Module: 13 Networking with Windows Server

# Installing and configure DNS server

1. Describe DNS operation
   1. The Internet’s DNS system works much like a phone book by anaging the mapping between names and numbers.
2. DNS query—Iterative and Recursive
   1. A recursive DNS lookup is where one DNS server communicates with serval other DNS server to hunt down an ip address and return it to the client.
3. what is forward lookup zone and its resource type
   1. Forward lookup Zones allows the DNS server to resolve queries where the client send a name to the DNS server to request the IP address of the requested host.
4. what is reverse lookup zone and its resource type
   1. A reverse lookup zone is an authoritative DNS zone that is used primarily to resolve IP addresses to network resource name.
5. what is conditional forwarder
   1. Conditional forwarders are DNS servers that only forward queries for a specific domain name.
6. what is primary zone, secondary zone and stub zone
   1. Primary [master] DNS zone – holder of the original zone file [all the DNS records for the zone] you can manage a host through this zone. Secondary [slave] DNS zone – hlds a copy of the zone file.
7. what is active directory integrated zone
   1. AD-integrated DNS zones are stored in directory partitions within active directory These directory partitions replicate along with the rest of AD Therefore, no extra configuration is required for DNS replication.
8. primary server, secondary server, cache only server
   1. A primary server is a server that acts as the first source for Domain Name System [DNS] data and responds to queries. It can be contrasted to the secondary server, which acts like the primary server but does not have the same access to data.
9. what is aging and scavenging
   1. DNS aging and scavenging are used to automatically clean up dynamic DNS records after a certain period of time. DNS aging and scavenging work in concert. You need to config both! DNS aging is a zone setting> DNS scavenging is a server setting.
10. what is MX record
    1. A DNS ‘mail exchange’ [MX] record direct email to a mail server. The MX record indicates how email messages should be routed in accordance with the simple Mail transfer protocol [SMTP, the standard protocol for all email].

## Practical

* + 1. install active directory integrated dns
    2. create secondary dns and zone transfer
    3. create “A” record
    4. create alias
    5. create reverse lookupzone
    6. make a pointer
    7. apply conditional forwareder betwwen two different domain
    8. nslookup command

A. DONE ALL

# DHCP

1. purpose of DHCP
   1. Dyanmic Host Configuration protocol [DHCP] is a network protocol that is used to configure network devices to communicate on an IP network. A DHCP client uses the DHCP protocol to acquire configuration information, such as an IP address, a default route and one or more DNS server addresses from a DHCP server.
2. what is DORA process?
   1. Broadcast-based DORA [Discover, offer, Request, Acknowledgement]. This process consists of the following steps: The DHCP client send a DHCP offer broadcast request to all available DHCP servers within range. A DHCP offer broadcast response is received from the DHCP server, offering an available IP address lease.
3. what is authorized DHCP server?
   1. An authorized DHCP server ia a DHCP server that has been authorized in Active Directory to support DHCP clients. Authorizing a DHCP server provides you with the ability to control the addition of DHCP server to the domain. Authorization must occur before a DHCP server can issue leases to DHCP clients.
4. Describe scope, lease duration, DHCP option, exclude address
   1. The scope is a range of valid IP addresses available for lease to the DHCP client computers on the network, The lease time is the length of time in seconds that a client holds the lease for an IP address assigned by a DHCP server
5. what is reservation?
   1. It is a specific IP address within aDHCP scope that is permanently reserved for leased use to a specific DHCP client. Users can configure a DHCP reservation in their DHCP server when they need to reserve a permanent IP address assignment.
6. what is dhcp relay agent?
   1. Network administrators can use the DHCP Relay service of the SD-WAN appliances to relay requests and replies between local DHCP Clients and a remote DHCP Server.
7. describe ipconfig command
   1. ipconfig (standing for "Internet Protocol configuration") is a console application program of some computer operating systems that displays all current TCP/IP network configuration values and refreshes Dynamic Host Configuration Protocol (DHCP) and Domain Name System (DNS) settings. ipconfig.

## Practical

1. install dhcp sever and make authorize
2. create a scope and check on client by ipconfig
3. dhcp database and take backup
4. dhcp failover
5. dhcp relay agent
6. dhcp filter
7. dhcp reservation

A. ALL DONE

# IPAM

1. what is IPAM and purpose of IPAM

A. **IP Address Inventory Management, the Domain Name Service (DNS) Management, and the Dynamic Host Configuration Protocol (DHCP) Management**.

1. why need dedicated server
   1. Dedicated servers provide an exclusive, dedicated operating system with no contention of resources. The server is dedicated to you and you alone. This means your dedicated server will give better performance and faster applications than a cloud server.
2. policy for ipam sever
   1. The Institute of Public Administration and Management (IPAM)was established on 5th November 1980. It has two faculties, the Faculty of Management Sciences comprising four departments – Accountancy & Finance, Business Administration, Banking & Finance and Public Administration.
3. which service monitor and manage by IPAM
   1. IP Address Management (IPAM) is an integrated suite of tools to enable end-to-end planning, deploying, managing and monitoring of your IP address Infrastructure.

## Practical

* + 1. Install IPAM
    2. configure IPAM with six step
    3. create dhcp scope using IPAM 4 create DNS zone
    4. check monitoring of sevices

A. ALL DONE.

# Network policy server

1. what is Radius server
   1. RADIUS [Remote Authentication Dial-In user service] is a client-server protocol and software that enable remote access servers to communicate with a central server to authentication dial-in user and authorize their access to the requested system or service.
2. what is authentication authorization and accounting
   1. Authentication, authorization, and accounting [AAA] is a term for a framework for intelligently controlling access to computer resources, enforcing policies, auditing usage, and providing the information necessary to bill for services.
3. RADIUS server operation method and radius client
   1. The device creates a message called an Access-Requesting message and it to the RADIUS server.
4. RADIUS port number A. [1645 and 1812.]
5. what is network policies (NPS)?
   1. Network Policy Server [NPS] allows you to create and enforce organization-wide network access policies for connection request authentication and authorization.

## Practical

* + 1. P1 configure RADIUS for wireless client
    2. confiure NPS for remote access

A. ALL DONE.

# Advance Network

1. what is SDN?
   1. Software-Defined Networking [SDN] is an approach to networking that uses software- based controllers or application programming interfaces [APIs].
2. what is SCVMM?
   1. SCVMM is a tool for managing and configuring virtualization data centers built on Microsoft Hyper-V and VMware Vsphere.