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maintenance & service guide

Presario 1200XL Series
Model XL300, XL300A, and XL300B

Battery Operations

This section covers the following topics regarding battery pack operating time:

Increasing Battery Pack Operating Time

Battery pack operating time varies depending on several factors. To avoid unnecessary replacement, consider the following variables when determining how long a charged battery pack should last:

- Power management settings
- Hardware configuration
- Software applications
- Installed options
- Display brightness
- Hard drive usage
- Changes in operating temperature
- Type and number of installed PC cards

Note: The power consumption requirements for PC cards vary widely. Some cards drain the battery pack very rapidly.

Battery pack operating time can be increased by as much as 50 percent by controlling the energy required by the computer and the energy stored in the battery pack.

Minimizing the Energy Required

To minimize the energy required by the computer, follow these steps:

- Set the power conservation levels in the Power Management utility to **Maximum**.
- Customize the timeout value to work more efficiently with the applications. The amount of battery life depends on the values selected.

Maximizing the Energy Stored

To maximize the energy stored in the battery pack, follow these guidelines:

- Condition the battery pack at least every 30 days to improve overall battery performance.
- Keep a battery pack in the Notebook when using it with AC power to supply the battery pack with a constant trickle charge.
- Store the battery pack in a cool, dry place when not in use.

Conditioning a Battery Pack

⚠ **CAUTION:** To avoid loss of data, ensure that all data is saved before discharging a battery pack.

To condition a battery pack, complete the following steps:

1. Plug in the AC adapter and allow the battery to charge until the fast charge arrow on the display disappears. Your battery gauge may read 100 percent for a period of time before the arrow disappears. Do not unplug the AC adapter until the arrow is gone.
2. Unplug the AC adapter and allow the battery to drain until the Notebook reaches hibernation and turns itself off.

   ⚠ **CAUTION:** Do not unplug the AC adapter during this process or you will need to start the process over again with Step 1. You may use the Notebook while the battery is draining.

3. The battery is re-conditioned.
4. Plug in the AC adapter and begin using the Notebook.

The table below shows battery pack charge times by model.

Battery Charge Time		
Computer	**On Line**	**Off Line**
Li—Ion Battery Pack	4.5 hours premature termination	2:50 hours
NiMH Battery Pack	TBD	TBD

Disposing of a Used Battery Pack

In the interests of safeguarding our environment, Compaq Computer Corporation recommends that nickel metal hydride (NiMH) and lithium ion (Li-Ion) battery packs be recycled. Battery packs should be handled in accordance with country, state, province, or local regulations.

> ⚠ **CAUTION:** Never attempt to open or service a battery pack. Opening a battery pack not only damages the pack and makes it unusable, but also exposes potentially harmful battery components.

Power Management

The following power management features are available for conserving AC power and extending battery operating time:

Power Management Settings

Differing patterns of Notebook use determine the level of power management needed. These power management levels can be initiated based on the amount of time passed since the last system activity. System activity examples include keyboard strokes or mouse movement, DVD/CD playback (while under program control that monitors Standby), and modem use.

Power Schemes

You may select different settings or Power Schemes through Power Management from the Control Panel. The default Power Schemes are Home/Office Desk, Portable/ Laptop, and Always On. The settings can be customized by changing the following options:

- **System Standby**: length of inactivity before the Notebook goes into Standby mode
- **Turn Off Monitor**: length of inactivity before the screen times out and goes blank
- **Turn Off Hard Disks**: length of inactivity before the hard drive goes into low power mode

Important: The setting for the Hard Disk must be less than or equal to the setting for the system. If the Notebook is on a network, Compaq recommends that System Standby be set to Never.

The following table shows the default settings for each Power Scheme.

Power Schemes		
Always on	**AC Power**	**Battery Power**
System Standby	Never	5 minutes
Turn OFF Monitor	15 minutes	2 minutes
Turn OFF Hard Disks	1 hour	3 minutes
Portable/Laptop	**AC Power**	**Battery Power**
System Standby	Never	15 minutes
Turn OFF Monitor	3 hours	Never
Turn OFF Hard Disks	15 minutes	10 minutes
Home/Office Desk	**AC Power**	**Battery Power**
System Standby	20 minutes	1 minute
Turn OFF Monitor	15 minutes	2 minutes
Turn OFF Hard Disks	30 minutes	10 minutes

Alarms

The Notebook can be set to Alarm when the battery power level is reduced or when it reaches a critical low level. The Notebook can also be set automatically to enter a low-power mode when the battery reaches a specific power level.

CAUTION: The settings on the Alarms tab is preset for the Notebook to run at its best. Changing any of these settings could cause the Notebook to function improperly. It is recommended that these settings be left at their default values.

Alarms		
Alarm	**Default**	**Alarm Action**
Low Battery	10%	Notification: Text Power Mode: No Action
Critical Battery	0%	Notification: No Action Power Mode: Hibernation

SpeedStep Technology Modes

SpeedStep Technology features several speed options for processor response to low-power conditions. These include the following settings:

- **Maximum Performance**: always at high speed
- **Battery Optimized**: always at low speed
- **Reversed**: opposite recommended
- **Recommended**: performance on AC, Battery Optimized on Battery
- **Disabled**: no run time support, high speed

SpeedStep options can be accessed in three ways:

- Access **F10** Setup during startup and select the **Advanced** screen.
- Click **Start>Settings>Control Panel>Power Options>Intel(R) SpeedStep(TM) technology** tab.
- Double-click the Flag icon on the Windows taskbar to open the **Intel(R) SpeedStep(TM) technology** dialog box.

Low-Power Modes

Compaq Presario 1200 Series Notebook Computers have two levels of low-power management: **Hibernation** and **Standby**.

Hibernation

Hibernation helps conserve battery life and protect data. Your Notebook automatically enters Hibernation mode when the battery has little power left or when the Notebook (operating on battery power) is in Standby mode for more than one hour. As the Notebook enters Hibernation, it automatically stores the contents of the Notebook memory to the hard drive before it shuts down. When the Notebook comes out of Hibernation, it returns to its former state.

Activate Hibernation mode by pressing the **Power** button once.

To restart the Notebook, press the **Power** button once. When the Notebook enters or wakes from Hibernation mode, a Progress window is displayed on the screen.

Standby

Standby mode is a low-power mode, also referred to as Sleep mode. Selecting Standby mode instead of turning off the Notebook when finished has two advantages: 1. It allows the Notebook to wake up faster than turning it completely off; 2. It saves more power than the active (On) mode.

Activate Sleep mode by pressing **Fn+F4**. Or click **Start,** select the **Shut Down** option, and click **Standby**.

> ⚠ **CAUTION:** The Notebook maintains system information and open files while in Standby mode. However, unsaved information is lost if the Notebook is turned off prior to system wake-up, or if a power loss occurs while using the AC adapter.

The following table shows the conditions and indicators for entering and exiting the various power management modes, Standby, Hibernation, and Off.

Power Management Modes			
Standby	**Activation**	**Deactivation**	**Indicators**
Manual	Press **Fn+F4** key combination or click the **Start** button on the Windows taskbar, then point to **Shutdown** and click **Standby**.	Press any key.	Flashing **Power** light
Time-Out Default	15 minutes if using battery power. Notebook will not automatically enter Standby mode if using AC Power.		
Hibernate	**Activation**	**Deactivation**	**Indicators**
Manual	Press **Power** button once.	Press **Power** button once.	**Power** light is off, screen is blank
Time-Out Default	When battery is low or after 1 hour of Standby. Notebook will not automatically enter Hibernation mode if using AC Power.	Press **Power** button once.	**Power** light is off, screen is blank

Power Management Modes			
Off	**Activation**	**Deactivation**	**Indicators**
Standard	Perform normal Windows shutdown using the **Start** button on the Windows taskbar.	Press **Power** button once.	**Power** light is off, screen is blank.
Manual	Press and hold down the **Power** button for 4 seconds.		

Important: The manual shutdown mode is not recommended unless the standard shutdown mode does not work.

Battery Operating Life

Battery operating life is affected by variables such as:

- Power conservation settings
- Hardware configuration
- Software applications Installed options
- Display brightness
- Hard drive usage
- Changes in operating temperature
- Type and number of installed PC Cards

For more information on increasing battery-pack operating time, conditioning the battery pack, and disposing of a used battery pack, refer to the Battery Pack Operations section in this *Maintenance and Service Guide*.

Servicing the Notebook - Full Off Mode

The Notebook must be turned off completely when installing or replacing components in the system. Follow the instructions for putting the Notebook into Off mode properly, unplugging it from the outlet, and removing the battery (see Battery Pack Removal Sequence).

Rebooting After a Lockup

To reboot the Notebook (from a cold start) when the keyboard is frozen or the screen is locked, press and hold down the Power button for at least four seconds; this causes a manual shutdown. Then, restart your Notebook with a single press of the **Power** button.

If the Notebook still does not recover, press the **Power** button and hold for four seconds to shut it down, then remove the battery or unplug the AC power for at least 30 seconds. Reinsert the battery or reconnect AC power and press the **Power** button once to reboot.

Recovering From a Loss of Electrical Power

Loss of electrical power causes the Notebook to turn off automatically. This may cause loss of data because the Microsoft Windows operating system is not able to close all files and programs properly.

Loss of power may be caused by one of the following:

- Electrical power service is interrupted.
- The power cord is accidentally disconnected.

If power surges or sags, the display and status lights may flicker, and the Notebook may automatically restart. If an improper shutdown occurs, ScanDisk, a Microsoft Windows utility program, runs automatically once power is restored. ScanDisk determines if the improper shutdown caused any errors on the hard disk. These errors may occur if the Microsoft Windows operating system is not able to close all files properly before the shutdown. If no errors are found, the restart process continues. If ScanDisk does detect errors, follow the instructions on the screen to continue the restart process. Work that was not saved before the loss of power or shutdown may be lost.

If a power failure occurs, or the power cord disconnects while the Notebook is turned on, turn it off until normal service is restored. The next time the Notebook is turned on, ScanDisk may run to check the hard disk for errors caused by improper shutdown.