

1- Server Installation

Q1. Define operating system.

Ans: An operating system is a crucial software that manages computer hardware and facilitates the execution of application software. It acts as an intermediary between users and the computer's resources, providing an efficient and user-friendly environment.

Q2. Define Server operating system.

Ans: A server operating system is a specialized software designed to operate and manage server computers, which are dedicated to providing services and resources to other computers or clients on a network. It offers robust features for stability, security, and scalability, optimizing server performance and ensuring reliable service delivery.

Q3. Write two differences between desktop operating system and Server Operating System

Ans: 1. User Interface: Desktop operating systems are designed with a graphical user interface (GUI) that allows direct interaction with the system, making them suitable for personal computing. Server operating systems typically lack a GUI and are managed remotely through command-line interfaces or web-based tools, prioritizing efficiency and resource utilization.

2. Hardware Resource Allocation: Desktop operating systems prioritize responsiveness and support a wide variety of hardware configurations to cater to individual user needs. Server operating systems are optimized for efficient resource allocation, focusing on handling multiple concurrent connections and server-specific tasks to ensure reliable service delivery.

Q4. Define BIOS

Ans: BIOS stands for "Basic Input/Output System"

Q5. What is the need of BIOS?

Ans: The BIOS is needed to initialize hardware, perform Power-On Self-Test (POST), and facilitate the boot process, enabling the computer to start and load the operating system.

Q6. Define UEFI

Ans: UEFI (Unified Extensible Firmware Interface) is a modern firmware standard that replaces the traditional BIOS, providing advanced capabilities for booting, hardware configuration, and improved security features in computer systems.

Q7. What is the need of UEFI?

Ans: The need for UEFI arises from its advanced capabilities compared to traditional BIOS, including support for larger storage devices, faster boot times, enhanced security features, and a more flexible user interface for system configuration.

Q8. Define Global Partitioning Table.

Ans: The Global Partitioning Table (GPT) is a modern disk partitioning scheme used on UEFI-based systems, providing support for larger disk capacities and more partitions compared to the older Master Boot Record (MBR) partitioning scheme. It also includes redundancy for improved data integrity.

Q9. What is Master Boot Record?

Ans: The Master Boot Record (MBR) is a legacy disk partitioning scheme used on BIOS-based systems. It contains the partition table and a small bootloader, enabling the computer to locate and load the operating system from the bootable partition on the disk.

Q10. When is the support for windows server 2012 ends?

Ans: The support for Windows Server 2012 ended on October 10, 2023. This means that Microsoft will no longer provide regular updates, security patches, or technical support for Windows Server 2012 after this date. It is recommended to upgrade to a newer and supported version of Windows Server to ensure continued security and reliability.

Q11. What is the file system supported by windows operating system

Ans:

1. NTFS (New Technology File System)
2. FAT32 (File Allocation Table 32)

Q12. What is the file system supported by Linux operating system

Ans: Linux supports ext4 (Fourth Extended File System)

Q13. What are the partitions created during the installation of Linux operating system?

Ans:

1. / (root)
2. boot
3. / home

Exercise

Q1. Write the steps to create a bootable installation media drive

Ans: To create a bootable installation media drive, you can follow these steps:

1. **Choose the Operating System:** Decide which operating system you want to install on the media drive (e.g., Windows, Linux distribution, macOS).
2. **Obtain the Installation Image:** Download the official installation image or ISO file of the chosen operating system from the official website or trusted sources.
3. **Insert the USB Drive:** Insert a USB flash drive with sufficient storage capacity (usually 8 GB or more) into an available USB port on your computer.
4. **Backup Data (Optional):** If there are any important files on the USB drive, make sure to back them up to another location, as the creation process will erase all data on the drive.
5. **Format the USB Drive:** Open "File Explorer" (Windows) or "Disk Utility" (macOS) and format the USB drive to the desired file system format (e.g., FAT32, exFAT, NTFS). Ensure that the format is compatible with the operating system and can be bootable.
6. **Download Bootable Media Creation Tool:** Some operating systems offer specific tools for creating bootable media. For example, "Rufus" for Windows or "Etcher" for macOS and Linux.
7. **Use a Bootable Media Creation Tool:** If you have downloaded a bootable media creation tool, open it and follow the on-screen instructions to select the downloaded ISO file and create the bootable media on the USB drive.
8. **Manual Method (Alternative):** If you prefer not to use a bootable media creation tool, you can manually make the USB drive bootable. Open a command prompt or terminal window and use a command-line utility like "dd" (on macOS and Linux) or "diskpart" (on Windows) to copy the ISO file to the USB drive. The specific commands may vary depending on your operating system and the utility used.
9. **Eject the USB Drive:** Once the bootable media creation process is complete, safely eject the USB drive from your computer.

Your bootable installation media drive is now ready for use. You can use it to install the chosen operating system on other computers by booting from the USB drive. Remember to configure the target computer's BIOS or UEFI settings to boot from the USB drive during the installation process.

Q2. Write the steps to install the windows server 2022 operating system.

Ans: Installing Windows Server 2022 involves the following steps:

1. **Prepare the Installation Media:** Obtain the Windows Server 2022 installation media. You can either download the ISO file from the Microsoft website or use a physical installation DVD.
2. **Insert the Installation Media:** Insert the installation media (DVD or USB drive) into the computer where you want to install Windows Server 2022.
3. **Boot from Installation Media:** Restart the computer and configure the BIOS or UEFI settings to boot from the installation media. You may need to press a specific key (e.g., F2, F12, Delete) during startup to access the boot menu.
4. **Language, Time, and Keyboard Settings:** On the initial Windows Setup screen, choose your desired language, time format, and keyboard input method. Click "Next."
5. **Install Now:** Click on the "Install Now" button to start the installation process.
6. **Enter Product Key:** Enter the product key for your Windows Server 2022 edition when prompted. Click "Next."
7. **Select Edition:** Choose the desired edition of Windows Server 2022 that you want to install (Standard or Datacenter). Click "Next."
8. **Accept License Terms:** Read and accept the license terms by checking the "I accept the license terms" box. Click "Next."
9. **Custom Installation: Select the "Custom: Install Windows only (advanced)" option.**
10. **Partitioning:** If the drive you are installing on has existing partitions, you can choose to format them or create new ones. Select the drive where you want to install Windows Server 2022 and click "Next." Windows will create necessary partitions automatically.
11. **Install Windows:** The installation process will begin, and Windows Server 2022 will be copied to the selected drive. The computer will restart several times during this process.
12. **Set Administrator Password:** After the installation is complete, the system will restart, and you'll be prompted to set the administrator password. Enter a strong password and click "Finish."
13. **Initial Configuration:** After login, you may be prompted to configure the initial settings, such as region, time zone, network settings, etc.
14. **Windows Update (Optional):** It's recommended to check for and install the latest Windows updates to ensure your system is up to date and secure.

Q3. Write the steps to install the cent operating system.

Ans: Installing the CentOS operating system involves the following steps:

- 1. Obtain CentOS Installation Media:** Download the CentOS ISO file from the official CentOS website or a trusted mirror site. Choose the appropriate version and architecture (e.g., CentOS 8 x86_64).
 - 2. Create Bootable Installation Media:** Use the CentOS ISO file to create a bootable USB drive or burn it to a DVD.
 - 4. Insert Installation Media:** Insert the bootable USB drive or DVD into the computer where you want to
 - 5. install CentOS.**
 - 4. Boot from Installation Media:** Restart the computer and configure the BIOS or UEFI settings to boot from the installation media. You may need to press a specific key (e.g., F2, F12, Delete) during startup to access the boot menu.
 - 5. Language and Installation Options:** On the initial CentOS installation screen, choose your desired language and click "Continue."
 - 6. Installation Summary:** In the Installation Summary screen, you can configure various installation options, such as Date & Time, Keyboard, Installation Destination (disk partitioning), Network & Hostname, Software Selection, and User Settings. Click on each section to make your desired configurations.
 - 7. Disk Partitioning:** In the "Installation Destination" section, you can choose the disk where you want to install CentOS. You can select the automatic partitioning option or manually configure partitions. Click "Done" when you are satisfied with your partition setup.
 - 8. Network Configuration:** In the "Network & Hostname" section, configure your network settings, including setting the hostname and enabling network connectivity.
 - 9. Software Selection:** In the "Software Selection" section, choose the type of environment you want to install (e.g., Server with GUI, Minimal Install, etc.) and select additional software packages if desired.
 - 10. Begin Installation:** After configuring all the settings, click the "Begin Installation" button to start the installation process.
 - 11. Set Root Password:** You will be prompted to set the root password. Choose a strong password and confirm it.
 - 12. Wait for Installation:** CentOS will be installed on your computer. The installation process may take some time depending on your hardware and the installation options you selected.
 - 13. Reboot:** Once the installation is complete, remove the installation media (USB/DVD) and click "Reboot" to restart the system.
 - 14. First Boot:** After the reboot, CentOS will start up, and you'll be presented with the login screen.
 - 15. Login and Post-Installation Configuration:** Log in with the root account and begin post-installation configuration, such as updating the system, configuring network settings, and installing additional software as needed.
- That's it! CentOS is now installed on your computer, and you can start using it for your specific purposes and applications.

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Q4. Write the steps to install the ubuntu operating system on virtual Machine.

Ans:

- 1. Download Ubuntu ISO:** Obtain the Ubuntu ISO file from the official website.
- 2. Create a Virtual Machine:** Open your preferred virtualization software (e.g., VirtualBox, VMware), create a new virtual machine, and configure its settings (RAM, CPU, storage).
- 3. Attach ISO to VM:** Mount the Ubuntu ISO file to the virtual machine's CD/DVD drive.
- 4. Start VM:** Start the virtual machine, and it will boot from the Ubuntu ISO.
- 5. Install Ubuntu:** Follow the on-screen prompts to choose language, keyboard layout, and installation type.
- 6. Allocate Disk Space:** Choose the installation destination and allocate disk space for Ubuntu.
- 7. Create User Account:** Set up the user account, including username and password.
- 8. Begin Installation:** Click "Install Now" to start the installation process.
- 9. Time zone and Updates:** Select your time zone and choose whether to install updates during the installation.
- 10. Wait for Installation:** The installation will proceed, and Ubuntu will be installed on the virtual machine.
- 11. Restart VM:** Once the installation is complete, restart the virtual machine.
- 12. Login:** Log in with the user account created during installation.
- 13. Install Guest Additions (Optional):** For enhanced VM performance, install guest additions (available in VirtualBox or VMware).
- 14. Ubuntu on VM:** You now have Ubuntu installed and running on the virtual machine. Enjoy using Ubuntu within the virtual environment!

Q5. Write the steps to create root, boot swap and home partitions in ubuntu operating system.

Ans:

- 1. **Boot into Ubuntu Installer**:** Boot your computer from the Ubuntu installation media (USB/DVD).
- 2. **Choose Language and Installation Type**:** Select your preferred language and choose "Something Else" as the installation type.
- 3. **Partitioning**:** In the partitioning screen, select the target drive and click "New Partition Table" to create a new partition table (if needed).
- 4. **Root Partition (/)**:** Create a new partition with mount point "/" and set the desired size (recommended at least 20GB).
- 5. **Swap Partition**:** Create another partition with "swap area" as the file system type and allocate the size based on your RAM (e.g., if you have 8GB RAM, a 8GB swap partition is sufficient).
- 6. **Boot Partition (optional)**:** For legacy BIOS systems, you can create a small partition (e.g., 500MB) with "ext4" file system and set the mount point as "/boot".
- 7. **Home Partition (/home) (optional)**:** For easier system upgrades and data separation, create a partition with "ext4" file system and mount point "/home". Allocate the remaining space on the disk to this partition.
- 8. **Device for Boot Loader**:** Choose the device where the boot loader will be installed (usually "/dev/sda" for the primary drive).
- 9. **Complete Installation**:** Proceed with the installation, follow the on-screen instructions, and set up your user account.
- 10. **Finish Installation**:** After the installation is complete, restart the system and enjoy your Ubuntu setup with root, boot, swap, and home partitions.

Q6. Write the steps to three drives during the installation of windows operating system

Steps:-

1. Begin Windows installation.
2. Choose "Custom" installation option.
3. Select target disk for installation.
4. Click "New" to create first drive.
5. Set size and allocate space.

6. Repeat steps 4 and 5 for second drive.
7. Repeat steps 4 and 5 for third drive.
8. Format each drive if needed.
9. Select a drive to install Windows.
10. Complete installation process.
11. Windows installs with three drives.