Unit-4
Laptop/Desktop BIOS installation

Introduction

What is BIOS ?

- BIOS (Basic Input/Output System) is the program a computer's microprocessor uses to start the computer system after it is powered on. The is a rom chip found on motherboard that lets you access and set up your computer system at the most basic level.

Importance of BIOS

- The BIOS includes instructions on how to load basic computer hardware and includes a test referred to as a POST (Power On Self-Test) that helps verify the computer meets requirements to boot up properly.
- A BIOS basically initializes hardware, potentially tests that hardware and then boots to an Operating System (OS) or an application.

4.1 BIOS Setting

- Bios is a firmware that controls the low-level functions of a computer.
- BIOS settings determine how the computer boots, including the order of boot devices and the power-on self-test (POST) procedure.
- BIos contain options to configure hardware components such as memory, hard drives, and other peripherals, as well as the system clock and system password protection.
- Accessing BIOS settings can be done during boot-up by pressing a specific key, typically "Delete," "F2," or "Esc," depending on the computer make and model.

4.1 BIOS Firmware

- There are two main types of firmware used in BIOS (Basic Input/Output System) in computers:
  - Legacy BIOS: This is the traditional and older type of BIOS firmware that was used in older computers and motherboards. It has limited capabilities and supports only MBR (Master Boot Record) disk partitioning scheme.
  - UEFI (Unified Extensible Firmware Interface): This is the newer type of firmware that has replaced Legacy BIOS in most modern computers. UEFI provides more advanced features, better security, and supports the GPT (GUID Partition Table) disk partitioning scheme. UEFI also enables faster boot times compared to Legacy BIOS.

4.1 Boot Configuration

- Boot configuration refers to the process of setting up the parameters and options for a computer system to start up and operate.
- The boot configuration information is stored in a specific area of the system's storage and is used every time the system starts up to determine how to boot the operating system.

4.2 Hard disc Partitioning

- Hard disk partitioning is the process of dividing a hard disk into multiple logical storage units, called partitions, which can be treated as separate disk drives.
- Hard disc partitioning allows for better organization of files, better use of disk space, and improved system stability.
- Partitioning also enables multiple operating systems to be installed on a single hard disk, with each operating system residing on its own partition.
- The process of partitioning a hard disk is usually performed during the installation of an operating system.

4.3 OS installation (Linux, windows

- Installing an operating system is the process of setting up the software that controls a computer's basic functions.
- It is an important step in setting up a new computer or in upgrading an existing one. There are two popular operating systems that can be installed on a computer:
  - Windows
  - Linux
  - MAC

4.3 installation of windows

- Windows is a proprietary operating system developed by Microsoft.
- It can be installed on a computer that meets the minimum hardware requirements, including a compatible.
- to install Windows, you need to have a valid license and a bootable installation media, such as a DVD or a USB drive, processor, enough RAM, and sufficient hard drive space.
- The installation process involves booting the computer from the installation media, partitioning the hard drive, and selecting the appropriate o
- During the installation process, you will also be asked to configure your network settings, create a user account, and activate your copy of Windows options for installation.
- After installation, it is important to keep your system up-to-date by installing the latest Windows updates and drivers.

4.3 Installation of Linux

- Linux is a free and open-source operating system that can be installed on a wide range of hardware platforms.
- There are many different distributions, or "distros," of Linux available, each with its own features and user interface.
- To install Linux, you need a bootable installation media, such as a DVD or a USB drive.
- The installation process involves booting the computer from the installation media, partitioning the hard drive, and selecting the appropriate options for installation.
- During the installation process, you will also be asked to configure your network settings and create a user account.
- Unlike Windows, Linux distributions do not require activation and can be installed on multiple computers with a single license.

4.3 Requirement based on user

- Both Windows and Linux installation require some level of technical knowledge, but the installation process for each operating system is well-documented and easy to follow with the right resources.
- The choice of operating system will depend on your specific needs, preferences, and the hardware you are using.

4.4 User Account Management

What is User Account Management ?

- User account management is the process of creating, maintaining, and securing user accounts in an operating system.
- During operating system installation, user account management plays a critical role in ensuring the security and stability of the system.

Importance of User Account Management ?

- Proper user account management can help prevent unauthorized access to the system and sensitive data.
- It can also ensure that each user has the necessary privileges and permissions to perform their job effectively.

Types of user account management

- Types of User Accounts
  - A. Local User Accounts
  - B. Domain User Accounts
  - C. Cloud User Accounts

Local User Accounts

- Local user accounts are created on the local system and only have access to that specific system.
- They are useful for personal or single-user systems, but are not recommended for enterprise or network environments.

Domain User Accounts

- Domain user accounts are created on a domain controller and are managed centrally.
- They provide centralized user management, security, and access control in a network environment.

Cloud User Accounts

- Cloud user accounts are created in a cloud computing environment and are managed by the cloud provider.
- They provide access to cloud services and resources, and are becoming increasingly popular for remote and mobile workers.

Account Creation during OS Installation

- Steps on Account Creation during OS Installation
  - Selecting the Operating System
  - User Information Gathering
  - Setting up User Privileges
  - Assigning Passwords
  - Account Verification

A. Selecting the Operating System

- The first step in creating user accounts during operating system installation is to select the appropriate operating system.
- This could be a desktop operating system such as Windows or macOS, or a server operating system such as Windows Server or Linux.

B. User Information Gathering

- The next step is to gather the necessary information for each user account to be created.
- This information typically includes the user's full name, username, password, and group membership.

C. Setting up User Privileges

- During account creation, it is important to set up the necessary privileges and permissions for each user.
- This could include administrative rights, access to specific applications or files, and restrictions on certain actions.

D. Assigning Passwords

- A secure password is critical for protecting the system and data, and should be assigned to each user account.
- A strong password policy should be in place to ensure that users choose secure and complex passwords.

E. Account Verification

- Once all the user accounts have been created, it is important to verify that they are working correctly.
- This includes testing the user's ability to log in, access resources, and perform the necessary tasks.

4.5 Printer and Scanner Installation

- Printer and scanner installation is the process of setting up and connecting these peripheral devices to a computer so they can be used to print documents, photos, and other types of output, or to scan images and documents into the computer.

Printer Installation:

- Gather information about the printer: Before installing the printer, make sure you have the manufacturer's name, model number, and any other relevant information about the printer.
- Connect the printer to the computer: Connect the printer to the computer using a USB cable, Ethernet cable, or a wireless connection.

Cont.

- **Install the printer software: Insert the printer software CD into the computer or download the software from the manufacturer's website. Follow the on-screen instructions to install the software and drivers**
- **Configure the printer settings: Set up the printer properties and preferences in the printer control panel or software.**
- **Test the printer: Print a test page to make sure the printer is working properly.**

Scanner Installation:

- Gather information about the scanner: Before installing the scanner, make sure you have the manufacturer's name, model number, and any other relevant information about the scanner.
- Connect the scanner to the computer: Connect the scanner to the computer using a USB cable.

Cont.

- **Install the scanner software: Insert the scanner software CD into the computer or download the software from the manufacturer's website. Follow the on-screen instructions to install the software and drivers.**
- **Configure the scanner settings: Set up the scanner properties and preferences in the scanner control panel or software.**
- **Test the scanner: Scan a test image to make sure the scanner is working properly.**

Things to remember

- It is important to follow the manufacturer's instructions carefully when installing printers and scanners to ensure they work correctly.
- If you encounter any issues during the installation process, refer to the manufacturer's support website or contact their customer service for assistance.

End of unit 4

Thank you!