NETWORKING & SYSTEM ADMINISTRATION LAB

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Aim

Identify the major components of a computer system such as motherboard,RAM modules,daughter cards,bus slots,SPMS,internal storage devices and interfacing ports.

Procedure

MOTHERBOARD

The motherboard is defined as a circuit board for the computer system, also called logic board or mainboard. In the computer system, the biggest component is the motherboard that controls all the components of the computer system and establishes a link between all components.

From the motherboard, different components like ROM, CPU, RAM, PCI slots, USB ports, and other components are connected.

The controller's device is also attached to the motherboard like DVD< hard drive, mouse, and keyboard. The computer system starts using the motherboard and these components act as the backbone for starting the system.

Each type of motherboard is designed to work with specific types of processors and memory, so they don't work with every processor and type of memory.

RAM MODULES

RAM (RANDOM ACCESS MEMORY) is a printed circuit board on which memory integrated circuits are mounted.

Types of memory module include:

- TransFlash Memory Module
- SIMM, a single in-line memory module , they can hold a group of memory chips.
- DIMM, dual in-line memory module

- Rambus memory modules are a subset of DIMMs, but are normally referred to as RIMMs
- SO-DIMM, small outline DIMM, a smaller version of the DIMM, used in laptops

Distinguishing characteristics of computer memory modules include voltage, capacity, speed (i.e., bit rate), and form factor. For economic reasons, the large (main) memories found in personal computers, workstations, and non-handheld game-consoles (such as PlayStation and Xbox) normally consist of dynamic RAM (DRAM). Other parts of the computer, such as cache memories normally use static RAM (SRAM). Small amounts of SRAM are sometimes used in the same package as DRAM. However, since SRAM has high leakage power and low density, die-stacked DRAM has recently been used for designing multi-megabyte sized processor caches.

DAUGHTERCARDS

A daughterboard is type of circuit board that plugs in or is attached to the motherboard or similar expansion card to extend its features and services. A daughterboard complements the existing functionality of a motherboard or an expansion card.

A daughterboard is also known as daughter card, piggyback board, riser card or mezzanine board.

Daughtercards are different from some other types of additional circuit boards that tech enthusiasts call "expansion cards." In expansion cards, the circuit board is often plugged in through a gap in the housing of a computer or device. These expansion boards help to give a device more functionality, often for additional sound play or for better visuals on a high-tech monitor or screen.

BUS SLOT

Alternatively known as a bus slot or expansion port, an expansion slot is a connection or port inside a computer on the motherboard or riser card. It provides an installation point for a hardware expansion card

to be connected. For example, if you wanted to install a new video card in the computer, you'd purchase a video expansion card and install that card into the compatible expansion slot.

Below is a listing of expansion slots commonly found in a computer and the devices associated with those

slots.

• AGP - Video card.

• AMR - Modem, sound card.

• CNR - Modem, network card, sound card.

• EISA - SCSI, network card, video card.

• ISA - Network card, sound card, video card.

• PCI - Network card, SCSI, sound card, video card.

• VESA - Video card.

SMPS

A switched-mode power supply (SMPS) is an electronic circuit that converts power using switching devices that are turned on and off at high frequencies, and storage components such as inductors or capacitors to supply power when the switching device is in its non-conduction state.

Switching power supplies have high efficiency and are widely used in a variety of electronic equipment, including computers and other sensitive equipment requiring stable and efficient power supply.

A switched-mode power supply is also known as a switch-mode power supply or switching-mode power supply.

INTERNAL STORAGE DEVICES

Some storage devices are classed as 'internal' which means they are inside the computer case.

Most computers have some form of internal storage. The most common type of internal storage is the hard disk.

At the most basic level, internal storage is needed to hold the operating system so that the computer is able to access the input and output devices.

It will also be used to store the applications software that you use and more than likely, the original copies of your data files.

Internal storage allows the data and applications to be loaded very rapidly into memory, ready for use. The data can be accessed much faster than data which is stored on an external storage device. This is because internal storage devices are connected directly to the motherboard and its data bus whereas external devices are connected through a hardware interface such as USB, which means they are considerably slower to access.

Internal storage also means that if the computer is moved around, it will still retain its most commonly used data.

The main disadvantage of internal storage is that when the hard disk fails (and it will), all the data and applications may be lost.

This can be avoided to some extent by using more than one hard disk within the machine. Each hard disk has a copy of all the data, so if one fails the other can carry on. This is called a RAID array. An alternative is to use external drives for backup.

INTERFACING PORTS

A port serves as an interface between the computer and other computers or peripheral devices. In computer terms, a port generally refers to the part of a computing device available for connection to peripherals such as input and output devices. Examples are:

- Serial port
- Parallel port
- USB port
- PS/2 port
- VGA port
- Modem port
- FireWire Port
- Ethernet port
- Sockets
- Infrared Port
- Game Port