Chapter 1 Product Overview

This chapter presents an overview of the hardware components of the HP Workstation xw4200. For a more detailed overview of all the hardware components and spare part numbers, visit http://partsurfer.hp.com. This chapter includes the following sections:

Product Features

Exploded View

The following illustration shows an exploded view of the HP Workstation xw4200.

NOTE Drive configurations can vary.

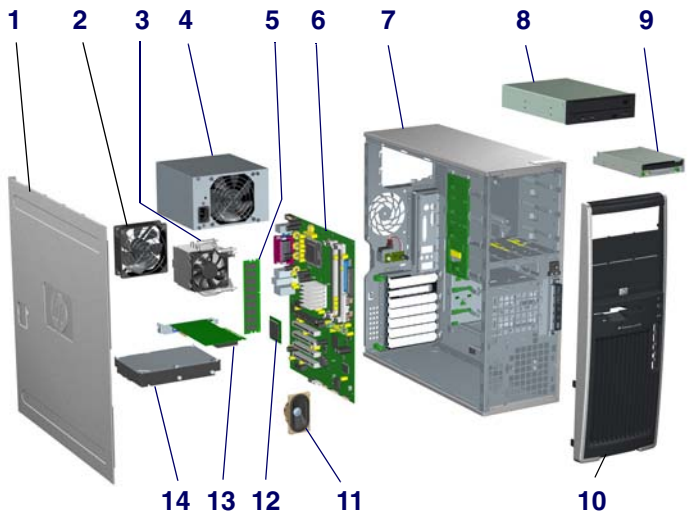


Figure 1-1 Exploded View

1	Access panel	**8**	Optical drive
2	System fan	**9**	Diskette drive
3	Processor heatsink	**10**	Bezel
4	Power supply	**11**	System speaker
5	Memory	**12**	Processor
6	System board	**13**	PCI Express Card
7	Chassis	**14**	Hard drive

Front Panel Components

The following illustration shows a typical HP Workstation xw4200. Drive configurations might vary depending on the configuration that was purchased.

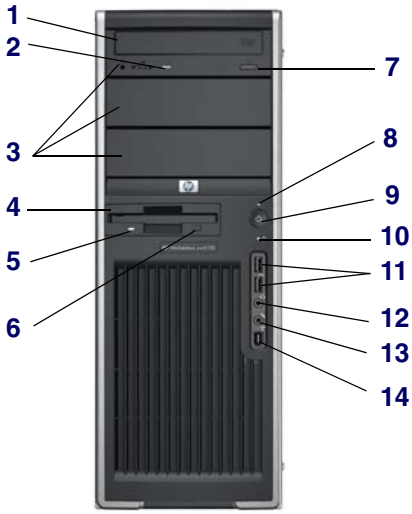


Figure 1-2 Front Panel Components

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

*An optical drive is a CD-ROM, CD-R/RW, DVD-ROM, DVD+R/RW, or CD-RW/DVD combo drive.
**IEEE-1394 is an optional feature. If the workstation was purchased without this option, then this connector will be covered.

Rear Panel Components

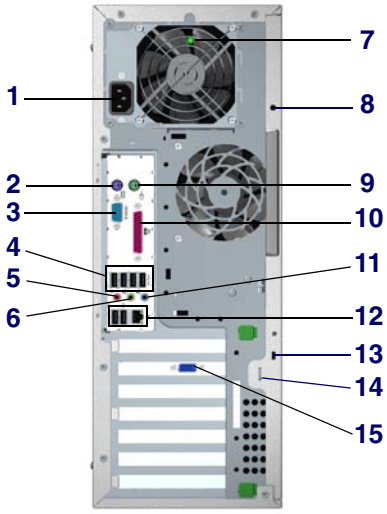


Figure 1-3 Rear Panel Components

1	Power Cord Connector	**9**	PS/2 Mouse Connector (green)
2	PS/2 Keyboard Connector (purple)	**10**	Parallel Connector (burgundy)
3	Serial Connector (teal)	**11**	Audio Line-In Connector (light blue)
4	USB	**12**	RJ-45 Network Connector and two USB connectors
5	Microphone Connector (pink)	**13**	Cable Lock Slot
6	Audio Line-Out Connector (lime)	**14**	Padlock Loop
7	Built In Self Test (BIST) LED (green)	**15**	Graphics Adapter
8	Universal Chassis Clamp Lock		

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

System Board Components

The following illustration shows the system board connectors and sockets on the HP Workstation xw4200.

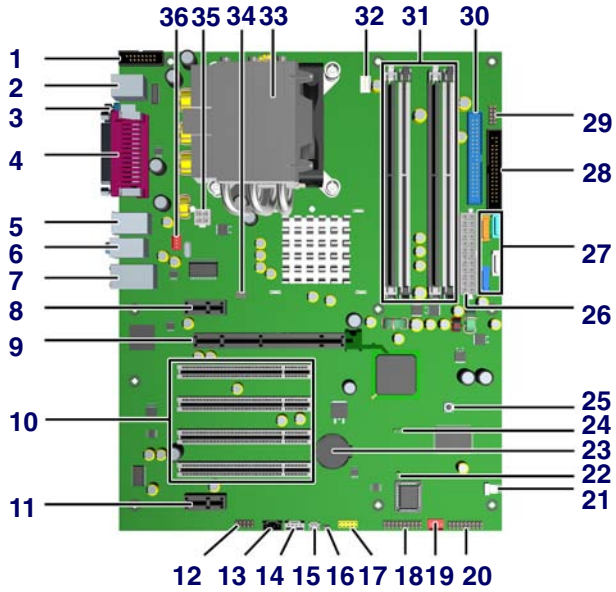


Figure 1-4 System Board Components

1	Second serial port connector (optional)	**13**	CD-ROM audio	**25**	Clear CMOS button
2	Keyboard/mouse	**14**	Auxiliary audio	**26**	Main power
3	Serial	**15**	Chassis speaker	**27**	Serial ATA
4	Parallel	**16**	Hard disk activity LED	**28**	Diskette drive
5	USB	**17**	Front USB	**29**	MultiBay
6	Audio	**18**	Trusted Platform Module connector	**30**	IDE
7	Network/USB	**19**	Front chassis fan (optional)	**31**	Memory modules sockets
8	PCI Express x1	**20**	Front control panel	**32**	Processor fan
9	PCI Express x16	**21**	Hood sensor	**33**	Processor
10	PCI	**22**	Boot block jumper	**34**	Solenoid hood lock
11	PCI Express x1	**23**	Battery	**35**	Processor power
12	Front audio	**24**	Password jumper	**36**	Rear chassis fan

The following illustration shows the HP Workstation xw4200 block diagram.

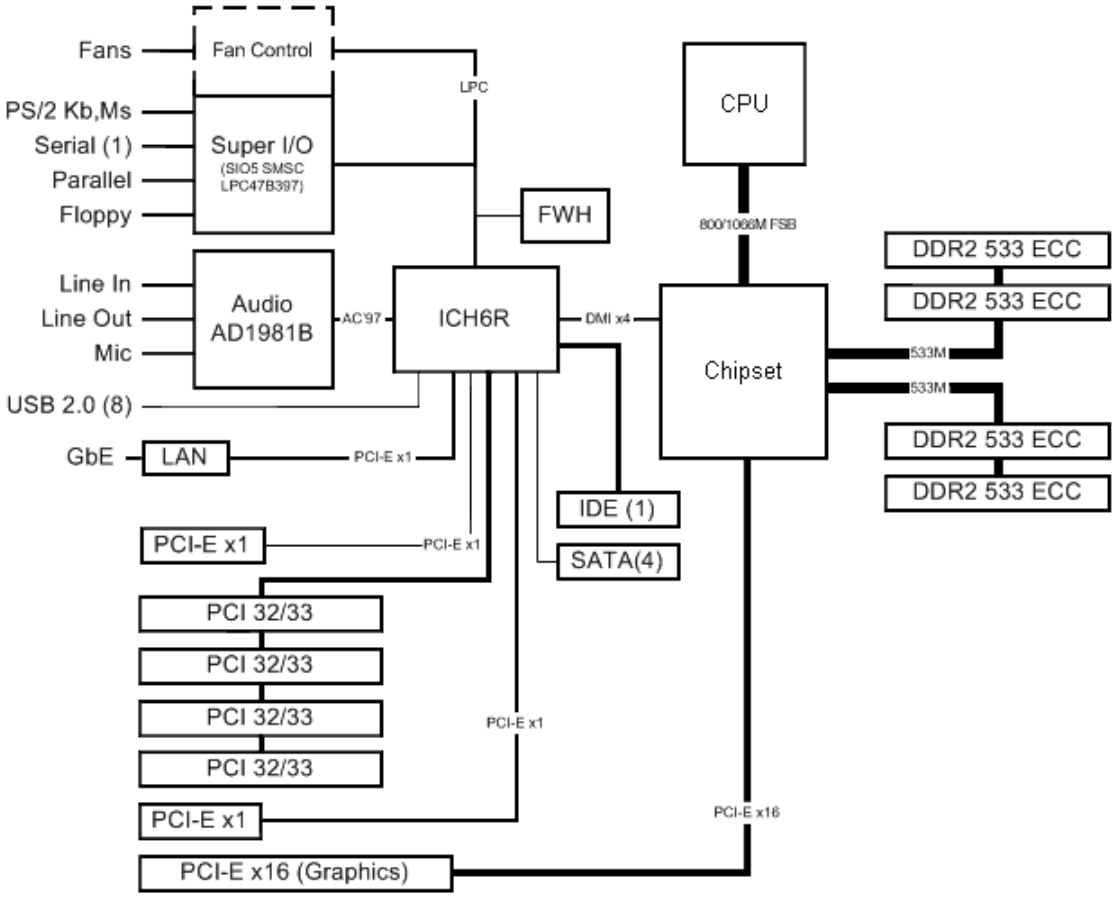
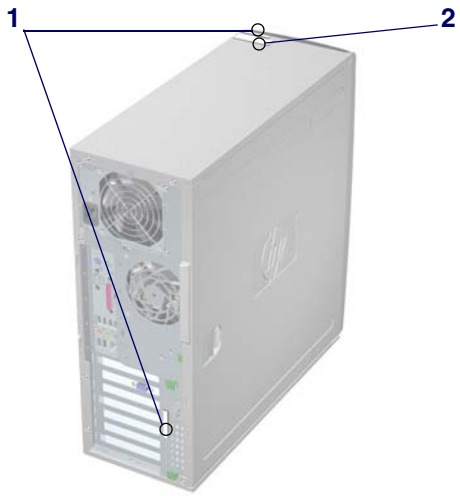


Figure 1-5 HP Workstation xw4200 Block Diagram

Serial Number and COA Label Location

Each workstation has two unique serial number labels **1** and a certificate of authentication (COA) label **2**. The serial number labels are located on the top (in a minitower configuration) of the unit and on the rear panel. Keep this number available when contacting customer service for assistance. The COA label is located on the top panel (in a minitower configuration).

NOTE The COA label is only if you have a Microsoft XP preinstalled system.



Product Specifications

This section describes the physical, environmental, and graphical and PCI Express specifications for the HP Workstation xw4200. For more specification information, visit http://www.hp.com and search for the QuickSpecs for this product.

Physical Specifications

The following table shows the physical characteristics of the HP Workstation xw4200.

Table 1-1 HP Workstation xw4200 Physical Characteristics

Weight	16 kg/35 lb (typical configuration)
Tower Dimensions	45.0 cm (17.7 in) high 16.8 cm (6.6 in) wide 45.6 cm (17.9 in) deep
Maximum Altitude (Non-pressurized)	**Operating:** 3,000 m (10,000 ft) **Non-operating:** 9,100 m (30,000 ft)

Environmental Specifications

The following table shows the HP Workstation xw4200 environmental specifications.

Table 1-2 HP Workstation xw4200 Environmental Specifications

Temperature	**Operating:** 5 to 35°C (40 to 95°F) **Non-operating:** -40 to 60°C (-40 to 140°F)
Humidity	**Operating:** 8 to 85%RH, non-condensing **Non-operating:** 8 to 90%RH, non-condensing
Altitude	**Operating:** 0 to 10,000 ft (3048m) **Non-operating:** 0 to 30,000 ft (9144m)
Shock	**Operating ½-sine:** 40g, 2-3ms **Non-operating:** ½-sine: 160 cm/s, 2-3ms, (~100g)· square: 422 cm/s, 20g
Vibration	**Operating Random:** 0.5g (rms), 5-300 Hz **Non-Operating:** random: 2.0 g (rms), 10-500 Hz·

PCI and PCI Express Slot Power Specifications

Your workstation contains four PCI slots, two PCI Express x1 slots, and a single PCI Express x16 high-end graphics slot. The following table describes the slots, card types, and maximum slot power.

Table 1-3 Graphics and PCI Express Slot Power Specifications

Slot#	Slot Type	Slot Power (Maximum)
1	PCI Express x1 half-length	10 W*
2	PCI Express x16 graphics	75 W*
3-6	PCI	25 W*
7	PCI Express x1 full-length	25 W*

* In addition to these slot power specifications, the overall power consumption of the system (including I/O cards, processor, and memory) must not exceed the maximum ratings of the system power supply.

NOTE For hardware specifications of other system components, such as graphics cards or optical drives, visit the Web site of the specific manufacturer.

Power Supply and Cooling

The following table shows the power supply specifications of the HP Workstation xw4200.

Table 1-4 HP Workstation xw4200 Power Supply Specifications

Full Ranging Input (No Line Select Switch)	Yes
Active Power Factor Correction (APFC) **(Input Current is nearly 1/2 a non-APFC PS)**	Yes
Passive Power Factor Correction (PFC)	No
Operating Voltage Range	90 to 264 VAC/118 VAC
Rated Voltage Range	100 to 240 VAC
Rated Line Frequency	50 to 60 Hz/400 Hz
Operating Line Frequency Range	47 to 66 Hz/393 to 407 Hz
Rated Input Current	6.4A/6.4A
Maximum Rated Power	360 W
Heat Dissipation	**Typical** 737.1 btu/hr **Maximum** 1890.3 btu/hr (360W); 2152.8 (410W)
Power Supply Fan	92mm variable speed
Power Supply Dimensions	9.76 cm (3.843 in) wide 15 cm (5.906 in) high 15.371 cm (6.052 in) deep
ENERGY STAR Compliant	Yes
FEMP Standby Power Compliant **(<2W in S5–Power Off)**	No
Power Consumption in ES Mode–Suspend to RAM (S3) **(Instantly Available PC)**	2.5 W
Built-in Self Test LED	Yes
Surge Tolerant Full Ranging Power Supply	Withstands power surges up to 2000 V

Power Consumption and Cooling

The following table shows the power consumption for a typical configuration based on primary power consumptions:

- One processor (1 x 3.4 GHz Pentium 4 Processor with HT Technology)
- One GB memory (2 x 512 MB)
- Two hard drives (2 x SATA 40 GB)
- CD-ROM drive
- PCI-Express Graphics Card (Quadro FX 1300)
- One diskette
- Monitor

Table 1-5 HP Workstation xw4200 Power Consumption and Cooling

Input Power Consumption	120 VAC/60Hz
Typical operating mode (system busy)	216 W/737.1 btu/hr
Windows XP Idle	138 W/470.9 btu/hr
Standby mode (S3)	2.5 W/8.53 btu/hr
Hibernate mode (S4)	2.1 W/7.166 btu/hr
Power Off (S5)	7.166 btu/hr

NOTE When you turn off your workstation with the power button on the front panel, the power consumption falls below 10 W. To reach zero power consumption, either unplug the workstation from the power outlet or use a power strip with a switch. However, removing all power to the workstation might reduce the life of the real-time clock battery.

For more information on power-saving features, refer to your operating system documentation.

System Fans and Airflow

The workstation includes a rear system fan, one processor heatsink fan, plus an optional front system fan.

Resetting the Power Supply

If an overload triggers the power supply overload protection, all power is immediately cut. To reset the power supply unit:

1. Disconnect the power cord.
2. Determine what caused the overload, and fix the problem.
3. Reconnect the power cord and reboot the workstation.

ENERGY STAR

The ENERGY STAR® program, a government-backed initiative, promotes energy efficiency by identifying ways to reduce energy consumption. Select HP workstations participate in the ENERGY STAR program.

NOTE ENERGY STAR is not supported on Linux-based workstations.

For those workstations that support ENERGY STAR and have it enabled, the power management features will be set as follows:

- Monitor—goes into Sleep 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 If you must restore the operating system, reset the ENERGY STAR settings (if applicable).

To verify the factory default power settings for your product:

- From the Windows 2000 or Windows XP Classic Start menu, select **Start>Settings>Control Panel>Power Options.**
- From the Windows XP standard Start menu, select **Start>Control Panel>Performance and Maintenance>Power Options.**

ENERGY STAR Compliance

HP products purchased with the ENERGY STAR configuration are compliant with the U.S. Environmental Protection Agency (EPA) ENERGY STAR Computers Program. The EPA ENERGY STAR configuration does not imply endorsement by the EPA. As an ENERGY STAR Partner, HP has determined that products with the ENERGY STAR configuration meet the ENERGY STAR guidelines for energy efficiency.

The ENERGY STAR Computers Program was created by the EPA to promote energy efficiency and reduce air pollution through more energy-efficient equipment in homes, offices, and factories. HP products achieve this by reducing the power consumption when not being used.

ENERGY STAR on HP Workstations uses ACPI power management. The system can wake as a result of a user action (keyboard or mouse) or from the network or a modem.

The Power Management feature, when used in conjunction with an external ENERGY STAR-compliant monitor, will support the power-down features of the monitor. The Power Management feature allows an external monitor to go into low-power mode when the energy save timeout occurs.

CAUTION Using the Energy Save Monitor feature with non-ENERGY STAR compliant monitors might cause video distortion when the Energy Save timeout occurs.

Hyper-Threading Technology

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

To see if Hyper-Threading Technology can benefit you, test your system by turning the feature on. Computer Setup (F10) can be used to turn this feature on. To do this, run F10 Setup during boot up and select **Advanced>Device Options>Hyper-Threading**, and enable 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 The Hyper-Threading Technology is recommended for use with Windows XP systems. This technology is detected by the system and is turned on in the operating system after it is enabled in the system BIOS.

NOTE Red Hat Enterprise Linux WS 3 supports Hyper-Threading Technology. An SMP-capable kernel must be installed on your system before this technology can be utilized.

For more information about the Hyper-Threading Technology, visit the Intel Web site at http://www.intel.com.