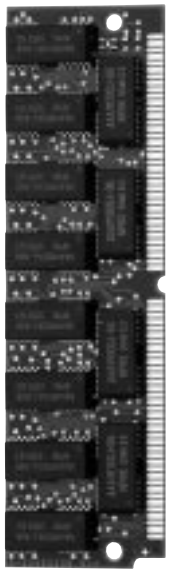
MEMORY TIPS

TECHWORKS EDUCATION SERIES



THE BASICS: WHAT IS RAM MEMORY?

Random Access Memory (RAM) is used by your Central Processing Unit (CPU) to store and retrieve the raw data required to accomplish various tasks. RAM can supply data roughly one million times faster than a hard drive can—RAM access times are measured in nanoseconds (billionths of a second). Adding more RAM lets you open more applications at the same time and work with larger files or documents. It may also speed up your applications.

Memory Upgrading Tips

As reported by *PC Computing*, one of the most cost effective and easiest computer upgrades to make is to your computer memory. This article will help take the uncertainty out of purchasing memory by informing you of general rules of thumb, as well as helping you decide how much RAM to buy and how to get the most out of your memory upgrade.

Purchasing memory is very easy. In most cases, you will only need know what kind of computer you have and how much memory you want. Physical installation is also very easy, and the manufacturer of the memory module can help you with all aspects of upgrading. However, as you have probably experienced in your life, the more you know about the item you are buying, the more confident you are in your purchase and the more likely you are to purchase the correct item.

What RAM Is And How It Differs From Hard Drive Memory.

Random Access Memory (RAM) are computer chips used by your Central Processing Unit (CPU) to store and retrieve the data required to accomplish various tasks. Your hard drive stores data on a circular disc similar to your floppy drive. The CPU processes instructions from the hard drive to RAM and manipulates data from there because RAM can supply data up to one hundred times faster than a hard drive.

Although RAM is the medium of choice for short term storage, hard drives are more advantageous for long term storage because the data doesn't disappear when your computer is turned off, hard drives can store up to 2 gigabytes and the cost per megabyte is much lower on the hard drive than for RAM. It's important to make this distinction between hard drive memory and RAM because they are both often referred to simply as memory.

Adding more RAM will allow you to work with larger files and open more applications concurrently. More memory may also make your machine run much faster. For instance, if you start with a limited amount of RAM, there may not be enough to completely load a given application, so the CPU will have to retrieve it from the hard disk and load it into memory. When done with this part, the CPU then swaps it back to the hard drive in exchange for something else. Since swapping data back and forth is very time consuming, having enough RAM to load the entire application in memory will dramatically speed up the process.

How Much RAM Do You Need?

After determining you could use more memory, you must determine how much you need and how much your wallet and computer are willing to oblige.

The minimum RAM needed to run most software today is about 32 megabytes (MB), which is the least amount most current computers have when shipped from the factory. If you're running a sophisticated operating system like Windows 95, System 7 or Window's NT, you will need additional memory because these alone are going to use at least 8 to 16 MB. Also, after you have loaded these programs and are ready to actually do something with your computer, you will want to have ample memory to get the job done.

- If you use standard applications like word processors, spreadsheets and communications packages, you can get by with 16 to 24 MB total memory.
- If you're a moderate "power user", you may want 24 to 64 MB total memory.
- If you're a graphic artist or multimedia enthusiast, you may be a candidate for 64+ MB total memory.

If you are a PC user, you can tell how much memory you currently have by watching your screen the next time you turn on your PC. If you are a Macintosh user, you can tell how much memory you currently have

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