

# Troubleshooting Guide

Compaq iPAQ Desktop Personal Computer



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

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## ***Troubleshooting Guide***

### **Compaq iPAQ Desktop Personal Computers**

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# chapter 1

## Troubleshooting

This guide provides information on how to identify and correct minor disk, graphics, memory, and software problems. It also explains many of the messages that may be displayed on the screen, including specific error messages that may appear during the Power-On Self-Test (POST) at startup.

POST Message Disabled suppresses most system messages during POST, such as memory count and non-error text messages. If a POST error occurs, the screen will display the error message. To manually switch to the POST Messages Enabled mode during POST, press any key (except F10 or F12). The default mode is POST Message Disabled.

The speed at which the Personal Computer loads the operating system and the extent to which it is tested are determined by the POST mode selection.

Quick Boot is a fast startup process that does not run all of the system level tests, such as the memory test. Full Boot runs all of the ROM-based system tests and takes longer to complete.

Full Boot may also be enabled to run every 1 to 30 days on a regularly scheduled basis. To establish the schedule, reconfigure your Personal Computer to the Full Boot Every xx Days mode, using Computer Setup.



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For more information, refer to appendix B, “Computer Setup Utilities (F10 Setup)” on page 1.

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## Helpful Hints

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

- Check that the Personal Computer and monitor are plugged into a working electrical outlet.
- Check to see that the Personal Computer is turned on and the power light is on.
- Check to see that the monitor is turned on and the monitor power light is on and not blinking.
- Turn up the brightness and contrast controls of the monitor if the monitor is dim.
- Press and hold any key. If the system beeps, then your keyboard should be operating correctly.
- Check all cable connections for loose connections or incorrect connections.
- If you have installed an operating system other than the factory-installed operating system, check to be sure that it is supported on the Desktop Personal Computer. Windows 95 is not supported. To run Windows 98 or Windows NT 4.0, you must have the Legacy Module installed on the PC.
  
- Be sure that all the needed device drivers have been installed. For example, if you are using a printer, you need a printer driver.

# Solving General Problems

You may be able to easily resolve the minor problems described in this section. If a problem persists and you are unable to resolve it yourself, contact Compaq Customer Support.

## Solving General Problems

Problem	Cause	Solution
Computer won't turn on.	Computer is not connected to an external power source.	Connect to an external power source.
	Cables to the external power source are unplugged.	Ensure that cables connecting the Personal Computer to the external power source are plugged in properly and the wall outlet is active.
Computer appears locked up and won't turn off when the power button is pressed.	Software control of the power switch is not functional.	Press and hold the power button until the Personal Computer turns off.
Computer date and time display is incorrect.	RTC (real-time clock) battery may need to be replaced. Battery life is approximately 3 years.	Reset the date and time under Control Panel. If the problem persists, contact Compaq Customer Support.
Computer powered off automatically.	The unit temperature was exceeded. The fan may be blocked.	<ol style="list-style-type: none"> <li>Unit is in an exceedingly hot environment. Let it cool down.</li> <li>Ensure Personal Computer air vents are not blocked and internal fan is running.</li> <li>Contact Compaq Customer Support.</li> </ol>
Computer appears to pause periodically	Network driver is loaded and no network connection is established.	Establish a network connection, or use Computer Setup or Windows Device Manager to disable the network controller.
Cursor will not move using the arrow keys on the keypad.	The Num Lock key may be on.	Press the Num Lock key. The Num Lock light should not be on if you want to use the arrow keys.
LS-120 drive light stays on.	Diskette is damaged.	<p>In Windows 98 or Windows Millenium, run ScanDisk. Click Start &gt; Programs &gt; Accessories &gt; System Tools &gt; ScanDisk.</p> <p>In Windows NT or Windows 2000, right click Start, click Explore, and select a drive. Select File &gt; Properties &gt; Tools. Under Error-checking, click Check Now.</p>
	Diskette is incorrectly inserted.	Remove diskette and reinsert.
	Drive is not properly connected.	Reconnect drive.
LS-120 drive cannot write to a diskette.	Diskette is not formatted.	Format the diskette.

## Solving General Problems *(Continued)*

Problem	Cause	Solution
	Diskette is write-protected.	Use another diskette or remove the write protection.
	Writing to the wrong drive	Check the drive letter in your path statement.
	Not enough space is left on the diskette.	Use another diskette.
	Diskette write control is enabled.	Use Computer Setup to check your storage security feature disabled settings.
A problem has occurred with a disk transaction.	The directory structure is bad, or there is a problem with a file.	<p>In Windows 98 or Windows Millenium, run ScanDisk. Click Start &gt; Programs &gt; Accessories &gt; System Tools &gt; ScanDisk.</p> <p>In Windows NT or Windows 2000, right click Start, click Explore, and select a drive. Select File &gt; Properties &gt; Tools. Under Error-checking, click Check Now.</p>
LS-120 drive cannot read a diskette.	Diskette is not formatted.	Format the diskette.
	You are using the wrong diskette type for the drive type.	Check the type of drive you are using and use the correct diskette type.
Drive is not found or not recognized by the system.	Removable drive is not seated properly.	Reseat the drive.
	You attempted to hot plug a removable hard drive that has DriveLock security enabled.	Shut down Windows and turn off the Personal Computer. Insert the drive into the MultiBay, if it is not already inserted. (Refer to the the <i>User's</i> for cautions and detailed instructions.) Turn on the Personal Computer.
Nonsystem disk message	The system is trying to start from a nonsystem disk.	Remove the diskette from the drive or replace it with a bootable disk.

# Solving Graphics Problems

If you encounter graphics problems, refer to the documentation that came with your monitor and to the common causes and solutions listed in the following table.

## Solving Graphics Problems

Problem	Cause	Solution
Blank screen	Monitor is not turned on and the monitor light is not on.	Turn on the monitor and check that the monitor light is on.
	The cable connections are not correct.	Check the cable connection from the monitor to the Personal Computer and to the electrical outlet.
	The energy saver feature has been enabled.	Press any key or click the mouse button and, if set, type your password.
	The RGB (Red, Green, Blue) input switch on the monitor is incorrectly set.	Set the monitor's RGB input switch to 75 ohms and, if there is a sync switch, set it to External.
	You are using a fixed-sync monitor and it won't sync at the resolution chosen.	Be sure that the monitor can accept the same sweep rate as the resolution chosen.
	The VGA/BNC selector switch is not properly set.	Set the selector switch to agree with the cable connection.
Monitor does not function properly when used with energy saver features.	Monitor without energy saver capabilities is being used with energy saver features enabled.	Disable the monitor energy saver feature.
Graphics colors are wrong.	The cabling or monitor impedance is incorrect.	1 If you are using BNC cables, be sure that the Red, Green, and Blue BNC cables are connected to the corresponding monitor connectors.
		2 Be sure your monitor's RGB inputs are set to 75 ohms.
Dim characters	The brightness and contrast controls are not set properly.	Adjust the monitor brightness and contrast controls.
	The RGB switch on the back of the monitor is incorrectly set.	Set the RGB switch (and sync options, if this option is available) to 75 ohms, with the sync set to external. Refer to the documentation included with the monitor.
Screen goes blank.	You may have a screen blanking utility installed or energy saver features are enabled.	Press any key or type a password.

# Solving Audio Problems

## Solving Audio Problems

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
Sound does not come out of the speaker or headphones.	The external speakers are not turned on.	Turn on the external speakers.
	Software volume control is turned down.	Double click on the speaker icon on the taskbar, then set volume by adjusting the volume slider.
Sound does not come out of the internal speaker.	Headphones or devices connected to the line-out connector mute the internal speaker.	Turn on and use headphones or external speakers, if connected, or disconnect headphones or external speakers.

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# Solving Printer Problems

If you encounter printer problems, refer to the documentation that came with your printer and to the common causes and solutions listed in the following table.

## Solving Printer Problems

Problem	Cause	Solution
Printer will not print.	Printer is not turned on and online.	Turn the printer on and make sure it is online.
	The correct printer drivers for your application are not installed.	Install the correct printer drivers for your application.
	If you are on a network, you may not have made the connection to the printer.	Make the proper network connections to the printer.
Printer will not turn on.	The cables may not be connected properly.	Reconnect all cables and check the power cord and electrical outlet.
Printer prints garbled information.	The correct printer driver for your application is not installed.	Install the correct printer driver for your application.
	The cables may not be connected properly.	Reconnect all cables.
Printer is offline.	The printer may be out of paper.	Check the paper tray and refill it if it is empty. Select online.

## Solving Hardware Installation Problems

Refer also to the documentation that came with any optional hardware you have installed in the Personal Computer.

### Solving Hardware Installation Problems

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
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.
	Power switch of new external device is not turned on.	Turn off the Personal Computer, turn on the external device, then turn on the Personal Computer to integrate the device with the Personal Computer system.

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# Solving Network Problems

Some common causes and solutions for network problems are listed in the following table. These guidelines do not discuss the process of debugging the network cabling.

## Solving Network Problems

Problem	Cause	Solution
Remote Wakeup feature is not functioning.	Remote Wakeup is not enabled.	Use the Network control application to enable Remote Wakeup. Refer to the <i>User's Guide</i> for more information on Desktop Management features.
Network driver does not detect network controller.	Network controller is disabled.	Run Computer Setup and enable network controller.
Network status link light does not turn on or flashes.	No active network is detected.	Check cabling and network equipment for proper connection.
	Network controller is not set up properly.	Use the Network control application to verify that device is working properly. Refer to the <i>User's Guide</i> for more information on using network communications.
	Network driver is not properly loaded.	Reinstall network drivers. Refer to the <i>User's Guide</i> for more information on using network communications.
	System cannot autosense the network.	Disable autosensing capabilities and force the system into the correct operating mode. Refer to the <i>User's Guide</i> for more information on using network communications.
Diagnostics reports a failure.	The cable is not securely connected.	Ensure that the cable is securely attached to the network connector and that the other end of the cable is securely attached to the correct device.
	The cable is attached to the incorrect connector.	Ensure that the cable is attached to the correct connector.
	There is a problem with the cable or a device at the other end of the cable.	Ensure that the cable and device at the other end are operating correctly.
	The network controller is defective.	Contact Compaq Customer Support.
Diagnostics passes, but the Personal Computer does not communicate with the network.	Network drivers are not loaded, or driver parameters do not match current configuration.	Make sure the network drivers are loaded and that the driver parameters match the configuration of the network controller.
	The network controller is not configured for this Personal Computer.	Select the Network icon at the Control Panel and configure the network controller.
Network controller stops working without apparent cause.	The files containing the network drivers are corrupted.	Reinstall the network drivers, using the Compaq Restore CD.

### Solving Network Problems *(Continued)*

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
	The cable is not securely connected.	Ensure that the cable is securely attached to the network connector and that the other end of the cable is securely attached to the correct device.
	The network controller is defective.	Contact Customer Support.
Cannot connect to network server when attempting Remote System Installation	The network controller is not configured properly.	Run Computer Setup (F10 Setup) and modify the NIC Settings.

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# Solving Memory Problems

If you encounter memory problems, some common causes and solutions are listed in the following table.

## Solving Memory Problems

Problem	Cause	Solution
System won't boot or does not function properly after installing additional memory modules.	Memory module is not the correct type or speed grade for the system or the new memory module is not seated properly.	Replace module with the correct industry-standard device for your Personal Computer.
Out of Memory error	Memory configuration may not be set up correctly.	Use the Device Manager to check memory configuration.
	You have run out of memory to run the application.	Check the application documentation to determine the memory requirements.
Memory count during POST is wrong.	The memory modules may not be installed correctly.	Check that the memory modules have been installed correctly and that proper modules are used.
Insufficient memory error during operation	Too many Terminate and Stay Resident programs (TSRs) are installed.	Delete any TSRs that you do not need.
	You have run out of memory for your application.	Check the memory requirements for the application or add more memory to the Personal Computer.

## Solving CD-ROM and DVD Problems

If you encounter CD-ROM or DVD problems, refer to the common causes and solutions listed in the following table or to the documentation that came with the optional device.

### Solving CD-ROM and DVD Problems

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
System will not boot from CD-ROM or DVD drive.	The CD-ROM or DVD boot is not enabled through the Computer Setup utility.	Run the Computer Setup utility (F10 Setup) and set the drive priorities.
	Non-bootable CD in drive.	Try a bootable CD in the drive.
CD-ROM or DVD devices are not detected or driver is not loaded.	Drive is not connected properly or not properly configured.	Refer to the documentation that came with the optional device.
Movie will not play in the DVD drive.	Movie may be regionalized for a different country.	Refer to the documentation that came with the DVD drive.
	Decoder software is not installed.	Install decoder software.

## Solving Software Problems

Most software problems occur as a result of the following:

- If you have installed an operating system other than the factory-installed operating system, check to be sure that it is supported on the iPAQ Desktop Personal Computer. Windows 95 is not supported. To run Windows 98 or Windows NT 4.0, you must have the Legacy Module installed on the PC.
- A software application was not installed or configured correctly.
- Be sure that all the needed device drivers have been installed. For example, if you are using a printer, you need a printer driver.
- There is insufficient memory available to run the application.
- There is a conflict between applications.

Where available, run the Compaq Configuration Utility to determine if any changes have been made to the software which may be causing a problem. Refer to the online *Intelligent Manageability Guide* for more information.

## Troubleshooting Using Compaq Intelligent Manageability Features

The Local Alert Pop-Up Dialog notifies you of an impending or actual hardware failure. If the Personal Computer is connected to a network and the Compaq Management Agents are installed and configured, a message is sent to the specified management application.

The Local Alert Pop-Up Dialog also tells you the steps you need to take prior to a hardware failure to avoid loss of data and damage to the Personal Computer. The system administrator can create a customized action message that might include contact telephone or pager numbers.

To close the Local Alert Pop-Up Dialog, click the Close button. To retrieve fault information after closing the dialog, run Computer Diagnostics.

For more detailed information, refer to the *User's Guide* or to the online *Intelligent Manageability Guide*.

## **Compaq Configuration Record Utility**

Compaq Configuration Record Utility is an online information-gathering tool similar to other Compaq management tools. It gathers critical hardware and software information from various sources to give a complete view of the Personal Computer. Configuration Record Utility provides a means for automatically identifying and comparing configuration changes, and has the ability to maintain a configuration history. The information can be saved as a history of multiple sessions.

This utility was developed to allow resolution of problems without taking the Personal Computer off-line and to assist in maximizing Personal Computer availability. The information obtained by the utility is useful in troubleshooting Personal Computer problems, and streamlines the service process by enabling quick and easy identification of Personal Computer configurations, which is the first step in resolving service cases.

The Compaq Configuration Record Utility is accessed via an icon in the Control Panel. When running the utility, information is automatically gathered on such items as the operating system version number, operating system parameters, and the operating system startup files. The utility then combines this information with information on the hardware configuration to deliver a comprehensive view of the Personal Computer.

## Contacting Compaq Customer Support

For help and service, contact Compaq Customer Support. For a list of phone numbers, consult the warranty.

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If you take your Personal Computer to a Compaq authorized service provider for service, remember to provide the setup and power-on passwords, if they are set.

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# appendix **A**

## Resetting or Clearing CMOS

### Resetting CMOS Using Computer Setup (F10)

The configuration memory (CMOS) stores system configuration information. It also stores the power-on and setup passwords, if set.

To reset CMOS, you must first access the Computer Setup (F10 Setup) Utilities menu.

1. When the Computer Setup (F10 Setup) message appears in the lower-right corner of the screen, press the F10 key. Press Enter to bypass the title screen, if necessary.



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If you do not press the F10 key while the message is displayed, you must turn the Personal Computer off, then on again, to access the utility.

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A choice of five headings appears in the Computer Setup (F10 Setup) Utilities menu: File, Storage, Security, Power, and Advanced.

2. To reset CMOS to the factory default settings use the arrow keys or the Tab key to select File > Set Defaults and Exit.

Refer to appendix B, “Computer Setup Utilities (F10 Setup)” on page 1 for further instructions.

### If You Forget the Power-On or Setup Password

This computer supports security password features, which can be established through the Computer Setup Utilities menu.

This computer supports two security password features that are established through the Computer Setup (F10 Setup) Utilities menu: setup password and power-on password. When you establish only a setup password, any user can access all the information on the computer except Computer Setup (F10 Setup). When you establish only a power-on password, the power-on

password is required to access Computer Setup (F10 Setup) and any other information on the computer. When you establish both passwords, only the setup password will give you access to Computer Setup (F10 Setup).

When both passwords are set, the setup password can also be used in place of the power-on password as an override to log into the computer. This is a useful feature for a network administrator.

If you forget the password for your computer, there are two methods for clearing that password so you may gain access to the information on the computer:

- Resetting the password jumper
- Using the Clear CMOS button

## Resetting the Password Jumper



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**WARNING:** To reduce the risk of personal injury from electrical shock and/or hot surfaces, be sure to disconnect the power cord from the wall outlet, and allow the internal system components to cool before touching.

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**CAUTION:** When the computer is plugged in, the power supply always has voltage applied to the system board even when the unit is turned off. Failure to disconnect the power cord can result in damage to the system.

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**CAUTION:** Static electricity can damage the electronic components of the computer or optional equipment. Before beginning these procedures, ensure that you are discharged of static electricity by briefly touching a grounded metal object. Refer to the *Safety & Regulatory Information Guide* for more information.

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To disable the power-on or setup password features, or to clear the power-on or setup passwords without resetting CMOS, complete the following steps:

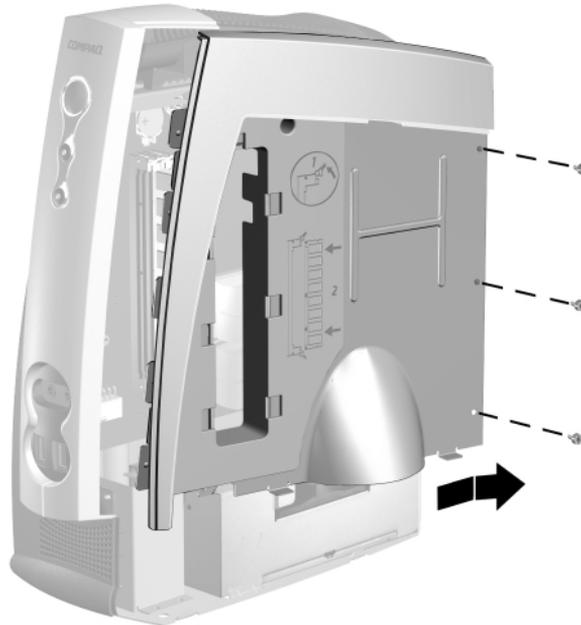
1. Exit all software applications, shut down the operating system software, turn off the Personal Computer and any external devices, then disconnect the power cord from the power outlet.

2. Press down on the ribbed middle section at the top of the right access panel ❶, then pivot and lift the access panel from the Personal Computer.



*Removing the Right Access Panel*

3. Remove the three screws ❶ that secure the sheet metal ❷ covering the system board.



*Removing the Sheet Metal Covering the System Board*

4. Locate the password jumper. The header is labeled E49.
5. Remove the jumper from pins 1 and 2. Place the jumper over pin 2 only, in order to avoid losing it.
6. Replace the access panel, making sure that it is aligned on the two tabs on the base of the Personal Computer ❷, then pivot it up and toward the Personal Computer until it locks into place.
7. Reconnect the external equipment.
8. Plug in the computer and turn on power. Allow the operating system to start. This clears the current passwords and disables the password features.

To re-enable the password features, repeat steps 1–4, then replace the jumper on pins 1 and 2. Repeat steps 6–8, then establish new passwords. Refer to appendix B, “Computer Setup Utilities (F10 Setup)” on page 1 for instructions.

## Using the Clear CMOS Button

The computer’s configuration memory (CMOS) stores password information as well information about the computer’s configuration.



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**CAUTION:** Pushing the CMOS button will reset CMOS values to factory defaults and will erase any customized information including passwords, asset numbers, and special settings.

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**WARNING:** To reduce the risk of personal injury from electrical shock and/or hot surfaces, be sure to disconnect the power cord from the wall outlet, and allow the internal system components to cool before touching.

---



---

**CAUTION:** When the computer is plugged in, the power supply always has voltage applied to the system board even when the unit is turned off. Failure to disconnect the power cord can result in damage to the system.

---



---

**CAUTION:** Static electricity can damage the electronic components of the computer or optional equipment. Before beginning these procedures, ensure that you are discharged of static electricity by briefly touching a grounded metal object. Refer to the *Safety & Regulatory Information Guide* for more information.

---

To disable the power-on or setup password features, or to clear the power-on or setup passwords, complete the following steps:

1. Exit all software applications, shut down the operating system software, turn off the Personal Computer and any external devices, then disconnect the power cord from the power outlet.
2. Press down on the ribbed middle section at the top of the right access panel , then pivot and lift the access panel from the Personal Computer.



3. Locate the CMOS button opening (above and slightly to the left of the memory module).
4. Insert the eraser end of a pencil into the opening to press the CMOS button (shown in the illustration below) and hold it in for 5 seconds.



5. Replace the access panel, making sure that it is aligned on the two tabs on the base of the Personal Computer ②, then pivot it up and toward the Personal Computer until it locks into place.
6. Reconnect the external equipment.
7. Plug in the computer and turn on power. Allow the operating system to start. This clears the current passwords and disables the password features.



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You will need to reset your passwords and any special system setups along with the date and time. Refer to the "Using Computer Setup" section for further instructions

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# *appendix* **B**

## **Computer Setup Utilities (F10 Setup)**

Use Computer Setup to do the following:

- Change factory default settings.
- Set the system date and time.
- Set, view, change, or verify the system configuration, including settings for processor, graphics, memory, audio, storage, communications, and input devices.
- Modify the boot order of bootable devices such as hard drives, diskette drives, CD-ROM drives, DVD-ROM drives, or LS-120 drives.
- Enable Quick Boot, which is faster than Full Boot but does not run all of the diagnostic tests run during a Full Boot. You can set your system to:
  - always Quick Boot (default);
  - periodically Full Boot (from every 1 to 30 days); or
  - always Full Boot.
- Enable or disable Network Server Mode, which allows the Personal Computer to boot the operating system when the power-on password is enabled, with or without a keyboard or mouse attached. When attached to the system, the keyboard and mouse remain locked until the power-on password is entered.
- Select Post Messages Enabled or Disabled to change the display status of Power-On Self-Test (POST) messages. Post Messages Disabled suppresses most POST messages, such as memory count, product name, and other non-error text messages. If a POST error occurs, the error is displayed regardless of the mode selected. To manually switch to Post Messages Enabled during POST, press any key (except F10 or F12).
- Establish an Ownership Tag, the text of which is displayed each time the system is turned on or restarted.
- Enter the Asset Tag or property identification number assigned by your company to this Personal Computer.

- Enable power-on password prompting during system restarts (warm boots) as well as during power-on.
- Establish a setup password that controls access to Computer Setup (F10) and the settings described in this section.
- Secure serial, USB, or parallel ports so that they cannot be used until they are unsecured.
- Enable or disable removable media boot ability.
- Enable or disable removable media write ability.
- Enable or disable DriveLock security for MultiBay drives.
- Solve system configuration errors detected but not automatically fixed during the Power-On Self-Test (POST).
- Execute self-tests on a specified IDE hard drive.
- Configure various energy-saving features including energy saver mode, system and hard drive timeouts, power button mode, power LED behavior, and fan speed selection.

## Using Computer Setup Utilities

To access the Computer Setup Utilities menu, complete the following steps:

1. Turn on or restart the Personal Computer. If you are in Windows, click Start > Shut Down > Restart the Computer.
2. When the F10=Setup message appears in the lower-right corner of the screen, press the F10 key.



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If you do not press the F10 key while the message is displayed, you must turn the Personal Computer off, then on again, to access the utility.

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3. Select your language from the list and press the Enter key.

A choice of five headings appears in the Computer Setup Utilities menu: File, Storage, Security, Power, and Advanced.

4. Using the arrow keys or the Tab key, select the option you want and press the Enter key. To return to the Computer Setup Utilities menu, press the Esc key.
5. To apply and save changes, select File > Save Changes and Exit.

- ❑ If you selected an option that automatically restarted the Personal Computer, changes were applied at that time.
- ❑ If you have made changes that you do not want applied, select Ignore Changes and Exit.
- ❑ If you have already applied changes you now want to eliminate, select Set Defaults and Exit. This option will restore the original factory system defaults.

## Computer Setup

Heading	Option	Description
File	System Information	Lists: <ul style="list-style-type: none"> <li>■ product name</li> <li>■ processor type/speed/stepping</li> <li>■ cache size (L1/L2)</li> <li>■ installed memory size</li> <li>■ integrated MAC for embedded, enabled NIC (if applicable)</li> <li>■ system ROM (includes family name and version)</li> <li>■ system board revision</li> <li>■ chassis serial number</li> <li>■ asset tracking number</li> </ul>
	About	Displays copyright notice.
	Set Time and Date	Allows you to set system time and date.
	Save to Diskette	Saves system configuration, including CMOS, to a blank, formatted 1.44-MB diskette.
	Restore from Diskette	Restores system configuration, including CMOS, from a diskette.
	Set Defaults and Exit	Restores factory default settings, which includes clearing any established passwords.
	Ignore Changes and Exit	Exits Computer Setup without applying or saving any changes.
	Save Changes and Exit	Saves changes to system configuration and exits Computer Setup.
	Storage	Device Configuration

*Support for Computer Setup options may vary depending on your specific hardware configuration.*

## Computer Setup *(Continued)*

Heading	Option	Description										
Storage <i>(continued)</i>	Device Configuration <i>(continued)</i>	<p><b>Drive Emulation (IDE devices only)</b></p> <p>Allows you to select a drive emulation type for a storage device. (For example, a Zip drive can be made bootable by selecting disk emulation.)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Drive Type</th> <th style="text-align: left;">Emulation Options</th> </tr> </thead> <tbody> <tr> <td>Hard disk</td> <td>No emulation options available.</td> </tr> <tr> <td>Diskette</td> <td>None (treated as diskette drive) Disk (treated as hard drive)</td> </tr> <tr> <td>CD-ROM</td> <td>None (treated as CD-ROM drive) Diskette (treated as diskette drive) Disk (treated as hard drive)</td> </tr> <tr> <td>Other (e.g., Zip drive)</td> <td>None (treated as Other) CD-ROM (treated as CD-ROM drive) Diskette (treated as diskette drive) Disk (treated as hard drive)</td> </tr> </tbody> </table> <hr/> <p><b>Transfer Mode (IDE devices only)</b></p> <p>Specifies the active data transfer mode. Options (subject to device capabilities) are PIO 0, Max PIO, Enhanced DMA, Ultra DMA 0, and Max UDMA.</p> <hr/> <p><b>Translation Mode (IDE disks only)</b></p> <p>Lets you select the translation mode to be used for the device. This enables the BIOS to access disks partitioned and formatted on other systems and may be necessary for users of older versions of Unix (e.g., SCO Unix version 3.2). Options are Bit-Shift, LBA Assisted, User, and None.</p> <p><b>CAUTION:</b> Ordinarily, the translation mode selected automatically by the BIOS should not be changed. If the selected translation mode is not compatible with the translation mode that was active when the disk was partitioned and formatted, the data on the disk will be inaccessible.</p>	Drive Type	Emulation Options	Hard disk	No emulation options available.	Diskette	None (treated as diskette drive) Disk (treated as hard drive)	CD-ROM	None (treated as CD-ROM drive) Diskette (treated as diskette drive) Disk (treated as hard drive)	Other (e.g., Zip drive)	None (treated as Other) CD-ROM (treated as CD-ROM drive) Diskette (treated as diskette drive) Disk (treated as hard drive)
Drive Type	Emulation Options											
Hard disk	No emulation options available.											
Diskette	None (treated as diskette drive) Disk (treated as hard drive)											
CD-ROM	None (treated as CD-ROM drive) Diskette (treated as diskette drive) Disk (treated as hard drive)											
Other (e.g., Zip drive)	None (treated as Other) CD-ROM (treated as CD-ROM drive) Diskette (treated as diskette drive) Disk (treated as hard drive)											

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*Support for Computer Setup options may vary depending on your specific hardware configuration.*

## Computer Setup *(Continued)*

Heading	Option	Description
Storage <i>(continued)</i>	Device Configuration <i>(continued)</i>	<p><b>Translation Parameters (IDE Disks only)</b></p> <p>Allows you to specify the parameters (logical cylinders, heads, and sectors per track) used by the BIOS to translate disk I/O requests (from the operating system or an application) into terms the hard drive can accept. Logical cylinders may not exceed 1024. The number of heads may not exceed 256. The number of sectors per track may not exceed 63. These fields are only visible and changeable when the drive translation mode is set to User.</p> <hr/> <p><b>Multisector Transfers (IDE ATA devices only)</b></p> <p>Specifies how many sectors are transferred per multi-sector PIO operation. Options (subject to device capabilities) are Disabled, 8, and 16.</p> <hr/> <p><b>Quiet Drive (available on select drives only)</b></p> <ul style="list-style-type: none"> <li>■ Performance Allows the drive to operate at maximum performance.</li> <li>■ Quiet Reduces noise from the drive during operation. When set to Quiet, the drive will not operate at maximum performance.</li> </ul> <p>If the drive does not support Quiet mode, the Quiet Drive option will not be displayed.</p> <hr/> <p><b>Removable Media Boot</b></p> <p>Enables/disables ability to boot the system from removable media.</p> <p><b>Note:</b> After saving changes to Removable Media Boot, the computer will restart. Turn the computer off, then on, manually.</p> <hr/> <p><b>Removable Media Write</b></p> <p>Enables/disables ability to write data to removable media.</p> <p><b>Note:</b> This feature applies only to legacy diskette, IDE MultiBay Superdisk LS-120 and LS260 drives.</p> <hr/> <p><b>Primary IDE Controller</b></p> <p>Allows you to enable or disable the primary IDE controller.</p> <hr/> <p><b>Secondary IDE Controller</b></p> <p>Allows you to enable or disable the secondary IDE controller.</p>
	Storage Options	

*Support for Computer Setup options may vary depending on your specific hardware configuration.*

## Computer Setup *(Continued)*

Heading	Option	Description
Storage <i>(continued)</i>	Storage Options <i>(continued)</i>	<p><b>Diskette MBR Validation</b></p> <p>Allows you to enable or disable strict validation of the diskette Master Boot Record (MBR).</p> <p><b>Note:</b> If you use a bootable diskette image that you know to be valid, and it does not boot with Diskette MBR Validation enabled, you may need to disable this option in order to use the diskette.</p>
	DPS Self-Test	<p>Allows you to execute self-tests on IDE hard drives capable of performing the Drive Protection System (DPS) self-tests.</p> <p><b>Note:</b> This selection will only appear when at least one drive capable of performing the IDE DPS self-tests is attached to the system.</p>
	Boot Order	<p>Allows you to specify the order in which attached peripheral devices (such as diskette drive, hard drive, CD-ROM, or network interface card) are checked for a bootable operating system image. Each device on the list may be individually excluded from or included for consideration as a bootable operating system source. For systems with more than one attached diskette or disk drive, a submenu allows you to specify the order in which the devices are assigned drive letters.</p> <p><b>Note:</b> MS-DOS drive lettering assignments may not apply after a non-MS-DOS operating system has started.</p> <p>To boot one time from a device other than the default device specified in Boot Order, restart the computer and press F9 when the F10=Setup message appears on the screen. When POST is completed, a list of bootable devices is displayed. Use the arrow keys to select a device and press the Enter key.</p>
Security	Setup Password	<p>Allows you to set and enable setup (administrator) password.</p> <p><b>Note:</b> If the setup password is set, it is required to change Computer Setup options, flash the ROM, and make changes to certain plug and play settings under Windows. Also, this password must be set in order to use some Compaq remote security tools.</p>
	Power-On Password	<p>Allows you to set and enable power-on password.</p>

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*Support for Computer Setup options may vary depending on your specific hardware configuration.*

## Computer Setup *(Continued)*

Heading	Option	Description
Security <i>(continued)</i>	Password Options	<p>Allows you to:</p> <ul style="list-style-type: none"> <li>■ enable/disable network server mode.</li> </ul> <p><b>Note:</b> This selection will appear only if a power-on password is set.</p> <ul style="list-style-type: none"> <li>■ specify whether password is required for warm boot (CTRL+ALT+DEL).</li> </ul> <p><b>Note:</b> This selection is available only when Network Server Mode is disabled.</p> <p>See the the “Desktop Management” section of the User’s Guide for more information.</p>
	DriveLock Security	Allows a MultiBay hard drive to be locked, preventing unauthorized access to data stored on the drive.
	Device Security	Enables/disables serial, parallel, audio, and NIC security.
	Network Service Boot	Enables/disables the computer’s ability to boot from an operating system installed on a network server. (Feature available on NIC models only; the network controller must reside on the PCI bus or be embedded on the system board.)
	System IDs	<p>Allows you to set:</p> <ul style="list-style-type: none"> <li>■ asset tag (16-byte identifier) and ownership Tag (80-byte identifier displayed during POST)</li> </ul> <p>See the the “Desktop Management” section of the User’s Guide for more information.</p> <ul style="list-style-type: none"> <li>■ chassis serial number or Universal Unique Identifier (UUID) number if current number is invalid (these ID numbers are normally set in the factory and are used to uniquely identify the system)</li> <li>■ keyboard locale setting (e.g., English or German) for System ID entry</li> </ul>

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*Support for Computer Setup options may vary depending on your specific hardware configuration.*

**Computer Setup** (Continued)

Heading	Option	Description
Security (continued)	Master Boot Record Security	<p>Allows you to enable or disable Master Boot Record (MBR) Security. When enabled, the BIOS rejects all requests to write to the MBR on the current bootable disk. Each time the computer is powered on or rebooted, the BIOS compares the MBR of the current bootable disk to the previously-saved MBR. If changes are detected, you are given the option of saving the MBR on the current bootable disk, restoring the previously-saved MBR, or disabling MBR Security. You must know the setup password, if one is set.</p> <p><b>Note:</b> Disable MBR Security before intentionally changing the formatting or partitioning of the current bootable disk. Several disk utilities (such as FDISK and FORMAT) attempt to update the MBR. If MBR Security is enabled and disk accesses are being serviced by the BIOS, write requests to the MBR are rejected, causing the utilities to report errors. If MBR Security is enabled and disk accesses are being serviced by the operating system, any MBR change will be detected by the BIOS during the next reboot, and an MBR Security warning message will be displayed.</p>
	Save Master Boot Record	<p>Saves a backup copy of the Master Boot Record of the current bootable disk.</p> <p><b>Note:</b> Only appears if MBR Security is enabled.</p>
	Restore Master Boot Record	<p>Restores the backup Master Boot Record to the current bootable disk.</p> <p><b>Note:</b> Only appears if all of the following conditions are true:</p> <ul style="list-style-type: none"><li>■ MBR Security is enabled.</li><li>■ A backup copy of the MBR has been previously saved.</li><li>■ The current bootable disk is the same disk from which the backup copy of the MBR was saved.</li></ul>
Power	Energy Saver	<p>Allows you to set the energy saver mode (advanced, disable, or minimal).</p> <p><b>Note:</b> In the minimal energy saver mode setting, the hard drive and system do not go into energy saver mode, but the setting allows you to press the power button to suspend the system.</p> <p>This option is not available under ACPI-enabled operating systems.</p>

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*Support for Computer Setup options may vary depending on your specific hardware configuration.*

## Computer Setup *(Continued)*

Heading	Option	Description
Power <i>(continued)</i>	Timeouts	<p>Allows you to disable or manually select timeout values for the system and/or all attached IDE hard drives.</p> <p><b>Note:</b> This option is not available under ACPI-enabled operating systems. This selection will only appear when energy saver mode is set to advanced.</p>
	Energy Saver Options	<p>Allows you to set:</p> <ul style="list-style-type: none"> <li>■ power button configuration (on/off or sleep/wake) under APM-enabled operating systems</li> <li>■ power LED blink in suspend (or standby) mode (enable/disable). This option is not available under ACPI-enabled operating systems.</li> </ul> <p><b>Note:</b> Energy Saver Options will not appear if the energy saver mode is disabled.</p>
Advanced	Power-On Options	<p>Allows you to set:</p> <ul style="list-style-type: none"> <li>■ POST mode (QuickBoot, FullBoot, or FullBoot every 1-30 days)</li> <li>■ POST messages (enable/disable)</li> <li>■ Safe POST (enable/disable)</li> <li>■ F9 prompt (enable/disable)</li> <li>■ F10 prompt (enable/disable)</li> <li>■ F12 prompt (enable/disable)</li> <li>■ Option ROM prompt (enable/disable)</li> <li>■ Remote wakeup boot sequence (remote server/local hard drive)</li> <li>■ After power loss (off/on)</li> </ul> <p>If you connect your computer to an electric power strip, and would like to turn on power to the computer using the switch on the power strip, set this option to on.</p> <p><b>Note:</b> If you turn off power to your computer using the switch on a power strip, you will not be able to use the suspend/sleep feature or the Remote Management features.</p> <ul style="list-style-type: none"> <li>■ UUID (Universal Unique Identifier) (enable/disable)</li> <li>■ POST delay (enable/disable)</li> <li>■ I/O APIC mode (enable/disable)</li> </ul>

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*Support for Computer Setup options may vary depending on your specific hardware configuration.*

## Computer Setup *(Continued)*

Heading	Option	Description
Advanced <i>(continued)</i>	Onboard Devices <i>Only visible when Legacy Module is installed</i>	Allows you to set resources for or disable onboard system devices (diskette controller, serial port, parallel port).
	Device Options	Allows you to set: <ul style="list-style-type: none"><li>■ Printer mode (bi-directional, EPP &amp; ECP, output only) <i>(Parallel printers connected to Legacy Module only)</i></li><li>■ Num Lock state at power-on (off/on)</li><li>■ PME (power management event) wakeup events (enable/disable)</li><li>■ Processor cache (enable/disable)</li><li>■ Processor Number (enable/disable) for Pentium III processors.</li><li>■ ACPI S3 support (enable/disable). S3 is an ACPI (advanced configuration and power interface) sleep state that some add-in hardware options may not support.</li><li>■ AGP Aperture size (options vary depending on platform) allows you to modify the size of your AGP aperture size window.</li></ul>

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*Support for Computer Setup options may vary depending on your specific hardware configuration.*

# *appendix* **C**

## **Compaq Diagnostics for Windows**

Compaq Diagnostics for Windows is a component of Intelligent Manageability that allows you to view:

- System overview
- AssetControl information
- Input devices
- Communications ports
- Storage devices
- Graphics information
- Memory configuration
- Security management settings
- System health
- Operating system
- Windows version

Depending on the version, Compaq Diagnostics for Windows may include diagnostic tests to determine if all the devices installed on the Personal Computer are recognized by the system and are functioning properly.

## Using Compaq Diagnostics for Windows

1. Select the Compaq Diagnostics icon, located in the Control Panel.

The screen displays an overview of the Personal Computer hardware and software.

2. For specific hardware and software information, select a category from the Categories menu or from the toolbar.



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As you move your cursor over the toolbar icons, the corresponding category names appear near the cursor.

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3. To display more detailed information in a selected category, click More in the Information Level box.
4. Review and print this information and, if necessary, discuss it with your Compaq authorized service provider.



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To print the information, click File, then select Print. Select one of the following options: Detailed Report (All Categories), Summary Report (All Categories), or Current Category. Click OK to print the report you selected.

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5. To exit Compaq Diagnostics for Windows, click File, then click Exit.

## Running Diagnostic Tests

If your version of Compaq Diagnostics for Windows includes diagnostic testing utilities, four tabs will appear next to Overview—Test, Status, Log, and Error.

1. Select the Test tab.
2. Select one of the following options:
  - Quick Test-Runs a quick, general test on each device with a minimal number of prompts.
  - Complete Test-Runs maximum testing of each device with minimal prompts.
  - Custom Test-Runs only the tests you select. To select specific devices or tests, find the device in the list, then click the box beside each test to select or deselect it. When selected, a red check mark appears in the box.

3. Select Interactive Mode or Unattended Mode.

In Interactive Mode, the diagnostic software will prompt you for input during tests that require it. Some tests require interaction and will display errors or halt testing if selected in conjunction with Unattended Mode.

4. Click the Begin Testing button.

Test Status is displayed, showing the progress and result of each test.

5. If errors are found, click the Error tab to display more detailed information and recommended actions. By following the recommended actions, you may be able to solve some problems yourself.
6. Click Print or Save the error information in case you need to contact your Compaq authorized service provider for assistance.
7. To exit Compaq Diagnostics for Windows, click File, then click Exit.



# appendix **D**

## POST Error Messages

### Error Codes

This chapter lists the error codes that you may encounter during the Power-On Self-Test (POST) that occurs when the Personal Computer is restarted, the probable source of the problem, and what steps you can take to resolve the error condition.

#### Power-On Self-Test Messages

Message	Beeps	Probable Cause	Recommended Action
101-Option ROM Error	1L, 1S	System ROM checksum	<ol style="list-style-type: none"><li>1 Verify the correct ROM</li><li>2 Flash the ROM if needed.</li><li>3 If the problem persists, contact Compaq Customer Support.</li></ol>
102-System Board Failure	None	DMA, timers, and so forth	<ol style="list-style-type: none"><li>1 Follow directions in Appendix A to clear CMOS.</li><li>2 If the problem persists, contact Compaq Customer Support.</li></ol>
103-System Board Failure	None	DMA, timers, and so forth	<ol style="list-style-type: none"><li>1 Follow directions in Appendix A to clear CMOS.</li><li>2 If the problem persists, contact Compaq Customer Support.</li></ol>
162-System Options Not Set	2S	Configuration incorrect	RTC (real-time clock) battery may need to be replaced. Battery life is approximately 5 years. <ol style="list-style-type: none"><li>1 Run Computer Setup (F10 Setup).</li><li>2 Reset the date and time under Control Panel. If the problem persists, contact Compaq Customer Support.</li></ol>
163-Time & Date Not Set	2S	Invalid time or date in configuration memory	RTC (real-time clock) battery may need to be replaced. Battery life is approximately 5 years. <ol style="list-style-type: none"><li>1 Run Computer Setup (F10 Setup).</li><li>2 Reset the date and time under Control Panel. If the problem persists, contact Compaq Customer Support.</li></ol>

\* L = Long, S = Short

### Power-On Self-Test Messages *(Continued)*

Message	Beeps	Probable Cause	Recommended Action
164-Memory Size Error	2S	Memory configuration incorrect	<ol style="list-style-type: none"> <li>1 Run Computer Setup (F10 Setup) or Windows utilities.</li> <li>2 Make sure your memory module(s) are installed properly.</li> <li>3 Verify proper memory module type.</li> </ol>
201-Memory Error	None	RAM failure	<ol style="list-style-type: none"> <li>1 Run Computer Setup (F10 Setup) or Windows utilities.</li> <li>2 Ensure memory and continuity modules are installed correctly.</li> <li>3 Verify proper memory module type.</li> <li>4 Remove and replace the memory module(s) one at a time to isolate faulty module.</li> <li>5 Replace faulty memory module(s).</li> <li>6 If error persists after replacing memory modules, contact Compaq Customer Support.</li> </ol>
202-Memory Type Mismatch	None	Memory modules do not match each other.	Replace memory modules with matched sets.
207-ECC Corrected Single Bit Errors in DIMM/SIMM Pair(s) x,x in Memory Module Socket(s) y,y,...	2S	Single Bit ECC error	<ol style="list-style-type: none"> <li>1 Verify proper memory module type.</li> <li>2 Try another memory socket.</li> <li>3 Replace memory module if problem persists.</li> </ol>
301-Keyboard Error	None	Keyboard failure	<ol style="list-style-type: none"> <li>1 Reconnect keyboard with Personal Computer turned off.</li> <li>2 Check connector for bent or missing pins.</li> <li>3 Ensure that none of the keys are depressed.</li> <li>4 Replace keyboard.</li> </ol>
213-Incompatible DIMM Module in DIMM Socket(s) X, X, ...	2S	A DIMM module in DIMM socket identified in the error message is missing critical SPD information, or is incompatible with the chipset.	<ol style="list-style-type: none"> <li>1 Verify proper memory module type.</li> <li>2 Try another memory socket.</li> <li>3 Replace DIMM with a module conforming to the SPD standard.</li> </ol>
304-Keyboard or System Unit Error	None	Keyboard failure	<ol style="list-style-type: none"> <li>1 Reconnect keyboard with Personal Computer turned off.</li> <li>2 Check connector for bent or missing pins.</li> <li>3 Ensure that none of the keys are depressed.</li> <li>4 Replace keyboard.</li> <li>5 If the problem persists, contact Compaq Customer Support.</li> </ol>

\* L = Long, S = Short

**Power-On Self-Test Messages** (Continued)

<b>Message</b>	<b>Beeps</b>	<b>Probable Cause</b>	<b>Recommended Action</b>
410-Audio Interrupt Conflict	2S	IRQ address conflicts with another device.	Reset the IRQ.
501-Display Adapter Failure	1L, 2S	Graphics display controller	<ol style="list-style-type: none"> <li>1 Follow directions in Appendix A to clear CMOS.</li> <li>2 Verify monitor is attached and turned on</li> </ol>
660-Display cache is detected unreliable	None	Integrated graphics controller display cache not working properly and will be disabled.	Contact Compaq Customer Support if minimal graphics degrading is an issue.
1720-SMART Hard Drive Detects Imminent Failure	None	Hard drive is about to fail. (Some hard drives have a firmware patch that will fix an erroneous error message).	<ol style="list-style-type: none"> <li>1 Determine if hard drive is giving correct error message. Run the Drive Protection System test if available.</li> <li>2 Apply firmware patch if applicable.</li> <li>3 Back up contents and replace hard drive.</li> </ol>
1721-SMART SCSI Hard Drive Detects Imminent Failure	None	Hard drive is about to fail. (Some hard drives have a firmware patch that will fix an erroneous error message).	<ol style="list-style-type: none"> <li>1 Determine if hard drive is giving correct error message.</li> <li>2 Apply firmware patch if applicable.</li> <li>3 Back up contents and replace hard drive.</li> </ol>
1780-Disk 0 Failure	None	Hard drive/format error	<ol style="list-style-type: none"> <li>1 Run Computer Setup (F10 Setup).</li> <li>2 Follow directions in Appendix A to clear CMOS.</li> <li>3 Check cables/jumper settings.</li> <li>4 Run hard drive diagnostics.</li> <li>5 Disconnect additional drives.</li> <li>6 Run the Drive Protection System test if available.</li> <li>7 Replace the hard drive.</li> </ol>

\* L = Long, S = Short

**Power-On Self-Test Messages** *(Continued)*

<b>Message</b>	<b>Beeps</b>	<b>Probable Cause</b>	<b>Recommended Action</b>
1781-Disk 1 Failure	None	Hard drive/format error	<ol style="list-style-type: none"> <li>1 Run Computer Setup (F10 Setup).</li> <li>2 Follow directions in Appendix A to clear CMOS.</li> <li>3 Check cables/jumper settings.</li> <li>4 Run hard drive diagnostics.</li> <li>5 Disconnect additional drives.</li> <li>6 Run the Drive Protection System test if available.</li> <li>7 Replace the hard drive.</li> </ol>
1782-Disk Controller Failure	None	Hard drive circuitry error	<ol style="list-style-type: none"> <li>1 Run Computer Setup (F10 Setup).</li> <li>2 Follow directions in Appendix A to clear CMOS.</li> <li>3 Check cable seating/jumper settings.</li> <li>4 Run hard drive diagnostics.</li> <li>5 Disconnect additional drives.</li> <li>6 Run the Drive Protection System test if available.</li> <li>7 Replace the hard drive.</li> <li>8 If the problem persists, contact Compaq Customer Support.</li> </ol>
1790-Disk 0 Error	None	Hard drive error or wrong drive type	<ol style="list-style-type: none"> <li>1 Run Computer Setup (F10 Setup).</li> <li>2 Follow directions in Appendix A to clear CMOS.</li> <li>3 Check cable seating jumper settings.</li> <li>4 Run hard drive diagnostics.</li> <li>5 Disconnect additional drives.</li> <li>6 Confirm drive is supported on this Personal Computer (large drive ROM support).</li> <li>7 Run the Drive Protection System test if available.</li> <li>8 Replace the hard drive.</li> <li>9 If the problem persists, contact Compaq Customer Support.</li> </ol>

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\* L = Long, S = Short

**Power-On Self-Test Messages** (Continued)

Message	Beeps	Probable Cause	Recommended Action
1791-Disk 1 Error	None	Hard drive error or wrong drive type	<ol style="list-style-type: none"> <li>1 Run Computer Setup (F10 Setup).</li> <li>2 Follow directions in Appendix A to clear CMOS.</li> <li>3 Check cable seating/jumper settings.</li> <li>4 Run hard drive diagnostics.</li> <li>5 Disconnect additional drives.</li> <li>6 Confirm drive is supported on this computer (large drive ROM support).</li> <li>7 Run the Drive Protection System test if available.</li> <li>8 Replace the hard drive.</li> <li>9 If the problem persists, contact Compaq Customer Support.</li> </ol>
1792-Secondary Disk Controller Failure	None	Hard drive circuitry error	<ol style="list-style-type: none"> <li>1 Run Computer Setup (F10 Setup).</li> <li>2 Follow directions in Appendix A to clear CMOS.</li> <li>3 Check cable seating/jumper settings.</li> <li>4 Run hard drive diagnostics.</li> <li>5 Disconnect additional drives.</li> <li>6 Run the Drive Protection System test if available.</li> <li>7 Replace the hard drive.</li> </ol>
1793-Secondary Controller or Disk Failure	None	Hard drive circuitry error	<ol style="list-style-type: none"> <li>1 Run Computer Setup (F10 Setup).</li> <li>2 Follow directions in Appendix A to clear CMOS.</li> <li>3 Check cable seating/jumper settings.</li> <li>4 Run hard drive diagnostics.</li> <li>5 Disconnect additional drives.</li> <li>6 Run the Drive Protection System test if available.</li> <li>7 Replace the hard drive.</li> </ol>
1800-Temperature Alert	None	Internal temperature exceeds specification.	<ol style="list-style-type: none"> <li>1 Check that Personal Computer air vents are not blocked and cooling fan is running.</li> <li>2 Verify processor speed selection.</li> <li>3 If the problem persists, contact Compaq Customer Support.</li> </ol>
1801	None	Processor is not supported by ROM BIOS.	Upgrade BIOS to proper version.

\* L = Long, S = Short

### Power-On Self-Test Messages *(Continued)*

Message	Beeps	Probable Cause	Recommended Action
Audible	2S	Power-on successful	None
<b>NOTE:</b> If you have a Universal Serial Bus (USB) keyboard, you will hear the beep sequences for the following error codes, but you will not see the flashing keyboard lights.			
Flashing Caps Lock LED on Keyboard	1L, 2S	Graphics controller not present or incorrectly initialized	Follow directions in Appendix A to clear CMOS.
Flashing Num Lock LED on Keyboard	1S, 2L	System memory not present	<ol style="list-style-type: none"> <li>1 Check memory module (refer to the relevant section of the <i>User's Guide</i>).</li> <li>2 Remove and reseat memory module.</li> <li>3 See the "Solving Memory Problems" section of this guide.</li> </ol>
Flashing Scroll Lock LED on keyboard	2L, 1S	System board hardware failure (prior to graphics)	If the problem persists, contact Compaq Customer Support.
Green Power LED Blinks 1x / Second.	None	Personal Computer in normal Suspend mode	None
Green Power LED On	None	Computer on	None
Invalid Electronic Serial Number	None	Electronic serial number has become corrupted.	Run Computer Setup. If Setup already has data in the field or will not allow the serial number to be entered, download from <a href="http://www.compaq.com">www.compaq.com</a> and run SP5572.EXE (SNZERO.EXE).

\* L = Long, S = Short

# *appendix* **E**

## **Drive Protection System (DPS)**

### **Introducing the Drive Protection System**

The Compaq Drive Protection System (DPS) is a diagnostic tool built into the hard drives installed in select Compaq iPAQ Desktop Personal Computers. DPS is designed to help diagnose problems that might result in unwarranted hard drive replacement.

Each installed hard drive is tested using DPS and a permanent record of key information is written onto the drive. Each time DPS is run, test results are written to the hard drive. Your service provider can use this information to help diagnose conditions that caused you to run the DPS software.

Running DPS will not affect any programs or data stored on the hard drive. The test resides in the hard drive firmware and can be executed even if the Personal Computer will not boot to an operating system. The time required to execute the test depends on the manufacturer and size of the hard drive; in most cases, the test will take approximately two minutes per gigabyte.

Use DPS when you suspect a hard drive problem. If the Personal Computer reports a SMART Hard Drive Detect Imminent Failure message, there is no need to run DPS; instead, back up the information on the hard drive and contact your Compaq service provider for a replacement hard drive.

### **Accessing DPS Through Computer Setup**

When the Personal Computer does not power-on properly you should use Computer Setup (F10 Setup) to access the DPS program. To access DPS, perform the following steps:

1. Turn on or restart the Personal Computer.
2. When the F10 Setup message appears in the lower-right corner of the screen, press the F10 key.

If you do not press the F10 key while the message is displayed, you must turn the Personal Computer off, then on again, to access the utility.

A choice of five headings appears in the Computer Setup Utilities menu: File, Storage, Security, Power, and Advanced.

3. Select Storage > IDE DPS Self-Test.

The screen will display the list of DPS-capable hard drives that are installed on the Personal Computer.



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If no DPS capable hard drives are installed, the IDE DPS Self-Test option will not appear on the screen.

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4. Select the hard drive to be tested and follow the screen prompts to complete the testing process.

When the test has been completed, one of three messages will be displayed:

- Test Succeeded. Completion Code 0.
- Test Aborted. Completion Code 1 or 2.
- Test Failed. Drive Replacement Recommended. Completion Code 3 through 14.

If the test failed, the completion code should be recorded and reported to your service provider for help in diagnosing the problem.

## Accessing DPS Through Compaq Diagnostics for Windows

To access DPS through Compaq Diagnostics for Windows, perform the following steps:

1. Turn on the Personal Computer and select My Computer >Control Panel > Compaq Diagnostics.

A choice of five possible headings appears in the Diagnostics screen: Overview, Test, Status, Log, and Error.

2. Select Test > Type of Test

A choice of three tests appear: Quick Test, Complete Test, and Custom Test.

3. Select Custom Test.

A choice of two test modes is offered: Interactive Mode and Unattended Mode.

4. Select Interactive Test > Storage > Hard Drives.
5. Select the specific drives to be tested > Drive Protection System Test > Begin Testing.

When the test has been completed, one of three messages will be displayed for each of the drives tested:

- Test Succeeded. Completion Code 0.
- Test Aborted. Completion Code 1 or 2.
- Test Failed. Drive Replacement Recommended. Completion Code 3 through 14.

If the test failed, the completion code should be recorded and reported to your service provider for help in diagnosing the problem.



# appendix **F**

## Electrostatic Discharge

A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

### Preventing Electrostatic Damage

To prevent electrostatic damage, observe the following precautions:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

### Grounding Methods

There are several methods for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or personal computer chassis. Wrist straps are flexible straps with a minimum of 1 Mohm +/- 10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
- Use heelstraps, toestraps, or bootstraps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, contact your Compaq authorized service provider.



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For more information on static electricity, contact your Compaq authorized service provider.

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# appendix **G**

## Routine Care & Shipping Information

### Routine Care

Follow these suggestions to take care of your personal computer and monitor:

- Operate the personal computer on a sturdy, level surface. Leave a 3-inch (7.6-cm) clearance at the back of the system unit and above the monitor to permit the required airflow.
- Never operate the personal computer with the cover or side panel removed.
- Never restrict the airflow into the personal computer by blocking the air intake or exhaust vents.
- Keep the personal computer away from excessive moisture, direct sunlight, and extremes of heat and cold. For information about the recommended temperature and humidity ranges for your personal computer, refer to the Specifications in the *User's Guide*.
- Keep liquids away from the personal computer and keyboard.
- Never cover the ventilation slots on the monitor with any type of material.
- Turn off the personal computer before you do either of the following:
  - Wipe the exterior of the personal computer with a soft, damp cloth as needed. Using cleaning products may discolor or damage the finish.
  - Occasionally clean the air intake and exhaust vents on the personal computer. Lint and other foreign matter can block the vents and limit the airflow.

## CD-ROM Drive Precautions

Be sure to observe the following guidelines while operating or cleaning your CD-ROM drive.

### Operation

- Do not move the drive during operation. This may cause it to malfunction during reading.
- Avoid exposing the drive to sudden changes in temperature, as condensation may form inside the unit. If the temperature suddenly changes while the drive is on, wait at least one hour before you turn off the power. If you operate the unit immediately, it may malfunction while reading.
- Avoid placing the drive in a location that is subject to high humidity, extreme temperatures, mechanical vibration, or direct sunlight.

### Cleaning

- Clean the panel and controls with a soft, dry cloth or a soft cloth lightly moistened with a mild detergent solution. Never spray cleaning fluids directly on the unit.
- Avoid using any type of solvent, such as alcohol or benzene, which may damage the finish.

### Safety

If any object or liquid falls into the drive, immediately unplug the personal computer and have it checked by an authorized Compaq service provider.

### Shipping Preparation

Follow these suggestions when preparing to ship your personal computer:

1. Back up the hard drive files onto the network or removable media. Be sure that the backup media is not exposed to electrical or magnetic impulses while stored or in transit.



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The hard drive locks automatically when the system power is turned off.

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2. Remove and store separately any removable media and MultiBay drives.

3. Turn off the personal computer and external devices.
4. Disconnect the power cord from the electrical outlet, then from the personal computer.
5. Disconnect the system components and external devices from their power sources, then from the personal computer.
6. Pack the system components, MultiBay drives, and external devices in their original packing boxes or similar packaging with sufficient packing material to protect them.



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For environmental nonoperating ranges, refer to the Specifications in the *User's Guide*.

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