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, SMPS, internal storage devices and interfacing ports.

Procedure

Motherboard

A motherboard provides connectivity between the hardware components of a computer, like the processor (CPU), memory (RAM), hard drive, and video card. There are multiple types of motherboards, designed to fit different types and sizes of computers.

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. However, hard drives are mostly universal and work with the majority of motherboards, regardless of the type or brand.

RAM Module

A memory module or RAM (random-access memory) stick is a printed circuit board on which memory integrated circuits are mounted. Memory modules permit easy installation and replacement in electronic systems, especially computers such as personal computers, workstations, and servers.

A memory module is another name for a RAM chip. It is often used as a general term used to describe SIMM, DIMM, and SO-DIMM memory. While there are several different types of memory modules available, they all serve the same purpose, which is to store temporary data while the computer is running.

Memory modules come in different sizes and have several different pin configurations. For example, the original SIMMs had 30 pins (which are metal contacts that connect to the motherboard). However, newer SIMM chips have 72 pins. DIMMs commonly come in 168-pin configurations, but some DIMMs have as

many as 240 pins. SO-DIMMs have a smaller form factor than standard DIMM chips, and come in 72-pin, 144-pin, and 200-pin configurations.

Daughter card

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.

Bus slots

An expansion slot is a socket on the motherboard that is used to insert an expansion card (or circuit board), which provides additional features to a computer such as video, sound, advanced graphics, Ethernet or memory.

The expansion card has an edge connector that fits precisely into the expansion slot as well as a row of contacts that is designed to establish an electrical connection between the motherboard and the electronics on the card, which are mostly integrated circuits. Depending on the form factor of the case and motherboard, a computer system generally can have anywhere from one to seven expansion slots. With a backplane system, up to 19 expansion cards can be installed.

SMPS

A switched-mode power supply is an electronic power supply that incorporates a switching regulator to convert electrical power efficiently. Like other power supplies, an SMPS transfers power from a DC or AC source to DC loads, such as a personal computer, while converting voltage and current characteristics.

Internal storage devices

Alternatively referred to as digital storage, storage, storage media, or storage medium, a storage device is any hardware capable of holding information either temporarily or permanently.

There are two types of storage devices used with computers: a primary storage device, such as RAM, and a secondary storage device, such as a hard drive. Secondary storage can be removable, internal, or external.

Interfacing ports

A port is basically a physical docking point which is basically used to connect the external devices to the computer, or we can say that a port act as an interface between the computer and the external devices, e.g., we can connect hard drives, printers to the computer with the help of ports. There are different types of ports available:

- Serial port
- Parallel port
- USB port
- PS/2 port
- VGA port
- Modem port
- FireWire Port
- Sockets
- Infrared Port
- Game Port
- Digital Video Interface (DVI) Port
- Ethernet Port