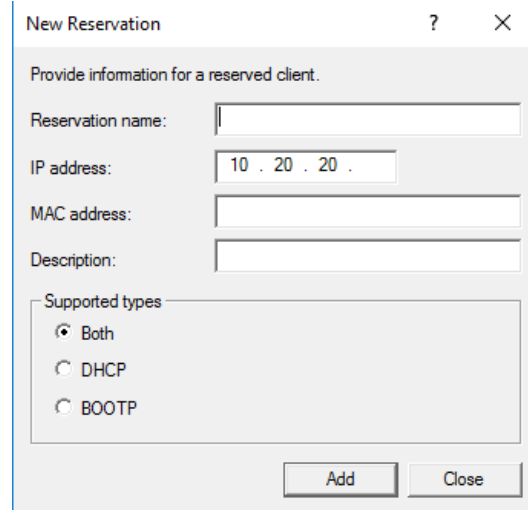**Windows Servers TTTS0500**

Lab 2 – Creating a domain

Task 1 – Install AD DS and DHCP on dc1

1. Install the following Roles and Features to **dc1**

    a. AD DS + integrated DNS

        i. Forest root: YourStudentID.local (i.e. a1234.local)

        ii. Install AD and promote the server first before installing dhcp (do not install dns separately, use the integrated one)

    b. DHCP server

2. Open the DHCP management console

    a. Configure a DHCP pool for mgmt network (10.20.20.0/24) and add at least the following options

        i. Option 3, 6, 15

        ii. **QUESTION: What do the forementioned options configure?**

            1. Router, DNS Servers and DNS Domain Name

        iii. **QUESTION: How do you configure a new scope using PowerShell?**

            1. Add-DhcpServerv4Scope -Name 'M3227' -StartRange 10.20.20.1 -EndRange 10.20.20.254 -SubnetMask 255.255.255.0 -Description '' –cn wds1

b. QUESTION: Using the DHCP management console, how do you set up a lease so that a certain MAC address will always get the same IP address from the server?

       i. You make a reservation for certain MAC address

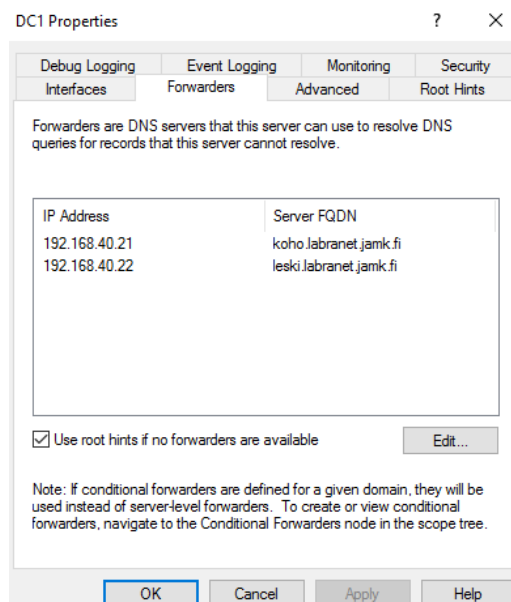**c. QUESTION: How do you accomplish this using PowerShell?**

       i. Add-DhcpServerv4Reservation -ScopeId 10.10.10.0 -IPAddress 10.10.10.8 -ClientId "F0-DE-F1-7A-00-5E" -Description "Reservation for mgmt. networPrinter"

       ii. QUESTION: How do you exclude certain IP addresses from a DHCP address pool? Why yould you do this?

       iii. You can add exclusion for map pool and add addresses you want to exclude.

3. Open the DNS management console

    a. QUESTION: Where can you find forwarders? What is dc1 using as forwarders and why?

i. <u>"Forwarders are DNS servers that this server can use to resolve DNS queries for records that this server cannot resolve." dc1 is using 192.168.40.21 and 192.168.40.22.</u>

b. Check the settings for Forwardtra lookup zone of your domain

   i. QUESTION: What records are present?

   1.

   ii. QUESTION: How do you add a forward lookup zone?

   1. <u>right click "Forward lookup zones" and select "new zone"</u>

c. Define reverse lookup zones for your environment

   i. Add a PTR record for dc1

   ii. QUESTION: How do you add records to DNS using PowerShell? Find out at least the follonswing:

   1. A record

   a. Add-DnsServerResourceRecordAtracer

   2. PTR record

   a. Add-DnsServerResourceRecordA -CreatePtr

4. Open and explore the following AD management consoles

   a. Active Directory Administrative Center

   b. Active Directory Users and Computers

5. Add a new user to Active Directory with both of the forementioned management consoles

   a. QUESTION: What information is mandatory for a new user in AD?

   i. <u>Users name, logon name and password</u>

   b. QUESTION: How do you add a new user using PowerShell?

   c. <u>New-ADUser -Name "Jere Pesonen" -GivenName "Jere" -Surname "Pesonen" -SamAccountName "jerpes" -UserPrincipalName "jerpes@m3227.local" -Path "OU=Users,OU=Europe,DC=rebeladmin,DC=com" -AccountPassword("Type Password for User") -Enabled $true</u>

Task 2 – Join mgmt-ws-01 to your domain

1. Make sure your mgmt-ws-01 workstation has its network adapter in mgmt internal network

2. Launch your mgmt-ws-01 workstation

3. Make sure your workstation has a correct hostname – change it if you didn't already

4. Has mgmt-ws-01 received an IP address from your DHCP server?

    a. QUESTION: If not, what might be missing? Consider the following:

    i. DHCPDISCOVER is a broadcast message

    ii. dc1 and mgmt-ws-01 are in different subnets

    b. Add necessary changes to your router

    i. Use information available at https://wiki.vyos.net/wiki/DHCP_relay

5. Join mgmt-ws-01 to your domain after you have correct IP addressing and DNS server addresses configured

    a. QUESTION: How do you join a computer to domain using PowerShell?

6. Log on to your domain using the user accounts created in Task 1

Task 3 – Verifying configurations

1. Verify you've done previous Tasks correctly using simple command line tools

    a. Ping dc1 and various websites using

    i. IP address

    ii. Hostname

    iii. FQDN

    b. Using tracert from mgmt-ws-01, test that your routing works

    i. tracert dc1

    ii. tracert youtube.com

    c. Check that DNS works using nslookup, do at least the following tests

    i. nslookup a hostname or FQDN

      ii.   nslookup an IP address

            1.   Hint: You should have records for at least dc1 and mgmt-ws-01 at this point

2. **QUESTION: Why can you resolve names using just a hostname inside your domain network?**

Questions

1. Why can't you install RODC-type domain controller as a first domain controller in a forest?

    a. RODC, which was designed to be used in branch offices that cannot support their own domain controllers

2. What is the difference between Domain Functional Lever and Forest Functional Lever? What machines in your network do these concepts apply to?

    a. https://docs.microsoft.com/en-us/windows-server/identity/ad-ds/active-directory-functional-levels

3. What does authorizing a DHCP server mean in an Active Directory environment?

    a. Authorizing means that the DHCP Server can distribute IP addresses to Active Directory clients. Otherwise, if a DHCP Server is unauthorized, then the IP address distribution will stop.