Module 12: Installation, Storage, and Compute with Windows Server

1. What two options are provided in the type of installation window during Windows Server installation?
   - Upgrade
   - Custom

2. Write the step How to configure server step by step?
   - Power on server -> install windows server
   - After installation setup initial configuration like admin name nd password - after that login with password
   - After that assign static IP address setup security, firewall and update
   - Add role and features
   - Create users , groups and set permissions

3. What are the Pre installation tasks?
   - Firstly download iso file (windows, Linux , server)
   - Creat bootable USB or DVD
   - Backup your all data from all partitions

4. What are the Post installation tasks?
   - System update
   - Install drivers (if required)
   - Update drivers
   - Setup security settings
   - operating system, application, or software to ensure that the system is fully operational, secure, and configured according to your needs

5. What is the standard upgrade path for Windows Server?
   - Download iso file
   - Run the setup
   - Follow the on screen instructions
   - Allow to upgrade process
     after many times reboot the system you have successfully upgrade server

6. What is the Physical structure of AD?
   - Domain Controllers : These are servers that hold a copy of the Active Directory database and manage network resources They stored and verify user logins, enforce policies.
   - Domain: This is a logical grouping of network objects (such as computers, users, and printers) that share a common directory database.
   - Organizational Units (OU): These are containers within domains that can hold users, groups, computers, and other OU.
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7. What is the Logical components of Active Directory?
   - Domain
   - Forest
   - Organization units
   - Group policy object

8. What is the Full form Of LDAP?
   - Lightweight directory access protocol

9. What is the location of the AD database?
   - C: / windows / NTDS

10. What is child DC?
    - Child is last domain of company. This DC is under the parent DC.

11. Explain the term forest in AD.

In Active Directory (AD), a "forest" is the highest level of organization that encompasses one or more domains.

1. **Multiple Domains**: A forest can contain multiple domains, which may have different namespace structures but share a common schema and configuration.
2. **Schema**: The forest defines a common schema, which is a blueprint for the types of objects (like users, computers, and groups) and their attributes within the AD.
3. **Global Catalog**: The forest includes a global catalog that allows users to search for objects across all domains in the forest efficiently.
4. **Trust Relationships**: Domains within the same forest automatically trust each other, enabling resource sharing and unified management.

12. What is Active Directory? Check all that apply.
● An open-source directory server
● **A Windows-only implementation of a directory server**
● **Microsoft's implementation of a directory server**
● **An LDAP-compatible directory server**

13. When you create an Active Directory domain, what's the name of the default user account?
● Superuser
● Root
● Username
● **Administrator**

14. AD domain provides which of the following advantages? Check all that apply.
● **Centralized authentication**
● **More detailed logging**
● **Centralized management with GPOs**
● Better performance

15. What are the minimum hardware requirements for installing Windows Server ?
   - Processor
   - RAM - upto 4 gb

- Disk space - upto 50gb
- Network ethernet adapter
- Firmware

16. Explain the different editions of Windows Server and their features.

-1)Windows Server Essentials:

- Designed for small businesses (up to 25 users).Simplified management and administration.

- Limited features compared to other editions, but includes basic functionalities like file sharing, remote access, and backup.

-2) Windows Server Standard:

- Suitable for physical or minimally virtualized environments.

- Includes core features like Active Directory, file and storage services, and virtualization rights for two virtual machines.

- Ideal for small to medium-sized businesses with more extensive needs.

- 3) Windows Server Datacenter:

- Offers unlimited virtualization rights, making it suitable for large organizations.

- Includes all features of Standard edition, plus advanced features like Software Defined Networking (SDN) and Storage Spaces Direct.

-4) windows server foundation.

- this server used for basic feature print services and application support.

- this addition design for small business. And that required only basic server features.

17. Walk through the steps of installing Windows Server using GUI mode.
   - **Preparation:**
   ● Ensure your hardware meets the system requirements for Windows Server.
   ● Obtain the Windows Server installation media (USB/DVD or ISO file).

   Boot from Installation Media:

   ● Insert the installation media and reboot the server.
   ● Access the boot menu and select the installation media.

   Select Language and Preferences:

- On the "Windows Setup" screen, choose your language, time format, and keyboard layout.
- Click "Next."

Start Installation:

- Click on "Install Now."

Product Key:

- Enter your product key when prompted or select "I don't have a product key" to continue with an evaluation version.

Select Installation Type:

- Choose the installation type:
  - "Upgrade" (if upgrading from a previous version) or
  - "Custom: Install Windows only (advanced)" for a clean installation.

Select Partition:

- Choose the partition where you want to install Windows Server. You can format or create partitions as necessary.
- Click "Next."

Installation Process:

- The setup will start copying files and installing Windows. This process may take some time.

Restart:

- The server will automatically restart multiple times during the installation.

Configure Settings:

- After the installation completes, you'll be prompted to set the Administrator password.

Finish Setup:

- Once you set the password, the server will log in to the desktop interface. You can now proceed to configure your server roles and features.

16. Describe the steps for installing Windows Server in Server Core mode.
    - **Preparation:**
    - Ensure hardware meets the requirements and obtain the installation media.

    Boot from Installation Media:

- Insert the installation media and reboot the server.
- Access the boot menu and select the installation media.

Select Language and Preferences:

- On the "Windows Setup" screen, choose your language, time format, and keyboard layout.
- Click "Next."

Start Installation:

- Click "Install Now."

Product Key:

- Enter your product key or select "I don't have a product key" to continue.

Select Installation Type:

- Choose "Custom: Install Windows only (advanced)."

Select Partition:

- Choose the partition for installation and format/create partitions as needed.
- Click "Next."

Installation Process:

- The installation will copy files and install Windows. This may take some time.

Restart:

- The server will restart automatically during the installation process.

Initial Configuration:

- After the installation completes, you'll be prompted to set a password for the Administrator account.

Log In:

- Log in with the Administrator account.

Post-Installation Configuration:

- Configure network settings using `sconfig`, which is the Server Configuration tool.
- You can set the server name, join a domain, configure Windows Update, and more.

Manage the Server:

- Use PowerShell or Remote Server Administration Tools (RSAT) to manage roles and features on your Server Core installation.

17. How do you configure network settings during Windows Server installation?
    - **Boot from Installation Media:**
    - Insert your Windows Server installation media (DVD/USB) and boot the server from it.

Choose Language and Preferences:

- On the initial setup screen, select your preferred language, time, and keyboard layout, then click "Next."

Install Now:

- Click on "Install Now" to begin the installation process.

Accept License Terms:

- Read and accept the license terms, then click "Next."

Select Installation Type:

- Choose either "Custom: Install Windows only (advanced)" for a new installation or "Upgrade" if you're upgrading from a previous version.

Partition Disk:

- If necessary, create or select a partition for installation, then click "Next."

Network Settings:

- After the files are copied and the installation progresses, you will reach the "Server Manager" configuration screen.
- Here, you might see a prompt to set up the server. Select "Set network settings" or "Configure network."

Configure Network:

- **IP Address Configuration:**
    - You can choose to use DHCP (automatic IP assignment) or set a static IP.
    - If choosing static, enter the IP address, subnet mask, default gateway, and DNS servers.
- **Network Name:**
    - Specify the name for the network connection (optional).

Complete Installation:

- Continue with the installation process. Once the installation is complete, the server will reboot.

Final Configuration:

- After rebooting, you can log in and further configure network settings through the Server Manager or Control Panel as needed.

18. Explain the process of promoting a Windows Server to a domain controller.
    - **After installing AD DS, a notification will appear in Server Manager. Click on it and select Promote this server to a domain controller**.
    Deployment Configuration:

- Choose whether to add a domain controller to an existing domain, create a new domain in an existing forest, or create a new forest.

Domain Information:

- If creating a new forest, provide a **Root domain name** (e.g., `example.local`).

Domain Controller Options:

- Choose the functional level for the domain and forest (e.g., Windows Server 2016 or 2019).
- Specify whether the Domain Name System (DNS) server will be installed, and choose whether to install the Global Catalog.
- Set a **Directory Services Restore Mode (DSRM)** password.

Additional Options:

- Review the DNS options and choose whether to add the server to an existing DNS zone or create a new one.

Paths:

- Specify the paths for the AD DS database, log files, and SYSVOL folder.

Review Options:

- Review your selections and click **Next**. The server will perform a prerequisites check.

Install:

- If all checks pass, click **Install**. The server will automatically restart once the promotion is complete.

19. Discuss the steps involved in upgrading from a previous version of Windows Server to Windows Server 2016.
Check Compatibility:

- Ensure that your current version of Windows Server is compatible for direct upgrade (e.g., from Windows Server 2012 R2 or Windows Server 2016).

- Check hardware requirements and ensure your applications and drivers are compatible with Windows Server 2019.

Backup:

- Take a full backup of your server, including system state, applications, and data.

Download Windows Server 2019:

- Obtain the Windows Server 2019 installation media (ISO) from the Microsoft Volume Licensing Service Center or another authorized source.

Run the Setup:

- Insert the installation media and run `setup.exe`.
- You can also run it from the command line by navigating to the media.

Choose Upgrade Option:

- Select **Upgrade** when prompted. You'll see an option to keep personal files and apps; ensure that this option is selected if you want to retain your settings and installed applications.

Review Settings and Compatibility:

- Windows will perform a compatibility check. If there are issues, resolve them before proceeding.

Installation Options:

- Review and confirm your installation choices, including any prompts about updating your applications or settings.

Start the Upgrade:

- Click **Install** to begin the upgrade process. The server will restart multiple times during this process.

Post-Upgrade Configuration:

- Once the upgrade is complete, log in and check for updates.
- Verify the functionality of applications and services.
- Review any new features and settings in Windows Server 2016.

20. What is Active Directory Domain Services (AD DS), and what are its key Components?
   - Active Directory Domain Services (AD DS) is a core component of Microsoft Windows Server that provides a variety of directory services for network

management, authentication, and resource management. It is a critical service for enterprises that rely on a centralized system for managing users, computers, and other resources within a network.

Key Components of AD DS

1. **Domain**
2. **Domain Controller (DC)**
3. **Forest**
4. **Tree**
5. **Organization Units (OUs):**

21. How do you create a new Active Directory user account in Windows Server ?
   - **Add role of ADDC**
   - **Open Active Directory Users and Computers:**
   - **Navigate to the Appropriate Organizational Unit (OU):**
   - **Create the New User:**
   ● Right-click on the OU (or the domain) where you want to create the user.
   ● Select **New** from the context menu, then click on **User**.

Enter User Information:

   ● In the **New Object – User** dialog box, fill in the required fields:
      ○ **First name**
      ○ **Last name**
      ○ **Full name**
      ○ **User logon name**

Click Next
Set Password
Click Next
Review and Create
Review the user information you've entered. If everything looks correct, click **Finish** to create the account.
Verify the User Account
The new user account should now appear in the selected OU.

22. Explain the process of creating and managing Group Policy Objects (GPOs) in Windows Server 2016 or 2019.
   - **Creating a GPO**
1. **Open Group Policy Management:**
      ○ Log in to a Windows Server with administrative privileges.
      ○ Open **Server Manager**.
      ○ Click on **Tools** and select **Group Policy Management** from the dropdown.
2. **Navigate to the Desired Location:**

- ○ In the **Group Policy Management Console (GPMC)**, expand the forest and domain to find the location where you want to create the GPO (usually at the domain level or within an Organization Unit).
3. **Create a New GPO:**
    - ○ Right-click on the target OU or domain, then select **Create a GPO in this domain, and Link it here**.
    - ○ Give your new GPO a descriptive name and click **OK**.
4. **Edit the GPO:**
    - ○ Right-click on the newly created GPO and select **Edit**.
    - ○ This opens the **Group Policy Management Editor**, where you can configure various settings:
        - ■ **Computer Configuration**: Settings applied to computers.
        - ■ **User Configuration**: Settings applied to users.
    - ○ Navigate through the categories to set policies as needed (e.g., Security Settings, Software Installation, etc.).
5. **Close the Editor:**
    - ○ After configuring the desired settings, close the editor to save changes automatically.

Managing GPOs

1. **Linking GPOs:**
    - ○ GPOs can be linked to sites, domains, or OUs. To link an existing GPO, right-click the target site/domain/OU and select **Link an Existing GPO**. Choose the GPO from the list and click **OK**.
2. **Enforcing a GPO:**
    - ○ If you want to ensure a GPO takes precedence over others, right-click the GPO link and select **Enforce**. This means its settings will apply even if other conflicting GPOs exist.
3. **Blocking Inheritance:**
    - ○ You can prevent a GPO from applying to a specific OU by blocking inheritance. Right-click the OU, select **Block Inheritance**. Note that this can affect GPOs linked at higher levels.
4. **Filtering GPOs:**
    - ○ Use **Security Filtering** to apply a GPO to specific users or groups. In the GPO's properties, under the **Scope** tab, you can remove **Authenticated Users** and add specific groups.

23. What are Organizational Units (OUs) in Active Directory, and how do you use Them?
    - **Organizational Units (OUs)** are containers in Active Directory that help organize users, groups, computers, and other resources within a domain. They are essential for effective management and delegation of administrative tasks.
    - **Creating OUs**:
        - Use the Active Directory Users and Computers (ADUC) console to create OUs.

- Right-click on the domain or an existing OU, select "New," then "Organizational Unit."
- **Organizing Objects**:
    - Move existing objects (like users and computers) into OUs by dragging and dropping them in the ADUC console or using the "Move" option.
- **Delegating Control**:
    - Right-click the OU, select "Delegate Control," and follow the wizard to specify which users or groups should have administrative permissions and what actions they can perform.
- **Linking Group Policies**:
    - In the Group Policy Management Console (GPMC), right-click the OU and choose "Create a GPO in this domain, and Link it here" to apply specific policies.
- **Nested OUs**:
    - For large organizations, create nested OUs to further refine management. For example, you might have an OU for each department, with nested OUs for different teams.
- **Managing Permissions**:
    - Adjust permissions on the OU level to control access and management capabilities for users and groups without affecting the entire domain.

24. Describe the process of delegating administrative privileges in Active Directory.
    - **Open Active Directory Users and Computers (ADUC)**:
    - Access ADUC by opening the "Run" dialog (Windows + R), typing `dsa.msc`, and hitting Enter. You may need administrative credentials to do this.

Identify the Organizational Unit (OU):

- Locate the OU where you want to delegate control. This is crucial since delegation applies to the objects contained within the specific OU.

Right-Click the OU:

- Right-click on the OU and select **"Delegate Control"** from the context menu. This will start the Delegation of Control Wizard.

Start the Delegation of Control Wizard:

- Click **Next** on the welcome screen of the wizard.

Select Users or Groups:

- Click **Add** to select the users or groups you want to delegate control to. You can search for existing users/groups or create new ones.
- After adding, click **Next**.

Choose Tasks to Delegate:

- You will see a list of common tasks that you can delegate (e.g., resetting passwords, creating/deleting user accounts, managing group memberships).
- Select the tasks you want to delegate or choose **"Create a custom task to delegate"** for more granular control.
- If you choose the custom option, click **Next**, then specify whether to delegate control over the entire OU or only specific objects. Select the specific permissions you want to grant (like Read, Write, Create, Delete, etc.).

Review and Confirm:

- Review the settings and permissions you've selected. Ensure everything is correct.
- Click **Finish** to complete the delegation.

Verify the Delegation:

- After completing the wizard, it's good practice to verify that the delegation has been applied correctly. You can do this by checking the **Security** tab of the OU's properties and ensuring the delegated user or group appears with the appropriate permissions.