Module: 13- Networking with Windows Server

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

ANS: Role of Windows Firewall in Windows Server: The Windows Firewall is a security feature that helps protect the server from unauthorized access while allowing necessary traffic. It controls incoming and outgoing network traffic based on predefined rules. In a Windows Server environment, the firewall helps mitigate the risk of threats such as hacking, malware, and unauthorized access.

Configuration of Windows Firewall:

1. Access Windows Firewall:
   * > Go to Control Panel > System and Security > Windows Defender Firewall or use Server Manager.
   * > Alternatively, open Windows Firewall with Advanced Security from the Start menu or via wf.msc in the run command.
2. Configure Inbound/Outbound Rules:
   * > In Advanced Settings, you can create inbound and outbound rules to control specific network traffic.
   * > Right-click on Inbound Rules or Outbound Rules and select New Rule.
   * > Choose the type of rule (program, port, predefined, or custom), and configure the necessary parameters.
3. Allow or Block Specific Programs:
   * > You can enable or block specific applications or services by specifying the program’s executable file.

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

ANS : Configuration of NAT:

1. Install the Routing and Remote Access Service (RRAS) role:

> Open Server Manager > Add roles and features > Routing and Remote Access Services > Routing.

1. Enable NAT:

> In RRAS, right-click on the server and choose Configure and Enable Routing and Remote Access.

> Select Network Address Translation (NAT) and configure the appropriate network interfaces.

>Typically, one interface connects to the private network (internal), and the other to the public network (external).

1. Configure NAT for your network:

> Right-click on the NAT option in RRAS > New Interface.

> Choose the internal (private) network interface and mark it as Private.

> For the external interface (public), mark it as Public.

1. Configure Static NAT or Port Forwarding if needed for specific internal resources.

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

ANS : Configuration of DHCP:

1. Install the DHCP Server Role:
   * > Open Server Manager > Add Roles and Features > DHCP Server.
2. Activate DHCP Server:

> Once the role is installed, open DHCP Management Console from the Tools menu.

> Right-click on the DHCP server and select Authorize to authorize the server to issue IP addresses.

1. Create a DHCP Scope:

> A scope defines a range of IP addresses that the server can assign to clients.

> Right-click on IPv4 > New Scope, and follow the wizard to specify the scope range, subnet mask, and exclusions (if any).

1. Configure Additional Options:

> Set options such as Default Gateway, DNS Servers, and Lease Duration.

1. Activate the Scope:

> After configuring the scope, activate it to start assigning IP addresses to clients in the range.

28. Describe the process of configuring DNS (Domain Name System) in Windows Server.

ANS : DNS Configuration:

1. Install the DNS Server Role:

> Open Server Manager > Add Roles and Features > DNS Server.

1. Create a Forward Lookup Zone:

> Open DNS Manager > Right-click on Forward Lookup Zones > New Zone.

> Choose a Primary Zone or Secondary Zone based on your needs.

> Specify the domain name (e.g., example.com).

1. Configure Zone Settings:

> Set the type of zone (e.g., AD-integrated or standard) and configure zone replication and other settings.

1. Add Records to the Zone:

> Add A Records (Host Records), MX Records (Mail Exchange), CNAME (Canonical Name) records as needed.

1. Configure Reverse Lookup Zone (optional):

> If you need reverse DNS lookups, create a Reverse Lookup Zone to map IP addresses back to domain names.

1. Test DNS Resolution:

> Use nslookup or ping to ensure proper resolution of domain names.

29. What is Server Manager, and how do you use it to manage servers in Windows Server?  
 ANS : Using Server Manager:

1. Add/Remove Roles and Features:

> Open Server Manager and use the Add Roles and Features Wizard to install server roles and features.

1. Monitor Server Health:

> View the Dashboard for a quick overview of the server's health, including CPU usage, memory, disk, and network statistics.

1. Manage Remote Servers:

> Server Manager allows remote server management by adding other servers to the management console.

1. Configure Local Server:

> You can configure settings such as the computer name, network settings, time zone, and Windows Firewall.

1. Performance Monitoring:

> Use Performance Monitor and Task Manager within Server Manager to track system performance.

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

ANS : Configuration of RDS:

1. Install RDS Role:

> Open Server Manager > Add Roles and Features > Remote Desktop Services.

>Install the necessary RDS roles: Remote Desktop Session Host, Remote Desktop Licensing, and Remote Desktop Connection Broker.

1. Configure Licensing:

> Configure RDS Licensing by adding a valid license for users or devices that will connect to RDS.

1. Create a Session Host:

> In Server Manager, go to Remote Desktop Services > Collections and create a new collection for users to connect remotely.

1. Publish RemoteApps:

> You can publish individual applications to users, so they appear as if they are running locally on their devices.

1. Configure User Access:

> Set up Remote Desktop Client Access Licenses (CALs) for users and configure the Remote Desktop Gateway for secure access over the internet.