**Module: 13- Networking with Windows Server**

**1. Discuss the role of Windows Firewall in Windows Server and how to configure it.**

🡪 Windows Firewall in Windows Server plays a crucial role in protecting the server from unauthorized access and threats. It is a network security feature that monitors and controls incoming and outgoing network traffic based on predetermined security rules. The firewall helps safeguard the server by blocking potentially harmful traffic while allowing legitimate communication.

steps to configure Windows Firewall on a Windows Server:

1. Open Windows Firewall:
   * Server Manager > Tools > Windows Firewall with Advanced Security.
2. Create Inbound/Outbound Rules:
   * Select Inbound Rules or Outbound Rules.
   * Click New Rule..., choose the rule type , and define the settings .
   * Set action (Allow/Deny), and apply to profiles (Domain, Private, Public).
3. Enable or Disable Firewall:
   * Open Firewall Properties and enable or disable the firewall for different profiles.
4. Use PowerShell (Optional):
   * Enable firewall:
5. Enable Logging (Optional):
   * Configure logging through Monitoring > Logging in the firewall settings.
6. Group Policy (for multiple servers):
   * Use Group Policy Management to apply consistent firewall settings across all servers in the domain.

**2. What is Network Address Translation (NAT) in Windows Server, and how do you configure it?**

**🡪** Network Address Translation (NAT) allows a Windows Server to share a single public IP address with multiple devices on a private network. It enables devices on the private network to access external resources like the internet while hiding their internal IP addresses.

Configure NAT in Windows Server :

1. Install RRAS Role:
   1. Open Server Manager > Manage > Add Roles and Features.
   2. Select Remote Access > Routing > DirectAccess and VPN (RAS) > Install.
2. Enable Routing and Remote Access:
   1. Open Server Manager > Tools > Routing and Remote Access.
   2. Right-click the server > Configure and Enable Routing and Remote Access.
   3. Choose Network Address Translation (NAT) and complete the wizard.
3. Configure NAT Interfaces:
   1. Right-click NAT > New Interface.
   2. Select Internal Network (private) and External Network (public).
   3. Set the External Interface to NAT.
4. Start RRAS:
   1. Right-click the server > All Tasks > Start to enable NAT.

**3. Explain the concept of Dynamic Host Configuration Protocol (DHCP) and how to configure it in Windows Server 2016.**

**🡪**DHCP (Dynamic Host Configuration Protocol) is a network management protocol that automatically assigns IP addresses and other network configuration settings to devices on a network. It simplifies network administration by eliminating the need to manually configure each device. DHCP helps in efficient IP address management, ensuring that there are no IP address conflicts.

Steps to configure dhcp:-

- Add dhcp role and feature in your windows server >> adter adding DHCP role,click on flag icon and select complete DHCP configration >> open >> next >> commit >> close >> go to tools >> DHCP >> click on domain name >> IPV4 >> right click on IPV4 and click on new scope >> next >> set scope name >> set starting and ending IP addres(you can give IP manually) >> after set time and save change after that give gateway >> next >> next(X2) >> finish

**4. Describe the configuring DNS (Domain Name System) in Windows Server.**

**🡪** DNS configuration steps :-

**-** Add DNS role

**-** open DNS service>>click on tools

- To configure DNS set forward lookup zone and reverse lookup zone

- to configure forward lookup zone >> righyt click on forward lookup zone >> new zone >> next >> select primary zone >> next >> next >> set zone name >> next >> select third option for update >> next >> finish >> open your creatted zone and right click and select new host >> set zone name and IP address

- Go to reverse lookup zone >> right click and new zone >> nest >> select primary zone >> next >> next >> set your IP version >> next >> enter your network ID >> next >>finish

Enter your reverse lookup zone >> right click >> new pointer(PTR) >> click on browse (to set hot name) >> select your forward lookup zone >> ok

**5. What is Server Manager, and how do you use it to manage servers in Windows Server?**

**🡪** Server Manager is a management tool in Windows Server that provides a centralized interface for managing servers, roles, features, and services. It helps administrators configure, monitor, and maintain multiple servers from a single location.

Use Server Manager to Manage Servers:-

1. Launch Server Manager:
   * Open Server Manager from the Start menu or use ServerManager via Windows + R.
2. Add Servers:
   * Click Manage > Add Servers to add remote servers for management.
3. Install Roles and Features:
   * Click Manage > Add Roles and Features to install new roles (e.g., DHCP, DNS).
4. Monitor Server Health:
   * The Dashboard shows server status, performance data, and alerts.
5. Configure Local Server:
   * Select Local Server to manage settings like network configuration and firewall.
6. Remote Server Management:
   * Manage remote servers by selecting them in the left pane for tasks like role configuration.

**6. Discuss the role of Remote Desktop Services (RDS) in Windows Server 2016 or 2019 and how to configure it.**

**🡪**Role of Remote Desktop Services (RDS) in Windows Server 2016/2019:

Remote Desktop Services (RDS) enables remote access to desktops and applications hosted on a Windows Server. It allows users to access a virtualized desktop or remote applications over a network, providing flexibility for remote work and centralized application management.

How to Configure RDS in Windows Server:-

- Add role of RDS in windows server >> next >> remote desktop gateway manager >> remote desktop licensing diagnoser >> licensing manager >> finish >> tools >> RDS >> licensing manager >> right click on server name >> activate server >> automatic >> next >> add company info >> next >> add licensing >> new