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

1] What two options are provided in the type of installation window during Windows Server 2016 installation?

The two options in the type of installation window during Windows Server 2016 installation are:

1. Windows Server 2016 Standard/Data center with Desktop Experience (GUI-based).
2. Windows Server 2016 Standard/Data center (Server Core, command-line based).

2] Write the step How to configure server step by step?

* Install Windows Server: Complete the installation process and log in.
* Set Static IP Address: Open Network Settings and configure a static IP.
* Rename Server: Go to System Properties and rename the server.
* Update Server: Install the latest updates via Windows Update.
* Install Roles and Features: Use Server Manager to add roles like Active Directory, DNS, etc.
* Promote to Domain Controller: Configure Active Directory via AD DS.
* Configure Firewall and Security: Set up security policies and firewalls.
* Set Up User Accounts: Add users and groups in Active Directory.
* Test and Verify: Ensure all services are running correctly.
* Backup Configuration: Set up a backup plan for recovery.

3] What are the Pre installation tasks?

* Hardware Compatibility: Verify the hardware meets system requirements.
* Backup Data: Save important data to avoid loss.
* Plan Server Roles: Decide roles like AD, DNS, or File Server.
* Select Server Edition: Choose the appropriate Windows Server version.
* Check Network Settings: Ensure proper IP configuration.
* Create Bootable Media: Prepare installation media (USB/DVD).
* Ensure Power and Connectivity: Use a reliable power source and stable network.
* Gather Credentials: Have admin credentials and license keys ready.
* Document Configuration: Plan and note the desired configuration.

4] What are the Post installation tasks?

* Install Updates: Update the server using Windows Update.
* Set a Static IP Address: Configure a fixed IP for stability.
* Rename the Server: Assign a meaningful name for identification.
* Join a Domain (if applicable): Add the server to an existing domain.
* Configure Server Roles and Features: Use Server Manager to set up roles like AD, DNS, or IIS.
* Set Administrator Password Policies: Strengthen security with password policies.
* Configure Firewall Settings: Enable and adjust firewall rules.
* Verify Services: Ensure essential services are running correctly.
* Create Backup Plan: Set up and test backup and recovery strategies.
* Document Configuration: Keep a record of configurations for future reference

5] What is the standard upgrade path for Windows Server?

* Windows Server 2012 → Windows Server 2016 → Windows Server 2019 → Windows Server 2022.
* Upgrades must follow the same edition (e.g., Standard to Standard or Datacenter to Datacenter).
* In-place upgrades are supported only between consecutive versions.
* Ensure all pre-upgrade requirements are met, including backups and compatibility checks.

6] What is the Physical structure of AD?

Physical Structure of Active Directory (AD):

1. Domain Controllers: Servers that host and manage the AD database.
2. Sites: Represent physical locations in a network, optimized for replication.
3. Subnets: Define IP address ranges associated with sites for efficient routing.
4. Replication: Controls the synchronization of data between domain controllers within and across sites.

7]. What is the Logical components of Active Directory?

Logical Components of Active Directory:

1. Forest: The top-level container that holds one or more domain trees.
2. Domain: A logical group of objects (users, computers, etc.) sharing a common AD database.
3. Organizational Units (OUs): Subdivisions within a domain for organizing objects and applying policies.
4. Trees: A collection of domains in a hierarchical structure with a shared namespace.
5. Global Catalog: A distributed database that provides universal access to objects in the AD forest.
6. Groups and Objects: Logical representations of users, computers, and resources.

8] What is the Full form Of LDAP?

The full form of LDAP is Lightweight Directory Access Protocol

9] What is the location of the AD database?

The Active Directory (AD) database is located at:

C:\Windows\NTDS\ntds.dit

This file stores the directory data, including user accounts, groups, and other directory objects.

10] What is child DC?

A Child Domain Controller (Child DC) is a domain controller for a child domain within an Active Directory (AD) hierarchy.

1. Hierarchy: A child domain is a subdomain of a parent domain (e.g., sales.example.com is a child of example.com).
2. Autonomy: Child domains can manage their own policies and resources while still being part of the forest.
3. Trust: Automatic trust relationships exist between parent and child domains.
4. Purpose: Often used to organize resources by geographical location, departments, or business units.

11] 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

12] When you create an Active Directory domain, what's the name of the default user account?

● Superuser

● Root

● Username

● Administrator

13] AD domain provides which of the following advantages? Check all that apply.

● Centralized authentication

● More detailed logging

● Centralized management with GPOs

● Better performance

14] What are the minimum hardware requirements for installing Windows Server 2016?

The minimum hardware requirements for installing Windows Server 2016 are:

1. Processor: 1.4 GHz 64-bit processor (compatible with x64 architecture).
2. RAM: 512 MB (minimum), 2 GB (recommended for better performance).
3. Disk Space: 32 GB of free disk space (minimum).
4. Network Adapter: Ethernet adapter with gigabit (10/100/1000) connectivity.
5. Other Requirements: UEFI firmware for secure boot, DVD drive or USB port for installation media.

15] Explain the different editions of Windows Server 2016 and their features.

Windows Server 2016 Datacenter:

* Designed for highly virtualized environments.
* Unlimited virtual machine (VM) licenses.
* Features like Storage Spaces Direct, Shielded VMs, and software-defined networking.
* Best for large-scale data centers.

Windows Server 2016 Standard:

* For physical or minimally virtualized environments.
* Supports up to 2 virtual machines (VMs).
* Includes essential features like Active Directory, DNS, and Group Policy.
* Suitable for small to medium-sized businesses.

Windows Server 2016 Essentials:

* + Targeted for small businesses (up to 25 users and 50 devices).
  + Simplified management and fewer features compared to Standard and Datacenter.
  + Includes built-in backup, file sharing, and remote access features.

Windows Server 2016 Web:

* + Optimized for web hosting environments.
  + Provides support for web applications, including IIS (Internet Information Services).
  + Lacks some of the more advanced features like Hyper-V and clustering.

16] How do you configure network settings during Windows Server 2016 installation?

1. Start Installation: Boot from the installation media and begin the setup process.

2. Select Language & Region: Choose language, time, and currency formats, and keyboard layout.

3. Choose Installation Type: Select the edition and installation type (Server Core or Desktop Experience).

4. Configure Network Adapter:

* Once installation starts, press Shift + F10 to open Command Prompt.
* Type ncpa.cpl to open Network Connections.
* Right-click the network adapter, select Properties, and then configure the IP settings under Internet Protocol Version 4 (TCP/IPv4).
* Choose either Obtain an IP address automatically (DHCP) or Use the following IP address (static IP).

1. Complete Installation: Continue the installation process and finish setup.

17] Explain the process of promoting a Windows Server to a domain controller

1. Install Active Directory Domain Services (AD DS):
   * Open Server Manager, click on Add roles and features.
   * Select Active Directory Domain Services and follow the prompts to install.
2. Promote the Server:
   * After installation, in Server Manager, click on the Notification flag and select Promote this server to a domain controller.
3. Select Deployment Configuration:
   * Choose Add a new forest if it's the first domain controller, or Add a domain controller to an existing domain for an additional DC.
4. Specify Domain Information:
   * Enter the Root domain name (e.g., example.com).
5. Set Directory Services Restore Mode (DSRM) Password:
   * Set a strong password for DSRM (used for recovery).
6. Select Additional Options:
   * Configure the DNS server and Global Catalog options.
7. Review and Install:
   * Review your settings and click Next to install.
   * The server will automatically reboot and be promoted to a domain controller.

18] What is Active Directory Domain Services (AD DS), and what are its key components?

Active Directory Domain Services (AD DS) is a Microsoft service that manages and organizes network resources, including users, computers, and services, in a centralized directory. It is the core service for managing Active Directory in a Windows environment.

Key Components of AD DS:

1. Domain Controllers (DCs): Servers that store and manage the AD database, authenticate users, and enforce policies.
2. Domains: Logical groups of objects (users, computers) with a shared AD database.
3. Organizational Units (OUs): Containers within a domain to organize objects and apply Group Policy.
4. Global Catalog: A read-only database that provides quick access to information about all objects in the forest.
5. Group Policy Objects (GPOs): Centralized management of security settings and configurations applied to AD objects.
6. Active Directory Schema: Defines the structure of data stored in AD, including object types and attributes.
7. Replication: Synchronization of data between domain controllers across the network.

19] How do you create a new Active Directory user account in Windows Server ?

Steps to Create a New Active Directory User Account in Windows Server:

1. Open Active Directory Users and Computers:
   * From Server Manager, go to Tools and select Active Directory Users and Computers.
2. Select the Organizational Unit (OU):
   * In the AD console, navigate to the domain or the Organizational Unit (OU) where you want to create the user.
3. Create a New User:
   * Right-click the chosen OU, select New and then User.
4. Enter User Information:
   * In the New Object - User window, fill in the required fields such as:
     + First Name
     + Last Name
     + User logon name (username)
5. Set User Password:
   * Enter and confirm the password.
   * Choose whether to require the user to change the password at the next logon, or to set it to never expire.
6. Complete the Creation:
   * Click Next, review the details, and then click Finish.

20] Explain the process of creating and managing Group Policy Objects (GPOs) in Windows Server 2016 or 2019.

Process of Creating and Managing Group Policy Objects (GPOs) in Windows Server 2016/2019:

1. Open Group Policy Management:
   * Go to Server Manager, click Tools, and select Group Policy Management.
2. Create a New GPO:
   * In the Group Policy Management Console, right-click the Group Policy Objects container, and select New.
   * Name the new GPO (e.g., "Security Policy") and click OK.
3. Edit the GPO:
   * Right-click the newly created GPO and select Edit.
   * This opens the Group Policy Management Editor, where you can configure settings under:
     + Computer Configuration (applies to computers)
     + User Configuration (applies to users)
   * Example: Set security settings, desktop restrictions, or software deployment.
4. Link the GPO to an OU or Domain:
   * In the Group Policy Management Console, right-click the domain or OU where you want to apply the GPO, and select Link an Existing GPO.
   * Choose the GPO you created and click OK.
5. Force Update or Wait for Automatic Replication:
   * To apply the GPO immediately, run gpupdate /force on target computers or wait for the next policy refresh cycle (every 90 minutes by default).
6. Manage or Modify GPO:
   * To make changes, right-click the GPO in Group Policy Management and select Edit again.
   * You can also delete or unlink GPOs when no longer needed.

21] What are Organizational Units (OUs) in Active Directory, and how do you use them?

An Organizational Unit (OU) is a container within Active Directory (AD) that is used to organize and manage objects (users, computers, groups, etc.) in a hierarchical structure. OUs allow administrators to delegate administrative control and apply Group Policy settings to specific groups of objects.

How to Use OUs in Active Directory:

1. Create an OU:
   * Open Active Directory Users and Computers.
   * Right-click the domain or an existing OU, select New, then choose Organizational Unit.
   * Name the OU and click OK.
2. Organize Objects:
   * Move users, computers, groups, and other objects into the OU for better organization.
   * Right-click the object, select Move, and choose the target OU.
3. Delegate Administrative Control:
   * Right-click the OU, select Delegate Control.
   * Use the wizard to assign specific administrative rights to users or groups within the OU, allowing for granular management.
4. Apply Group Policies:
   * Link a Group Policy Object (GPO) to the OU to apply specific settings to the objects within that OU.
   * This ensures consistent policy enforcement, such as password policies or security settings.
5. Manage Permissions:
   * Use OUs to control access and permissions at a more granular level within the organization, making it easier to manage security and administration.

22] Describe the process of delegating administrative privileges in Active Directory.

Process of Delegating Administrative Privileges in Active Directory:

1. Open Active Directory Users and Computers:
   * Go to Server Manager, click Tools, and select Active Directory Users and Computers.
2. Select the OU or Object:
   * Right-click the Organizational Unit (OU) or object (user, group, etc.) you want to delegate control over.
3. Choose Delegate Control:
   * Select Delegate Control from the context menu to open the Delegation of Control Wizard.
4. Add a User or Group:
   * Click Add to select the user or group you want to delegate administrative rights to.
5. Choose Permissions:
   * Select the specific tasks/permissions to delegate, such as:
     + Create, delete, or manage user accounts
     + Modify group membership
     + Reset passwords
     + Manage group policies
6. Review and Finish:
   * Review the permissions and click Next and Finish to apply the delegation.