation.

- universal chassis clamp lock—all workstations support this optional custom designed all-in-one locking solution that protects the internal components while securing the monitor, keyboard, mouse or speaker cables.

- port security bracket—the xw4200 supports this option that guards against the removal of any of the I/O components connected to the main I/O back panel of your system.

For more information about these features, see the back panel illustrations earlier in this guide or refer to the *Service and Technical Reference* Guide web link located on the *Documentation and Diagnostics* CD (www.hp.com/support/workstation_manuals).

Chassis Conversion Features

The xw4200 is a convertible minitower (CMT) systems. It can be physically reconfigured from a minitower orientation into a desktop orientation (or from a desktop to a minitower). For information and procedures on converting your system, refer to the *Service and Technical Reference* Guide web link located on the *Documentation and Diagnostics* CD (www.hp.com/support/workstation_manuals).

Accessories

The HP xw series workstations can be enhanced with several HP accessories. Some of these options include:

- graphics cards
- memory
- diskette drives
- optical drives
- hard drives
- processors
- audio cards

Visit www.hp.com/workstations/pws/options for more information on available workstation options. HP also tests certain options that are available from supported third-party suppliers. Refer to the *Service and Technical Reference* Guide by using the link on the *Documentation and Diagnostics* CD (www.hp.com/support/workstation_manuals) for instructions on installing and removing components.

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