Getting Started Guide

hp workstation zx2000

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This guide provides an overview of the system front and rear panel connectors, instructions on how to set up and configure your system, and troubleshooting tips. The appendix includes regulatory notices.

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First Edition (July 2004)

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

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

Important Safety Warnings

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

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

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

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

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

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

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

CAUTION: Information on Ergonomic Issues. It is strongly recommended that you read the ergonomics information, available in the "Working In Comfort" section of this manual, before using your system. You can access more extensive ergonomics information at: **www.hp.com/ergo**

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

Contents

1 Setting Up and Using Your System

2 Troubleshooting

A Regulatory Information

Index

1

setting up and using your system

This section provides:

- description of front and rear panel
- setup instructions
- system configuration instructions
- troubleshooting tips

system description

The zx2000 workstation is available in *tower* and *rack-mount* configurations.

front panel

The hp workstation zx2000 front panel has the following features:

- Two front-access **USB connectors**.
- Two front-access **optical drive bays**.
- **Power button** to turn system on or off.
- **Power LED**: green when the power is on or the power button is pushed in. If the power is on and the button is pushed in, the light will stay on even after the system is powered down. When the button is released, the green light turns off.
- **Activity LED**: indicates whether the system is accessing any of the hard drives or optical drives (IDE or SCSI). If the LED is:
  - **off**, the system is off, or the system is not accessing internal drives
  - **blinking green**, the system is accessing an internal drive

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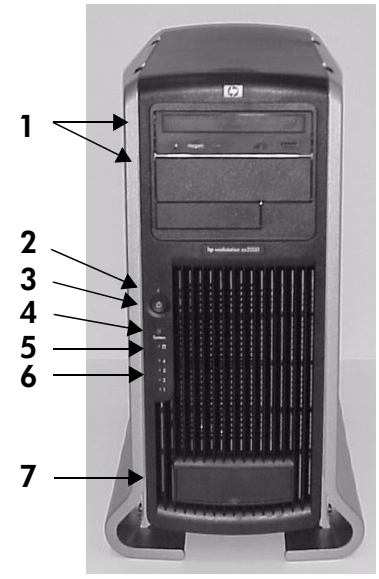
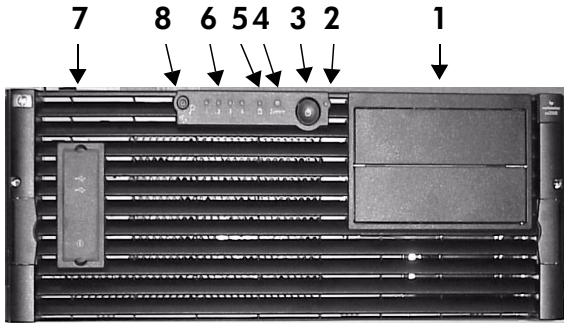
NOTE: The Activity LED is only active on systems purchased after March 2003.

NOTE: The Activity LED automatically communicates with IDE HDD or optical drives. To communicate with SCSI drives, a SCSI LED activity cable must connect the SCSI card and the system board.

- **System** and **Diagnostic LEDs** provide information about system errors.
- **Locator Button and LED** (rack-mount configuration only) identifies the rack position of the workstation.



Front Panel, Tower Configuration

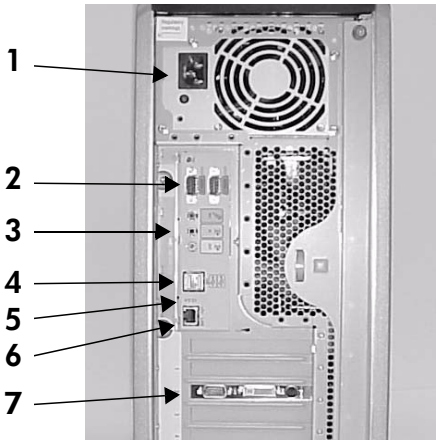


Front Panel, Rack Configuration

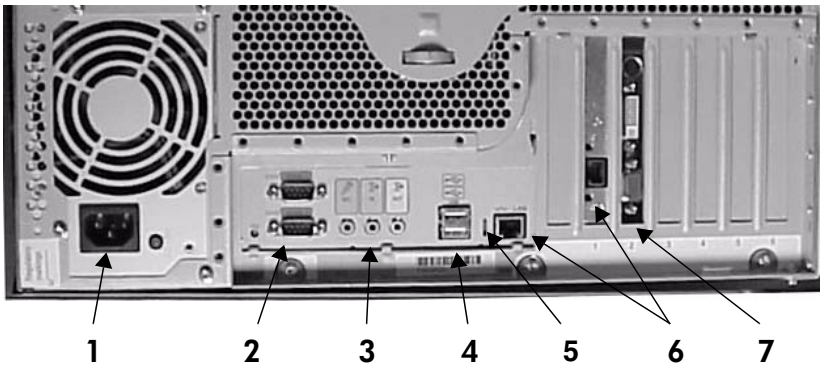
1 Optical drive bays	**5** Activity LED
2 Power LED	**6** Diagnostic LEDs 1-4
3 Power button	**7** Front-access USB connectors (behind door)
4 System LED	**8** Locator LED and Button *(rack-mounted system only)*

rear panel

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



Rear Panel Connectors, Tower Configuration



Rear Panel Connectors, Rack-mounted Configuration

1 Power	**5** LAN LEDs
2 Serial ports	**6** Built-in LAN and optional second LAN ports
3 Audio (headphone, microphone)	**7** Monitor port(s) on graphics card
4 USB	

setting up your system

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

1. Check the materials list shipped with your system to verify that you have all of the components.
2. Position the system so that its rear connectors are easily accessible:
   - ❏ *If the system is a tower configuration*, place the system in an area with easily accessible power outlets and enough space for the keyboard, mouse, and any other accessories.
   - ❏ *If the system is to be rack-mounted*, refer to the mounting instructions provided with your system.

tools

You do not need any tools to set up your system. However, if you plan to install additional hardware components, you will need:

- Flat blade screwdriver
- T-15 Torx driver
- Special processor tool (provided with processor)
- Static-free mat
- Static strap

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

Over time, very fine whiskers of pure metal can form on electroplated zinc, cadmium, or tin surfaces. If these whiskers are disturbed, they may break off and become airborne, possibly causing failures or operational interruptions. For

over 50 years, the electronics industry has been aware of the relatively rare, but possible, threat posed by metallic particulate contamination. During recent years, a growing concern has developed in computer rooms where these conductive contaminants are formed on the bottom of some raised floor tiles.

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

connecting devices

Before connecting any cords or cables to your system, please read the Warning Notices in the front of this manual.

power, keyboard and mouse

To connect the power, keyboard and mouse:

1. Connect the power cords to the rear of the monitor and the computer.
2. Connect both power cords to a grounded outlet (for tower systems) or to a power distribution unit (PDU) on the rack (for racked systems).
3. Connect the keyboard and mouse. This system uses Standard 104 keyboard with a USB connector. Plug them into the USB ports on the back of the system. (Ports are labelled.)

WARNING: For your safety always connect equipment to a grounded wall outlet. Always use a power cord with a properly grounded plug, such as the one provided with the equipment, or one in compliance with your national safety standards. To ensure that the equipment can be disconnected from the power by removing the power cord from the outlet, the equipment must be located close to an easily accessible power outlet.

graphics cards

The zx2000 workstation is available with a range of graphics cards.

- Graphics cards may include an 15-pin connector, an 18-pin connector, or both. Only one connecting cable is needed for each monitor.
- Some video cards are pre-installed in the system, whereas others are packaged separately and shipped with the system. If your workstation did not ship with a pre-installed graphics card, you must install the card and load the drivers. Refer to the documentation included with your graphics card for instructions.
- For more detailed information about your graphics card, see the manufacturer's web site:
  - ATI: **www.ati.com**
  - NVIDIA: **www.NVIDIA.com**
- For a complete and current list of supported cards with supported display resolutions and frequencies, see the *hp zx2000 Technical Reference Guide*.
  - Frequencies of 85Hz and higher provide flicker-free viewing.
  - If the monitor you select is DDC-2B or DDC-2B+ compliant, the graphics card will automatically limit itself to those resolutions and frequencies supported by that monitor. In this case, you do not need to use the tables to select your monitor.

CAUTION: To prevent possible damage to your monitor, make sure you select a monitor that supports the resolutions and frequencies you wish to use.

starting and stopping your system

The zx2000 workstations come in several different configurations. Please pay careful attention to the directions below and choose the options that match the OS and packaging that you purchased.

starting your system

To start your system:

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

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

   - ❏ Power LED turns on
   - ❏ System LED blinks on and off
   - ❏ Diagnostic LEDs 1-4 create scrolling pattern
3. If you are prompted for a password, type it and press **Enter**.

   The password prompt displays only if you have set a password in the EFI Boot Manager program. (See “Using the Security/Password Menu” on page 21.)

initializing your software

The zx2000 can be configured with the Operating System (OS) pre-installed or packaged separately.

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

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

CAUTION: Do NOT switch OFF the system while the software is being initialized — this could cause unexpected results.

  The initialization process:

  - ❏ Displays the license agreement.
  - ❏ Asks questions about the system.

- If you purchased a system and the OS is not pre-installed, install the OS now:

  - ❏ **HP-UX**: Follow the instructions on the HP-UX CD envelope.
  - ❏ **Linux**: Follow the instructions on the Linux OS CD envelope.
  - ❏ **Windows**: Only available pre-installed.

turning off your system

To turn off the system:

1. Exit all applications.
2. Execute the Shut Down command provided by your OS.
3. When prompted, press the power button on your system.

NOTE: You can also shut down using the power button on the system. When you press the power button, the OS shuts down and the power turns off.

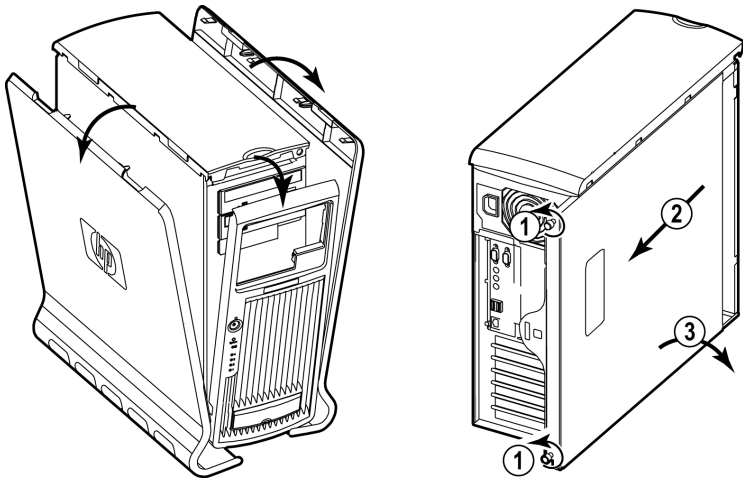
installing hardware components

If you purchased an accessory card, a graphics card, or other hardware components that were not installed in your system at the factory, you must install those components now.

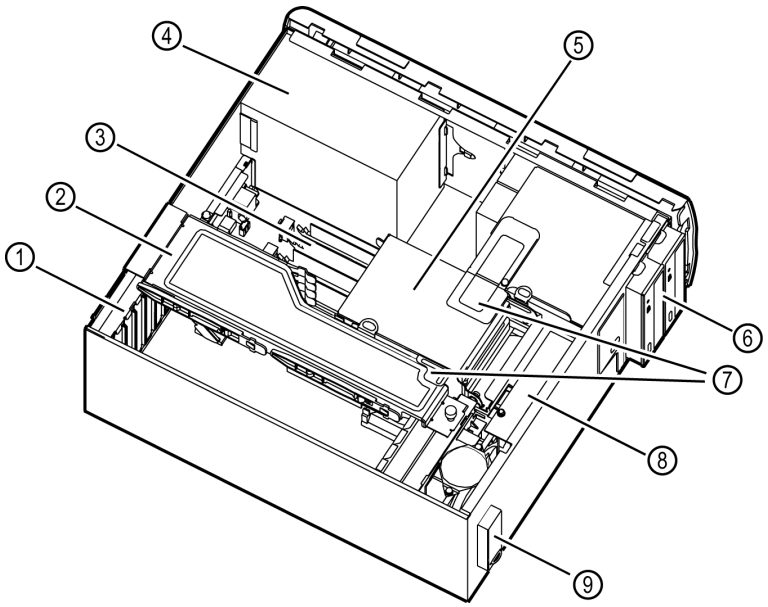
WARNING: For hardware installation procedures, you must power off the system and unplug the power cord from the outlet.

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

1. If you have already connected and turned on the system, turn off the system and disconnect all cables from the rear panel.
2. Remove the system access covers.



3. Install the new components. The following diagram shows the location of internal components.



1 PCI and AGP slots	**6** optical drives
2 PCI/AGP retainer arm	**7** shipping screws
3 memory	**8** fans
4 power supply	**9** front-access USB
5 hard drive cage	

For detailed instructions on installing hardware components, see the *hp zx2000 Technical Reference Guide*.

4. Replace the system access covers.
5. Connect the system.

firmware and drivers

To download the latest drivers and firmware for your system, go to the "Software and Drivers" section of the HP support site: **www.hp.com/go/bizsupport**.

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

configuring your system

Two tools are available to configure your system:

- Extensible Firmware Interface (EFI)
- Baseboard Management Controller (BMC)

This section provides a brief introduction to these tools. For complete information, refer to "System Configuration" in the *zx2000 Technical Reference Guide*.

extensible firmware interface (efi)

The Extensible Firmware Interface (EFI) is an interface that allows you to configure the Itanium Processor Family (IPF) firmware.

When you turn on your system and it begins to start up, your system pauses at the **boot option** screen:

```
EFI Boot Manager ver x.xx [xx.xx]

   Please select a boot option

         [your OS]
         EFI Shell [Built-in]
         Boot option maintenance menu
         Security/Password Menu

Use up and down arrows to change option(s).
Use Enter to select an option
```

NOTE: You have seven seconds to change the boot option before the system boots to the default OS.

Use the up or down arrow keys to highlight an option, then press **Enter**.

- **EFI Shell [Built-in]** is a command line interface that allows you to operate the EFI commands or create and run automated scripts.
- **Boot Option Maintenance Menu** allows you to select the order of the devices from which you want the firmware to attempt to boot the OS. You can also configure the system to boot from a configuration file.
- **Security/Password Menu** lets you add, change and delete system administrator and user passwords.

remote access

You can also access the EFI remotely.

1. With the workstation turned off, connect a 9-pin to 9-pin serial cable to *Serial Port A* on the rear panel of the workstation, and to your remote device.
2. Configure the terminal emulation software with these settings:
   - ❏ Baud rate: 9600
   - ❏ Bits: 8
   - ❏ Parity: None
   - ❏ Stop Bits: 1 (one)
   - ❏ Flow Control: XON/XOFF
3. Using the terminal emulation software, connect to the workstation with a *direct connection*.

NOTE: The default terminal emulation type is VT100+. This setting can be changed from the EFI **Boot Options Maintenance Menu**.

---

4. Turn on the workstation and follow the steps below to access the EFI.

using the efi shell

To access the EFI shell:

1. When the EFI boot option screen displays, use the arrow keys to highlight **EFI Shell**, then press **Enter**.
2. A list of *file systems* (drives and partitions), and *block devices* on hard drives is displayed. For example:

```
Device mapping table

fs0: Acpi(HWP0002,100)/Pci(1|0)/Scsi(Pun0,Lun0)/HD(Part1,Sig00112233)
blk0: Acpi(HWP0002,0)/Pci(2|0)/Ata(Primary,Master)
blk1: Acpi(HWP0002,100)/Pci(1|0)/Scsi(Pun0,Lun0)
```

3. The EFI shell first searches for an optional script file named `startup.nsh`. If this file is found, it is executed automatically. If the script does not automatically start an OS or other application, the shell then waits for commands to be entered at the command prompt.

4. You can now enter commands.

   To run an individual command:

   a. Type the command at the shell prompt. For example, to clear the display on the monitor:

      ```
      Shell:\> cls
      ```

   b. Press **Enter** to execute the command.

      - Some commands require additional arguments to further define their action. For example, to display information about the system memory, you must type the command name, plus the desired category of information to display:

        ```
        fs0:\> info mem
        ```

      - When you enter individual commands at the command prompt, the shell performs variable substitution, then expands wild cards before the command is executed.

      - To switch to a different file system, execute the following, where `fsx` is the selected file system, as listed on the screen (see step 2). For example:

        ```
        Shell> fsx:
        ```

        You see this prompt:

        ```
        fs0:\> _
        ```

      - You can also run EFI applications (files ending with `.efi`). To list applications in the current file system, run the **ls** command.

The following section provides a list of EFI command categories. For more information, see the *hp zx2000 Technical Reference Guide* or use the EFI shell's help system.

To access a:

- List of EFI command classes, execute **help** at the EFI shell prompt.
- Detailed description of a command, execute **help** and the command name at the EFI shell prompt. For example:

```
fs0:\> help date
```

EFI commands are organized into different classes based on their functions. The classes include:

- **boot** — boot options and disk-related commands
- **configuration** — change and retrieve system information
- **device** — get device, driver and handle information
- **memory** — memory related commands
- **shell** — basic shell navigation and customization
- **scripts** — EFI shell script commands

using the boot option maintenance menu

This menu allows you to select console output and input devices as well as various boot options. To:

- display the help available for the command, select **Help**
- return to the main Boot Options Maintenance menu, select **Exit**
- highlight an item using the arrow keys, then press **Enter**
- save your changes, select **Save Settings to NVRAM**

The **Boot Option Maintenance Menu** contains the following options.

Option	Function
Boot from a File	Manually runs a specific application or driver.
Add a Boot Option	Adds items to the EFI boot menu.
Delete Boot Option(s)	Removes options from the EFI boot menu.
Change Boot Order	Changes the order of boot options. The order in which options are listed in the EFI boot menu also reflects the order in which the system attempts to boot.
Manage BootNext Setting	Selects a boot option to be executed on the next system boot. This does not change the permanent system boot settings.
Set Auto Boot TimeOut	Sets the amount of time the system will pause before attempting to launch the first item in the Boot Options list.
Select Active Console Output Devices	Defines devices to display output from the system console.
Select Active Console Input Devices	Defines devices to provide input to the system console.
Select Active Standard Error Devices	Defines the devices that will display error messages from the system console.
Cold Reset	Shuts down and restart the system.
Exit	Returns to the EFI startup menu.

using the security/password menu

You can set administrator and user passwords to provide different levels of access to the system firmware:

- The **Administrator** can access and change all settings in the EFI Boot Manager program and can run the EFI shell.
- The **User** can access basic functions in the EFI Boot Manager.

N**OTE**: This password limits access to the firmware interface only. You must create passwords if you want to limit access to the EFI. No passwords are set at the factory.

This is **not** the OS password. For information on setting OS passwords, see your OS user guide.

The **Security/Password Menu** of the EFI lets you change the administrator and user passwords:

1. Select **Security/Password Menu**.
2. Select either:
   - ❑ **Set Administrator Password**
   - ❑ **Set User Password**
3. Select:
   - ❑ **Set Administrator Password** or **Set User Password** to set a new password
   - ❑ **Enable/disable Password** to specify whether a password is required
   - ❑ **Help** for assistance
4. When you are finished, select **Exit**.

baseboard management controller (bmc)

The Baseboard Management Controller supports the industry-standard Intelligent Platform Management Interface (IPMI) specification. This specification describes the management features that have been built into the system board. These features include:

- local and remote diagnostics
- console support
- configuration management
- hardware management
- troubleshooting

For a complete listing of BMC Commands, see the System Configuration section in the *zx2000 Technical Reference Guide*.

2

troubleshooting

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

- Your System Does Not Start Properly
- You Find a Hardware Problem
  - Keyboard Problems
  - Mouse Problems
  - Graphics and Monitor Problems
- Troubleshooting with the LED and e-buzzer Codes
- Software Diagnostics Tools
- Restoring the OS
- Where to Get Help

NOTE: If you need technical assistance, call HP at 1-800-593-6631 (USA) or go to **www.hp.com/country/us/eng/contact_us.html** to contact hp in your region.

your system does not start properly

The system doesn't power on.	
Make sure...	*How*
The system power cord is properly connected.	Connect the power cord to a working power outlet and to the rear of the system.

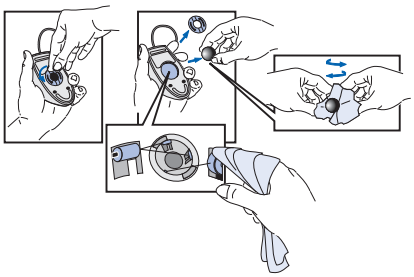
There is a buzzing noise.	
A beep code when the system starts up means that there is a configuration problem. Many of the e-buzzer codes relate to the LED diagnostic codes. See section "Using the LEDs and e-buzzer to Troubleshoot Your System".	
Make sure...	*How*
You correctly identify the e-buzzer error code.	Count the number of beeps after the buzzer (refer to the section "Troubleshooting with the e-buzzer" on page 2-9). Contact HP Support (refer to page 2-16).
If you still have a problem, see "Software Diagnostics Tools" on page 2-11.	

you find a hardware problem

keyboard problems

The keyboard doesn't work.	
Make sure...	*How*
The keyboard cable is correctly connected and the mouse driver is loaded.	Plug the cable into the correct connector on the back of the system. Ports are labelled for easy matching. Reboot the workstation to load the mouse driver on startup.
The keyboard is free of debris.	Check all keys are at the same height, and none are stuck down.
The keyboard itself is not defective.	Either replace the keyboard by a known working unit or try the keyboard with another system.
You are using the correct driver. Refer to your OS documentation.	Download the latest driver from: **www.hp.com/go/bizsupport**
You are using the latest firmware.	Download the latest firmware from: **www.hp.com/go/bizsupport**

mouse problems

The mouse doesn't work.	
Make sure...	How
The mouse cable is correctly connected.	Plug the cable into a USB port on the back of the system. Ports are labeled for easy identification.
You are using the correct driver. If you are using the HP enhanced mouse, ensure that the correct driver is installed. **This driver is provided with all Linux preloaded systems.**	Download the latest driver from: **www.hp.com/go/bizsupport**
You are using the latest firmware	Download the latest firmware from: **www.hp.com/go/bizsupport**
The mouse is clean.	Clean the mouse ball as shown below. 
The mouse itself is not defective.	Replace the mouse with unit that is known to work or try the mouse with another system.

If the system starts but you still have a problem, see "Software Diagnostics Tools" on page 2-11.

graphics and monitor problems

The monitor doesn't work.	
The system's power indicator light works but the monitor remains blank	
Make sure...	*How*
The monitor power cord is correctly connected.	Ensure the power cord is plugged into a working grounded power outlet and into the monitor.
The monitor is switched ON (LED is on).	Refer to the monitor manual for an explanation of the LED signals.
The graphics card is installed and the monitor (video) cable is correctly connected.	Ensure the monitor (video) cable is properly connected to both the system and the monitor. Ensure the cable is connected to the graphics card's connector.
The monitor's brightness and contrast settings are correctly set.	Check the settings using the on-screen display or controls on the front of the monitor.
The EFI console output settings are correct.	Check and correct the settings using the EFI Boot Options Maintenance Menu. For instructions, see page 1-20.
If the system starts and you still have a problem, see "Software Diagnostics Tools" on page 2-11.	

troubleshooting with the system LEDs

Several LEDs are on the front panel of the system. The following sections describe their functions.

power and system LEDs

The **Power and System LEDs** indicate the state of the system.

Power LED	System LED	State
Off	Off	Off
On (green)	Solid green	Running
On (green)	Off	Booting
On (green)	Blinking orange (1/sec.)	Attention
On (green)	Blinking red (2/sec.)	Fault

activity LED

The Activity LED indicates the state of disk and drive activity on the system.

NOTE: The Activity LED is only active on systems purchased after March 2003.

NOTE: The Activity LED automatically communicates with IDE HDD or optical drives. To communicate with SCSI drives, a SCSI LED activity cable must connect the SCSI card and the system board.

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

locator LED and button (rack-mounted systems only)

You may find it difficult to identify a specific computer requiring maintenance if you have several similar systems in a rack. The locator LED is designed to help identify the system in a rack.

To activate the locator LED, press the locator button on the front bezel of the system.

NOTE: The locator LED can also be lit using BMC commands. See the *HP zx2000 Technical Reference Guide*.

When the locator button is pressed in, the locator LED begins to flash blue at a frequency of one blink per second both on the front of the system and the back, making it easy to locate the system.

diagnostic LEDs

The four diagnostic LEDs located on the front bezel of your system are labeled one through four. Chapter 4 of the *hp zx2000 Technical Reference Guide* provides a table with a list of faults associated with the various possible LED lighting sequences.

lan LEDs (back panel)

The four LAN LEDs on the back panel of the system indicate LAN activity.

LAN LED	Location	Color	State
1. Gbit	*Tower:* Right	Off	No 1000 Mbps link
	Rack-mounted: Top	Green	Port linked at 1000 Mbps
2. 100mb	*Tower:* 2nd from right	Off	No 100 Mbps link
	Rack-mounted: 2nd from top	Green	Port linked at 100 Mbps
3. Link	*Tower:* 2nd from left	Off	No LAN connection
	Rack-mounted: 2nd from bottom	Green	Link connectivity on LAN port
4. Activity	*Tower:* Left	Off	No LAN activity
	Rack-mounted: Bottom	Green	Flashing or solid green LED indicates activity on LAN port

troubleshooting with the e-buzzer

When your system starts up, the system firmware performs pre-boot diagnostics to test your hardware configuration for any problems. If a problem is detected during pre-boot, the e-buzzer emits audible beeps and an encoded error message.

The e-buzzer emits a different number of beeps for each type of error. More detailed information is provided by the system LEDs.

Number of Beeps	Component	Description
1	Processor	Processor absent, not correctly connected. Reseat or replace processor.
2	Power Supply	Power supply failure. Replace power supply.
3	Memory	No memory, bad memory modules or incompatible memory module. Check memory module loading order. Reseat or replace memory modules.
4	Graphics Card	Graphics card problem. Reseat or replace the graphics card.
5	PCI Card	PCI card problem. Reseat or replace the PCI card.
6	General Failure	Possible problems include: System board failure, CPU connection problem, CPU failure, CPU power failure. See the *hp zx2000 Technical Reference Guide* for additional details and recommendations.
7	System Board	Defective system board. Contact support.

NOTE: If you miss the beep code, send the signal again. Press the power supply button for 3 seconds, then release it once the sound begins.

The e-buzzer also emits an electronic signal that can be sent through a telephone line to an authorized help desk or HP Support. This signal can be decoded by help desk equipment to identify the workstation model and serial number as well as details about any faults. To send this signal to HP Support, hold your telephone next to the front bezel when the system is booting.

software diagnostics tools

This section includes information on the following diagnostic tools:

- HP e-DiagTools Hardware Diagnostics
- Additional Diagnostics Tools for HP-UX

Before you run the HP diagnostic software, note any e-buzzer and LED errors.

hp e-diagtools hardware diagnostics

Your system came with an *HP IPF Offline Diagnostics and Utilities* CD with HP e-DiagTools Hardware Diagnostics. These tools can be used to diagnose hardware-related problems on your HP system.

Run e-DiagTools before contacting HP for Warranty service. This is to obtain information that will be requested by a support agent.

With this utility you can:

- Check the hardware configuration and verify that it is functioning correctly.
- Test individual hardware components.
- Diagnose hardware-related problems.
- Obtain a complete hardware configuration.
- Provide precise information to an HP support agent so they can solve problems quickly and effectively.

HP e-DiagTools provides a user-friendly interface to the *Offline Diagnostics Environment (ODE)*, that enables you to troubleshoot a system that is running without an OS or cannot be tested using the online tools. ODE can also be run separately using a command line interface, which allows the user to select specific tests and/or utilities to execute on a specific hardware module. See the *hp zx2000 Technical Reference Guide* for more information.

starting hp e-diagtools

1. Insert the *HP IPF Offline Diagnostics and Utilities* CD in the CD or DVD drive.
2. Restart the system.
3. Select the CD/DVD boot option from the EFI startup menu.

NOTE: If you are unable to boot from your CD/DVD drive, restart your system and check the boot options from the **Boot Options Maintenance Menu** to ensure that your system is configured to boot from the CD/DVD drive.

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4. If you are not familiar with e-DiagTools, review the documentation. From the main menu:
   a. Select **View Release Notes and Documentation Menu** to view a list of available documentation.
   b. Select **View e-DiagTools Info** to open the overview document.
5. If you are already familiar with e-DiagTools, select **Run e-DiagTools for IPF** from the main menu.

producing a support ticket

To produce a complete record of your system's configuration and test results, you will need to create a Support Ticket. This is a simple text file that contains essential information and is designed to assist your local or HP Support Agent.

To produce a Support Ticket, from the **Welcome to e-DiagTools** Menu:

1. Start e-DiagTools and select **Run eDiagTools for IPF** from the main menu.
2. Select **2 - Run e-DiagTools Basic System Test (BST)** to run the basic diagnostics on your system if you have not already done so.

   e-DiagTools scans your system. The Configuration Description displays on the screen when the configuration detection phase is complete.
3. Select **2 - Continue Test** to run the rest of the basic diagnostics test.
4. After the test is complete:
   - ❏ Press **4** to view the Support Ticket. (Use the arrow keys to scroll.)
   - ❏ Press **3**to exit the Support Ticket tool.

For more information about the e-DiagTools utility, refer to the *hp zx2000 Technical Reference Guide.*

additional diagnostics tools for hp-ux

HP provides several additional tools to help you identify possible problems with your system running HP-UX. These include:

- *Support Tools Manager*. HP-UX uses an online diagnostics product called the Support Tools Manager (STM) that allows system operation verification. Three interfaces are available with the Support Tools Manager: a command line interface (accessed through the **cstm** command), a menu-driven interface (accessed through the **mstm** command), and the graphical user interface (accessed through the **xstm** command).
- *Event Monitoring*. The Event Monitoring Service performs hardware monitoring. Hardware monitoring is the process of watching a hardware resource (such as a disk) for the occurrence of any unusual activity, called an event. When an event occurs, it is reported using a variety of notification methods (such as e-mail). Event detection and notification are all handled automatically with minimal involvement on your part.

Instructions for installing and running HP-UX diagnostics tools can be found in Chapter 4 of the *Operations and Maintenance Guide*. For a complete description of HP-UX diagnostics tools, go to:

docs.hp.com/hpux/diag/

recovering the OS

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

The process, documentation, and media are different for each OS:

- HP-UX
  - *HP Recovery CD for HP-UX*
  - Instructions on CD sleeve
  - **www.hp.com/go/bizsupport**
- Windows
  - *Windows XP 64 Bit Edition 2003 Recovery DVD*
  - Instructions on DVD sleeve
  - Access DVD contents through Windows Explorer
- Linux
  - *HP Enablement Kit for Linux* CD
  - Instructions in *HP Enablement Kit for Linux* booklet
  - **docs.hp.com/linux**, under "Linux for Itanium 2-based Servers and Workstations"

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

where to get help

HP Customer Care Centers can help you solve problems related to HP products and, if necessary, initiate appropriate service procedures. Support is available on the web and by phone.

For information on contacting HP Customer Care, go to:

www.hp.com/go/bizsupport

information to collect before you contact support

Before you contact support, you should:

1. Collect the following information:
   - ❏ Workstation model number (zx2000)
   - ❏ Serial number (on label inside front-access USB door)
   - ❏ Product number (if applicable, this will be printed next to the serial number)
2. Be familiar with your system configuration and note any errors that have occurred. For example:
   - ❏ When did the problem start?
   - ❏ Have you made any recent changes to the system?
   - ❏ What firmware version is installed?
   - ❏ Have you made any recent changes to the firmware settings?
   - ❏ How much memory is installed? Is it HP or third-party memory?
   - ❏ What accessory card slots are being used?
   - ❏ What OS is installed on the system?
   - ❏ Have you changed to a different OS? If so, what OS and version?
   - ❏ Is the OS giving any error messages?
3. Check the previous sections in this chapter and attempt to solve the problem.

4. Use any LED and e-buzzer error codes and try to solve the problem according to the solutions suggested:
   - ❏ Are there any LED errors? (Displays on screen during boot. See "Troubleshooting with the System LEDs" on page 2-6 for a list of common LED errors and recommended solutions.)
   - ❏ Are there any e-buzzer errors? (Audible beeps during boot. See "Troubleshooting with the e-buzzer" on page 2-9 for a list of e-buzzer beep sequences and recommended solutions.)
5. Use the diagnostic software on your system (See "Software Diagnostics Tools" on page 2-11).
6. Run HP e-DiagTools and produce a support ticket (See "HP e-DiagTools Hardware Diagnostics" on page 2-11).

online support

To contact HP Customer Care, online, see the *Worldwide Limited Warranty and Technical Support Guide* or go to **www.hp.com/go/bizsupport** and enter your product name (zx2000) in the search field.

NOTE: After accessing the site, select the appropriate hardware. Selected publications are also available as printed books.

The following information is available on this web site:

- Firmware updates (including the upgrade utility and instructions).
- The latest drivers and software utilities.
- Additional documentation (see below).

phone support

To contact HP Customer Care on the phone, call 1-800-593-6631 (USA) or visit **www.hp.com/country/us/eng/contact_us.html** to find the phone number in your region.

additional documentation

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

- *Installation Poster* — basic information on setting up your new workstation.
- *Getting Started Guide* (this document) — information on setting up and configuring your system, along with basic troubleshooting information.
- *Technical Reference Guide* — detailed information on installing and replacing parts, troubleshooting, and configuring the system.
- *Safety and Comfort Guide* — information on using your workstation safely and avoiding injury or discomfort.

Recovery instructions accompany CD/DVD.

- *Recovery CD/DVD Instructions* — detailed instructions on restoring your OS if you need to restore the system to the original shipping configuration.

A

Regulatory Information

This appendix includes:

- Declaration of conformity
- International regulatory statements

Declaration of Conformity according to ISO/IEC Guide 22 and EN 45014

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

Declares that the:

Product Type: Computer Workstation/Server
Marketing Designation(s): zx2000
Regulatory Model Number: FCLSA-0201
Product Options: all

conforms to the following specifications:

Safety.
IEC 60950:1991+A1+A2+A3+A4/EN 60950:1992+A1+A2+A3+A4
IEC 60825-1:1993/EN60825-1:1994+A11 Class 1 for LED's and Lasers
U.S.A 21CFR Subpart J – for FC Laser module
China GB4943-1995
Russia GOST R 50377-92

EMC.
CISPR 22: 1997 / EN 55022: 1998 Class A
CISPR 24: 1997 / EN 55024: 1998
Also compliant with...
EN 61000-3-2: 1998
EN 61000-3-3: 1995
EN 61000-4-2: 1999 - 4 kV CD, 8 kV AD
EN 61000-4-3: 1996 - 10 V/m
EN 61000-4-4: 1995 - 2 kV Signal, 4 kV Power Lines
EN 61000-4-5: 1995 - 1 kV Differential mode, 2 kV Common mode
EN 61000-4-8: 1993 - 3 A/m
EN 61000-4-11: 1994
U.S.A FCC Part 15, Class A
Japan VCCI Class A
Australia/New Zealand AS/NZS 2046:1997, AS/NZS 3548:1995
China GB9254-1988
Region of Taiwan CNS 13438:1997 Class A
Russia GOST R 29216-94

and is certified or verified by:
UL Listed to UL1950, 3nd edition, File E146385
cUL Listed to CSA 22.2 No. 950-M93
TUV Certified to EN60950 2nd edition with A1+A2+A3+A4
HP Fort Collins CCQD HTC

Supplementary information:
The product herewith complies with the requirements of the following Directives: Low Voltage Directive 73/23/EEC and the EMC directive 89/336/EEC and carries the CE marking accordingly.
This product was tested in a typical Hewlett-Packard system configuration.

For Compliance Information ONLY, contact: European Contact: Hewlett-Packard, HQ-TRE, Herrenberger Strasse 140, D-71034 Boeblingen (FAX: +49-7031-14-3143)
Americas Contact: Hewlett-Packard, WGBU Quality Manager., 3404 E. Harmony Road, Fort Collins, CO 80528, U.S.A. (FAX: (970) 898-4556)

federal communications commission radio frequency interference statement (for usa only)

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

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

notice for canada

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Class A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

safety warning for the usa and canada

If the power cord is not supplied with the computer, select the proper power cord according to your local national electric code:

- USA: use a UL listed type SVT detachable power cord.
- Canada: use a CSA certified detachable power cord.

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

Si le cordon secteur n'est pas livré avec votre ordinateur, utiliser un cordon secteur en accord avec votre code electrique national.

- USA: utiliser un cordon secteur "UL listed," de type SVT.
- Canada: utiliser un cordon secteur certifié CSA.

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

notice for france

Il y a danger ïexplosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou ïun type equivalent recommandé par le constructer. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

notice for the netherlands

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

notice for germany

Wenn die Batterie nicht korrekt eingebaut wird, besteht Explosionsgefahr. Zu ihrer eigenen Sicherheit sollten Sie nicht versuchen, die Batterie wiederaufzuladen, zu zerlegen oder die alte Batterie zu verbrennen. Tauschen Sie die Batterie nur gegen den gleichen oder ähnlichen Typ aus, der vom Hersteller empfohlen wird. Bei der in diesem PC intergrierten Batterie handelts sich um eine Lithium-Batterie, die keine Schwermetalle enthält. Batterien und Akkumulatoren gehören nicht in den Hausmüll. Sie verden vom Hersteller, Händler oder deren Beauftragten kostenlos zurückgenommen, um sie einer Verwertung bzw. Entsorgung zuzuführen.

noise declaration for germany

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

notice for japan (class a)

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

notice for korea

사용시 안내문 (A급 기기)

이 기기는 업무용으로 전자파장해검정을 받은 기기이오니,만약 잘못 구입하셨을 때에는 구입한 곳에서 비업무용으로 교환하시기 바랍니다.

notice for taiwan

警告使用者:

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

index