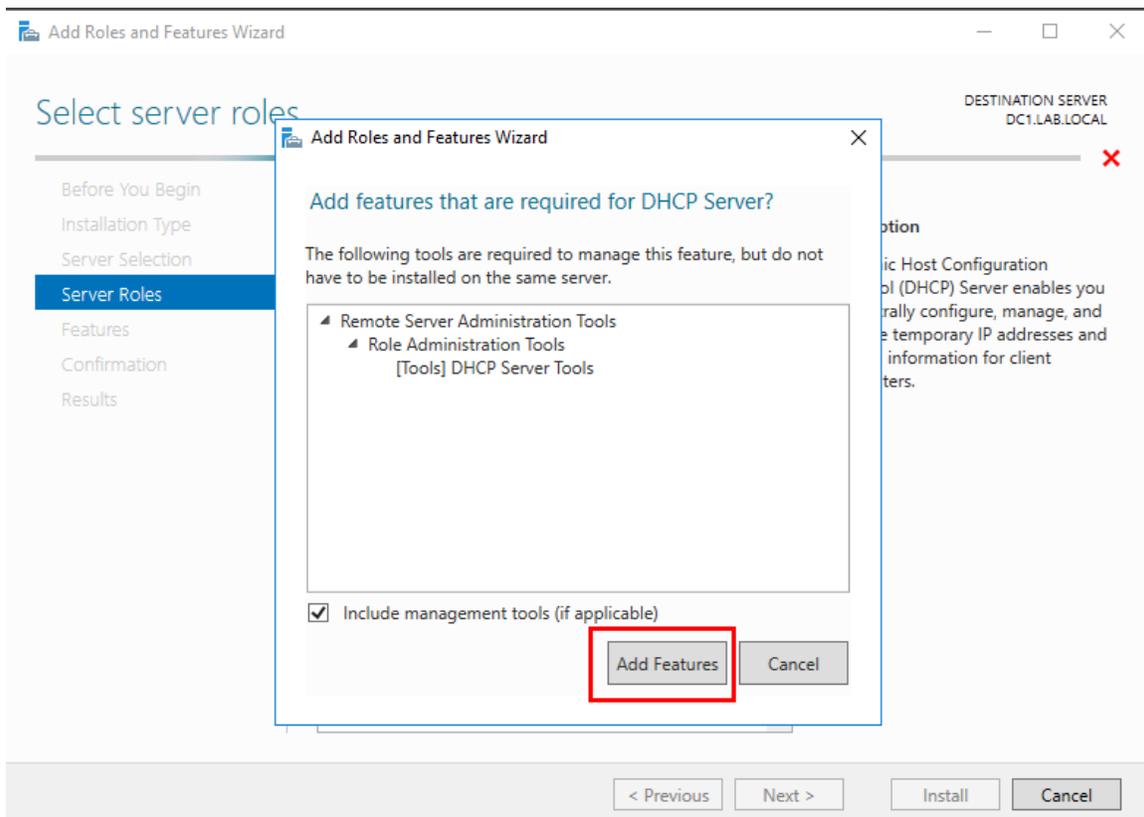
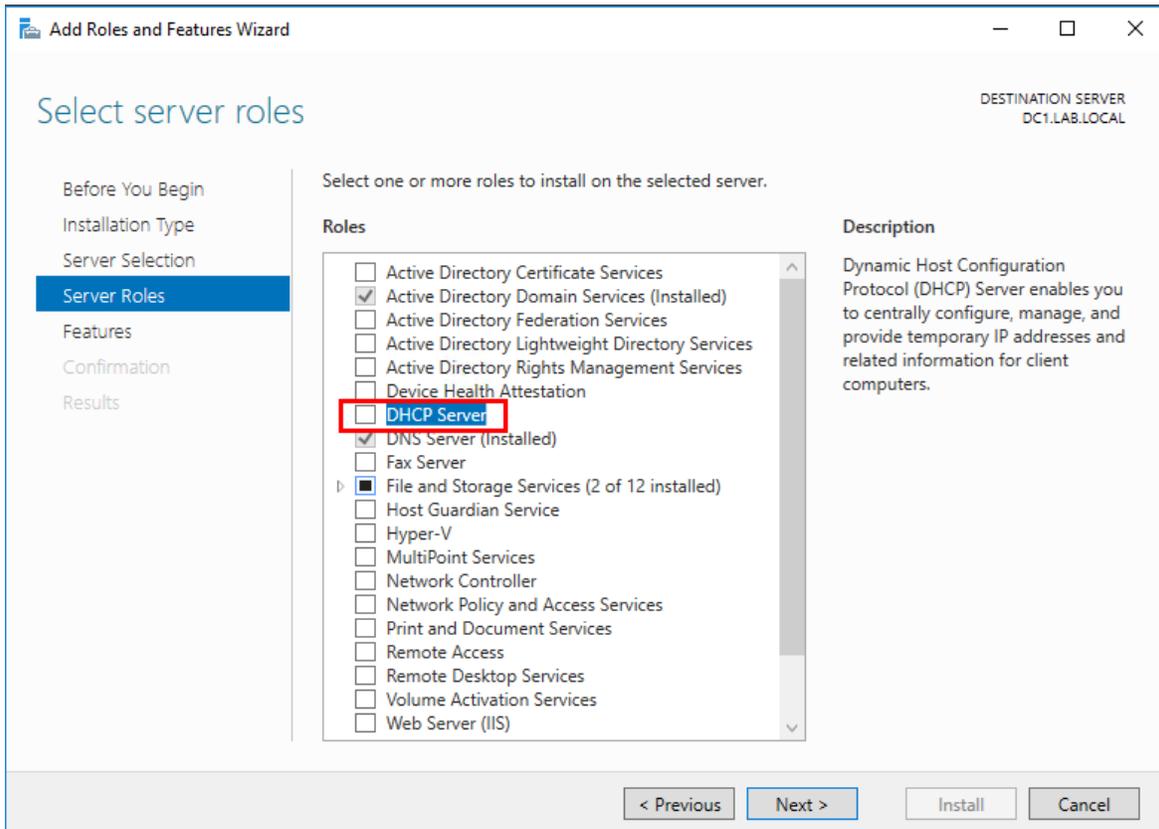


## **Lab Guide**

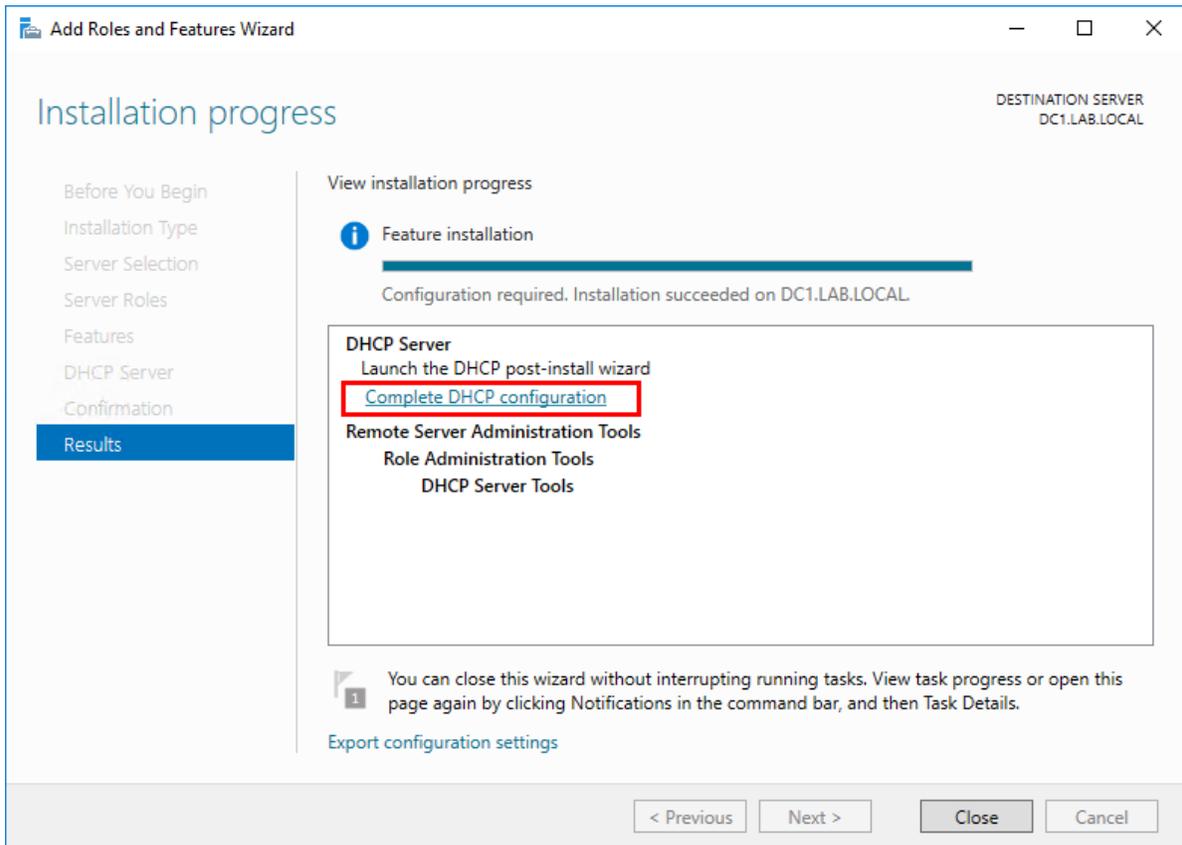
### **Install and Configure DHCP Server Role**

## Install and Configure DHCP Server Role

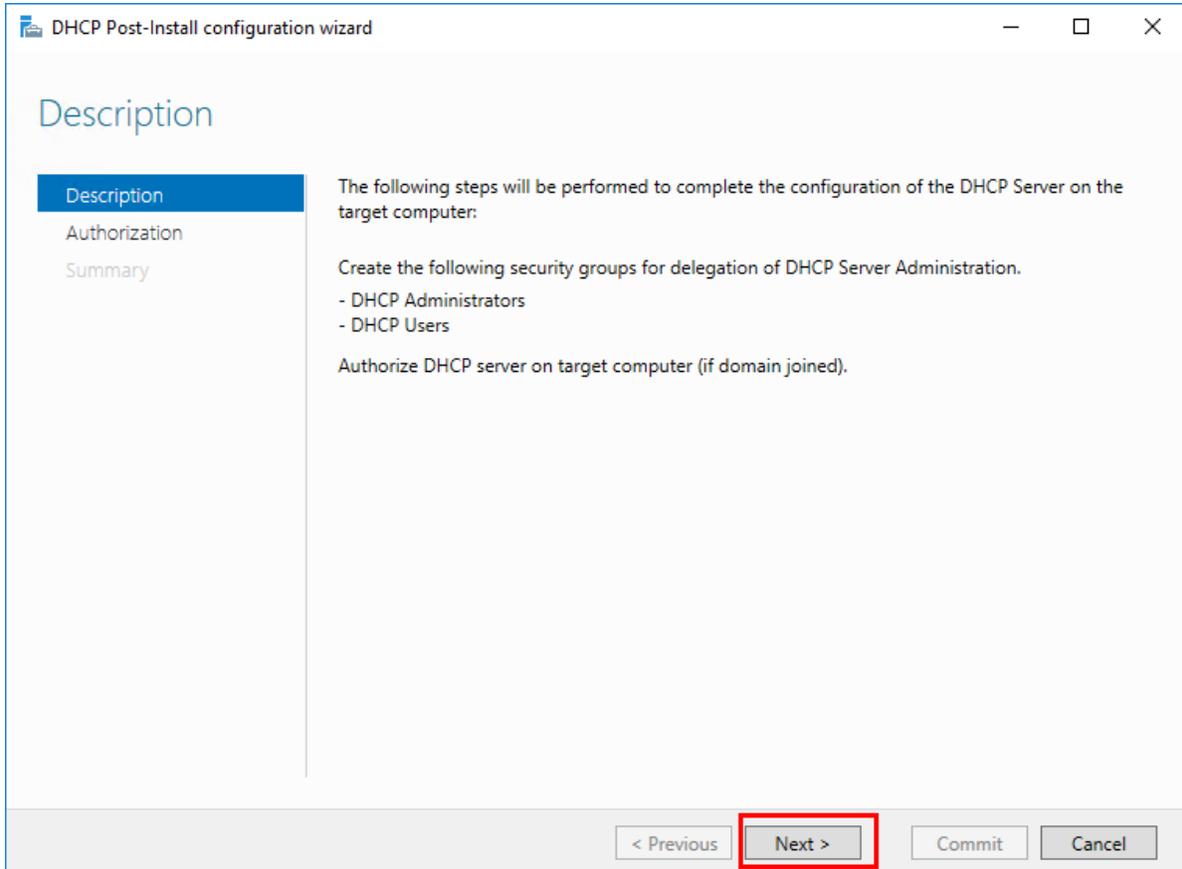
1. Start from Server Manager, then click on “Add roles and features”
2. Choose “DHCP Server”, then click Next, add the required features and complete the wizard to the Install to finish.



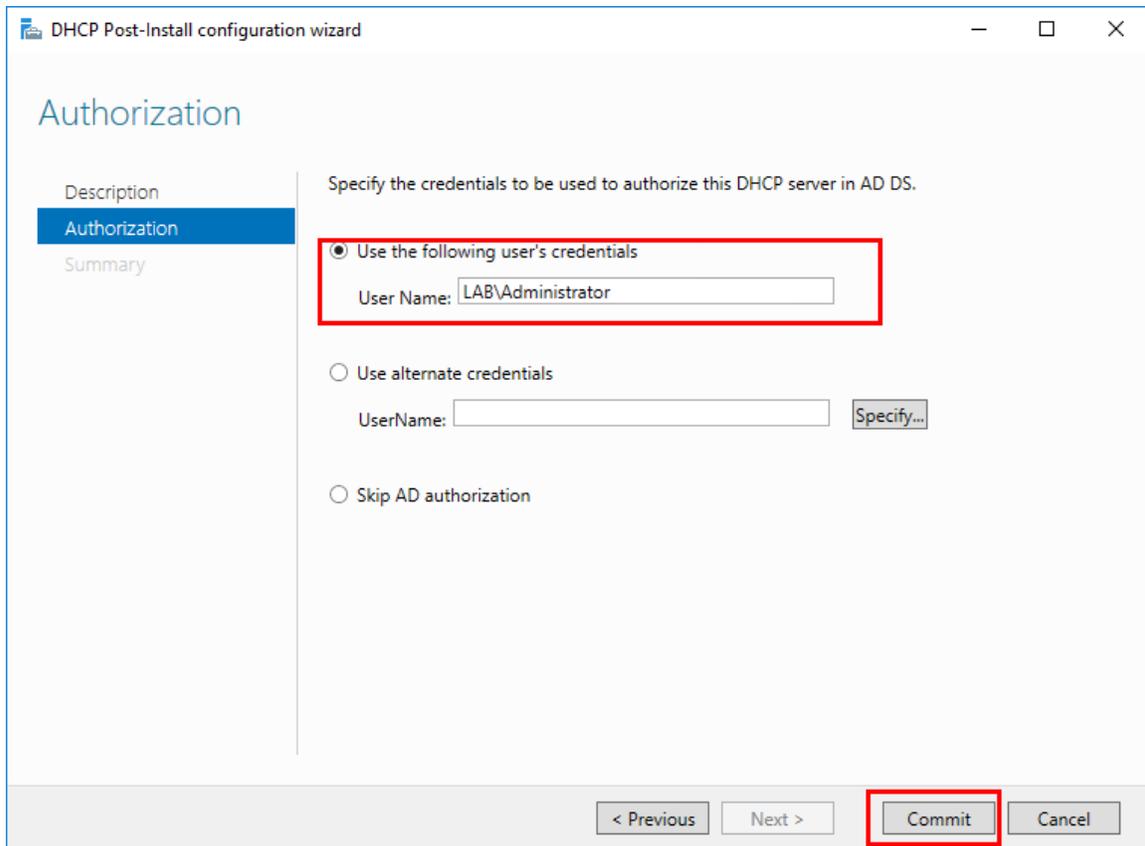
3. Click Complete DHCP Configuration



4. In the authorization window, click Next

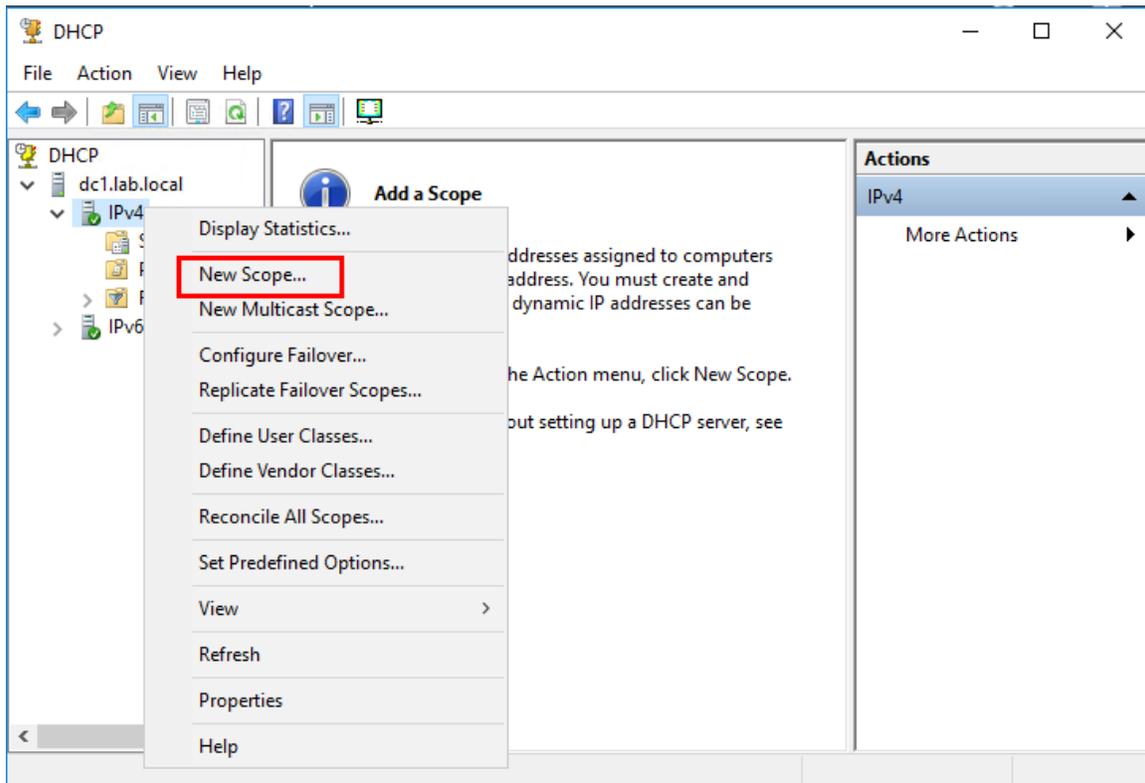


- In the authorization wizard, make sure the right user account is selected (must be member of “Enterprise Admins” group in Active Directory, and click “Commit”, Then click “Close” to close the wizard.



Now the DHCP is ready to add a scope.

- From Server Manager, open DHCP console, expand IPv4 and r-click, select “New Scope”



7. In the “New Scope Wizard” click next and type a scope name, then click Next.

**New Scope Wizard**

**Scope Name**  
You have to provide an identifying scope name. You also have the option of providing a description.

Type a name and description for this scope. This information helps you quickly identify how the scope is to be used on your network.

Name:

Description:

< Back **Next >** Cancel

8. Type in the address pool you want, and click Next.

**New Scope Wizard**

**IP Address Range**  
You define the scope address range by identifying a set of consecutive IP addresses.

Enter the range of addresses that the scope distributes.

Start IP address:

End IP address:

Configuration settings that propagate to DHCP Client

Length:

Subnet mask:

< Back **Next >** Cancel

9. Add an exclusion if you have any, and set the subnet delay if you need to, and click Next.

The screenshot shows the 'New Scope Wizard' dialog box at the 'Add Exclusions and Delay' step. The title bar reads 'New Scope Wizard'. Below the title, the section is titled 'Add Exclusions and Delay' with a folder icon. A descriptive text explains that exclusions are addresses or ranges not distributed by the server, and a delay is the time to delay DHCP message transmission. The main area contains two input fields for 'Start IP address' and 'End IP address', with an 'Add' button to the right. Below these is a list box for 'Excluded address range' containing one entry: '10.10.10.101 to 10.10.10.105', with a 'Remove' button to its right. A 'Subnet delay in milli second:' label is followed by a spinner box set to '0'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

10. Set the lease duration and click Next.

The screenshot shows the 'New Scope Wizard' dialog box at the 'Lease Duration' step. The title bar reads 'New Scope Wizard'. Below the title, the section is titled 'Lease Duration' with a folder icon. A descriptive text explains that lease duration specifies how long a client can use an IP address. It provides advice on setting durations based on network types (mobile vs. stable). The main area contains the text 'Set the duration for scope leases when distributed by this server.' followed by 'Limited to:'. Below this are three spinner boxes for 'Days' (set to 8), 'Hours' (set to 0), and 'Minutes' (set to 0). At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

11. Keep the selection on “Yes”, to configure the scope options, and click Next

The screenshot shows the 'New Scope Wizard' dialog box at the 'Configure DHCP Options' step. The title bar reads 'New Scope Wizard'. Below the title, the section is titled 'Configure DHCP Options' with a sub-header 'You have to configure the most common DHCP options before clients can use the scope.' To the right of this text is a folder icon. The main content area contains the following text: 'When clients obtain an address, they are given DHCP options such as the IP addresses of routers (default gateways), DNS servers, and WINS settings for that scope.' followed by 'The settings you select here are for this scope and override settings configured in the Server Options folder for this server.' Below this is the question 'Do you want to configure the DHCP options for this scope now?' with two radio button options: 'Yes, I want to configure these options now' (which is selected and highlighted with a red square) and 'No, I will configure these options later'. At the bottom of the dialog are three buttons: '< Back', 'Next >', and 'Cancel'.

12. Enter the “Default Gateway” address, and click “Add”, then click “Next”.

The screenshot shows the 'New Scope Wizard' dialog box at the 'Router (Default Gateway)' step. The title bar reads 'New Scope Wizard'. Below the title, the section is titled 'Router (Default Gateway)' with a sub-header 'You can specify the routers, or default gateways, to be distributed by this scope.' To the right of this text is a folder icon. The main content area contains the text 'To add an IP address for a router used by clients, enter the address below.' Below this is an 'IP address:' label followed by an input field containing '10.10.10.254'. To the right of the input field are four buttons: 'Add', 'Remove', 'Up', and 'Down'. At the bottom of the dialog are three buttons: '< Back', 'Next >', and 'Cancel'.

13. Add the DNS server address, and click Next (if DNS is in the same server it will appear automatically).

The screenshot shows the 'New Scope Wizard' window at the 'Domain Name and DNS Servers' step. The title bar reads 'New Scope Wizard'. Below the title, the section is titled 'Domain Name and DNS Servers' with a sub-header 'The Domain Name System (DNS) maps and translates domain names used by clients on your network.' and a folder icon. The main text says 'You can specify the parent domain you want the client computers on your network to use for DNS name resolution.' Below this, the 'Parent domain:' field contains 'LAB.LOCAL'. A note states 'To configure scope clients to use DNS servers on your network, enter the IP addresses for those servers.' There are two input fields: 'Server name:' (empty) and 'IP address:' (containing '10.10.10.1'). A 'Resolve' button is next to the 'Server name' field. To the right of the 'IP address' field are buttons for 'Add', 'Remove', 'Up', and 'Down'. At the bottom are '< Back', 'Next >', and 'Cancel' buttons.

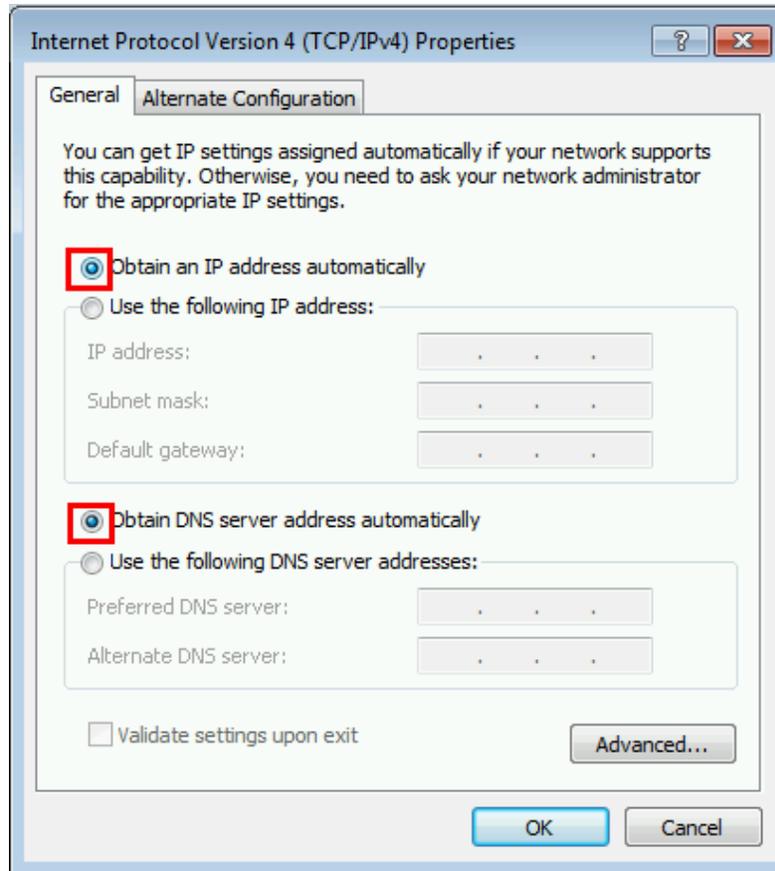
14. For the WINS server window leave is empty if you don't have one, and click Next.

15. The selection is by default is set to activate the scope now, click Next. Then click Finish

The screenshot shows the 'New Scope Wizard' window at the 'Activate Scope' step. The title bar reads 'New Scope Wizard'. Below the title, the section is titled 'Activate Scope' with a sub-header 'Clients can obtain address leases only if a scope is activated.' and a folder icon. The main text asks 'Do you want to activate this scope now?'. There are two radio button options: 'Yes, I want to activate this scope now' (which is selected and highlighted with a red box) and 'No, I will activate this scope later'. At the bottom are '< Back', 'Next >', and 'Cancel' buttons.

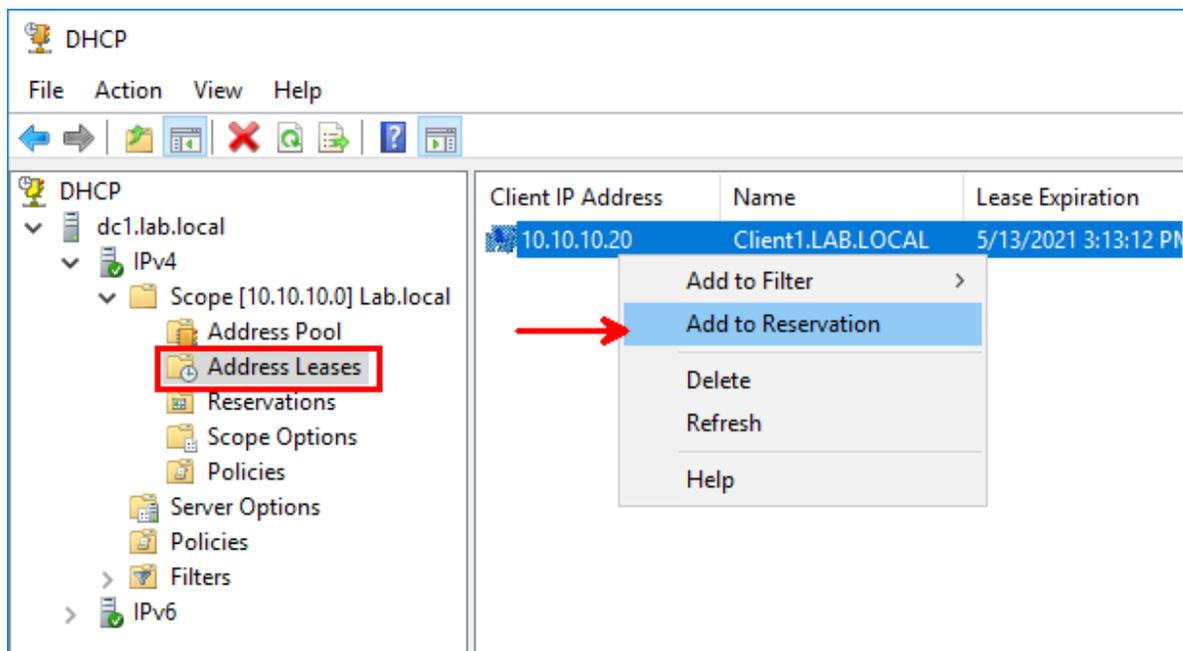
## Advanced DHCP Configuration

1. Configure “Client1” to get IP configuration automatically from DHCP Server.

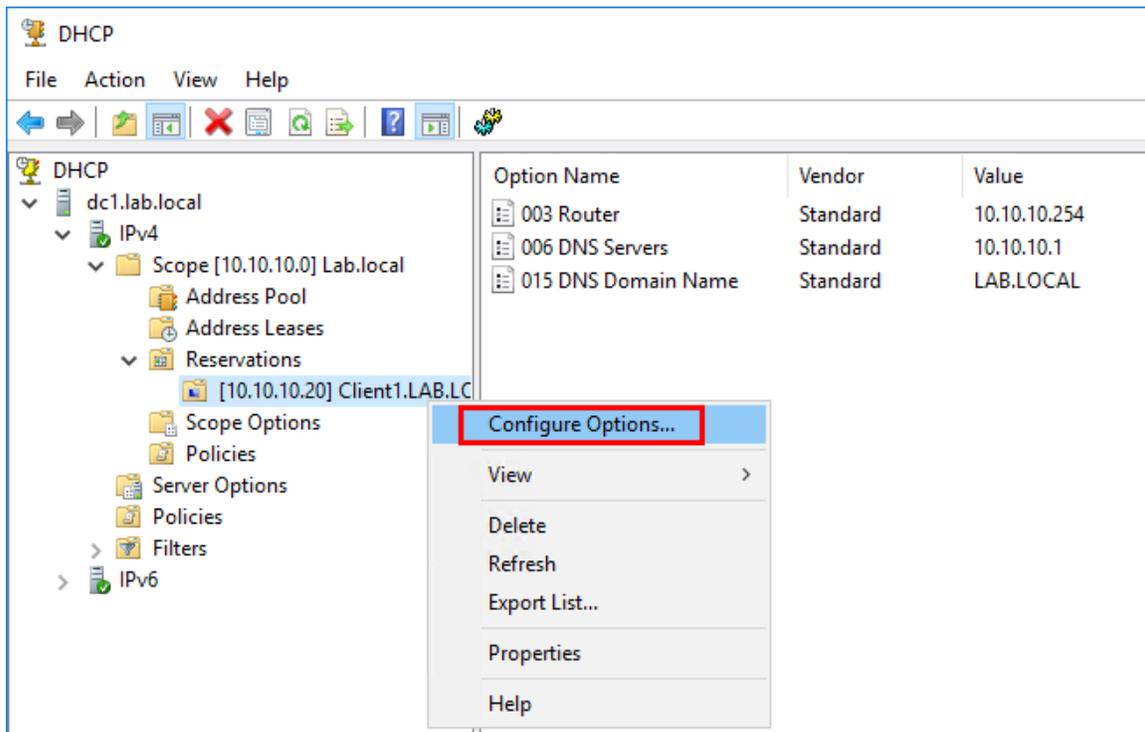


2. Add a reservation for “Client1”

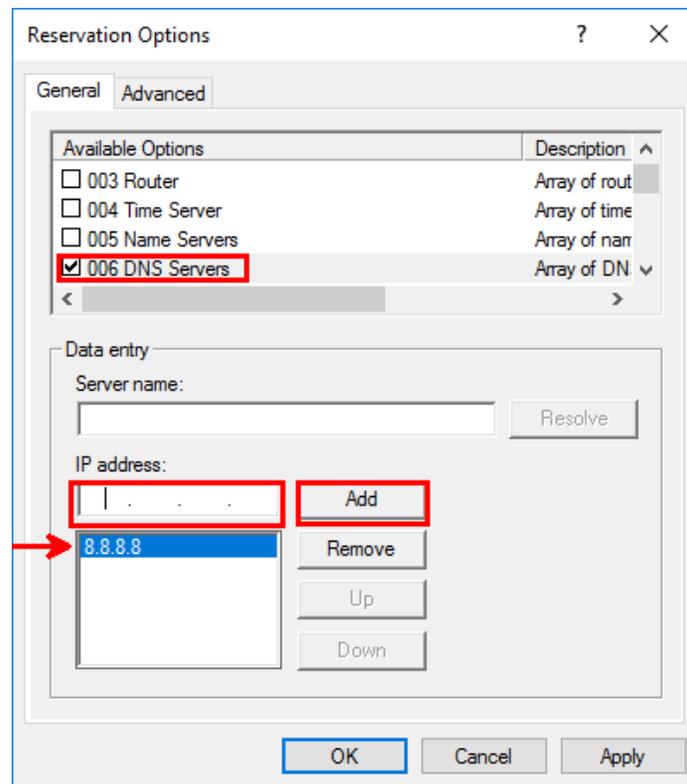
Open DHCP console, expand the scope, expand “Address Leases”, r-click on the lease and choose add to reservation.



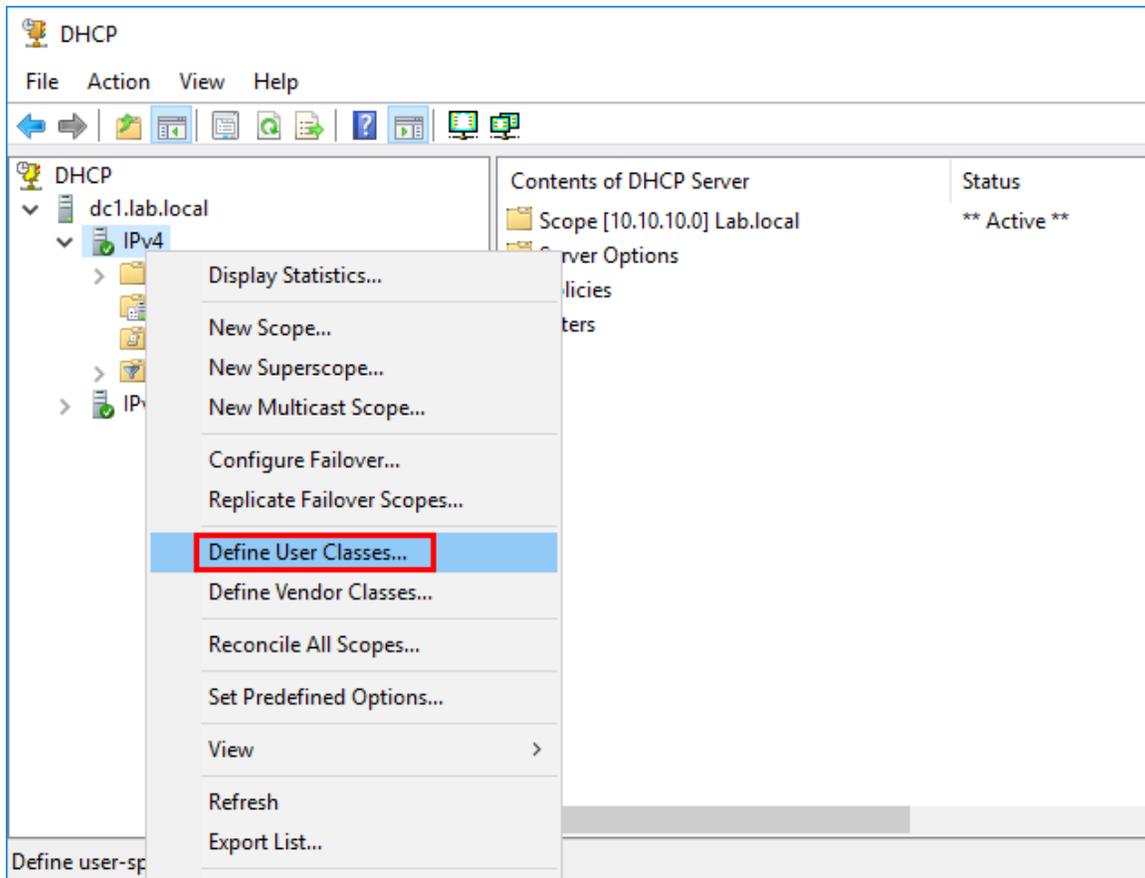
3. Configure a reservation option for “Client1” to assign the IP address 8.8.8.8 as a DNS server IP for “Client1”  
This reservation will override Server Options and Scope Options  
Go to reservation, r-click on the reservation for “Client1”, select “Configure Options”



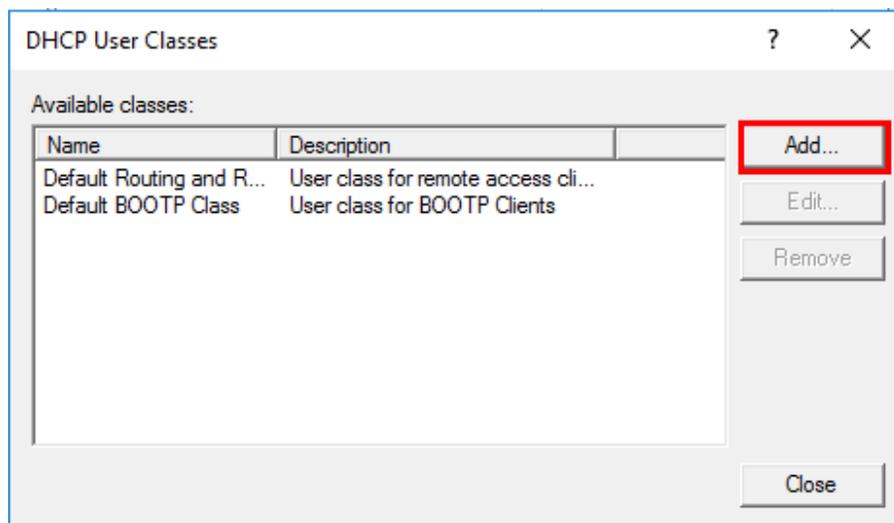
Put a check on option “006 DNS Servers”, and add the IP address 8.8.8.8, then click Add and OK.

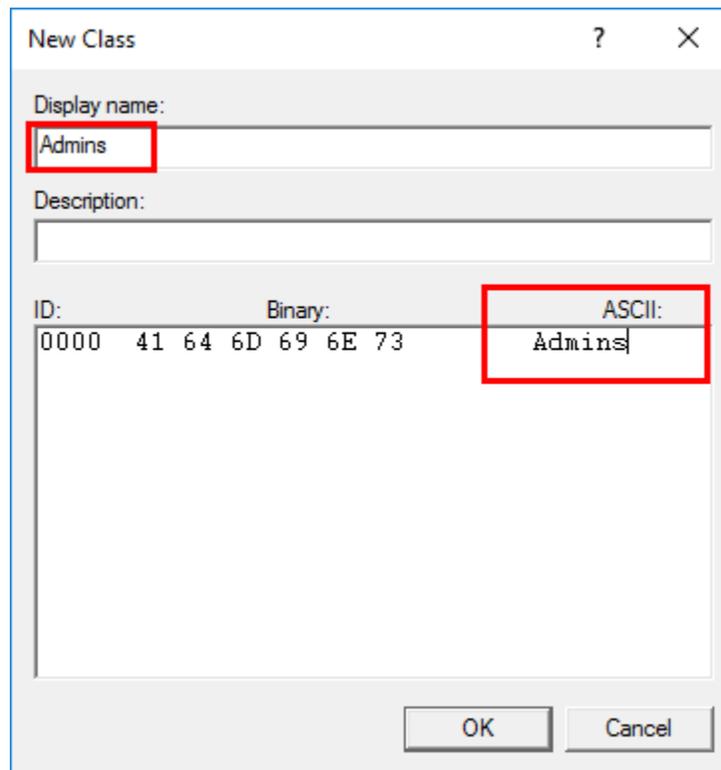


4. Create a User Class named “Admins” on the DHCP server, and configure a policy for this user class to assign a default gateway of “10.10.10.250”.
  - a. R-click on IPv4, select “Define User Classes...”



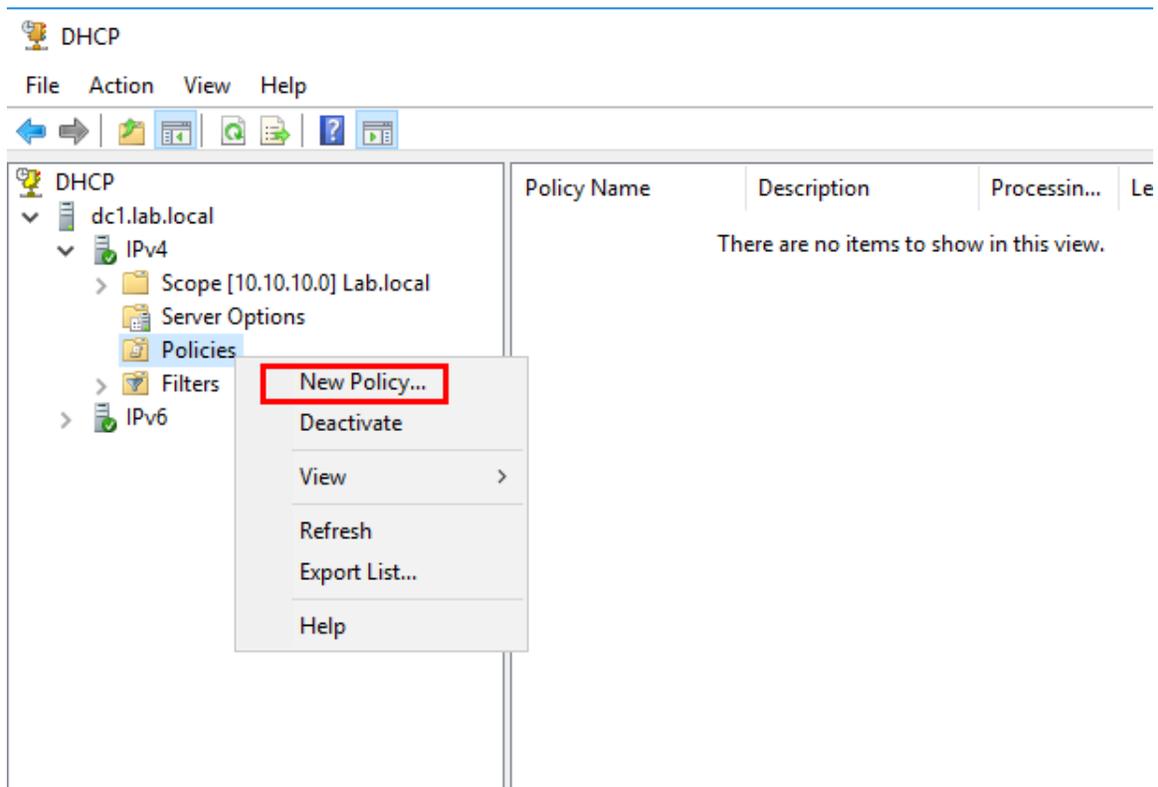
- b. In the wizard click on Add, and type in the class name “Admins” and the Value “Admins”, the value must be entered in the ASCII field as shown in the figure below.



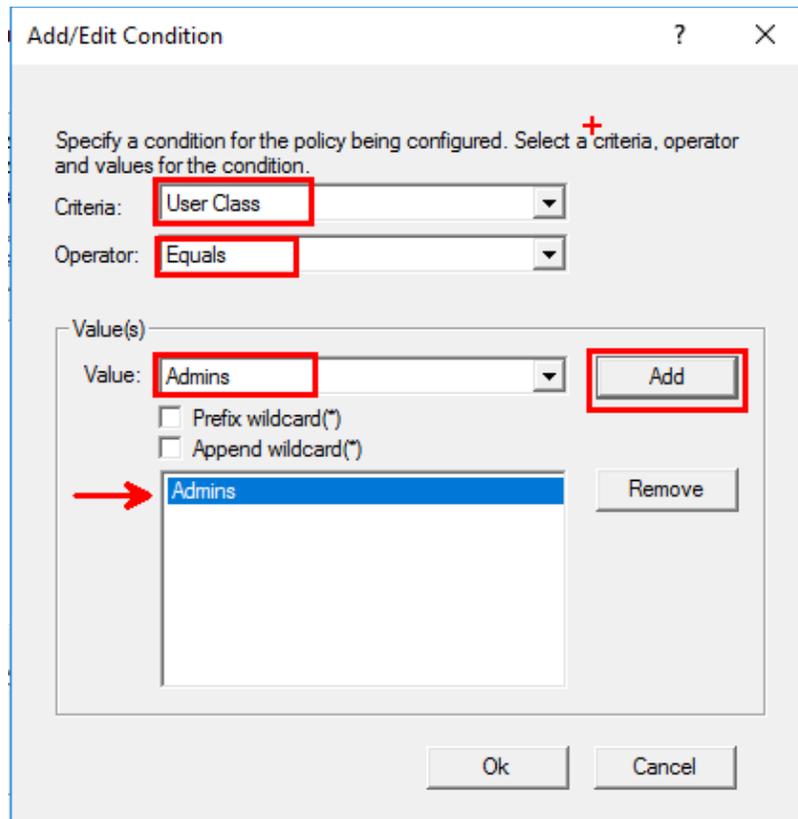


c. Now, we create the policy for this user class.

Expand IPv4, r-click on "Policy", select "New Policy"



- d. Type in the policy name “Admins” and click Next.
- e. Click on “Add” to add the condition.
- f. For the criteria, select “User Class”, the operator “Equal”, the Value “Admins, then click “Add” and “OK”



- g. In the “conditions” windows click Next.
- h. In the “Configure Setting for the Policy” windows, check on option “003 Router” and type in the IP address “10.10.10.250”, then click “Add”, and “Next”.
- i. In the Summary windows, click finish.
- j. Assign this user class to the network interface on Client1.

Go to the click machine “Client1” and open CMD as administrator, and type the following command.

Make sure you replace “Local Area Connection” with the interface name on your client machine.

```
Administrator: C:\Windows\System32\cmd.exe

C:\>ipconfig /setclassid "Local Area Connection" "Admins"

Windows IP Configuration

Successfully set the DHCPv4 class id for adapter Local Area Connection.

C:\>_
```

- k. Now run “ipconfig /release”, then “ipconfig /renew” to make sure the policy is working.