

Summaries of English texts

What Components are inside my computer?

Major components are:

- 1) the motherboard
- 2) The CPU (central processing unit)
- 3) Ram (random access memory)
- 4) The graphic card
- 5) The power supply
- 6) The hard disk or hard drive
- 7) The optical drive (cod or DVD drive)

The physical components of a pc are referred to as “hardware”.

Software refers to the programs and systems that operate within the hardware.

The motherboard is the largest and most important component of a pc. All the others components are attached to it because the components need the motherboard to communicate and work with each other. Memory, accessory cards and CPU are installed onto the motherboard. The drives and peripherals communicate with the motherboard through wired connections. Motherboards differ by speed, capacity and CPUs supported. They also differ by size, shape and layout, also called “form factor”.

The CPU, the brain of computers, also called processor or chip, sits directly on the motherboard, under a heat sink. Actually the CPU does mathematical calculations and the software translates those calculations into functions for us.

RAM is found directly on the motherboard, usually in one, two or for slots. Ram is used to store information for files that are used by the CPU. Ram differs of hard disk memory because the latter stores information for permanently.

Graphic card translate information into graphics and texts that appear on the monitor. AGP (advance graphics port) is the graphics adapter include on the motherboard. Modern graphics adapters usually incorporate some memory on the card to improve their performance.

The power supply is usually positioned at the back top corner of the computer case. The power supply has a fan built into it to keep itself and the computer cool. It supplies power to all the others components.

Hard disk stores programs and data. When the information is needed, the computer reads and moves the information into RAM memory. But the original file is still on the hard disk. When the computer stores or saves information, it writes the data to the disk, so the old file being replaced or modified. When you save a new file, the information is written in an empty place of the disk.

The optical drive sits of the front of the computer case. It uses a laser to read and write information to CD or DVD.

Voc:

Within : à l'intérieur

Trough : à travers

Wired : câblé

Shape : la forme

layout : la disposition

heat sink : radiateur

the latter : ce dernier

fan : ventilateur

to sit : se trouver, se situer

Green computing

Green computing is now used as a marketing tool and it is a way to slash electricity bills. Data centres have become huge consumers of electricity. For example, for every KW (kilowatt) of power it uses to drive a server, another KW is needed to cool it and it costs each year more expensive. Virtualisation is a trick for making one computer the work of many others. This can reduce the consumption of electricity. Virtual machines can coexist in separate partitions on a single server and they can run their own operating system and software applications on other servers. Consolidating the useful applications onto fewer and fewer machines can reduce a firm's electricity bill significantly.

Voc:

To slash : écraser les prix (dans ce contexte)

Huge consumers : grands/gros consommateurs

Trick : astuce

Own : qui lui est propre, la sienne

Consolidating : centraliser (dans ce contexte)

Phishing scams

Phishing is a scam that hand important information about you to an ill-intentioned person.

We can buy and sell things on internet with our accounts, most of the time well-protected...I hope. But some persons can impersonate organisations like your bank and ask you sensitive information.

Just be aware to this kind of mails/messages. There often have a link to click to. The reason of these kinds of mails is often that your account has been compromised...do NOT click links in these mails, try to contact your bank before.

Another trick to avoid this scam is to have a look for misspellings. Moreover, they do not know your name and the often call you like "Valued Customer".

Do not panic when you receive an email like this, just delete it or report it.

Contact organizations where you have your account if you have been the victim of phishing. It also exist anti-phishing software to prevent you from this scam that are a growing threat on the Internet.

Voc:

Hand : donner (dans le contexte)

Ill-intentioned : malintentionné

Impersonate : se faire passer pour

Avoid : éviter

Misspellings : faute d'orthographe

Moreover : de plus

Growing threat : menace grandissante

Virtual PC

It enables you to create separate virtual machines on your windows desktop, each running its own operating system while using the hardware of your physical PC. Applications can be installed and run in a virtual machine as if they were running on the physical PC. Because of this, it is possible to run your custom applications on different operating systems (OS) to take benefits of the one you want.

Suppose your legacy or custom applications are not compatible with an OS...you can run your application thanks to a virtual machine where an OS which support your application is installed. You can test what you want, as you do to your personal machine except that nothing can happen to your pc.

The installation is simple. It supports numerous features like folder sharing, networking options and many others and works as well on Intel as on AMD hardware Virtualization technology.

Voc:

Enables: permettre

Legacy: ancient/préexistant

Thanks to: grace à

How ram works

RAM allows the stored data to be accessed in any order (i.e., at random). The word random thus refers to the fact that any piece of data can be returned in a constant time, regardless of its physical location and whether or not it is related to the previous piece of data. RAM is often associated with types of memory that is volatile, i.e., when the information is lost after the power is switch off. There several types of RAM like DRAM or SRAM.

DRAM: It is easy to manufacture and is not expensive. It is called “dynamic” because it can only hold data for a short period of time and must be refreshed periodically.

A typical DRAM chip stores each bit values in a memory cell consisting of a capacitor, which is capable of storing a charge of electrons, where a 1 is synonym of a charge and a 0 synonym of a lack of charge, and a transistor that controls the flow of the electrons from one location to another. Electrons can flow when a voltage is applied while turning the voltage off prevents the electrons from flowing.

A typical DRAM chip today contains millions of cells organized into a rectangular array of rows (called as word line) and columns (called as bit line).the location of a cell is defined by the intersection of both. To write a value to a cell, a high or low voltage on the input (data) line charges or discharges the capacitor and records a 1 or 0 in memory. To read the bit's value, the selection and the data line are activated. If the capacitor is charged, this is a 1, when it is uncharged, it is a 0

The problem of capacitors to read data is that after reading, the date is destroyed. Therefore, the capacitor must be immediately refreshed

SRAM:

The bits are stored in SRAM thanks to an arrangement of transistors and resistors forming a small electronic switch that can be toggled on and off and that holds its state as long as power is applied. It is called “flip-flop”. It is also much faster but it is more expensive to due to the complexity of an SRAM cells.

Voc:

Regardless : sans tenir compte de

Manufacture : fabriquer

To flow : circuler

A lack of : un manque de

While : tandis que (dans le contexte)

Therefore : donc

Toggle on/off : allumer/éteindre (dans le contexte)

An introduction to personal computers

The computer case contains the main components of a computer system. The power supply changes the AC into DC. Ports are connectors at the back of the computer which is also known as external devices

The CPU is the main chip in a computer and it is plugged to the motherboard which is the main circuit board of a computer. If you want to add new features, you may plug expansion cards like sound card or graphics card. But actually, most of motherboards already include this kind of cards. Maybe you want to increase the power of your computer system, this can be easily done by replacing the processor. It is called upgrading your system.

(Notebooks have the same features than a desktop system, except for the cables of course. But as it takes fewer place, the price grows up.)

The CPU reads instructions and data from memory, processes the data according to the instructions, and writes the results back into memory. Together, the CPU and main memory make up the core of your machine and the graphics cards or Hard disks as known as peripherals. The CPU communicates with input, output and storage devices. Input devices let the user communicate with the computer. Output devices let the computer communicate with you. Storage devices hold information that is to be used by the processor.

The system's main memory is called random access memory or RAM. Random access means that it can access any storage cell independent of its physical location, and the access time is always the same.

ROM (read-only memory) is another type of memory that can only be read from, but it is also random access.

The information stored in RAM is lost when the computer is turned off, whereas ROM doesn't need any power to maintain its data. That is why BIOS contained ROM.

CPU and main memory are connected by a fast system bus called the frontside bus. It is made up of three electrical lines: the address bus, the data bus and the control bus. The address bus is used to specify the address of the memory location. Data and instructions travel to and from memory over the data bus. Various signals controlling the exchange of information between the microprocessor and memory travel over the control bus. And all of these functions are controlled by the system chipset.

The chipset is an integral part of the motherboard and it can not be replaced by another unlike the CPU. The chipset managing data transfers between the various parts of the system. The chipset's capabilities determine what kind of memory your system can use and other features of your system.

Chipsets is split into two physical chips: the Northbridge and the Southbridge. The Northbridge takes care of data transfers between the CPU and memory over the system bus. The Southbridge handles all the input and output capabilities of the system.

As the speed of CPUs as increase, we needed faster rates to supply data, which is the role of cache memory. Caching is the art of predicting what data will be requested next by the microprocessor and having that data already in hand, thus speeding execution. It is a very fast and expensive memory.

The cache is programmed (in hardware) to hold a copy of the contents of recently accessed memory locations. The next time the processor wants to use the same instruction or data, it will check the cache first, see that what it needs is there, and load it from the cache instead of going to the slower system RAM.

Voc:

Also: également/aussi

To plug : brancher

To grow up : augmenter

Whereas : tandis que

Unlike : contrairement

To split : diviser

Hard driving

A brief history :

History of hard disks begins in 1956 with an IBM one. Years later, the Winchester drive was introduced by IBM in 1973. It was the first drive which is based on most today's drive. The today's form factors were introduced by Rodime in 1988. In the early 90's IBM brought important advances in the way drives access data: first use of the magneto-resistive heads, a new way to decode data and replacing the magnetic oxide medium on the platter surface with a thin film medium. Seagate was the first to introduce a 10000rpm drive. Some manufacturers tried to have a faster drive but Seagate reclaims around 2000 the faster spin speed crown with its 15000rpm drive.

The SATA is now, since 2003, the most widespread interface that drives use.

For the recording technology, the first commercial perpendicular recording drive appears in 2005.

How do they work:

Hard drives are used to storage and accessing data. To storage data, on a disk, the magnetic polarity change like a bar magnet : It can go in two directions (north or south). It is the same except that the direction of magnetisation is indicated in binary (so 1 or 0 instead of north or south). Each platter has a head moving over its upper surface. All the heads are moved by the same actuator. They are extremely close to the surface of the disk but they do not touch each other except when the drive is switched off.

To read or write data, the controller waits until the appropriate sector passes

underneath the disk head. Because of their components, the electrical resistance of heads changes depending on magnetic fields near them, so, as the disk moves underneath the head, the resistance reflects the pattern of 0s and 1s stored. When data is written to the disk, a current is applied to the heads, which creates a magnetic field that aligns the polarity of the part of the disk's surface below the head.

Data is stored in sectors (which contains a fixed number of bytes, usually 512 or 256, and are grouped together) and tracks.

IDE and ATA :

When you access the data on your hard drive, the information comes via the IDE. It is like the brain of the drive.

IDE and ATA means the same things and they are better known now as Sata.

Sata and SCSI :

In 2003, the first Sata drive had a maximum transfer rate of 150MB/sec, soon raised to 300MB/sec.

Sata cable uses connectors with only 4 pins instead of 80. It allows thinner cables.

Additionally, Sata's lower voltages mean that cables can be longer too. The other advantage of the Sata architecture is that it is point-to-point, thus doing away with the old master/slave configuration of ATA drives.

Serial attached SCSI (SAS):

It is the latest generation interface for server environment and it can support SAS and Sata drives. It operates at the same speed than Sata (300MB/sec).

The future of hard disk:

One of the innovation engineers approve is thermally assisted recording which uses a laser to heat up the recording media while the head is writing the data. It allows a higher density of storage. It can be possible too to using patterned media to increase the storage. It is the magnetic layer that is created as an ordered array of highly uniform islands, each island capable of

storing an individual bit. One thing is sure:
hard drives are still here for a long time.

Voc:

Form factor: taille

To reclaim: réclamer

A bar magnet : une barre aimantée

Head actuator : mécanisme de déplacement
des têtes

Underneath: sous

Bellow : au dessous

A pin: une broche

Thinner: plus fin

Point to point : liaison point à point (une
liaison entre deux hôtes)

Thus: ainsi

To heat up: chauffer

A layer: une couche

Enjoy! :D