

Power

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This guide explains how the notebook uses power.

Contents

Power

Power Control and Light Locations	1
Power Sources	4
Standby and Hibernation	5
Standby	5
Hibernation	6
Initiating Standby, Hibernation or Shutdown	7
Default Power Settings.	9
Turning the Notebook or Display On or Off	10
Initiating or Resuming from Standby	11
Initiating or Restoring from Hibernation.	12
Using Emergency Shutdown Procedures	14
Power Options	15
Accessing Power Options Properties.	15
Displaying the Power Meter Icon	16
Setting or Changing a Power Scheme	17
Using a Security Password	17
Processor Performance Controls (Select Models Only).	18
Battery Packs	20
Identifying Battery Packs	21
Inserting or Removing a Primary Battery Pack.	22
Charging Battery Packs	24
Charging a New Battery Pack	25
Charging an In-Use Battery Pack	25
Monitoring the Charge of a Battery Pack	26
Obtaining Accurate Charge Information	26
Displaying Charge Information on the Screen	26

Managing Low-Battery Conditions	28
Identifying Low-Battery Conditions	28
Resolving Low-Battery Conditions	29
Calibrating a Battery Pack	31
When to Calibrate	31
How to Calibrate	31
Conserving Battery Power	35
Conserving Power As You Work	35
Selecting Power Conservation Settings	36
Storing a Battery Pack	37
Disposing of a Used Battery Pack	38

Index

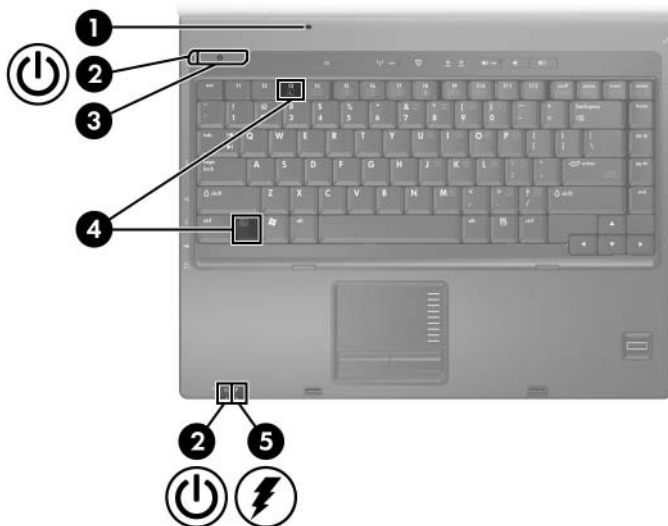
Power

Power Control and Light Locations

The following illustration and table identify and describe the power control and light locations.



Your notebook may look slightly different from the illustrations in this section.



Component	Description
❶ Display switch	Puts the notebook in standby if the display is closed while the notebook is on.
❷ Power/standby lights* (2)	Green: The notebook is on. Blinking green: The notebook is in standby mode. Off: The notebook is off or in hibernation.

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Component	Description
<p>③ Power/standby button</p>	<p>When the notebook is</p> <ul style="list-style-type: none"> ■ Off, press the button to turn on the notebook. ■ In standby, briefly press the button to exit standby. ■ In hibernation, briefly press the button to exit hibernation. <p>If the notebook has stopped responding and Microsoft® Windows® shutdown procedures cannot be used, press the power/standby button and hold for at least 5 seconds to turn off the notebook.</p>
<p>④ fn+f3</p>	<p>Initiates standby.</p>
<p>⑤ Battery light</p>	<p>Amber: A battery pack is charging. Green: A battery pack is close to full charge capacity. Blinking amber: A battery pack that is the only available power source has reached a low-battery condition. When the battery reaches a <i>critical</i> low-battery condition, the battery light begins blinking more quickly. Off: If the notebook is connected to an external power source, the light is turned off when all batteries in the notebook are fully charged. If the notebook is not connected to an external power source, the light is turned off until the battery reaches a low-battery condition.</p>

*There are 2 power/standby lights. Both display the same information. The light on the power button is visible only when the notebook is open; the other power/standby light is always visible on the front of the notebook.

Power Sources

The notebook can run on internal or external AC power. The following table indicates the best power sources for common tasks.

Task	Recommended Power Source
Work in most software applications	<ul style="list-style-type: none">■ Charged battery pack in the notebook■ External power supplied through one of the following devices:<ul style="list-style-type: none"><input type="checkbox"/> AC adapter<input type="checkbox"/> Optional docking device (select models only)<input type="checkbox"/> Optional power adapter
Charge or calibrate a battery pack in the notebook	External power supplied through <ul style="list-style-type: none">■ AC adapter■ Optional docking device (select models only)■ Optional power adapter
Install or modify system software or write to a CD or DVD	External power supplied through <ul style="list-style-type: none">■ AC adapter■ Optional docking device (select models only)■ Optional power adapter

Standby and Hibernation

Standby and hibernation are energy-saving features that conserve power and reduce startup time. They can be initiated by you or by the system. For more information, refer to “[Initiating Standby, Hibernation or Shutdown.](#)”

Standby



CAUTION: To avoid a complete battery discharge, do not leave your notebook in standby for extended periods. Connect the notebook to an external power source.

Standby reduces power to system components that are not in use. When standby is initiated, your work is saved in random access memory (RAM) and the screen is cleared. When you resume from standby, your work returns to the screen where you left off.

- Saving your work before initiating standby is not usually necessary, but it is a recommended precaution.
- When the notebook is in standby, the power/standby lights blink.

Hibernation



CAUTION: If the configuration of the notebook is changed during hibernation, resuming from hibernation may not be possible. When the notebook is in hibernation:

- Do not dock the notebook in or undock the notebook from a docking device.
- Do not add or remove memory modules.
- Do not insert or remove any hard drives or optical drives.
- Do not connect or disconnect external devices.
- Do not insert or remove a Digital Media Slot card, a PC Card, or an ExpressCard (select models only).

Hibernation saves your work to a hibernation file on the hard drive, and then shuts down the notebook. When you restore from hibernation, your work returns to the screen where you left off. If a power-on password has been set, the password must be entered to restore from hibernation.

You can disable hibernation. However, if hibernation is disabled and the system reaches a low-battery condition, the system will not automatically save your work while power is on or when standby has been initiated.

Use **Power Options** in Microsoft® Windows® Control Panel to reenable hibernation:

- » Select **Start > Control Panel > Performance and Maintenance > Power Options > Hibernate** tab. Make sure that the **Enable hibernation** check box is selected.

To set the time interval after which the system initiates hibernation:

1. Select **Start > Control Panel > Performance and Maintenance > Power Options**.
2. Click one of the intervals in the **System hibernates** list.

Initiating Standby, Hibernation or Shutdown

The following sections explain when to initiate standby or hibernation and when to shut down your notebook.



You cannot initiate any type of networking communications or perform any computer functions while the notebook is in standby or hibernation.

When You Leave Your Work

Initiating standby clears the screen. When the notebook is in standby, it uses less power than when it is on. Your work returns instantly to the screen when you resume from standby.

Initiating hibernation clears the screen and saves your work to the hard drive. When the notebook is in hibernation, it uses much less power than when it is in standby.

Shutting down the notebook and removing the battery pack is recommended to extend the life of the battery pack when the notebook will be unused and disconnected from external power for an extended period. For details on battery pack storage, refer to [“Storing a Battery Pack.”](#)

When a Reliable Power Supply Is Unavailable

Make sure that hibernation remains enabled, especially if you are operating the notebook on battery power and do not have access to an external power supply. If the battery pack fails, hibernation saves your work to a hibernation file and shuts down the notebook.

It is recommended that if you pause your work when the power supply is uncertain, you do one of the following:

- Initiate hibernation.
- Shut down the notebook.
- Save your work, and then initiate standby.

When Using Readable or Writable Drive Media (Select Models Only)



CAUTION: To prevent possible audio and video degradation, or loss of audio or video playback functionality, do not initiate standby or hibernation while reading or writing to a CD or DVD. To prevent loss of data, do not initiate standby or hibernation when writing to a CD or DVD.

If standby or hibernation is accidentally initiated during playback of a drive medium (such as a CD or DVD):

- Your playback may be interrupted.
- You may see the following warning message: “Putting the computer into hibernation or standby may stop the playback. Do you want to continue?” Click **No**.
- You may need to restart the CD or DVD to resume audio and video playback.

Default Power Settings

This section explains the default standby, hibernation, and shutdown procedures. For information about changing the function of some of the power features on your notebook, refer to [“Power Options.”](#)

The controls and lights discussed in this section are illustrated in [“Power Control and Light Locations.”](#)

Turning the Notebook or Display On or Off

Task	Procedure	Result
Turn on the notebook.	Press the power/standby button.	<ul style="list-style-type: none">■ The power/standby lights are turned on.■ The operating system loads.
Shut down the notebook.*	<p>Save your work and close all open applications. Then either</p> <ul style="list-style-type: none">■ Press the power/standby button and follow the on-screen directions (if displayed) for shutting down the notebook. <p>– or –</p> <ul style="list-style-type: none">■ Shut down the notebook through the operating system.<ul style="list-style-type: none">□ In Windows XP Home, select Start > Turn Off Computer > Turn Off.□ In Windows XP Professional, select Start > Turn Off Computer > Turn Off.[†]	<ul style="list-style-type: none">■ The power/standby lights are turned off.■ The operating system shuts down.■ The notebook is turned off.
Turn off the display while the power is on.	Close the notebook.	Closing the notebook activates the display switch, which initiates standby.

*If the system is unresponsive and you are unable to shut down the notebook with these procedures, refer to [“Using Emergency Shutdown Procedures.”](#)

[†]Depending on your network connections, the **Turn Off Computer** button may be called the **Shut Down** button.

Initiating or Resuming from Standby

Task	Procedure	Result
Initiate standby.	<ul style="list-style-type: none">■ With the notebook on, press fn+f3.□ In Windows XP Home, select Start > Turn Off Computer > Stand by.□ In Windows XP Professional, select Start > Turn Off Computer > Stand by. (If Stand by is not displayed, press the down arrow, select Stand by from the list, and then click OK.)*■ Close the notebook.	<ul style="list-style-type: none">■ The power/standby lights blink.■ The screen clears.
Allow the system to initiate standby.	<ul style="list-style-type: none">No action required.■ If the notebook is running on battery power, the system initiates standby after 10 minutes of notebook inactivity. (Default setting)■ If the notebook is attached to external power, the system does not initiate standby.■ Power settings and timeouts can be changed in the Power Options window.	<ul style="list-style-type: none">■ The power/standby lights blink.■ The screen clears.
Resume from user-initiated or system-initiated standby.	<ul style="list-style-type: none">■ Press the power/standby button.■ If the display was closed while the notebook was in standby, open the display.	<ul style="list-style-type: none">■ The power/standby lights are turned on.■ Your work returns to the screen.

*Depending on your network connections, the **Turn Off Computer** button may be called the **Shut Down** button.

Initiating or Restoring from Hibernation

Hibernation cannot be initiated unless it is enabled. Hibernation is enabled by default.

To verify that hibernation remains enabled:

- » Select **Start > Control Panel > Performance and Maintenance > Power Options > Hibernate** tab. If hibernation is enabled, the **Enable hibernation** check box is selected.

Task	Procedure	Result
Initiate hibernation.	<ul style="list-style-type: none">■ In Windows XP Home, select Start > Turn Off Computer. Then, hold down the shift key as you select Hibernate.■ In Windows XP Professional, select Start > Turn Off Computer. Then, hold down the shift key as you select Hibernate. (If hibernate is not displayed, press the up or down arrow, select Hibernate from the list, and then click OK.)*	<ul style="list-style-type: none">■ The power/standby lights are turned off.■ The screen clears.
Allow the system to initiate hibernation (with hibernation enabled).	<p>No action required. If the notebook is running on battery power, the system initiates hibernation</p> <ul style="list-style-type: none">■ After 30 minutes of notebook inactivity.■ When the battery pack(s) reach a critical low-battery condition. <p>Power settings and timeouts can be changed using Power Options in Windows Control Panel.</p>	<ul style="list-style-type: none">■ The power/standby lights are turned off.■ The screen clears.

(Continued)

Task	Procedure	Result
Restore from user-initiated or system-initiated hibernation.	Press the power/standby button. [†]	<ul style="list-style-type: none">■ The power/standby lights are turned on.■ Your work returns to the screen.

*Depending on your network connections, the **Turn Off Computer** button may be called the **Shut Down** button.

[†]If the system initiated hibernation because of a critical low-battery condition, connect external power or insert a charged battery pack before you press the power/standby button. (The system may not respond if the drained battery pack is the only power source.)

Using Emergency Shutdown Procedures



CAUTION: Emergency shutdown procedures result in the loss of unsaved data.

If the notebook is unresponsive and you are unable to use normal Windows shutdown procedures, try the following emergency procedures in the sequence provided:

- Press **ctrl+alt+delete**. Then, select **Shut Down > Turn Off**.
- Press and hold the power/standby button for at least 5 seconds.
- Disconnect the notebook from external power and remove the battery pack. For more information about removing and storing the battery pack, refer to “[Storing a Battery Pack](#).”

Power Options

You can change many default power settings in Windows Control Panel. For example, you can set an audio alert to warn you when the battery pack reaches a low-power condition, or you can change the default settings for the power/standby button.

By default, when the notebook is on:

- Pressing the **fn+f3** hotkey, called the “sleep button” in the operating system, initiates standby.
- The display switch turns off the display and initiates standby. The display switch is activated by closing the display. (By default and when using custom settings, the display switch setting is standby mode.)

Accessing Power Options Properties

To access Power Options Properties:

- Right-click the **Power Meter** icon in the notification area (at the far right of the taskbar), and then click **Adjust Power Properties**.

– or –

- Select **Start > Control Panel > Performance and Maintenance > Power Options**.

Displaying the Power Meter Icon

By default, the Power Meter icon appears in your notification area, at the far right of the taskbar. The icon changes shape to indicate whether the notebook is running on a battery pack or external power.

To hide or show the Power Meter icon in the notification area:

1. Right-click the **Power Meter** icon in the notification area, and then click **Adjust Power Properties**.
2. Click the **Advanced** tab.
3. Select or clear the **Always show icon on the taskbar** check box.
4. Click **Apply** and then click **OK**.



If you cannot see an icon you have placed in the notification area (at the far right of the taskbar), the icon may be hidden. Click the arrow in the notification area to view hidden icons.

Setting or Changing a Power Scheme

The Power Schemes tab in the **Power Options Properties** dialog box assigns power levels to system components. You can assign different schemes, depending on whether the notebook is running on a battery pack or on external power.

You can also set a power scheme that initiates standby or turns off the display or hard drive after a time interval that you specify.

To set a power scheme:

1. Right-click the **Power Meter** icon in the notification area, and then click **Adjust Power Properties**.
2. Click the **Power Schemes** tab.
3. Select the power scheme you want to modify, and adjust options in the lists on the screen.
4. Click **Apply**.

Using a Security Password

You can add a security feature that prompts you for a password when the notebook is turned on, resumes from standby, or restores from hibernation.

To set a password prompt:

1. Right-click the **Power Meter** icon in the notification area, and then click **Adjust Power Properties**.
2. Click the **Advanced** tab.
3. Select the **Prompt for password when computer resumes from standby** check box.
4. Click **Apply**.

Processor Performance Controls (Select Models Only)

On select notebook models, Windows XP supports software that enables you to control processor performance. The central processing unit (CPU) speed can be set for optimal performance or for optimal power conservation.

For example, the software can be set to activate an automatic change in processor speed when the power source changes from external power to battery pack power, or when the notebook use changes between active and idle.

Processor performance controls are managed in the **Power Options Properties** dialog box.

To access Windows XP processor performance controls:

- » Select **Start > Control Panel > Performance and Maintenance > Power Options > Power Schemes** tab.

The power scheme you select determines how the processor performs when the notebook is connected to external power or is running on battery power. Each power scheme for external power or battery power sets a specific processor state.

After a power scheme has been set, no other intervention is required to control the performance of your notebook processor. The following table describes the processor performance on external and battery power for the available power schemes.

Power Scheme	Processor Performance While on External Power	Processor Performance While on Battery Power
Home/Office Desk	Always runs at the highest performance state.	Performance state is determined based on CPU demand.
Portable/Laptop	Performance state is determined based on CPU demand.	Performance state is determined based on CPU demand.
Presentation	Performance state is determined based on CPU demand.	CPU performance is lower on battery power, then steadily decreases as the battery discharges.
Always On	Always runs at the highest performance state.	Always runs at the highest performance state.
Minimal Power Management	Performance state is determined based on CPU demand.	Performance state is determined based on CPU demand.
Max Battery	Performance state is determined based on CPU demand.	CPU performance is lower on battery power, then steadily decreases as the battery discharges.

Battery Packs

When the notebook is connected to external AC power, the notebook runs on AC power. When a charged battery pack is in the notebook and the notebook is not connected to external power, the notebook runs on battery power.

The notebook alternates between AC power and battery power according to the availability of an external AC power source. For example, if the notebook contains a charged battery pack and is running on external AC power supplied through the AC adapter, the notebook switches to battery power if the AC adapter is disconnected from the notebook.

You can leave a battery pack in the notebook or in storage, depending on how you work. Keeping a battery pack in the notebook enables the battery pack to charge whenever the notebook is connected to external AC power and also protects your work in case of a power outage.

However, battery packs in the notebook slowly discharge when the notebook is turned off. For this reason, the primary battery pack is not shipped inside the notebook and must be inserted before the notebook can run on battery power.

Identifying Battery Packs

This notebook supports up to 2 battery packs:

- One primary lithium-ion battery pack is included with the notebook.
- The travel battery pack is an optional battery pack that can be attached to the bottom of the notebook.

If the notebook will be unused and disconnected from external power for more than 2 weeks, remove the battery pack and store it as described in “[Storing a Battery Pack](#).” For more information about leaving your work, refer to “[Initiating Standby, Hibernation or Shutdown](#).”



WARNING: To reduce potential safety issues, only the battery pack provided with the computer, a replacement battery pack provided by HP, or a compatible battery pack purchased as an accessory from HP should be used with the computer.

Inserting or Removing a Primary Battery Pack

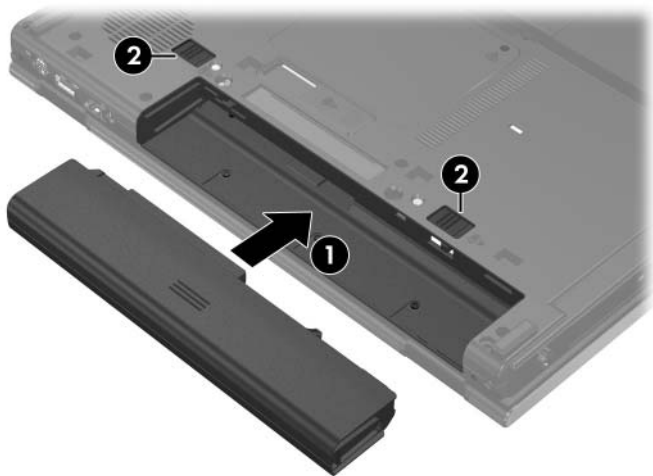


CAUTION: To prevent loss of work when removing a battery pack that is the sole power source, initiate hibernation or turn off the notebook before removing the battery pack.

To insert a primary battery pack:

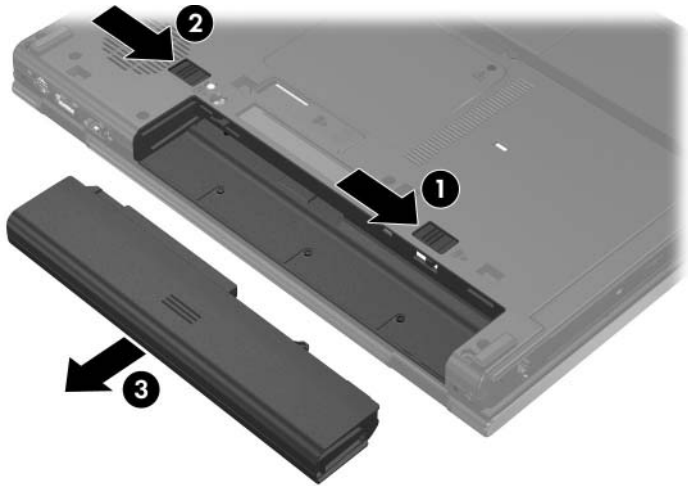
1. Turn the notebook upside down.
2. Slide the battery pack ❶ into the battery bay until it is seated.

The battery pack release latches ❷ automatically lock the battery into place.



To remove a primary battery pack:

1. Turn the notebook upside down with the battery bay facing you.
2. Slide the right-hand battery pack release latch **1** to the right.
3. Slide and hold the left-hand battery pack release latch **2** to the right.
4. Slide the battery pack **3** out of the notebook.



Charging Battery Packs

Multiple battery packs in the system charge and discharge in a preset sequence:

- Charge sequence:
 1. Primary battery in the notebook battery bay
 2. Optional travel battery
- Discharge sequence:
 1. Optional travel battery
 2. Primary battery in the notebook battery bay

While a battery pack is charging, the battery light on the notebook is amber. When the battery pack is almost fully charged, the battery light is green. The light is turned off when all battery packs are fully charged.

The primary battery pack charges when it is inserted into the notebook and the notebook is connected to external power. External power can be supplied through the following:

- AC adapter
- Optional docking device (select models only)
- Optional power adapter



WARNING: To reduce potential safety issues, only the AC adapter provided with the computer, a replacement AC adapter provided by HP, or an AC adapter purchased as an accessory from HP should be used with the computer.

Charging a New Battery Pack

Fully charge the battery pack while the notebook is connected to external power through the AC adapter.

A new battery pack that has been partially charged can run the notebook, but the battery charge indicators may be inaccurate.

Charging an In-Use Battery Pack

To prolong battery life and increase the accuracy of battery charge indicators:

- Allow a battery pack to discharge to 10 percent of a full charge through normal use before charging it.
- When you charge a battery pack, charge it fully.

Monitoring the Charge of a Battery Pack

This section explains several ways to determine the amount of charge in your battery pack.

Obtaining Accurate Charge Information

To increase the accuracy of all battery charge indicators:

- Allow a battery pack to discharge to about 10 percent of a full charge through normal use before charging it.
- When you charge a battery pack, charge it fully.
- If a battery pack has been unused for 1 month or more, calibrate the battery pack instead of simply charging it. For calibration instructions, refer to “[Calibrating a Battery Pack.](#)”

Displaying Charge Information on the Screen

This section explains how to access and interpret battery charge indicators.

Viewing Charge Displays

To view information about the status of any battery pack in the notebook:

- Double-click the **Power Meter** icon in the notification area (at the far right of the taskbar).

– or –

- Select **Start > Control Panel > Performance and Maintenance > Power Options > Power Meter** tab.

Interpreting Charge Indicators

Most charge indicators report battery status as both a percentage and as the number of minutes of charge remaining:

- The percentage indicates the approximate amount of charge remaining in the battery pack.
- The time indicates the approximate running time remaining on the battery pack *if the battery pack continues to provide power at the current level*. For example, the time remaining will decrease when you start playing a DVD and will increase when you stop playing a DVD.

Most charge displays identify battery packs by location:

- Location 1 is the battery pack in the primary battery bay.
- Location 2 is the optional travel battery pack.

In some instances, a lightning bolt icon may be superimposed over a battery icon on the Power Meter screen. The icon indicates that the battery pack in that location is charging.

Managing Low-Battery Conditions

The information in this section describes the alerts and system responses set at the factory. Some low-battery condition alerts and system responses can be changed using Power Options in Windows Control Panel. Preferences set in the Power Options window do not affect lights.

Identifying Low-Battery Conditions

This section explains how to identify low and critical low-battery conditions.

Low-Battery Condition

When a battery pack that is the only power source for the notebook reaches a low-battery condition, the battery light blinks in an amber color.

Critical Low-Battery Condition

If a low-battery condition is not resolved, the notebook enters a critical low-battery condition, and the amber-colored battery light blinks more rapidly.

In a critical low-battery condition:

- If hibernation is enabled and the notebook is on or in standby, the notebook initiates hibernation.
- If hibernation is disabled and the notebook is on or in standby, the notebook remains briefly in standby, and then shuts down and loses your unsaved work.

To verify that hibernation is enabled:

1. Select **Start > Control Panel > Performance and Maintenance > Power Options > Hibernate** tab.
2. Make sure that the **Enable hibernation support** check box is selected.

Resolving Low-Battery Conditions



CAUTION: To reduce the risk of data loss when the notebook reaches a critical low-battery condition and has initiated hibernation, do not restore power until the power/standby lights are turned off.

When External Power Is Available

To resolve a low-battery condition when external power is available, connect one of the following:

- AC adapter
- Optional power adapter

When a Charged Battery Pack Is Available

To resolve a low-battery condition when a charged battery pack is available:

1. Turn off the notebook or initiate hibernation.
2. Insert a charged battery pack.
3. Turn on the notebook.

When No Power Source Is Available

To resolve a low-battery condition when no power source is available:

- Initiate hibernation.

– or –

- Save your work and shut down the notebook.

When the Notebook Cannot Restore from Hibernation

To resolve a low-battery condition when the notebook lacks the power to restore from hibernation:

1. Insert a charged battery pack or connect external power.
2. Restore from hibernation by pressing the power/standby button.

Calibrating a Battery Pack

When to Calibrate

Even if a battery pack is heavily used, it should not be necessary to calibrate it more than once a month. It is not necessary to calibrate a new battery pack before first use. Calibrate the battery pack under the following conditions:

- When battery charge displays seem inaccurate
- When you observe a significant change in battery run time
- When the battery pack has been unused for one month or more

How to Calibrate

To calibrate a battery pack, you must fully charge, fully discharge, and then fully recharge the battery pack.

Charging the Battery Pack

A battery pack can charge whether the notebook is off or in use, but it will charge faster when the notebook is off.

To charge the battery pack:

1. Insert the battery pack into the notebook.
2. Connect the notebook to an AC outlet, optional power adapter, or optional docking device (select models only).

The battery light on the notebook is turned on.

3. Leave the notebook connected to external power until the battery pack is fully charged.

The battery light on the notebook is turned off.

Discharging the Battery Pack

Before you begin a full discharge, disable hibernation.

To disable hibernation:

1. Select **Start > Control Panel > Performance and Maintenance > Power Options > Hibernate** tab.
2. Clear the **Enable hibernation** check box.
3. Click **Apply**.

The notebook must remain on while the battery pack is being discharged. The battery pack can discharge whether or not you are using the notebook but will discharge faster while the notebook is in use.

- If you plan to leave the notebook unattended during the discharge, save your work before beginning the discharge procedure.
- If you use the notebook occasionally during the discharge procedure and have set energy-saving timeouts, expect the following performance from your system during the discharge process:
 - ❑ The monitor will not turn off automatically.
 - ❑ Hard drive speed will not decrease automatically while the notebook is idle.
 - ❑ System-initiated standby will not occur.

To fully discharge a battery pack:

1. Right-click the **Power Meter** icon in the notification area (at the far right of the taskbar), and then click **Adjust Power Properties**.

– or –

Access the Power Schemes tab by selecting **Start > Control Panel > Performance and Maintenance > Power Options > Power Schemes** tab.

2. Make a note of the 4 settings in the **Running on batteries** column so that you can reset them after the calibration.
3. Set the 4 options to **Never**.
4. Select **OK**.
5. Disconnect the notebook from the external power source, but *do not* turn off the notebook.
6. Run the notebook on battery power until the battery pack is fully discharged. The battery light begins to blink in an amber color when the battery pack has discharged to a low-battery condition. When the battery pack is fully discharged, the battery light is turned off and the notebook shuts down.

Recharging the Battery Pack

To recharge the battery pack:

1. Connect the notebook to external power and maintain the connection until the battery pack is fully recharged. At that time, the battery light on the notebook is turned off.

You can use the notebook while the battery pack is recharging but the battery pack will charge faster if the notebook is off.

2. If the notebook is off, turn it on when the battery pack is fully charged and the battery light is turned off.

-
3. Access the Power Schemes tab by selecting **Start > Control Panel > Performance and Maintenance > Power Options > Power Schemes** tab.
 4. Refer to the settings you made a note of earlier. Reenter the settings that you recorded for the items in the **Plugged In** column and the **Running on Batteries** column.
 5. Select **OK**.



CAUTION: After calibrating the battery pack, reenable hibernation. Failure to reenable hibernation may result in a complete battery drain and potential data loss.

To reenable hibernation, select **Start > Settings > Control Panel > Performance and Maintenance > Power Options > Hibernate** tab. Select the **Enable hibernation** check box, and then click **Apply**.

Conserving Battery Power

Using the battery conservation procedures and settings described in this section extends the time that a battery pack can run the notebook from a single charge.

Conserving Power As You Work

To conserve power as you use the notebook:

- Turn off wireless and local area network (LAN) connections and exit modem applications when you are not using them.
- Disconnect external devices you are not using that are not connected to an external power source.
- Stop or remove a optional PC Card or optional ExpressCard (select models only) you are not using.
- Remove a CD or DVD that you are not using.
- Use the **fn+f9** and **fn+f10** hotkeys to adjust screen brightness as you need it.
- Use optional powered speakers instead of the internal speakers, or adjust system volume as you need it.
- Turn off a device connected to the S-Video-out jack (select models) by using the **fn+f4** hotkey or by turning off support for the device in Windows.
- Run the notebook on external power while formatting a diskette.
- If you leave your work, initiate standby or hibernation, or shut down the notebook.

Selecting Power Conservation Settings

To set the notebook to conserve power:

- Select a short wait for the screen saver and select a screen saver with minimal graphics and motion.

To access screen saver settings:

Select **Start > Control Panel > Appearance and Themes > Choose a screen saver.**

- Select a Power Scheme with low-power-use settings through the operating system. For more information, refer to “[Setting or Changing a Power Scheme.](#)”

Storing a Battery Pack



CAUTION: To prevent damage to a battery pack, do not expose it to high temperatures for extended periods of time.

If a notebook will be unused and disconnected from external power for more than 2 weeks, remove the battery pack and store it separately.

To prolong the charge of a stored battery pack, place it in a cool, dry place.

Use the following table to estimate how long you can safely store a battery pack. The storage times provided are based on a battery pack that contains 50 percent of a full charge. A fully charged battery pack can be safely stored for longer times; a battery pack containing a lower charge can be safely stored for less time.

Calibrate a battery pack before using it if it has been stored for one month or more.

Temperature Range °F	Temperature Range °C	Safe Storage Time
115° to 140°	46° to 60°	Less than 1 month
79° to 113°	26° to 45°	No more than 3 months
32° to 77°	0° to 25°	1 year

Disposing of a Used Battery Pack



WARNING: To reduce the risk of fire or burns, do not disassemble, crush, or puncture a battery pack; short the external contacts on a battery pack; or dispose of a battery pack in fire or water. Do not expose a battery pack to temperatures above 60°C (140°F).



When a battery pack has reached the end of its useful life, do not dispose of the battery pack in general household waste. Follow the local laws and regulations in your area for computer battery pack disposal.

In Europe, dispose of or recycle the battery packs by using the public collection system or by returning them to HP, your service partner, or their agents.

Index

B

- battery charge information 26
- battery light
 - displaying charge status 24, 28
 - identifying 3
- battery pack
 - battery power vs. AC power 20
 - calibrating 31
 - charging 24, 31
 - conserving power 35
 - disposing of 38
 - identifying 21
 - inserting 22
 - low-battery conditions 28
 - monitoring charge 26
 - recharging 33
 - removing 22
 - storing 37
 - using 20
- battery pack release latch 23
- button, power/standby 3

C

- calibration, battery 31
- charging battery packs 24

- conservation, power 35
- critical low-battery condition 28

D

- default power settings 9
- display switch, identifying 2
- drive media 8

E

- emergency shutdown procedures 14

F

- fn+f3** key 3, 11

H

- hibernation
 - defined 6
 - enabling/disabling 6
 - initiated during critical low-battery condition 28
 - initiating 12
 - restoring from 12
 - when to use 5
- hibernation file 6

K

- keys, **fn+f3** 3, 11

L

lights, power/standby 2
low-battery condition 28

N

notebook display, turning on
or off 10

O

operating system 10
optional power adapter 4, 31

P

passwords, security 17
power
 conserving 35
 control and light locations
 1
 schemes 17
 setting preferences 15
 sources 4

Power Meter icon 16
power settings 9
power supply 7
power/standby button 3
power/standby light 2
processor performance
 controls 18

R

readable media 8
release latch, battery pack 23
reset (emergency shutdown
 procedures) 14

S

screen saver 36
security passwords 17

shutdown procedures 14
shutting down 10
software, Power Meter 15
standby
 defined 5
 initiating 11
 resuming from 11
switches
 display 2
 identifying 2

T

temperature, storage, battery
 pack 37
traveling with the notebook,
 battery pack temperature
 considerations 37
turning off notebook 10
turning off the notebook 14

U

unresponsive system,
 emergency shutdown
 procedures 14

W

writable media 8

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