

HP Workstations xw series Setup and Troubleshooting Guide



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Seventh Edition: September 2007

Part number: 361756-007

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1 Locating HP resources

This chapter provides information on the following HP resources for your workstation:

- [Product information on page 2](#)
 - HP Cool Tools
 - Regulatory information
 - Parts and accessories
 - System board
 - Serial number
 - Linux
- [Product support on page 3](#)
 - Additional information
 - Technical support
 - Business Support Center
 - IT Resource Center
 - HP Authorized Support and Service Provider
 - HP Business and IT Services
 - HP Hardware Support Services
 - Channel Services Network
- [Product documentation on page 4](#)
 - User documentation
 - Product notifications
 - QuickSpecs
 - Warranty information
- [Product diagnostics on page 5](#)
 - Documentation and Diagnostics CD
 - Diagnostics tools

- Beeps and LED codes
- Web-based support tools
- [Product updates on page 5](#)
- Software, BIOS, and driver updates
- Operating system update

Product information

Table 1-1 Product information

Topic	Location
Locating HP Cool Tools information	<p>Most HP Workstations come loaded with additional software that is not automatically installed when you first boot your system. Additionally, a number of valuable pre-installed tools on your workstation can enhance your workstation experience. To access or learn more about these applications, choose one of the following options:</p> <ul style="list-style-type: none"> ● Click the HP Cool Tools icon on the desktop. ● Open the HP Cool Tools folder by selecting Start > All Programs > HP Cool Tools. <p>To learn more about these applications, click HP Cool Tools—Learn More.</p> <p>To install or launch the applications, click the appropriate application icon.</p>
Locating regulatory information	<p>Refer to the <i>Safety & Regulatory Information</i> guide on the <i>Documentation and Diagnostics</i> CD for product Class information. You can also refer to the label on the workstation chassis.</p>
Locating parts and accessories	<p>For complete and current information on supported accessories and components, visit http://www.hp.com/go/workstations.</p>
Locating information about the system board	<p>The inside of the access panel contains an illustration of the system board layout. Also, you can find additional information by reviewing the <i>Service and Technical Reference Guide</i> on the <i>Documentation and Diagnostics</i> CD or on the Web at http://www.hp.com/support/workstation_manuals/.</p>
Locating the serial number and Certificate of Authenticity (COA) label (if applicable)	<p>The serial number labels are either on the top panel or on the side of the unit and at the rear of the unit, depending on the workstation model. The COA label is generally located on the top panel or side panel near the serial number label. Refer to Ventilation, COA label, and serial number label information on page 9 for more information.</p>
Locating information for Linux on HP workstations	<p>For information on running Linux on HP workstations, visit http://www.hp.com/linux/.</p>

Product support

Table 1-2 Product support

Topic	Location
Locating additional information	For online access to technical support information and tools, visit http://www.hp.com/go/workstationsupport . Support resources include Web-based troubleshooting tools, technical knowledge databases, driver and patch downloads, online communities, and proactive notification services.
How to contact technical support	<p>Before you call technical support, see Calling technical support on page 32 for more information. To facilitate your call, see Calling technical support on page 32 for a listing of information you need to have available before you call.</p> <p>For U.S. and Canada, call 1-800-HPINVENT.</p> <p>For a listing of all worldwide technical support phone numbers, visit http://www.hp.com/support/, select your region, and click Contact HP in the upper-left corner.</p>
Locating the Business Support Center (BSC)	For software/driver downloads, warranty information, single-topic documents, product bulletins, and QuickSpecs, visit http://www.hp.com/go/bizsupport .
Locating the IT Resource Center (ITRC)	Visit http://www.itrc.hp.com/ for a searchable knowledge base for IT professionals.
Locating an HP Service Center	Visit http://hp.com/go/bizsupport to find your nearest service provider.
Locating HP Business and IT Services.	For business and IT information, visit http://www.hp.com/hps/ .
Locating HP Hardware Support Services information	For hardware service information, visit http://www.hp.com/hps/hardware/ .
How an Authorized Service Provider can locate a Channel Services Network (CSN)	<p>For part and warranty information, visit http://www.hp.com/partners/csn/.</p> <p>NOTE: The Channel Services Network is available to Authorized Service Providers only.</p>
Locating warranty information	<p>To locate base warranty information, visit http://www.hp.com/support/warranty-lookuptool.</p> <p>To locate an existing Care Pack, visit http://www.hp.com/go/lookuptool.</p> <p>To extend a standard product warranty, visit http://www.hp.com/hps/carepack. HP Care Pack Services offer upgraded service levels to extend and expand a standard product warranty.</p>

Product documentation

Table 1-3 Product documentation

Topic	Location
Locating HP user documentation, white papers, and third-party documentation	For the latest online documentation, visit http://www.hp.com/support/workstation_manuals .
Signing up for product notifications	<p>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, customer advisories, and more. Sign up at http://www.hp.com/go/subscriberschoice/.</p> <p>Customer advisories and product change notifications are also available on http://www.hp.com/go/bizsupport/.</p>
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://www.hp.com/go/productbulletin/ .
Locating Customer Advisories, Security Bulletins, and Notices	<p>To find advisories, bulletins, and notices:</p> <ol style="list-style-type: none">1. Visit http://www.hp.com/go/workstationsupport.2. Select the desired product.3. From the Resources for your selected product menu, select See more...4. Use the scroll bar to select Customer Advisories, Customer Bulletins, or Customer Notices. The selection presents an index of related information.
Locating user tasks on the Preinstalled documentation	<p>You can locate user tasks in the preinstalled documentation on the workstation hard drive by selecting Start > All Programs > HP Documentation.</p> <p>NOTE: If you installed your own operating system image after receiving your workstation and the HP documentation on the hard drive was then lost or is no longer accessible, the documentation can also be found on the <i>Documentation and Diagnostics</i> CD and at http://www.hp.com/support/workstation_manuals</p>

Product diagnostics

Table 1-4 Product diagnostics

Topic	Location
Exploring the contents on the <i>Documentation and Diagnostics</i> CD	<p>For information on using the CD as a documentation tool or a diagnostics tool, see the instructions on the CD.</p> <p>The <i>Documentation and Diagnostics</i> CD includes:</p> <ul style="list-style-type: none">• <i>Setup and Troubleshooting Guide</i>• <i>Service and Technical Reference Guide</i>• <i>Safety and Comfort Guide</i>• <i>Safety & Regulatory Information Guide</i>• HP Insight Diagnostics utility• User task-specific instructions
Locating diagnostics tools	<p>For diagnostics tools, see the following resources :</p> <ul style="list-style-type: none">• The <i>Documentation and Diagnostics</i> CD contains the HP Insight Diagnostics utility. To use this utility, see Troubleshooting on page 22.• Use utilities such as:<ul style="list-style-type: none">◦ Instant Chat◦ Instant Support◦ Diagnose Problem• To access information about your workstation, visit http://www.hp.com/go/workstationsupport.• Use the Start > Support menu selection on your workstation.
Determining the meaning of beeps and LED codes	<p>Refer to Diagnostic lights and audible (beep) codes on page 28 for detailed information about beep and Light Emitting Diode (LED) codes applicable to the workstation.</p>
Accessing Web-based support tools to resolve workstation problems	<p>Refer to Instant Support and Active Chat on page 23 for more information on how to receive support.</p>

Product updates











Table 1-5 Product updates

Topic	Location
Locating the latest software, BIOS, and drivers	<p>Verify that you have the latest drivers for your system by visiting http://www.hp.com/go/workstationsupport.</p>
Reinstalling the operating system	<p>Refer to <i>Setting up operating system software</i> in this document for more information on how to load the operating system.</p>

Table 1-5 Product updates (continued)

Information on 64-bit operating systems	For information on availability and compatibility of the Windows and Linux 64-bit operating systems on HP workstations, visit http://www.hp.com/go/wsos .
Information on Linux and HP	For information on using Linux on HP workstations, including solutions, products, and services, visit http://www.hp.com/linux/ .

Warnings and cautions

-  **WARNING!**  Any surface or area of the equipment marked with this symbol indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists. To reduce the risk of injury from a hot component, enable the surface to cool before touching.
-  **WARNING!**  Any surface or area of the equipment marked with this symbol indicates the presence of an electrical shock hazard. To reduce the risk of injury from electrical shock, do not open any enclosed area marked with this symbol.
-  **WARNING!** To reduce the risk of electric shock or damage to your equipment:
- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
 - Plug the power cord in a grounded (earthed) outlet that is easily accessible at all times.
 - Disconnect power from the equipment by unplugging the power cord from the electrical outlet.
-  **WARNING!** To reduce the risk of serious injury, read the *Safety & Comfort Guide*. It describes proper workstation setup, posture, health, and work habits for computer users, and provides important electrical and mechanical safety information. This guide is located at <http://www.hp.com/ergo> and on the documentation CD (if one is included with the product).
-  **WARNING!** If a product is shipped in packaging marked with this symbol, , the product must always be lifted by two persons to avoid personal injury due to product weight.
-  **CAUTION:** Static electricity can damage the electronic components of the workstation. Before beginning these procedures, be sure you discharge static electricity by briefly touching a grounded metal object.
-  **CAUTION:** Observe the following cautions when removing or replacing a processor:
- Installing a processor incorrectly can damage the system board. Contact an HP authorized reseller or service provider to install the processor. If you plan to install the processor yourself, read all of the instructions carefully before you begin.
 - Failure to follow the workstation preparation instructions can result in an improperly installed processor, causing extensive workstation damage.
 - Processor socket pins are delicate and bend easily. Use extreme care when placing the processor in the socket.

△ **CAUTION:** To prevent damage to the workstation, observe the following Electrostatic Discharge (ESD) precautions while performing the system parts removal and replacement procedures:

— Work on a static-free mat.

— Wear a static strap to ensure that any accumulated electrostatic charge is discharged from your body to the ground.

— Create a common ground for the equipment you are working on by connecting the static-free mat, static strap, and peripheral units to that piece of equipment.

📋 **NOTE:** HP accessories are for use in HP Workstation products. They have been extensively tested for reliability and are manufactured to high quality standards.

2 Setting up the Hardware

This chapter provides information on setting up of the workstation hardware.

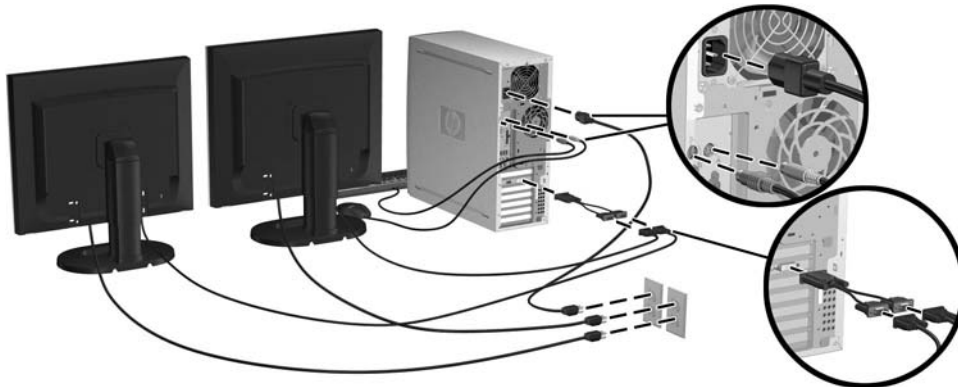
Quick setup

⚠ **WARNING!** To reduce the risk of electric shock or damage to your equipment:

- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
 - Plug the power cord in a grounded (earthed) outlet that is easily accessible at all times.
-


📝 **NOTE:** Your workstation might not have PS/2 mouse and keyboard connectors as shown in Figure 2–1. Alternatively, connect the mouse and keyboard to appropriate USB connectors (see Table 2–2).

Figure 2-1 Workstation quick setup example



📝 **NOTE:** After setting up your workstation hardware, connect other peripheral components (such as a printer) according to the instructions included with the device. For more information on your HP Workstation, see the *Documentation and Diagnostics* CD or visit <http://www.hp.com/go/workstationsupport>.

To rapidly set up your workstation hardware, complete the following steps:

1. After unpacking your HP Workstation, locate an accessible workspace to set up the system and connect the mouse, keyboard, and power cables to your workstation. Connect the power cable from the workstation to a power outlet.
 2. Connect the workstation monitors, as appropriate for your system configuration, as follows:
 - If your workstation has a PCI-Express graphics card with a DMS-59 output receptacle (see Table 2–2), use an appropriate adapter to connect your monitors. Adapters are available to connect the DMS-59 output to two DVI or two VGA monitors. Figure 2–1 (lower inset) illustrates using an adapter to connect dual DVI or VGA monitors to the workstation DMS-59 output.
 - If your workstation has a PCI-Express graphics card with two DVI output receptacles (see Table 2–2), you can connect a monitor to each DVI receptacle (using appropriate adapters, if required).
-
-  **NOTE:** On a system with two DVI connections, the **primary display port** (used to display BIOS and other important information) will be port #1; defined as the port physically closest to the system board, and located on the PCI-Express card bulkhead installed closest to the workstation chassis rear panel.
-
3. Connect a power cable from each monitor to a power outlet, as shown in Figure 2–1.

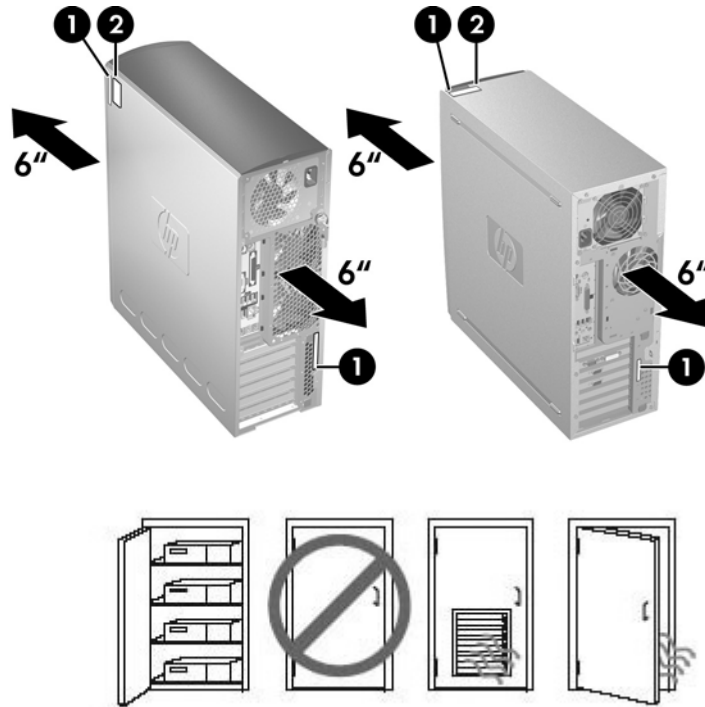
Ventilation, COA label, and serial number label information

Proper ventilation for your system is very important. See Figure 2–2 and the following notes to properly position your system for maximum airflow.

- Operate the computer on a sturdy, level surface.
- Place the computer in an area that is relatively cool with adequate ventilation. Provide at least 6 inches of clearance at the front and back of the workstation. For cabinet installation, ensure adequate cabinet ventilation and ensure that the ambient temperature within the cabinet does not exceed 35° C (95° F).

- Never restrict the incoming or outgoing airflow of the computer by blocking any vents or air intakes.

Figure 2-2 Workstation ventilation



Each HP Workstation has two unique serial number labels (1) and a Certificate of Authentication (COA) label (2) (for Windows®-preinstalled systems only) as shown in Figure 2–2. 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 when contacting customer service for assistance. The COA label is generally located on the top panel or side of the unit near the serial number label.

NOTE: If you must restore the operating system with Windows OEM CDs (installing without using the *Restore Plus!* CDs), refer to the appropriate section of the chapter [Setting up operating system software on page 14](#).

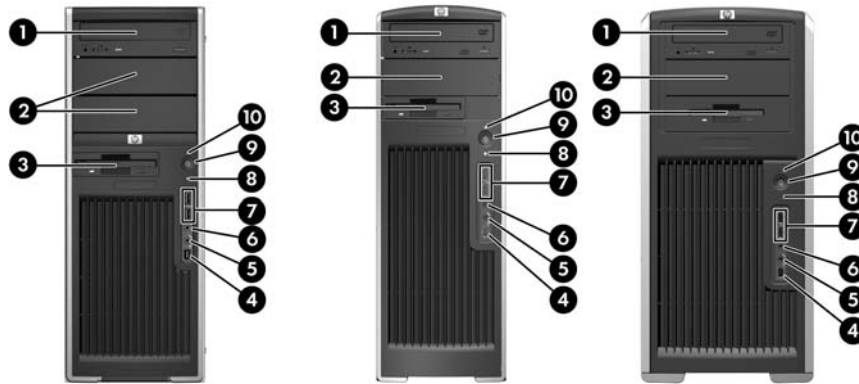
Front and rear panel components

This section provides information on workstation front and rear panel controls and components.

Front panel components

Figure 2–3 is for reference only, and shows examples of different workstation series. Your HP workstation might look different.

Figure 2-3 Workstation series front panel examples









xw4000 Series

xw6000 Series

xw8000/xw9000 Series

Table 2-1 Front panel component examples*

Item	Symbol	Description	Item	Symbol	Description
1		Optical drive	6		Headphone connector
2		5.25-inch drive bay	7		USB 2.0 (Universal Serial Bus) ports
3		Diskette drive (optional)	8		Hard drive activity light
4		IEEE-1394a connector	9		Power button
5		Microphone connector	10		Power on light

* Refer to the *Service and Technical Reference Guide* for your workstation for specific front panel component information.

Rear panel components

Figure 2–4 is for reference only and show examples of rear panel connectors that might be located on your workstation. Your HP workstation has some combination of these connectors, depending upon workstation model and configuration.

Figure 2-4 Workstation connector and control examples

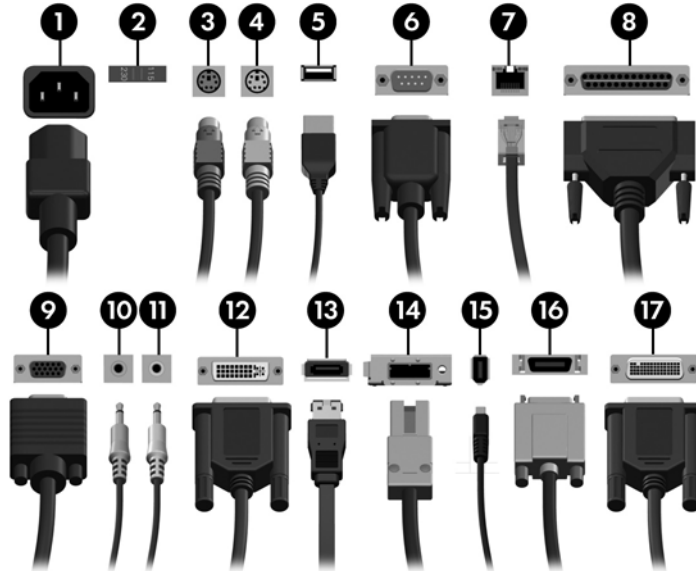


Table 2-2 Rear panel connector and control description









Item	Symbol	Description	Item	Symbol	Description
1		Power cord connector	10		Audio line-out connector
2		Voltage Select Switch	11		Audio line-in connector
3		PS/2 Mouse connector (green) NOTE: Might not be available on all workstations.	12	DVI	DVI-D Monitor Connector NOTE: Your workstation might have a DVI-I Monitor Connector instead. This connector will have two additional pins above and two below the horizontal flat blade to carry integrated analog signals.
4		PS/2 Keyboard connector (purple) NOTE: Might not be available on all workstations.	13		e-SATA Connector NOTE: Might not be available on all workstations.
5		USB 2.0 ports	14		Mini SAS Connector NOTE: Might not be available on all workstations.
6	10101	Serial connector	15		IEEE-1394a connector NOTE: Might not be available on all workstations.
7		RJ-45 network connector	16		SAS Connector

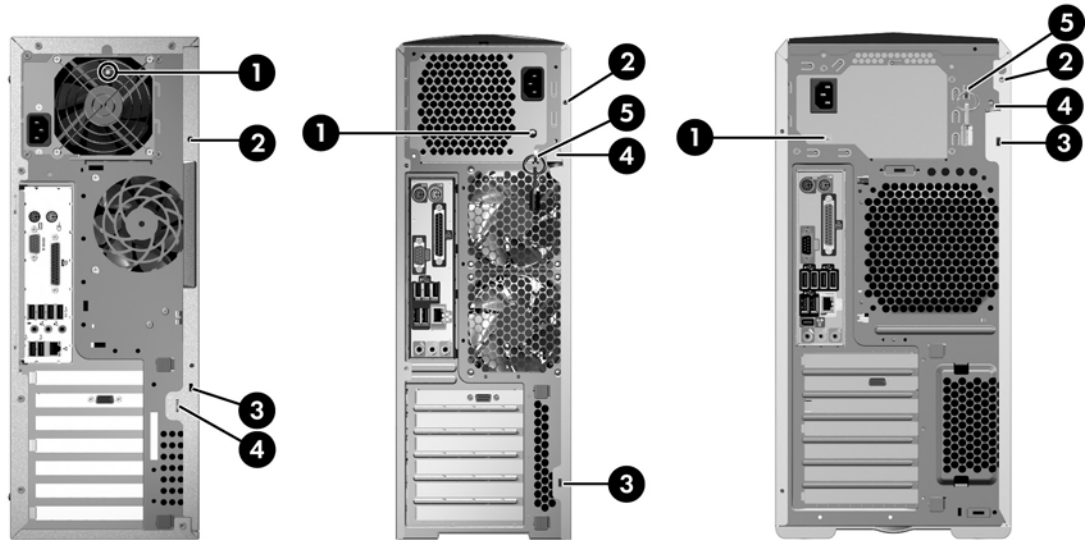
Table 2-2 Rear panel connector and control description (continued)

Item	Symbol	Description	Item	Symbol	Description
					NOTE: Might not be available on all workstations.
8		Parallel connector *	17		DMS-59 high density graphics connector
		NOTE: Might not be available on all workstations.			NOTE: Might not be available on all workstations.
9		SVGA Monitor Connector			

* Refer to the *Service and Technical Reference Guide* for your workstation for specific rear panel component information. The rear panel connectors are labeled with industry-standard icons and colors to assist you in connecting your peripheral devices.

Additional rear panel components can include those shown in the examples in Figure 2-5. Your workstation has some combination of these components, depending upon workstation model and configuration.

Figure 2-5 Additional rear panel component examples



xw4000 Series

xw6000 Series

xw8000/xw9000 Series

Item	Description
1	Built-in Self Test (BIST) LED
2	Universal chassis clamp opening
3	Cable lock slot
4	Padlock loop
5	Access panel key
	NOTE: Not all workstations models have the key lock.
6	PCI expansion slot access openings (each slot opening typically covered with blank filler panel when not use).

3 Setting up operating system software


This chapter provides setup information for the Windows Vista® Business , Microsoft Windows XP, Red Hat Linux, and Red Flag Linux operating systems. It also provides information on how to verify that you have the latest BIOS, drivers, and software updates installed on your workstation.

- △ **CAUTION:** Do not add optional hardware or third-party devices to the HP workstation until the operating system is successfully installed. Adding hardware might cause errors and prevent the operating system from installing correctly.
-

Setting up software for Windows Vista Business

When you first apply power to the workstation, the operating system is installed. This process takes approximately 5 to 10 minutes. Carefully 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 installation can damage the installation and operation of this software.
-

-  **NOTE:** After you have selected a language during initial boot of the operating system, the language will be locked in on the hard drive. If the system is restored with HP Backup and Recovery, only the previously selected language can be installed. If using RestorePlus! DVDs, the RestorePlus! DVD checks for the language stored on the hard drive and restores only the original preinstalled language. If a new hard drive is installed or no language is found on the disk, the RestorePlus! DVD installs any language requested.
-

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

Restoring the Windows Vista Business operating system

Your workstation has several methods to restore your Windows Vista Business operating system to a near-factory state or to the state of the system at a predefined restore point. Your system has a recovery partition on the system hard drive that contains software and data required for the restore process as described in the following sections.

-  **NOTE:** If you must restore the operating system with Windows XP OEM CDs (installing without using the *Restore Plus!* CDs), you must call Microsoft in order to provide the company with a Stock Keeping Unit (SKU) number. The SKU information is on the service tag and is the OS product number in the lower right hand section of the tag. It should display “OS: XXXXXXXX,” where “XXXXXXX” is the OS product number.
-

The HP Backup and Restore (HPBR) process

The Windows operating system and device drivers (for devices shipped with the system) are reinstalled using this process. The HPBR process can be executed from DVD, CD, or from the recovery partition contained on your system hard drive. To launch the HPBR, select **Start > All Programs > HP Backup & Recovery > HP Backup and Recovery Manager**.

△ **CAUTION:** Backup your data before you attempt any operating system restore. All data on the Windows partition will be deleted when you perform a system restore using the HPBR process. However, the recovery partition on the system drive and other partitions should not be affected.

Creating system recovery DVDs or CDs

You can create a set of the DVDs or CDs from your system if you have a DVD/CD burner. After launching the HP Backup and Restore Manager, you can create ISO images of the factory image, or burn them directly to CD or DVD media. You can also create a supplemental HP Backup and Recovery Manager CD. (There might be additional CDs you can create depending on the options you purchased.) You also have the option to move images of the CDs to another location, such as a network share, to be burned to DVD or CD at a later time or from another system.

Restoring from HPBR DVDs or CDs

To start the system recovery process, boot from the previously-created DVD or CD and carefully follow the online instructions.

Restoring directly from the recovery partition

To start the HPBR system restore process from the Recovery Manager, follow these steps:

1. Boot the workstation.
2. Press the **F11** key when prompted on the boot splash screen to enter the Recovery Manager.
3. Follow the prompts to restore the system to a factory-like condition.

Reclaiming hard drive space from the recovery partition

To reclaim hard drive space, you can remove only the HP Recovery Partition or you can completely uninstall the HP Backup and Recovery Manager application.

- △ **CAUTION:** Deleting the HP Recovery Partition or uninstalling the HP Backup and Recovery Manager application reduces or eliminates the ability to recover the system.

If the recovery partition is removed: (1) The **F11** Emergency Recovery function is not available, (2) The ability to recover the system from data on the recovery partition is lost, (3) Any recovery images contained in the recovery partition are deleted, and (4) The ability to create a recovery media set is lost.


If you uninstall the HP Backup and Recovery Manager application, emergency recovery, as well as data backup and recovery, are no longer possible.

- **Removing only the recovery partition** — The recovery partition can be removed by selecting **Remove HP Recovery Partition** in the **HP Backup & Recovery** program folder. When the HP Recovery Partition is removed; the recovery partition is deleted, the user partition is extended to reclaim the unused hard drive space, and the **F11** boot prompt is removed. The HP Backup and Recovery Manager application remains and can be used for data backup and restore.
- **Uninstalling the HP Backup and Recovery Manager application** — The HP Backup and Recovery Manager application can be uninstalled by selecting the Windows **Control Panel > Programs and Features** utility. When the HP Backup and Recovery Manager application is uninstalled; the recovery partition is deleted, the user partition is extended to reclaim the unused space, and the **F11** boot prompt is removed.

Ordering backup software

You can order a Recovery Disc Set from HP by contacting the HP support center. To obtain the support center telephone number for your region:

1. Visit http://welcome.hp.com/country/us/en/wwcontact_us.html.
2. Select your region.
3. Under the Call HP heading, click **Technical support after you buy**.

-  **NOTE:** Before calling HP to order the software, be sure to have the serial number of your workstation available. Refer to [Ventilation, COA label, and serial number label information on page 9](#) for details.

Transferring files and settings to your Windows Vista Business workstation using Windows Easy Transfer

Windows Easy Transfer, the Microsoft data migration tool, provides a guide that helps you choose what files and data to transfer from another Windows computer to your Windows Vista Business workstation and how to transfer it. You can use one of the following interconnect or storage methods with Windows Easy Transfer to migrate data from another Windows computer to your workstation:

- **Network** — Can be used when both the source computer and your workstation are connected to the same network.
- **Easy Transfer Cable** — A specially designed USB cable that can connect the source computer to your workstation when completing a Windows Easy Transfer. Note that an Easy Transfer Cable is not a standard USB cable, but is also commonly available from local electronic suppliers.
- **DVDs or CDs** — Can be used if you have writeable DVD or CD drives on the source computer and your workstation.
- **USB flash drive or an external hard drive** — Can access both the source computer and your workstation.


To use the Windows Easy Transfer tool, select **Start > All Programs > Accessories > System Tools > Windows Easy Transfer**.

 **NOTE:** For more information on using Windows Easy Transfer with your workstation, visit <http://www.microsoft.com/windows/products/windowsvista/features/details/easytransfer.msp>

Software setup for Microsoft Windows XP Professional

When you first apply power to the workstation, the operating system is installed. This process takes approximately 5 to 10 minutes. Carefully 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 installation can damage the installation and operation of this software.

 **NOTE:** After you have selected a language during initial boot of the operating system, the language will be locked in on the hard drive. If the system is restored, the restore CD checks for the language stored on the hard drive and restores only the original preinstalled language. If a new hard drive is installed or no language is found on the disk, the Recovery CD will install any language requested. A language selection is not required for the 64-bit operating system.

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

Restoring the Windows operating system

Your workstation has a several methods to restore your Windows XP operating system to a near-factory state, or to the state of the system at a predefined restore point. Your system has a recovery partition on the system hard drive that contains software and data required for the restore process as described in the following sections.

 **NOTE:** If you must restore the operating system with Windows XP OEM CDs (installing without using the *Restore Plus!* CDs), you must call Microsoft in order to provide the company with a Stock Keeping Unit (SKU) number. The SKU information is on the service tag and is the OS product number in the lower right hand section of the tag. It should display “OS: XXXXXXX,” where “XXXXXXX” is the OS product number.

The RestorePlus! process

The Windows operating system and device drivers (for devices shipped with the system) are reinstalled using this process. Some application software might not be restored using the RestorePlus! process. In this case you must install the application software from the appropriate application CD. The RestorePlus! process can be executed from CD or from the recovery partition contained on your system hard drive.

△ **CAUTION:** Backup your data before you attempt any operating system restore. All data on the Windows partition will be deleted when you restore using the RestorePlus! process. However, the recovery partition on the system drive and other partitions should not be affected.

Creating a RestorePlus! CD

You can create a set of the CDs from your system if you have a CD burner. When you first boot your system, you are prompted to make CDs for RestorePlus!, the Windows operating system, and a supplemental HP Backup and Recovery Manager CD. (There might be additional CDs you can create,

depending on the options you purchased.) You also have the option to move images of the CDs to another location, such as a network share, to be burned to CD at a later time or from another system.


Restoring from RestorePlus! CDs

To start the RestorePlus! process, boot from the RestorePlus! CD and carefully follow the online instructions.

Restoring from RestorePlus! on the recovery partition

Follow these steps to start the RestorePlus! process from the Emergency Recovery menu:

1. Boot the workstation.
2. Press the **F11** key when prompted during the boot process to enter the Emergency Recovery menu. The **F11** prompt appears briefly during the boot process.
3. Select **Recover PC's factory installed operating system, drivers, utilities, and applications** from the Emergency Recovery menu.

 **NOTE:** Some applications might not be restored using this method.

HP Backup and Recovery Manager restore points

HP Backup and Recovery Manager is preinstalled on your workstation. This software enables you to backup and restore your system and data using a restore point which is a snapshot of the system partition. A restore point can be used to return the system partition back to its state when the restore point was created.

Refer to the *Service and Technical Reference Guide* for your workstation for details on using the HP Backup and Recovery Manager, including restore points.

Reclaiming hard drive space from the recovery partition

To reclaim hard drive space, you can remove only the HP Recovery Partition or you can completely uninstall the HP Backup and Recovery Manager application.

△ **CAUTION:** Deleting the HP Recovery Partition or uninstalling the HP Backup and Recovery Manager application reduces or eliminates the ability to recover the system.

If the recovery partition is removed: (1) The **F11** Emergency Recovery function is not available, (2) The ability to recover the system from data on the recovery partition is lost, (3) Any RestorePlus! media contained in the recovery partition is deleted, and (4) The ability to create the RestorePlus! CD set is lost.

If you uninstall the HP Backup and Recovery Manager application, emergency recovery, as well as data backup and recovery, are no longer possible.


- **Removing only the recovery partition** — The recovery partition can be removed by selecting **Remove HP Recovery Partition** in the **HP Backup & Recovery** program folder. When the HP Recovery Partition is removed; the recovery partition is deleted, the user partition is extended to reclaim the unused hard drive space, and the **F11** boot prompt is removed. The HP Backup and Recovery Manager application remains and can be used for data backup and restore.
- **Uninstalling the HP Backup and Recovery Manager application** — The HP Backup and Recovery Manager application can be uninstalled by selecting the Windows **Control Panel > Programs and Features** utility. When the HP Backup and Recovery Manager application is

uninstalled; the recovery partition is deleted, the user partition is extended to reclaim the unused space, and the F11 boot prompt is removed.

Ordering backup software

You can order a Recovery Disc Set from HP by contacting the HP support center. To obtain the support center telephone number for your region:

1. Visit http://welcome.hp.com/country/us/en/wwcontact_us.html.
2. Select your region.
3. Under the Call HP heading, click **Technical support after you buy**.

 **NOTE:** Before calling HP to order the software, be sure to have the serial number of your workstation available. Refer to [Ventilation, COA label, and serial number label information on page 9](#) for details.


Software setup for Red Hat Linux

This section contains information for installing, setting up, and customizing your HP Linux Workstation when running the Red Hat Linux operating system.

Setting up and customizing Red Hat Linux-preinstalled workstations

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

After the boot process completes, you can view additional HP Linux documentation by opening your Internet browser (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 preinstalled Linux or Linux-enabled workstations, see the *HP Workstation User Manual for Linux*, which is located at http://www.hp.com/support/linux_user_manual. For additional information about HP and Linux, visit <http://www.hp.com/linux>.

Starting Red Hat Linux

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

Downloading the latest HP driver CD

Refer to “Obtaining the HP Installer Kit for Linux from the HP Support Website” in the *HP Workstations User Manual for Linux*.


Installing with the HP driver CD

Refer to “Installing with the HP Installer Kit for Linux” in the *HP Workstations User Manual for Linux*.

Restoring Red Hat Linux

The HP Driver CD and Red Hat box set are required to restore the Red Hat Linux Operating System. Download the latest HP Driver CD (*Downloading the latest HP driver CD*) to receive any new enhancements.

Preloaded Red Hat Linux systems have Red Hat ISO's icon that is available on the desktop. Click this icon to go to the */iso* directory. This directory contains the binary and source ISO files. This directory also contains the driver CD ISO, which is the same as the CD that is shipped with the workstation. Follow the instructions in the **Readme** file in the */iso* directory to burn the ISOs to CD.

 **NOTE:** HP recommends that you burn the ISOs to CD to have as backup files.

Installing and customizing Red Hat Linux-enabled workstations

Linux-enabled workstations are not preinstalled 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 that 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. Visit http://www.hp.com/support/workstation_manuals.
2. Select your HP Workstation model.
3. Click the **Hardware Support Matrix for Linux** link.

Installing the Red Hat Linux operating system

To install the Linux operating system on your Linux-enabled system, see *Starting Red Hat Linux* and *Restoring Red Hat Linux* in the previous sections.

 **NOTE:** For additional information concerning the setup of preinstalled Linux or Linux-enabled workstations, see the *HP Workstation User Manual for Linux*, located at http://www.hp.com/support/linux_user_manual. For additional information about HP and Linux, visit <http://www.hp.com/linux>.


 **NOTE:** For detailed information on Linux installation, see the *HP Installer Kit for Linux* manual.

Red Hat Linux activation

With your workstation you received an activation card with the title *Activate Your Subscription* printed on it. The information on this card is required to activate your Linux subscription with Red Hat Network. Until activation, your Red Hat Linux operating system is not fully enabled.

To activate Red Hat Linux, click the **Activate Your Subscription** icon on your desktop, which directs you to <http://www.redhat.com/activate>. Follow the instructions at this Web site to activate your subscription using the information on the card.

HP recommends that you activate your subscription as soon as you connect to the Web.

 **NOTE:** Keep the Red Hat activation card with your workstation registration card for future reference.

Software setup for Red Flag Linux

The Red Flag Linux operating system is not supported by Hewlett-Packard. For more information or for support of Red Flag Linux visit <http://www.redflag-linux.com>.

Verifying your system after first boot

HP continually strives to implement new enhancements that will increase functionality, performance, and reliability of your HP Workstation. To ensure that your workstation takes advantage of the latest enhancements, HP recommends that you install the latest BIOS, driver, and software updates on a regular basis.

After successfully booting your system for the first time:

- Verify you have the latest system BIOS loaded; see [Upgrading the BIOS on page 21](#) for instructions.
- Verify you have the latest drivers for your system; see [Upgrading device drivers on page 21](#) for instructions.
- Become familiar with your available HP resources; see [Locating HP resources on page 1](#).
- Consider a subscription to Driver Alerts at <http://www.hp.com/go/subscriberschoice>.

Upgrading the BIOS

To check the current BIOS of your workstation during system power up:

1. Wait for the **F10=setup** prompt to appear on the lower right corner of the screen.
2. Press the **F10** key to enter F10 setup. The F10 Setup utility displays your workstation BIOS version under **File > System Information**.
3. Note the workstation BIOS version so that you can compare it with the BIOS versions displayed on the HP Web site.

To locate and download the latest available BIOS:

1. Visit <http://www.hp.com/go/workstationsupport>.
2. Select **Download Drivers and Software** from the left menu column under **Tasks**, and follow the instructions to locate the latest BIOS available for your workstation.
3. If the BIOS on the Web site is the same as the version on your system, no further action is required.
4. If the BIOS on the Web site is a version later than the one on your system, download the appropriate version for your workstation. Follow the instructions in the release notes to complete the installation.

Upgrading device drivers

To install hardware devices (such as a printer, display adapter, or network adapter) after the operating system is installed, the operating system must have access to the appropriate software drivers for the devices. Device drivers are usually provided on a CD supplied with the peripheral device.

To locate the most current device drivers, visit <http://www.hp.com/go/workstationsupport>. Select **Download Drivers and Software** from the left menu column under **Tasks**, and follow the instructions to locate the latest drivers available for your workstation.

If a needed driver is not found, visit the Web site of the manufacturer of the peripheral device.

4 Troubleshooting


This chapter provides information on:

- Self-troubleshooting with HP Insight Diagnostics
- HP troubleshooting resources and tools
- Power-On Self Test (POST) error messages
- Basic troubleshooting tables
- Calling technical support

Self-troubleshooting with 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 optical drive and reboot. Follow the menu options and directions to begin your testing.

 **NOTE:** If you do not have the *Documentation and Diagnostics* CD, visit <http://www.hp.com/go/workstationsupport>. Select **Download Drivers and Software** from the left menu under **Tasks**, and follow the instructions to locate the latest documentation and diagnostics information available for your workstation.


For more information on using HP Insight Diagnostics when running the application, click the **Help** tab or see the *Service and Technical Reference Guide* at http://www.hp.com/support/workstation_manuals.

HP troubleshooting resources and tools

This section provides information on the HP Help and Support Center, E-support, and Helpful Hints for troubleshooting.

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 Web site related to your HP Workstation.

 **NOTE:** The customized HP Help and Support Center is not available on Windows XP Professional x64 Edition or on Linux.

E-support

Online access and support resources include Web-based troubleshooting tools, technical knowledge databases, driver and patch downloads, online communities, and product change notification services.

The following Web sites are also available to you:

- <http://www.hp.com>—Provides useful product information.
- http://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://www.hp.com/support>—Provides a listing of the worldwide technical support phone numbers. Access the telephone numbers by visiting the Web site, then select your region, and click **Contact HP** in the upper-left corner.
- http://www.hp.com/support/workstation_swdrivers—Provides access to software and drivers for your workstation.

Troubleshooting a problem

To help you troubleshoot problems with your system, HP provides the Business Support Center (BSC). The BSC is a portal to an extensive selection of online tools. To access BSC and troubleshoot a problem with your workstation, complete the following:


1. Visit <http://www.hp.com/go/workstationsupport>.
2. Under the **Business Support Center** menu on the left, select **Troubleshoot a problem**.
3. Under **Select your product** (center window), select **Workstations** (under **personal computing**).
4. Under **Select your product**, continue with selections as appropriate to your workstation series and model, and to the problem you are troubleshooting.

Instant Support and Active Chat

HP Instant Support is a set of Web-based support tools that automate and speed up 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 collects information about the computer and pass it to an online support specialist. The collection of information might take up to 30 seconds depending on the computer configuration. When you submit a support ticket, you receive a confirmation message containing your case ID, the support hours for your location, and the estimated time of response.

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

 **NOTE:** This feature is not available on Windows XP Professional x64 Edition or on Linux.

Customer Advisories, Customer and Security Bulletins, and Customer Notices

To find advisories, bulletins, and notices:

1. Visit <http://www.hp.com/go/workstationsupport>.
2. Select the desired product (for example, HP Workstation xw6000).
3. Under **Resources for <your selected product>** (for example, HP Workstation xw6000), select **See more...**
4. Under **Self-Help resources:** in the center of the window, choose the desired action and appropriate information in the scroll list to view the index.

Product Change Notifications

Product Change Notifications (PCNs) provide customers with a notice of changes to their product. Visit <http://www.hp.com> and perform a search for PCNs related to your system. To maximize your search efforts, use the + symbol to locate valid words. For example, to search for PCNs for the xw8200, type **+xw8200 +PCN** and press **Enter**. You can also use the - symbol to exclude certain words. You can also register with Subscriber's Choice to automatically receive PCNs related to your system. For information on how to register to Subscriber's Choice, see [Locating HP resources on page 1](#).

Helpful hints

If you encounter a problem with your workstation, monitor, or software, the following provides a list of general suggestions that help you isolate and focus on the problem before taking further action.

At startup

- Verify that the workstation and monitor are plugged into a working electrical outlet.
- Remove all diskettes from your system before turning it on.
- Verify 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 by visiting <http://www.hp.com/go/quickspecs>.
- Verify 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 and only a single monitor, the monitor must be connected to the source selected as the primary VGA adapter. During startup, the other monitor connectors are disabled; if the monitor is connected to one of these ports, it will not function after Power-on Self Test (POST). 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. Refer to the *Diagnostic lights and audible (beep) codes* section of this document for information on interpreting diagnostic lights and audible codes.
- Press and hold any key. If the system beeps, then your keyboard is operating correctly.
- Check all cables for loose 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 does not shut down, unplug the power cord, wait a few seconds, then plug it in again. If it does not restart, press the power button to start the workstation.
- Reconfigure your workstation after installing a non–plug and play expansion board or other option. Refer to the *Hardware installation problems* section of this document for instructions.
- Be sure that all required device drivers have been installed. For example, if you have connected a printer, you must install a printer driver.
- If you are working on a network, plug another workstation with a different cable into the network connection. There might be a problem with the network plug or cable.
- If you recently added new hardware, remove the hardware and verify if the workstation functions properly.
- If you recently installed new software, uninstall the software and verify 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. Alternatively, replace the monitor with a monitor that you know is working properly.
- Upgrade the BIOS. A new release of the BIOS might have been released that supports new features or fixes your problem.
- For more detailed information, see the troubleshooting chapter in the *Service and Technical Reference Guide* at http://www.hp.com/support/workstation_manuals.

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 the desktop, then click **Properties** to change display settings. For more information, see the online documentation provided with the graphics controller utility or the documentation that came with your monitor.

Power-On Self Test error messages

The POST is a series of diagnostic tests that runs automatically when the system is turned on. Audible, visual, or both message occur before the operating system boots if the POST encounters a problem. POST checks the following items to ensure that the workstation system is functioning properly:

- Keyboard
- Memory modules
- Diskette drives
- All mass storage devices
- Processors
- Controllers
- Fans

- Temperature sensors
- Cables (front/rear panels, audio, and USB ports)

Find additional information about POST error messages in the *Service and Technical Reference Guide*, which is available at http://www.hp.com/support/workstation_manuals.

Basic troubleshooting

This section provides guidance on troubleshooting problems that you might encounter during the initial setup process. Additional troubleshooting information is available in the *Service and Technical Reference Guide* at http://www.hp.com/support/workstation_manuals.

General problems

You might 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, contact an HP customer care center, or contact an authorized dealer or reseller. For a list of support telephone numbers for your region, visit <http://www.hp.com/support>, select your region, and click **Contact HP** in the upper-left corner.

Table 4-1 General installation 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 shuts down and you might lose your data.
Workstation date and time display is incorrect.	RTC (real-time clock) battery might need to be replaced. NOTE: Connecting the workstation to a live AC outlet prolongs the life of the RTC battery.	Reset the date and time using Computer Setup (F10). If the problem persists, replace the RTC battery. See the <i>Service and Technical Reference Guide</i> for instructions on installing a new battery, or contact an authorized dealer or reseller for RTC battery replacement.
Workstation pauses 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 might 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. (This solution not applicable to the xw8000/xw9000 series.)
	The panel is locked (xw6000/xw8000/xw9000 series).	Use the key located on the back of the unit to unlock the panel.

Table 4-1 General installation problems (continued)

Problem	Cause	Solution
Poor performance is experienced.	Processor is hot.	<ol style="list-style-type: none"> 1. Make sure the airflow to and from 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.
	The user has memory installed in a single channel instead of in both channels.	Ensure DIMMs are matched and installed in both memory channels for best performance.
System does not power on and the LEDs on the front of the workstation are not blinking.	System unable to power on with power applied.	<p>CAUTION: Internal components might be powered even when the system is off. To prevent damage, disconnect the workstation power cord before you remove a component.</p> <p>To resolve this problem, choose one of the following:</p> <p>A. Press and hold the power button for less than 4 seconds. If the hard drive LED turns green, then:</p> <ol style="list-style-type: none"> 1. Remove the expansion cards one at a time and try holding the power button again for less than 4 seconds. 2. The problem might be on the system board. Contact HP for assistance. <p>B. Press and hold the power button for less than 4 seconds. If the hard drive LED does not illuminate green:</p> <ol style="list-style-type: none"> 1. Verify that unit is plugged into a working AC power outlet. 2. Open the access panel and verify the power button harness is properly connected to the system board. 3. Verify that all power supply cables are properly connected to the system board. 4. Check the power supply functionality. <ol style="list-style-type: none"> a. Disconnect the AC power. b. Disconnect ALL internal power supply cables from the system board. c. Plug in the AC power. <p>If the power supply fan spins and the BIST* LED lights, the power supply is functional. The problem might be on the system board. Contact HP for assistance.</p> <p>If the power supply fan does not spin or the BIST* LED does not light, the problem might be in the power supply. Contact HP for assistance.</p>

* For BIST information, see the *Service and Technical Reference Guide* for your workstation.

Hardware installation problems

You might need to reconfigure the workstation when you add or remove hardware, such as an additional optical 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 4-2 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.
	Cables of new external device are loose or power cables are unplugged.	
	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 might 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.	<ol style="list-style-type: none"> 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. If you still cannot resolve the issue, contact Customer Support. 3. Observe the beeps and LED lights on the front of the workstation. See Diagnostic lights and audible (beep) codes on page 28 to determine possible causes.
Workstation will not shut down.	Proper steps were not followed.	<ol style="list-style-type: none"> 1. Shut down the operating system software. 2. Manually turn off power to the workstation by pressing and holding the power button for four seconds. CAUTION: Manually turning off the power bypasses the standby state and can result in loss of data. 3. To reconfigure the power button to work in On/Off mode, run Computer Setup (F10). <p>For more information about using Computer Setup, refer to the <i>Service and Technical Reference Guide</i>, which is available through a link on the <i>Documentation and Diagnostics</i> CD (http://www.hp.com/support/workstation_manuals).</p>

Diagnostic lights and audible (beep) codes

This section describes the front panel light (LED) error and operation codes as well as the audible codes that might occur before or during the POST.

Table 4-3 Diagnostic lights and audible codes

Activity	Possible cause	Recommended action
Green Power LED On. No beeps.	Workstation on.	
Green Power LED blinks every two seconds.** No beeps.	Workstation in Suspend to RAM mode (select models only) or normal Suspend mode.	
Green Power LED is off.** No beeps.	Workstation in Suspend to Disk or "Hibernate" mode.	None
Green Power LED blinks three times, once per second.** No beeps	Workstation in Suspend to RAM mode (select models only) or normal Suspend mode.	
Green Power LED blinks four times, once per second.** No beeps.	Workstation in Suspend to Disk or "Hibernate" mode.	
<p>NOTE: ** — The BIOS option you select controls the green LED function during these suspend modes.</p>		
<p>For the following LED activity and beeps, the beeps are heard through the chassis speaker. Blinks and beeps repeat for 5 cycles, after which, only the blinks continue to repeat.</p>		
Red Power LED blinks two times, once every second, followed by a two-second pause. Two beeps.	<p>Processor thermal protection activated by either of the following methods:</p> <ul style="list-style-type: none"> • A fan might be blocked or not turning. • The heatsink and fan assembly is not properly attached to the processor. 	<p>CAUTION: Internal components might be powered even when the system is off. To prevent damage, disconnect the workstation power cord before you remove a component.</p> <ol style="list-style-type: none"> 1. Ensure that the workstation air vents are not blocked and the cooling fan is running. 2. Open the access panel, press power button, and verify that the processor fan is spinning. If the processor fan is not spinning, make sure the fan cable is plugged into the system board header. Ensure the fan is fully and properly seated or installed. 3. If fan is plugged in and seated properly, but is not spinning, the problem might be in the processor fan. Contact HP for assistance. 4. Verify that the fan assembly is properly attached. If problems persist, there might be a problem with the processor heatsink. Contact HP for assistance.
Red Power LED blinks three times, once every second, followed by a two-second pause. Three beeps.	Processor not installed (not an indicator of bad processor).	<ol style="list-style-type: none"> 1. Verify that the processor is present. 2. Reseat the processor.
Red Power LED blinks four times, once every second, followed by a two-second pause. Four beeps.	Power failure (power supply is overloaded)	<p>CAUTION: Internal components might be powered even when the system is off. To prevent damage, disconnect the workstation power cord before you remove a component.</p> <ol style="list-style-type: none"> 1. Open the access panel and ensure the following connections are secure on the system board: <ul style="list-style-type: none"> ◦ 24-pin main power (all systems) ◦ 4-pin CPU (xw4000 series) ◦ 8-pin CPU (xw6000/xw8000/xw9000 series) ◦ 4-pin memory (xw8000/xw9000 series)

Table 4-3 Diagnostic lights and audible codes (continued)

Activity	Possible cause	Recommended action
Red Power LED blinks five times, once every second, followed by a two-second pause. Five beeps.	Pre-video memory error	<p>NOTE: Memory connector pin configurations vary, and can have either a 4-pin, 6-pin, or 8-pin configuration, depending on workstation series and model.</p> <ol style="list-style-type: none"> 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, power off and replace one device at a time; 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. Check the power supply functionality. <ol style="list-style-type: none"> a. Disconnect the AC power. b. Disconnect ALL internal power supply cables. c. Plug in the AC power. <p>If the power supply fan spins and the BIST* LED lights, the power supply is functional. The problem might be on the system board. Contact HP for assistance.</p> <p>If the power supply fan does not spin or the BIST* LED does not light, the problem might be in the power supply. Contact HP for assistance.</p>
Red Power LED blinks six times, once every second, followed by a two-second pause. Six beeps.	Pre-video graphics error.	<p>CAUTION: Internal components might be powered even when the system is off. To prevent damage, disconnect the workstation power cord before you remove a component.</p> <ol style="list-style-type: none"> 1. Reseat DIMMs. 2. Replace DIMMs one at a time to isolate faulty module. 3. Replace third-party memory with HP memory. 4. The problem might be on the system board. Contact HP for assistance. <p>CAUTION: Internal components might be powered even when the system is off. To prevent damage, disconnect the workstation power cord before you remove a component.</p> <ol style="list-style-type: none"> 1. Reseat the graphics card. 2. The problem might be on the graphics card. Contact HP for assistance.
Red Power LED blinks seven times, once every second, followed by a two-second pause. Seven beeps.	System board failure (ROM detected failure prior to video).	<ol style="list-style-type: none"> 1. Clear CMOS. <p>NOTE: Refer to the <i>Service and Technical Reference Guide</i> for your workstation model for detailed information on clearing CMOS.</p> 2. The problem might be on the system board. Contact HP for assistance.

Table 4-3 Diagnostic lights and audible codes (continued)

Activity	Possible cause	Recommended action
Red Power LED blinks eight times, once every second, followed by a two-second pause. Eight beeps.	Invalid ROM based on bad checksum.	<p>CAUTION: Internal components might be powered even when the system is off. To prevent damage, disconnect the workstation power cord before you remove a component.</p> <ol style="list-style-type: none"> 1. Clear CMOS. <p>NOTE: Refer to the <i>Service and Technical Reference Guide</i> for your workstation model for detailed information on clearing CMOS.</p> <ol style="list-style-type: none"> 2. Upgrade the ROM using SoftPaq, either from your hard drive, CD, diskette, or USB removable device (for example., HP Drive Key). See the ROM Flash section of the <i>Service and Technical Reference Guide</i> at http://www.hp.com/support/workstation_manuals. SoftPaq is a self-extracting executable, which contains instructions for its use, that enables you to upgrade your ROM. To download the Softpaq executable, visit http://www.hp.com/go/workstationsupport. 3. The problem might be on the system board. Contact HP for assistance.
Red Power LED blinks nine times, once every second, followed by a two-second pause. Nine beeps.	System powers on but does not boot.	<ul style="list-style-type: none"> • The problem might be on the system board. Contact HP for assistance. • The problem might be in the processor. Contact HP for assistance.
System does not power on and LEDs are not blinking. No beeps.	System unable to power on.	<p>CAUTION: Internal components might be powered even when the system is off. To prevent damage, disconnect the workstation power cord before you remove a component.</p> <p>To resolve the problem, choose one of the following options:</p> <p>Press and hold the power button for less than 4 seconds. If the hard drive LED turns green, then:</p> <ol style="list-style-type: none"> 1. Remove the expansion cards one at a time and try holding the power button again for less than 4 seconds. 2. The problem might be on the system board. Contact HP for assistance. <p>Press and hold the power button for less than 4 seconds. If the hard drive LED does not turn on green then:</p> <ol style="list-style-type: none"> 1. Check that unit is plugged into a working AC outlet. 2. Open the access panel and check that the power button harness is properly connected to the system board. 3. Check that all power supply cables are properly connected to the system board. 4. Check the power supply functionality <ol style="list-style-type: none"> a. Disconnect the AC power. b. Disconnect all internal power supply cables. c. Plug in the AC power. <p>If the power supply fan spins and the BIST* LED lights, the power supply is functional. The problem might be on the system board. Contact HP for assistance.</p>

Table 4-3 Diagnostic lights and audible codes (continued)


Activity	Possible cause	Recommended action
		If the power supply fan does not spin or the BIST* LED does not light, the problem might be in the power supply. Contact HP for assistance.

* Some workstation models (such as the xw4550) do not have the BIST LED functionality. * For BIST information, see the Service and Technical Reference Guide.

Calling technical support

At times you might encounter an issue that requires technical support. When you call technical support:

- Have your workstation readily accessible.
- Write down the workstation serial numbers, product numbers, model names, and model numbers and have them in front of you.
- Note any applicable error messages.
- Note any add-on options.
- Note the operating system.
- Note any third-party hardware or software.
- Note the details of any blinking LEDs on the front of the workstation.
- Note the applications you were using when you encountered the problem.
- Note the power supply BIST status, if applicable.

 **NOTE:** When calling in for service or support, you might be asked for the Product Number (example: PS988AV) 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: Refer to [Ventilation, COA label, and serial number label information on page 9](#) for the location of the Serial Number label on your workstation. On most models, the serial number and product number label are located at the rear of the workstation.

For a listing of all worldwide technical support phone numbers, visit <http://www.hp.com/support>, select your region, and click **Contact HP** in the upper-left corner.