

Do you need a new computer or do you need more memory installed?

Whenever someone asks me for a recommendation for a new computer, my first thought is do they want to upgrade because it's slow or is the machine truly ready for the metal recycler?

To understand when to buy and when to upgrade, we need to learn about how a computer works. The three main parts of any computer are the computer processing unit (the CPU or brain of the computer), with performance measured in clock speed or hertz; the hard disk drive or the C:\ drive with storage capabilities measured in kilobytes, megabytes or gigabytes; and the memory or RAM with performance measured in bytes, too.

These three major parts work together to perform any computer task or command. For example, when you double-click on the MS Word program this is what happens:

1. The MS Word program, which is stored on the hard disk drive in a folder called C:\Program Files\MS Office, is transferred to RAM memory. **The more RAM you have installed, the more applications you can open and use at the same time.**
2. The CPU loads the MS Word program data from RAM memory, assisted by the Chipset.
3. The MS Word program data, now inside the CPU, is processed. The program data includes built-in instructions that tell the computer what to do when you click on menu options like File|Save, for example. **The faster your processor, the faster the work gets done.**

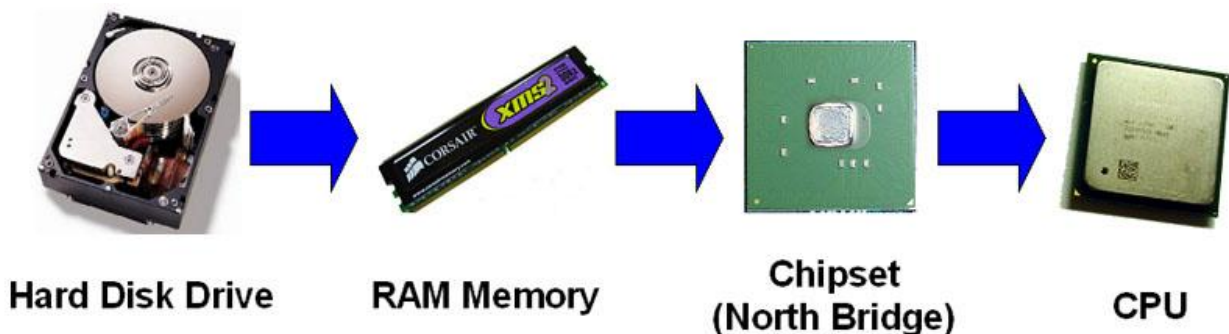
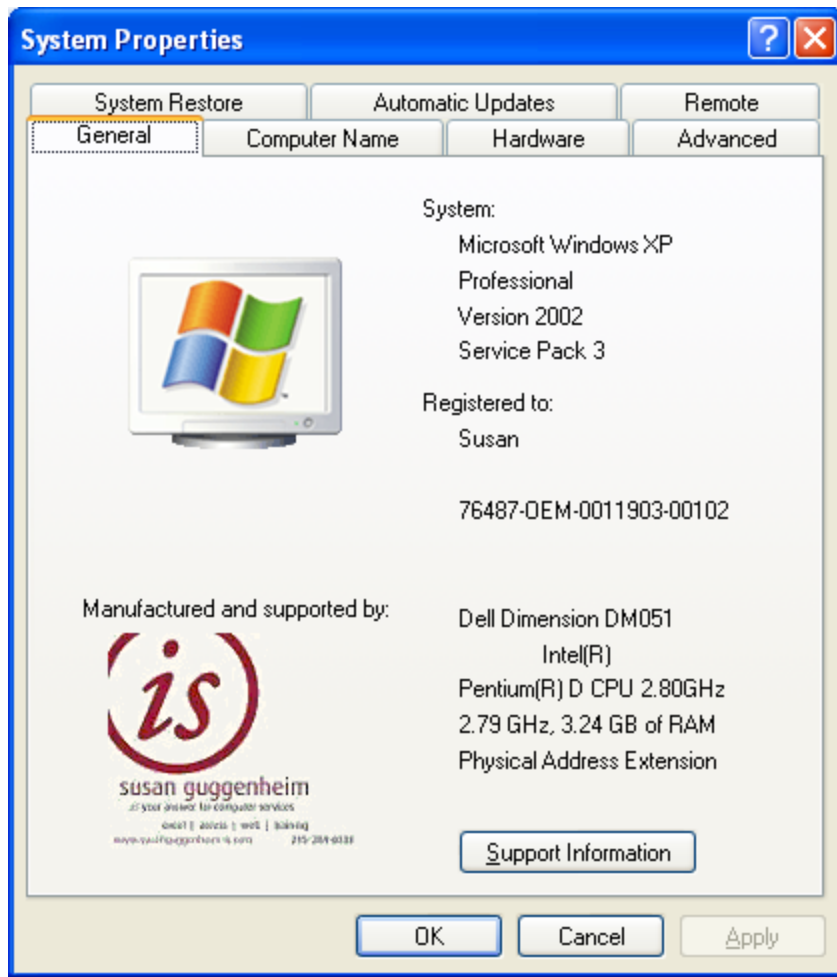


Figure 1: How stored data is transferred to the CPU. This information and graphic are adapted from this website: <http://www.hardwaresecrets.com/article/209>

Therefore, the speed of the CPU and the amount of installed memory are the two most critical factors of computer performance. To know whether to buy or upgrade, you need to know the speed of your processor and how much RAM is installed. You can find this out by holding down the Windows logo key (usually on either side of the Space bar) then tapping the Pause/Break key (usually above the numeric keypad). In XP, the window below will open (in Vista/Windows 7 it looks different but has the same information):



My processor speed is 2.80GHz, which means that my CPU is processing 2,800,000,000 cycles per second. Today, low end personal computers process at 1.8GHz and go up to a high end of 3.3 GHz. I don't think you want to upgrade your processor, it's too difficult a job, but if your computer is processing at less than 1.8 GHz, you would want to consider buying new.

Most new computers are installed with a minimum of RAM. Memory is can be upgraded easily, even laptops. My computer had 512MB RAM initially, but I increased it to the 3GB you see above. If you're buying a new computer, my advice is to buy the fastest processor you can afford, and then upgrade the memory within 6 months of your purchase. Memory is cheap, and installing it is easy. If your processor is at least 1.8GHz, then consider upgrading the memory by all means. The computer will have a few more years' life with the added RAM.

Susan Guggenheim delivers technical support, training and data services to NW Philadelphia. Visit her website, www.susanguggenheim-is.com or email her susan@susanguggenheim-is.com for information.