Next time Re-evaluate last few questions.

CIS231 Homework: DHCP

In this assignment you will configure the DHCP server service on the server in your domain. When done, all client machines in your domain must be configured as DHCP clients. **Please note that you MUST have your virtual server and clients' network adapters configured to use your CIS231-S# network connection when completing this assignment!!**

You should NOT have a 2nd network card at your server at this point in the assignments. If you do you should remove one. You will lose points if you have a 2nd card at the server.

1) Configure the server in your domain as a DHCP Server. The server must be configured as specified below:
   - Create a scope and name it *YourName*scope. The scope settings must be configured based on the network address of your server. It must be configured with an address pool of at least 100 addresses on that network.
   - Create 1 exclusion that is made up of a single address in the pool. You pick the address.
   - Create 1 exclusion that is made up of a range of at least 4 addresses in the pool. You pick the range.
   - The lease duration must be set at 10 days.
   - The scope must be configured to include a DNS Server option. The appropriate preferred DNS server setting must be applied.
   - Complete ALL steps to configure and test your DHCP server. **Do not answer questions for this problem until you have DHCP *working*.** Again…. Please be sure, before testing this, that the network adapters for your virtual operating systems are configured to your cis231-S# network.

   After everything is working, provide print-screen images for each of the below:
   If, while gathering these screenshots you realize that you configured something incorrectly PLEASE go back and update any previously taken screenshots!!!

   a) What are the IP settings of your server; provide a screenshot of the TCP/IP properties screen.
   b) What is your Windows 7 computer's name?
   c) What is your Windows 10 computer's name?
   d) From within DHCP MMC, click on *address pool* in the left pane. Provide a print-screen image which includes the items in the pool. Both panes must be included in the screenshot. Be sure all columns displayed on the right are wide enough to read their contents.
   e) While in DHCP MMC, provide a screenshot of the general tab of the scope object's properties.
   f) While in DHCP MMC click on *address leases* in the left pane. Provide a print-screen image which displays the list of addresses that have been leased. Both panes must be included in the screenshot. Be sure all columns displayed on the right are wide enough to read their contents.
   g) Click on *Scope Options* in the left pane. Provide a screenshot which displays the options configured. Both panes must be included in the screenshot. Be sure all columns displayed are wide enough to read their contents.
   h) At EACH client, provide a print-screen image of the TCP/IP properties screen
   i) At EACH client, execute the ipconfig /all command and include its output.

2. Configure a DHCP reservation for your Windows 7 computer. Name it Win7Res. Use an IP address that's at the end of the range. Confirm that your reservation worked.
    a. While in DHCP MMC provide a screenshot of the properties of the reservation you created.
    b. While in DHCP MMC click on the *Reservations* folder in the left pane (the parent folder, not Win7Res) and provide a screenshot which includes both the left and right panes.
    c. While in DHCP MMC click on address leases in the left pane. Provide a print-screen image which displays the list of addresses that have been leased. Both panes must be included in the screenshot.
    d. At the windows 7 client, execute the IPconfig command and include its output as your answer to this question.

3) Delete the reservation created in #2 and recreate it using the command line.
    a. What commands did you use? Provide each command and its output.
    b. Use a command to show the current reservations. Include the command and its output as your answer.
    Now get rid of the reservation – you won't need it for future work so get rid of it now.

4) Set a static IP settings on the Windows 10 computer using a netsh command. You must use an IP Address that's on your network but is outside your scope's range. You must also set the appropriate subnet mask and DNS server setting.
    a. What commands did you use?
    b. Execute the IPconfig /all command and include it and its output as your answer to this question.
    c. Provide a screenshot of the TCP/IP properties screen.
    d. Now, using the netsh command, set all IP settings back to dynamic. What command did you use?
    e. Execute the Ipconfig /all command and include it and its output as your answer to this question.
    f. Provide a screenshot of the TCP/IP properties screen.

5) Answer these questions based on *your* DHCP server's settings.
    a. If a client is assigned an IP address from your server, when would it automatically attempt to renew the lease?
    b. How could the lease be *manually* renewed?

6) Assume a DHCP Server is configured with a lease of 30 days. A Windows client receives an IP address from this server and 5 days later, when the client machine boots, the DHCP server which assigned the IP address is *not* available. Explain what will happen. Be very specific in your answer.

7) Configure a second DNS server address within the scope options of your dhcp scope. The address must be configured as the alternate DNS server. The IP address must be 4.2.2.2. Ensure that all your clients receive this newly added setting.
    a. While in DHCP MMC click on the scope options and provide a screenshot which displays the settings. Be sure all columns displayed are wide enough to read their contents.
    b. How did you ensure your clients received this setting?
    c. At EACH client, execute ipconfig /all and include its output as your answer. Show only the settings for the local area connection.

d. At EACH client, provide a screenshot of the TCP/IP properties

8) Provide a screenshot of your DHCP Server's current statistics.

9) Configure your DHCP server with 1 conflict detection attempts.
   a. Provide a print-screen image which confirms you've applied this setting.
   b. Explain the purpose of this setting. Be very specific in your answer.

10) If your server had two network cards and you wanted it to provide DHCP services through only one of the cards, where would you configure this?
   a. Provide a print-screen image which displays where you'd configure this.

11) Create a user class named CIS-BCC. Configure your Windows 10 client to use this class. The class must be configured with a router option of 192.168.#.1.(where # is your student number). Test your configuration.
   a. While in the DHCP MMC, from the properties of the policy you just created, provide a screenshot of the Conditions tab as well as a screenshot of the Options tab. Make sure the options tab shows me the setting you configured for the router.
   b. Provide the command used to configure your Windows 10 client to use this class.
   c. Execute Ipconfig /all on the Windows 10 client and provide its output as your answer.

12) Explain when it would be practical to define a new user class?

13) Explain when a super scope should be created?

14) What does it mean if your computer is configured with an IP address from the 169.254 network? Be very specific in your answer.

15) Refer to today's DHCP Audit Log. Look at the last entry in the log and explain what it means.
   a. What is the absolute path to the log file?
   b. What is the last entry in the file?
   c. What does the entry mean and how did you determine what it meant?

Use the appropriate NETSH command to complete the remaining questions.

16) Store the DHCP configuration in a file named DHCP.
   a. What command did you use to complete this task?

17) How often does the DHCP Database get backed up and where is the backup stored?
   a. What command did you use to display this information? Provide the command and its output.

18) Change the backup interval to every 90 minutes.
   a. Provide the command used to complete this task.
   b. Display the dbproperties to confirm the new setting.

19) Restore the DHCP configuration stored in the DHCP file created earlier in this assignment.
   a. What command did you use to complete this task?