

Sleep or hibernate?

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PART OF LIVING a more sustainable life means taking actions, such as recycling, using reusable bags at the grocery store, and turning off the lights when you leave a room. Just as leaving the lights on in an empty room is a waste of energy, leaving your computer on when it's not in use also wastes energy.

Windows Vista offers a variety of features that can help conserve power when you're not using your computer. Many of these settings are turned on by default. And while each of these features generally offers just a small step toward improved energy efficiency, together they add up to big returns – both for your checking account and for the environment.

Some people hesitate to use the advanced power consumption features in Windows Vista because they don't want to wait for the computer to shut down and start up each time they step away for a few minutes. This was a legitimate concern in the past with systems taking a long time to start back up. But Windows Vista addresses this issue, offering better reliability and more control over the power-saving functionality. In particular, sleep, hibernate and hybrid sleep let you use different power-saving states for different purposes.

Time to sleep

Sleep, which is the default power-saving state in Windows Vista, is a low-power state that preserves whatever you were doing in memory. A small amount of power is used to maintain that memory (typically less than 1 watt on a modern laptop).

It causes your computer to go to sleep automatically if you haven't used the system for a set amount of time. Of

course, if you know you are stepping away from your computer, you can also choose to put it to sleep manually.

On most computers that are running Windows Vista, you can put the system to sleep simply by pressing the power button (on a laptop, you can also close the lid). This is the default setting on most computers. However, if you want to customise your experience, you can do this by using the Power Options applet in the Control Panel.

To wake most computers from sleep, you can just press the power button again, or open the lid if the system is a laptop. Your computer will resume full power almost immediately. Computers certified for Windows Vista should take around two seconds to resume from sleep. (Resuming from hibernate takes longer.)

Note that when your system is in sleep mode, it can still wake up at specified times to download and install updates and perform other routine maintenance tasks. After these tasks have finished, the computer will go back to sleep automatically.

When to hibernate

Like sleep, hibernate is a power-saving state. In Windows Vista, sleep saves your settings in memory and draws a small amount of power to maintain that memory. Hibernate, on the other hand, writes your settings and the content of memory to the hard disk and then completely powers down the system.

On a laptop, this means that the computer is not using any power (unless the laptop is charging, of course). On a desktop that remains plugged in, power usage can vary. In fact, hibernate may not use significantly less

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power than sleep. To put your computer into hibernate mode, click the Start button, and then the small arrow next to the Lock button, and then click Hibernate. You can wake up most computers from hibernation by pressing the power button (or lifting the lid if you're using a laptop). But since not all computers are the same, you might have to press other keys on the keyboard or click the mouse.

Waking from a state of hibernation takes longer than waking from sleep. This is because your computer needs to load your data and applications from the hard drive back into memory. Hibernate is particularly useful on a laptop when you know you won't be using the computer for an extended period of time and you won't have an opportunity to charge the battery.

Hybrid sleep (desktop computers only)

Hybrid sleep is a power-saving feature designed primarily for desktop computers. Because laptops have batteries, there is limited risk that power will be completely lost unexpectedly. If a laptop is in a sleep state and the battery starts to run low, the system will wake up and immediately go into hibernate, which requires no power to preserve memory. But a desktop computer does not typically have a battery backup, so if the computer loses power while in sleep, all the contents stored in memory will be lost (including any unsaved work).

Hybrid sleep addresses this issue by combining the fast resume capabilities of sleep with the reliability of hibernate: specifically, it saves the contents of memory to hard disk. This means that you can quickly resume from sleep in most cases, but if a power failure occurs, Windows Vista can restore your work and settings from the hard disk.

On desktops, hybrid sleep is usually turned on by default. When this is enabled, clicking Sleep will put the computer into hybrid sleep. (When hybrid sleep is turned off, or if your comput-

er doesn't support hybrid sleep, clicking Sleep puts the computer into the standard sleep mode.) To wake up most computers from hybrid sleep, simply press the power button and the computer will resume exactly as you left it.

Should you use a screen saver?

Screen savers were originally developed to save older monitors from damage by preventing the burn-in of pixels into the screen. Today, screen savers are mainly used to personalise computers or to protect them with pass-

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words required after a certain amount of idle time.

Screen savers do not conserve energy. In fact, many of today's sophisticated screen savers use more energy than your computer would use under light conditions. Even when a display goes blank, many screen savers continue to run and consume energy. And some screen savers actually prevent your PC from going to sleep.

To increase the energy efficiency of your computer and make less of an impact on the environment, you should use display blanking instead of a screen saver. If you want the security of requiring a password to access the computer after the display has blanked, configure your PC to use the blank screen saver and check the box

to display the logon screen when access is resumed. The blank screen saver doesn't consume any more energy than an idle computer, and it allows your PC to go to sleep when the sleep idle timeout is reached.

You might want to set the screen saver timeout to be slightly longer than display blanking timeout. This lets you avoid having to type your password each time your display blanks while you are sitting at the computer. Only after the screen saver itself starts up will you need to type your password to get back to your session.

If your computer is unused for a longer time (and there are no background tasks keeping it awake), then Windows Vista will automatically put your computer into sleep. By default, this timeout is set to 60 minutes and requires a password to be entered after your computer wakes from sleep.

Becoming more energy efficient

Whether you want to save money or reduce your environmental impact, Windows Vista can help you reduce the amount of energy your computer consumes. When you're not using your system, press the power button to put it to sleep or close the lid on your laptop. Try to avoid using elaborate screen savers as these generally burn energy.

We should also point out that Windows Vista Media Center has also been enhanced to be more energy efficient. A Media Center PC can be configured to go to sleep when not in use and can be easily woken by using the remote control. It will also wake automatically to record scheduled programs and go back to sleep when it has finished recording. A Media Center PC can even be configured to wake up when you turn on your Media Center Extender.

Media Center power configuration, however, is a topic in itself. So watch for a future installment of the Sustainable Computing column dedicated to Windows Vista Media Center power settings. ■