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Making The Most Of Your Computer's Memory

You depend on your memory to perform even the most basic of life's functions such as getting to work, accessing your bank account, calling your mother. The memory of your computer is just as essential to your computer as your personal memory is to you. You don't have to be an expert to make the most of your computer's greatest asset.

Understanding Memory Technology Keywords

Take a look at some key terms that are essential to understanding your computer's memory.

Whether you want to make sure your files and applications aren't deleted or moved, restrict some areas of the Web for your children's safety or keep your email correspondence private, consider setting up your computer to support multiple users. And, even if you don't share your PC, you may still decide to configure multiple accounts to keep yourself organized. We'll take a look at what can be customized, including your operating system, Internet browser and email applications.

SDRAM (Synchronous Dynamic Random Access Memory) is the little guy that does all the memory work. Its architecture allows it to deal with bursts of data that are marching to the beat of the system clock's drummer. Data is sent one time per cycle to the Central Processing Unit (CPU). This timing feature allows for fast reading and writing. The SDRAM transfers chunks of data instead of bit by bit. Do not mix SDRAMs with other kinds of memory, such as RDRAM, that are not designed for interaction with the SDRAM.

Real Memory is the physical memory located on the chipset. It is your PC's capacity to remember information. Usually the real memory is the memory feature that is most often referred to in computer specifications (e.g. 64 MB of SDRAM).

Virtual Memory is basically a big fake out. It makes your PC believe that it has even more memory when actually the amount of memory has not increased. Virtual memory, which is located on the hard drive instead of in a memory chip, isn't as fast as physical or real memory. Its primary function is to help complicated software applications, such as Internet browsers, run properly. Hint: Don't turn off your virtual memory. If you are looking to upgrade memory, don't look to the virtual memory; upgrade your real memory.

Upgrading and Installing Memory

The best advice for buying memory is to begin by doing some research. This area of technology is fast-paced and is always improving. It is not worth it to spend a lot of money on memory that is already out of date. For example, the new DDR memory is available at the same price as SDRAM. DDR is a vast improvement over SDRAM, so why buy SDRAM if you can get twice as much memory with DDR--for the same price?

Do not invest in memory that isn't compatible with your computer or isn't designed to interact with other forms of already installed memory (if that's the case). You can find out what types of memory are compatible with your PC by contacting your PC's manufacturer or by referring to your owner's manual. Also, most manufacturers' websites have detailed information about purchasing and installing additional memory. .

If you are using your computer for video game play frequently, upgrade the V-RAM, or Video RAM. In short, regular computer memory cannot maintain enough of a charge to run video-enabled applications.

Also, pay attention to the amount of memory that your computer can cache (or put in its briefcase of temporary files). If you install more memory than your computer can cache, the upgrade will actually decrease performance.

Once you have bought extra RAM, be sure to speak to your vendor (or the manufacturer, if you purchased your machine directly) for advice on how to install it.

Symptoms and Causes of Memory Malfunctions

Memory problems result from two causes: aging systems and memory updates or upgrades.

Common symptoms of a memory problem are:

- "The blue screen of death," which usually freezes the computer and requires you to re-boot. The "blue screen" is actually a system alert, informing you of a memory failure..
- You have booted up, but there is no video input (e.g. the screen is black and everything is plugged in properly).
- Your PC will not boot up
- Your PC refuses to load your operating system, e.g. Windows
- Your operating system is malfunctioning or blacks out completely.
- Your PC keeps beeping upon boot-up. Pay attention to the number of beeps. That's the computers way of telling you what is wrong with the memory. Write down the number of beeps, in case you need to tell a repair technician
- Your PC counts RAM infinitely at start-up
- Your PC enters a vicious boot-up cycle; just as it finishes booting up, it starts the process over again

Memory Diagnostics and Preventative Maintenance

Computer applications, such as Norton SystemWorks, can help you to prevent and repair some computer memory problems.

For instance, Windows 95/98 creates a special file on your hard drive called a swap file. This file is used to create additional memory so your Windows programs can make maximum use of available system resources. The size of the swap file changes dynamically in response to demand for memory space. This can cause significant fragmentation of the swap file, which in turn reduces performance. Norton Optimization

Wizard, a feature of Norton SystemWorks, sets an appropriate minimum swap file size to reduce file fragmentation, to enhance system performance.

Easy Solutions: Physical Memory Parts

Sometimes, your computer's memory problems may be resolved or avoided by regularly checking and cleaning the physical parts of your computer's memory.

- **Housecleaning:** Are the sockets that hold your memory clean? These contacts do get dirty, which could cause degraded memory performance. Get rid of dust and other debris that could be causing bad connections, thus inhibiting your memory's performance. A cotton swab can do the trick. Contact a computer technician for additional cleaning advice.
- **Bad Vibration:** Memory modules vibrate in their sockets and, in time, they can become dislodged. Make sure that the memory modules are fitted properly in their sockets..
- **Inspection:** Inspect memory sockets and the memory modules carefully, checking for any broken or burnt parts. If something is broken, it may be able to be glued back together instead of being replaced with expensive new parts. Make sure the glue is "plastic-safe." Contact a computer technician for assistance.
- **Surge Protection:** Stop what you are doing right now! Go and plug your PC into a surge protector. Power surges are lethal to computer memory. It is easy to prevent a power surge from damaging your computer, but it is not so easy to fix a problem caused by a power surge.

When All Else Fails: See a Professional

If none of the above works to improve your computer's memory performance, take your computer to a computer repair center or consult your dealer or computer brand website for suggestions. Memory is the backbone of your computer. When you optimize your memory's performance, you'll optimize the performance of your entire machine.

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