IT3010
Network Design & Management
3rd Year, 2nd Semester

Lab 2

Practical 2

Y3.S2.WE.IT.02.02

Submitted to

Sri Lanka Institute of Information Technology

In partial fulfillment of the requirements for the

Bachelor of Science Special Honors Degree in Information Technology

2/27/2024

Declaration

I certify that this report does not incorporate without acknowledgement, any material previously submitted for a degree or diploma in any university, and to the best of my knowledge and belief it does not contain any material previously published or written by another person, except where due reference is made in text.

Registration Number: IT21271700

Name: Gunawardane K.C.

Table of Contents

Table of figures

01. Installing and configuring DHCP.

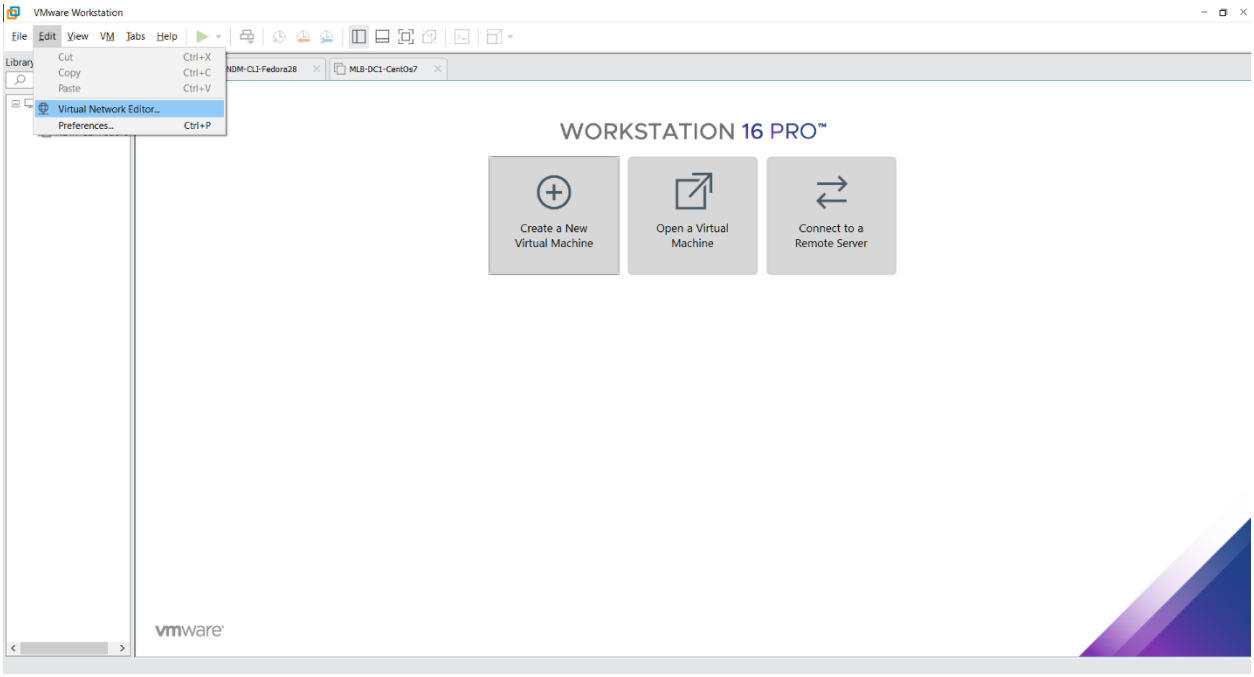

Figure 1.0 go to virtual network editor

Click on edit tab and go to virtual network editor.

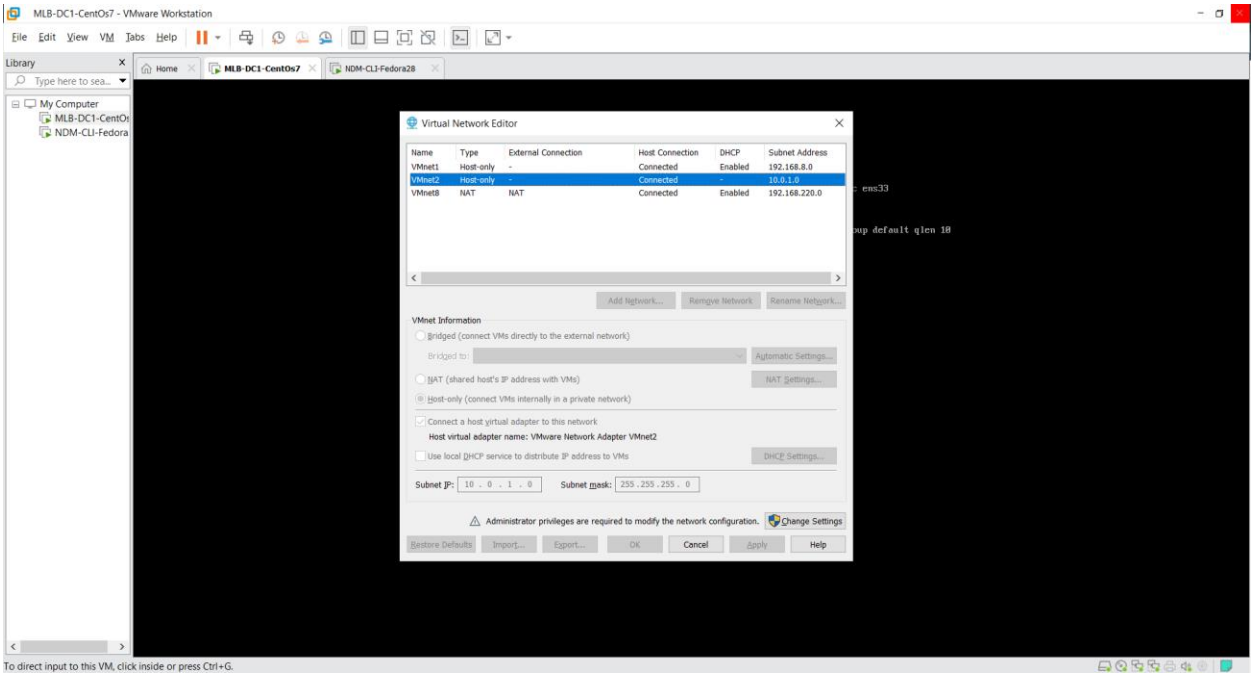

Figure 1.1 Disable DHCP service

Disable DHCP service.

01.01.Installing DHCP for the server

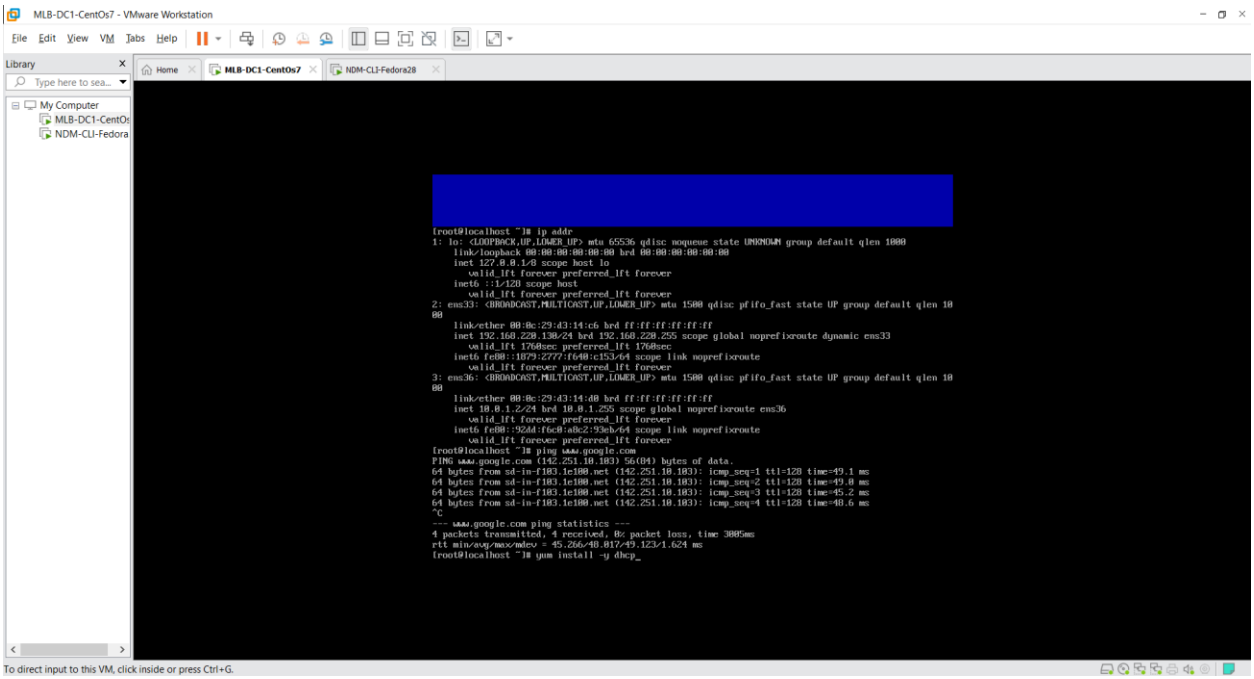

Figure 1.1.0 command “yum install –y dhcp”

Run the command “yum install –y dhcp” to install the DHCP in server.

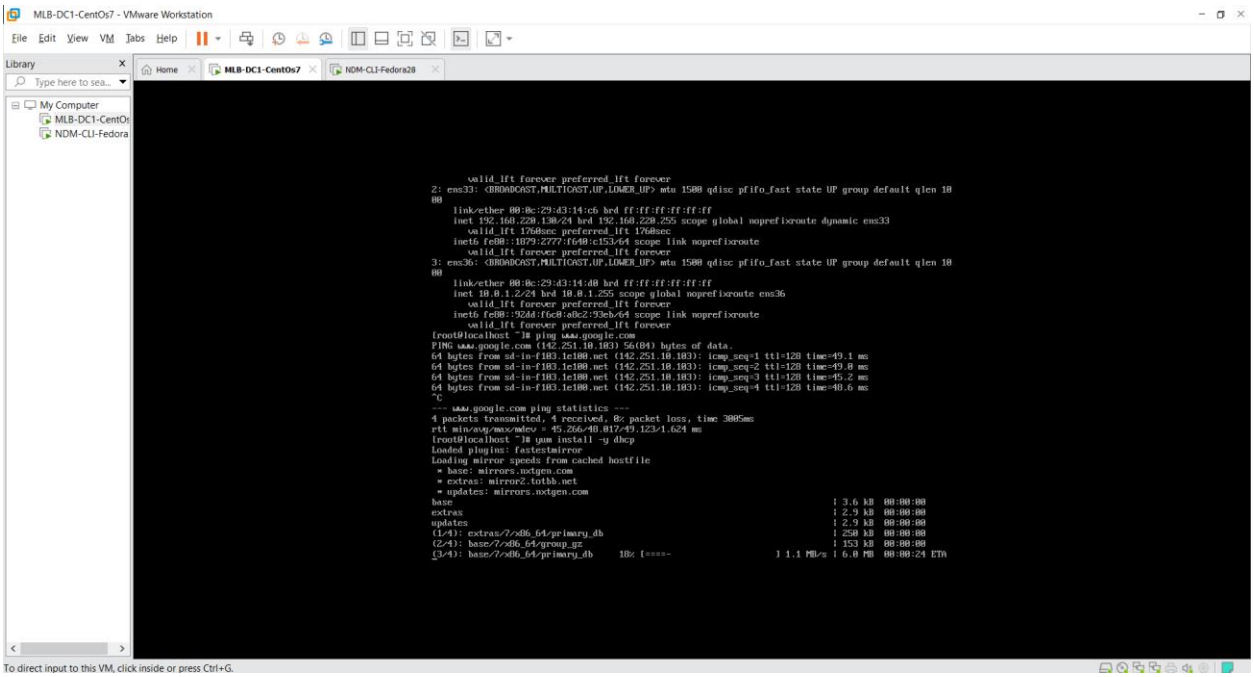

Figure 1.1.1 installing DHCP

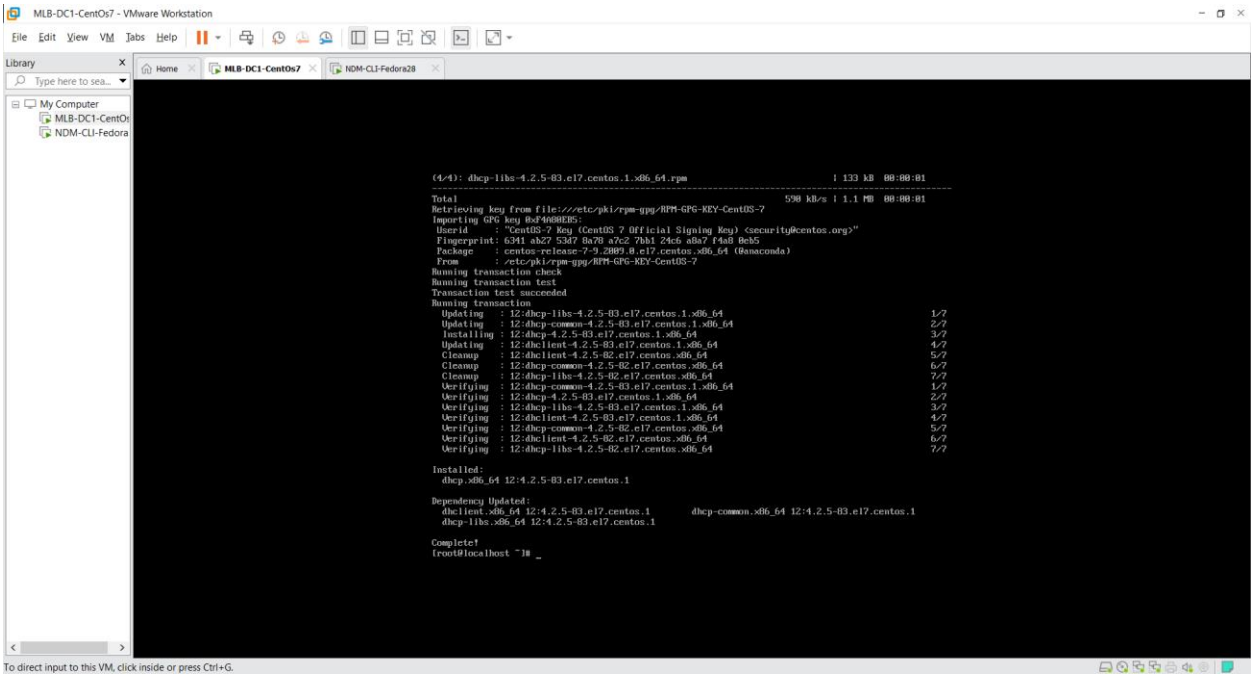

Figure 1.1.2 DHCP installation complete

DHCP will install and complete the process.

01.02. Configuring the DHCP

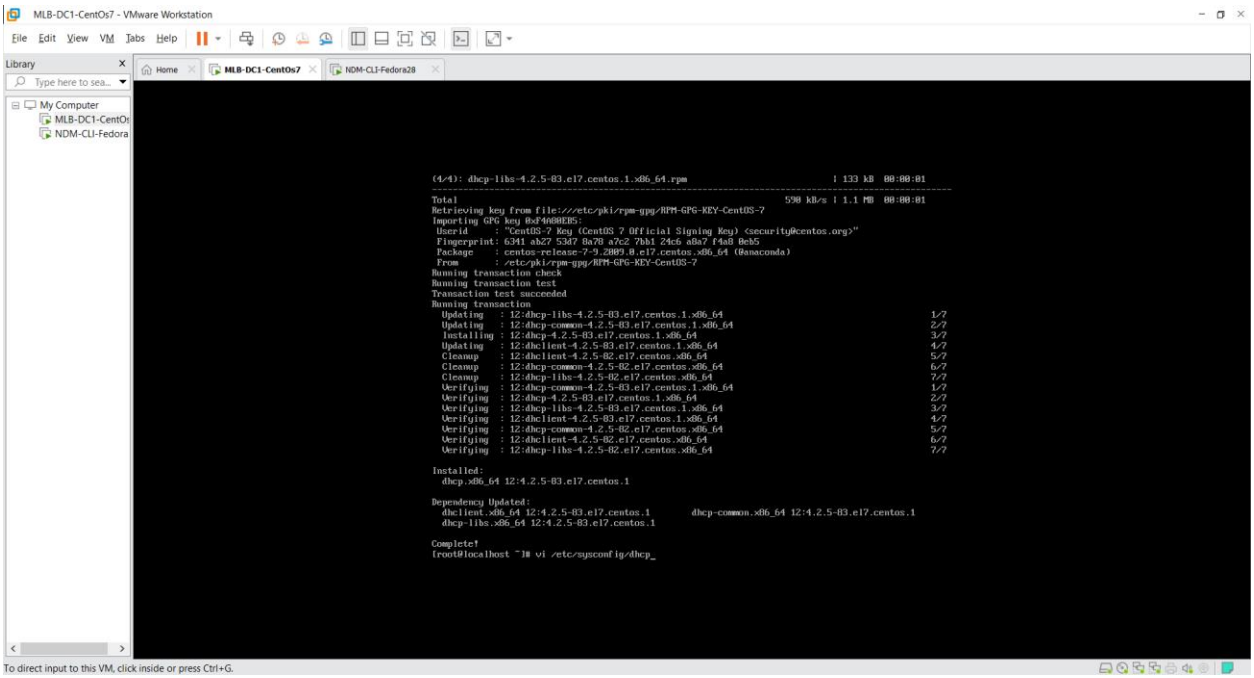

Figure 1.2.1 command “vi /etc/sysconfig/dhcpd”

Run the command “vi /etc/sysconfig/dhcpd” to mention the interface details.

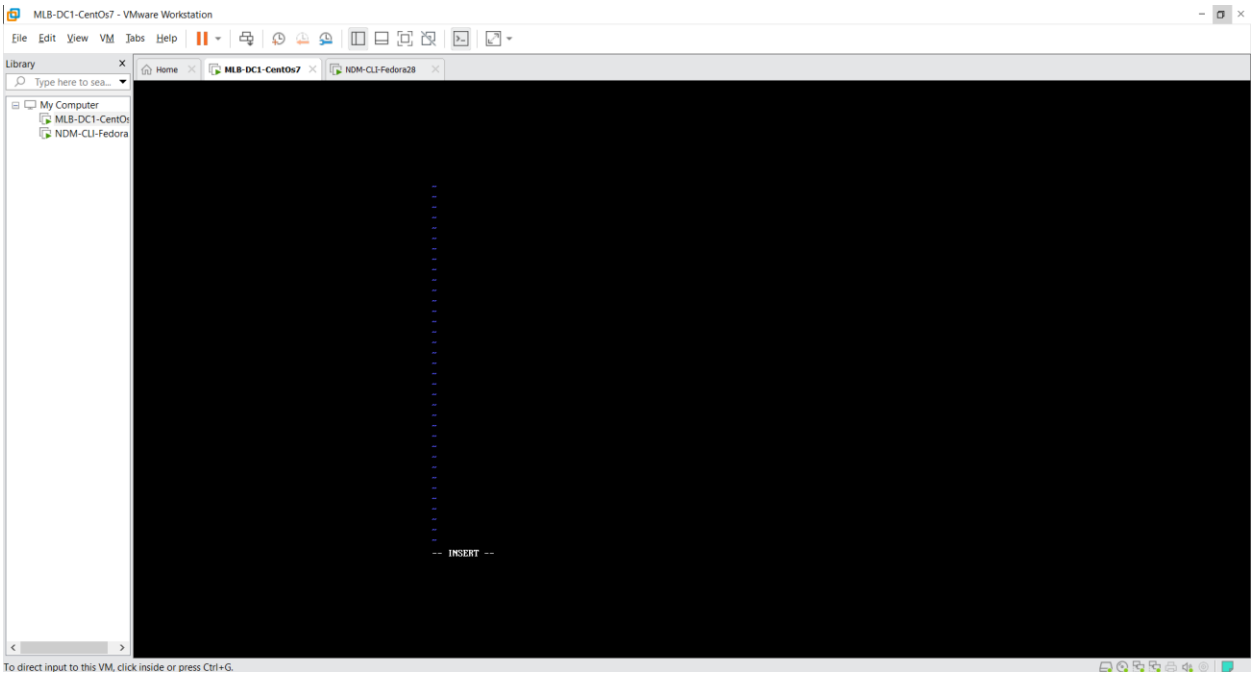

Figure 1.2.2 insert data to the file

Press the button “i” to move the cursor and insert data.

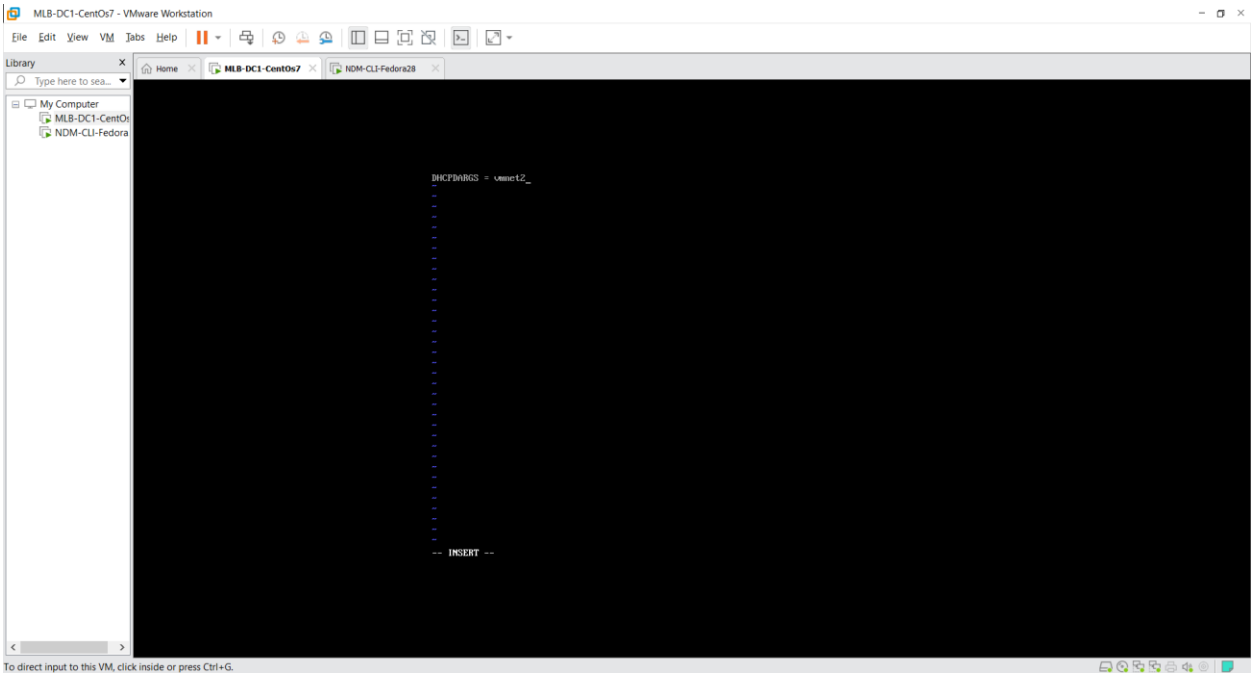

Figure 1.2.3 command “DHCPDARGS = vmnet2”

Run the command “DHCPDARGS = vmnet2” to assign the network interface.

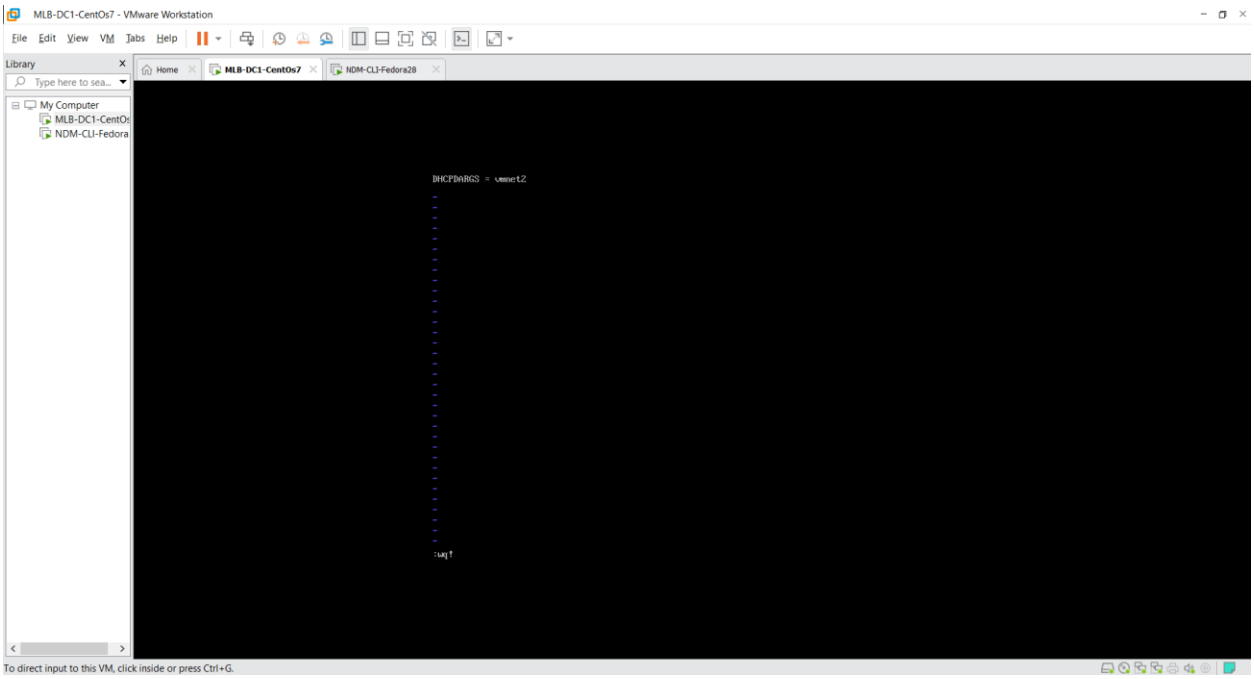

Figure 1.2.4 save and close the file

Press esc button and run the command “wq!” to save and close the file.

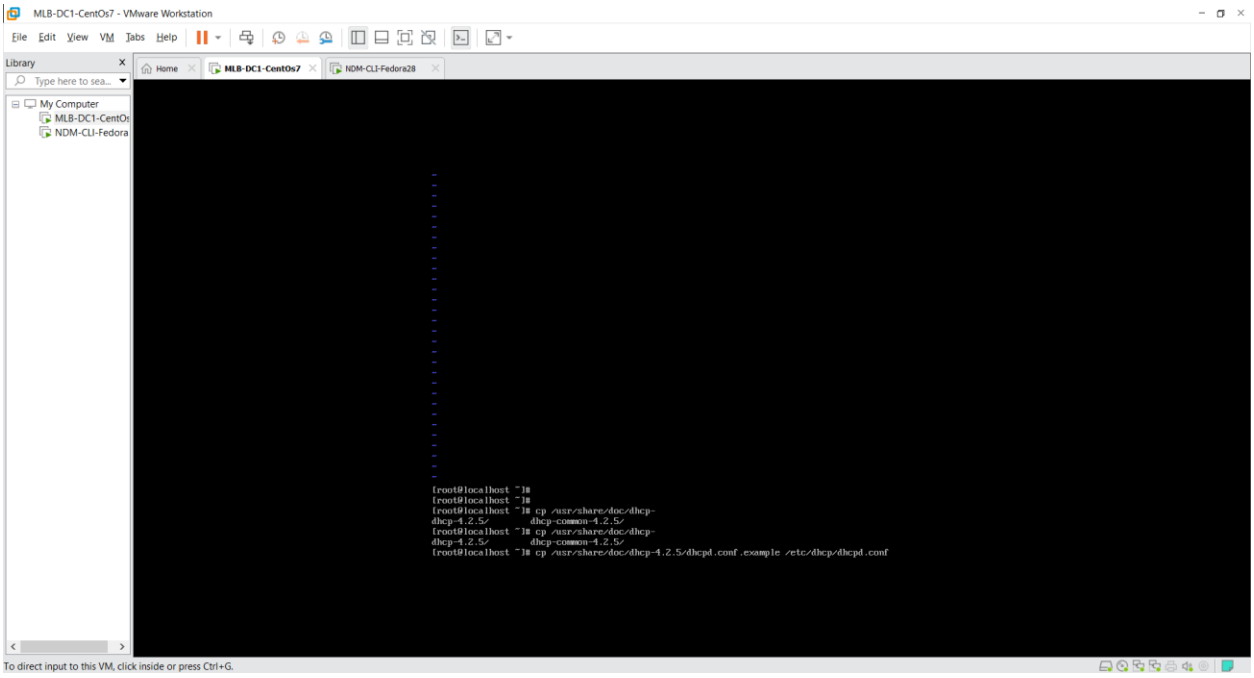

Figure 1.2.5 command “cp /usr/share/doc/dhcp-4.2.5/dhcpd.conf.example /etc/dhcp/dhcpd.conf”

Run the command “cp /usr/share/doc/dhcp-4.2.5/dhcpd.conf.example /etc/dhcp/dhcpd.conf” to copy the sample dhcp configuration file.

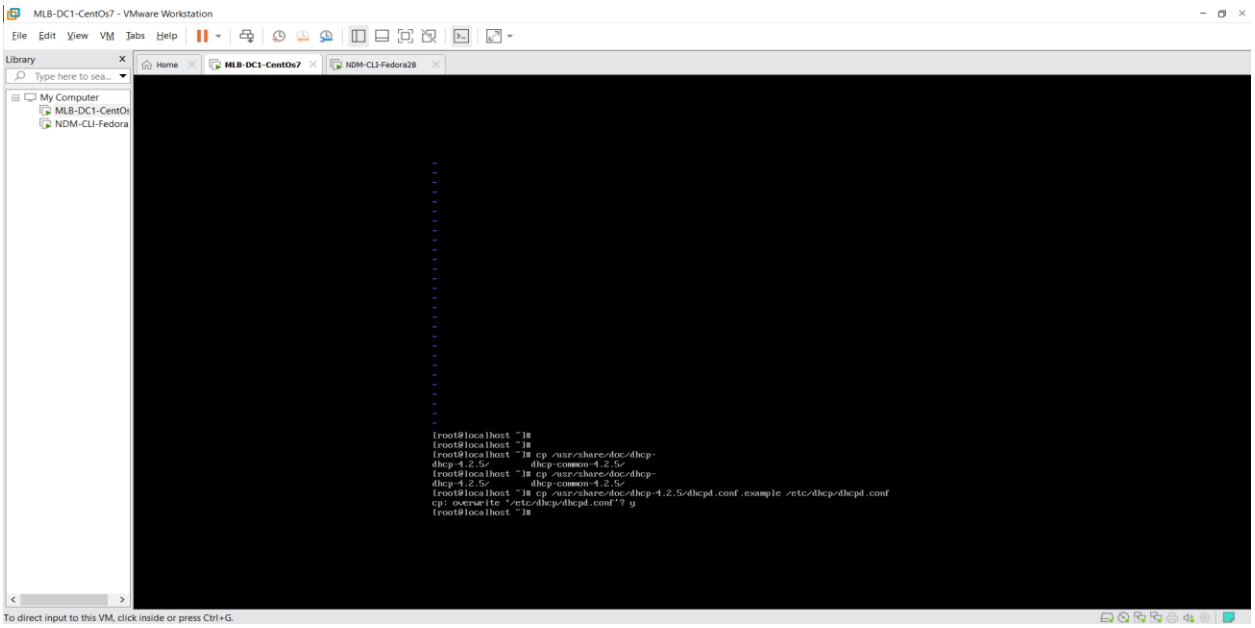

Figure 1.2.6 overwrite the file directory

Press y to overwrite the file at the directory.

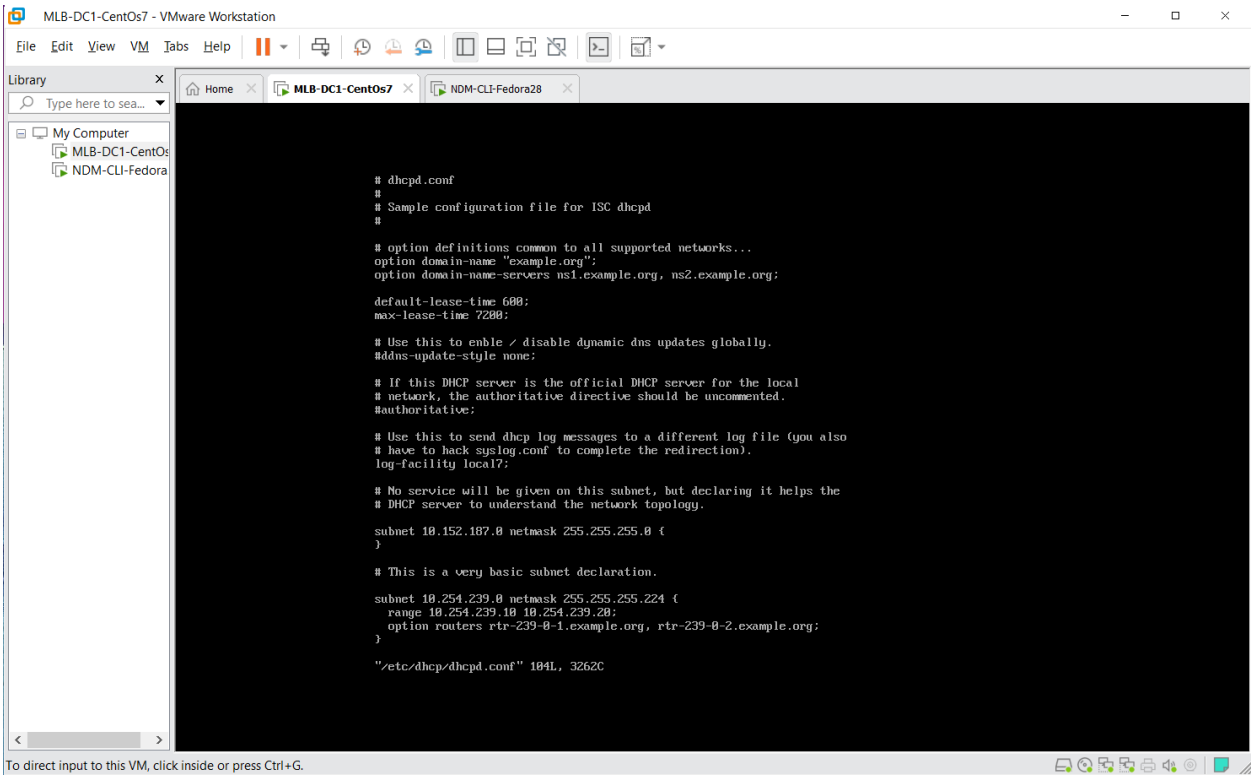

Figure 1.2.7 command “vi /etc/dhcp/dhcpd.conf”

Run the command “vi /etc/dhcp/dhcpd.conf” to edit the file.

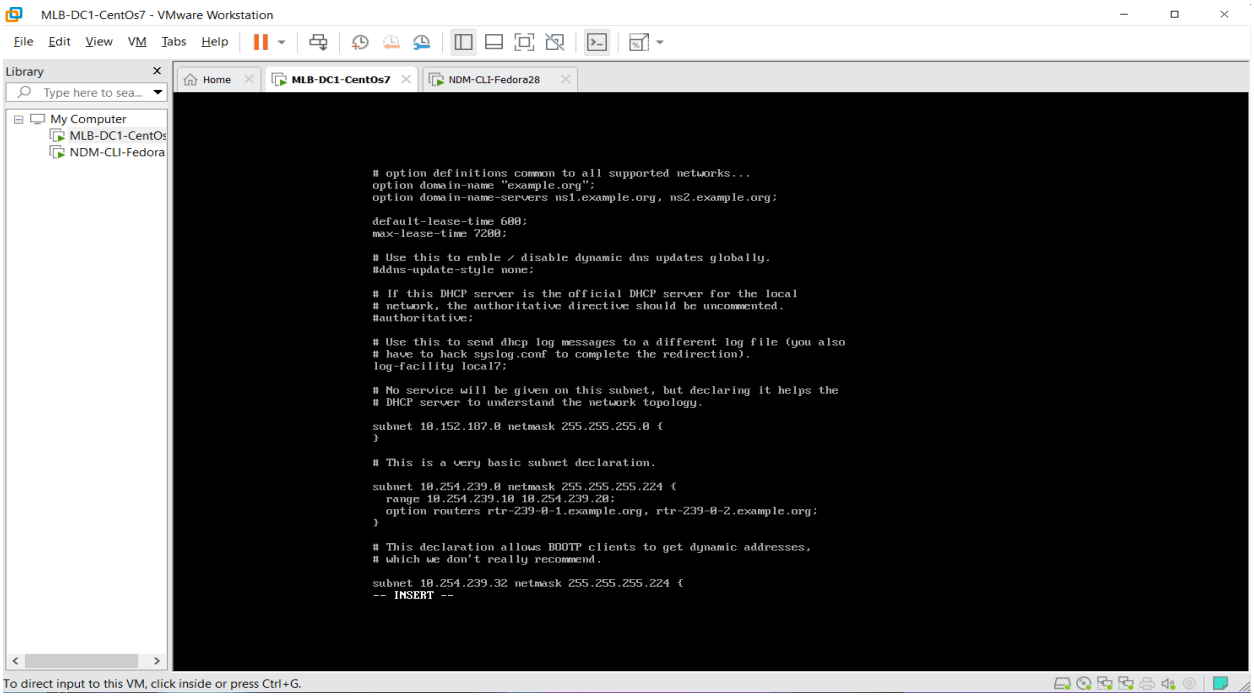

Figure 1.2.8 edit the file

Press button “i” to move the cursor and edit the file.

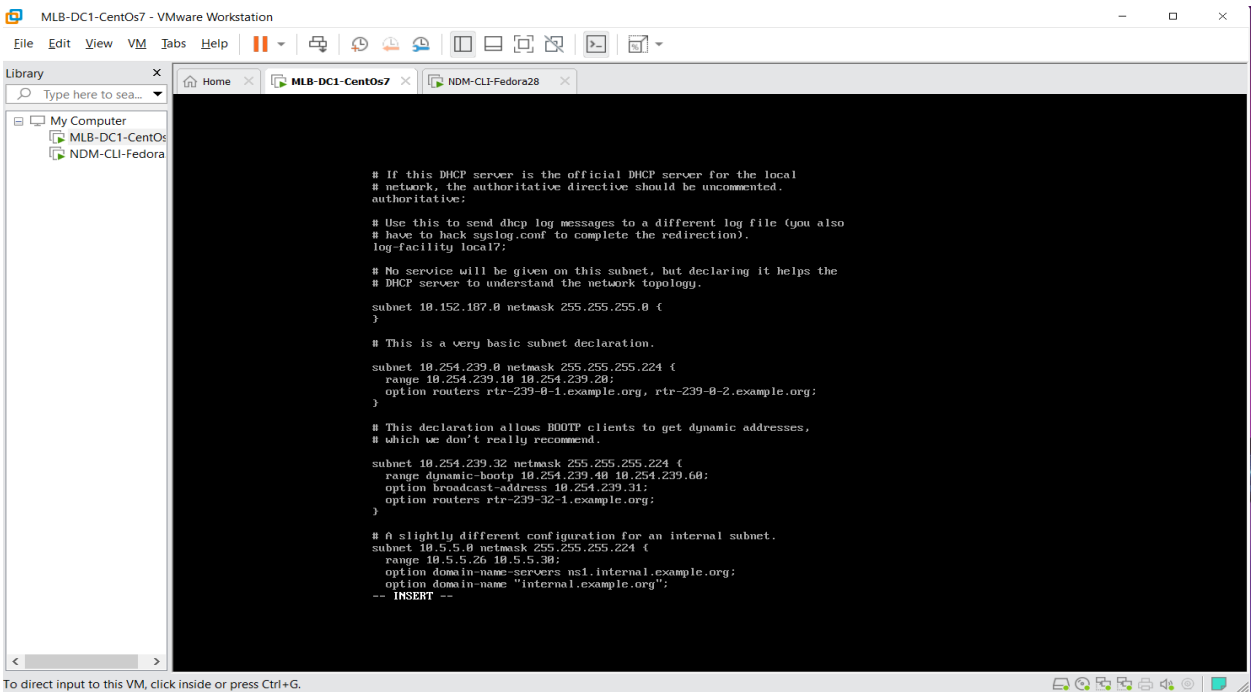

Figure 1.2.9 uncomment the authoritative

Remove the symbol “#” before the authoritative word to uncomment the authoritative. It makes the DHCP server as the official DHCP server for the local network.

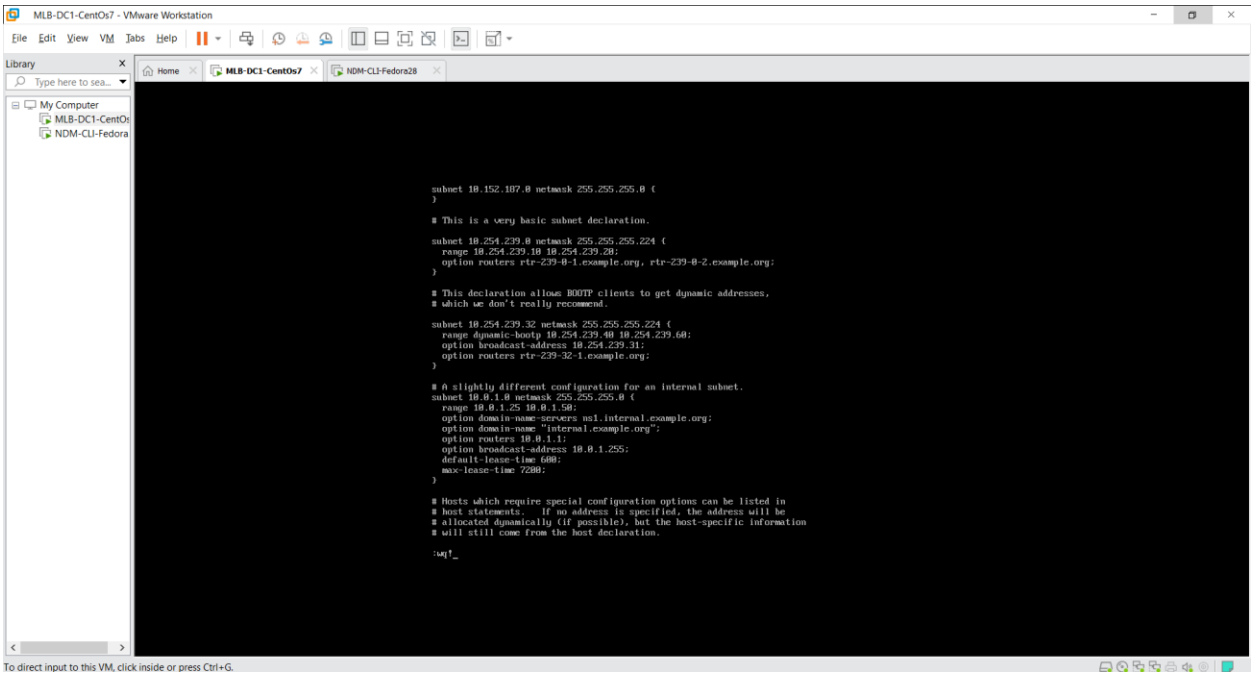

Figure 1.2.10 change the network details

Change subnet as 10.0.1.0 , netmask as 255.255.255.0 , range as 10.0.1.25 10.0.1.50 , option routers as 10.0.1.1 and option broadcast-address as 10.0.1.255 to define the subnet, range of IP addresses , option routers and broadcast-address.

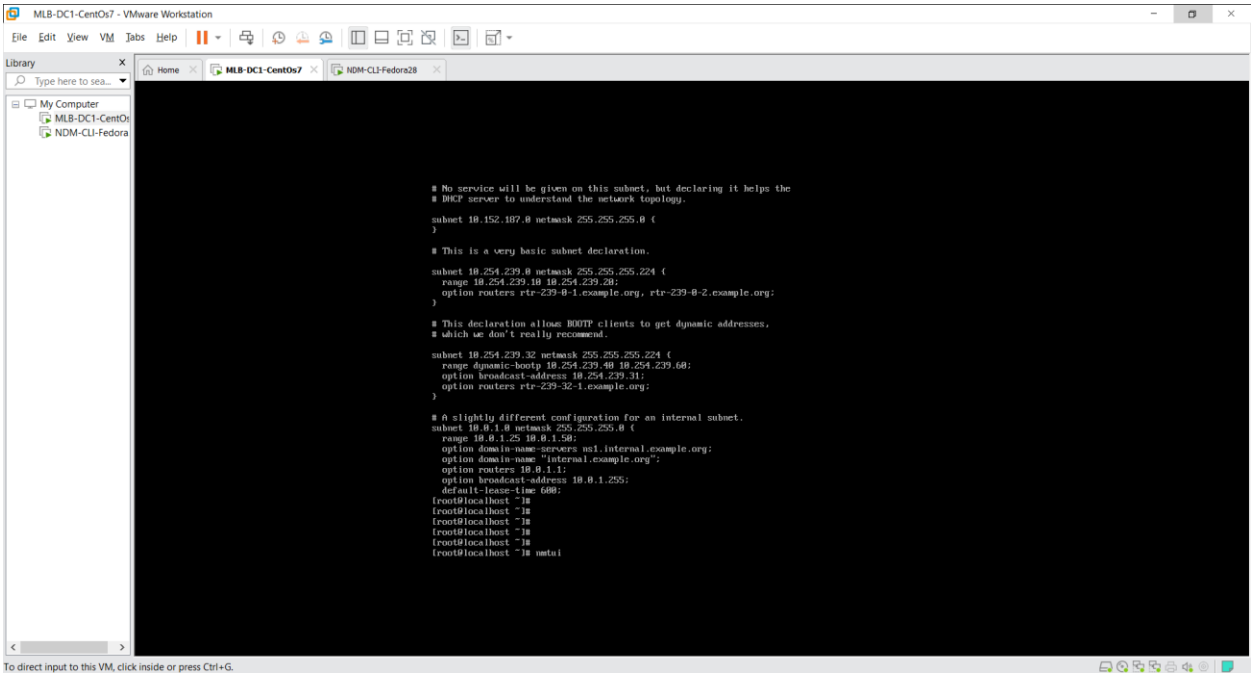

Figure 1.2.11 go to NetworkManager TUI

Run the command “nmtui” to go to NetworkManager TUI.

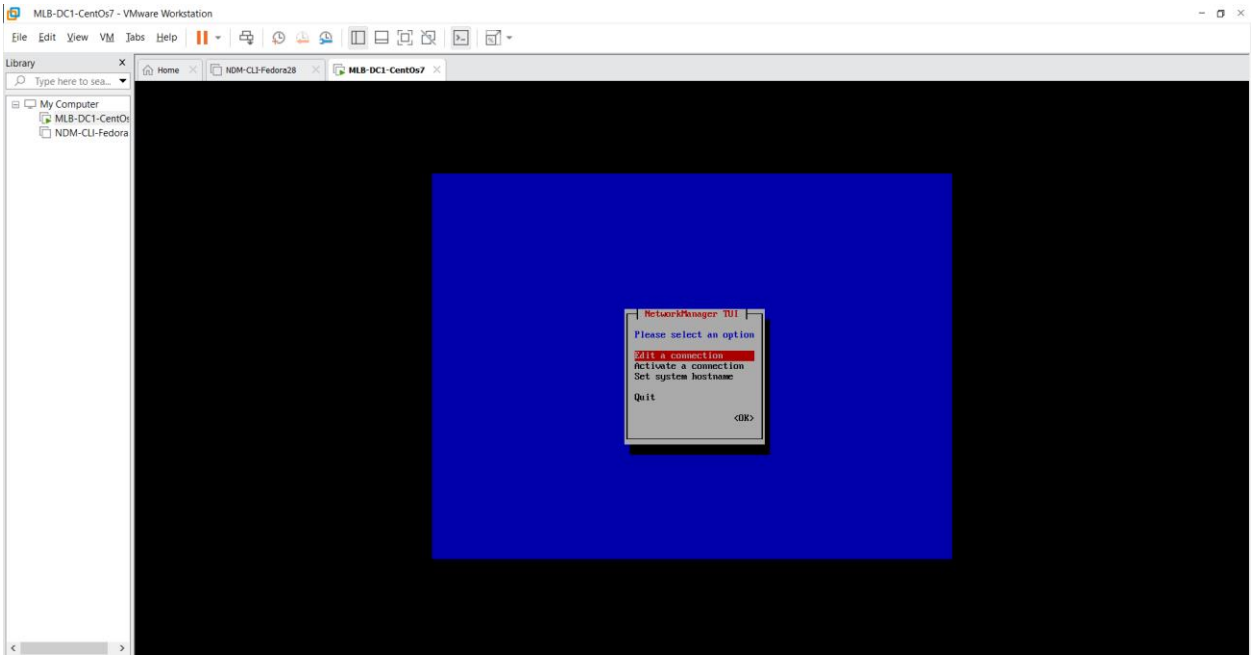

Figure 1.2.12 activate a connection

Go to activate a connection.

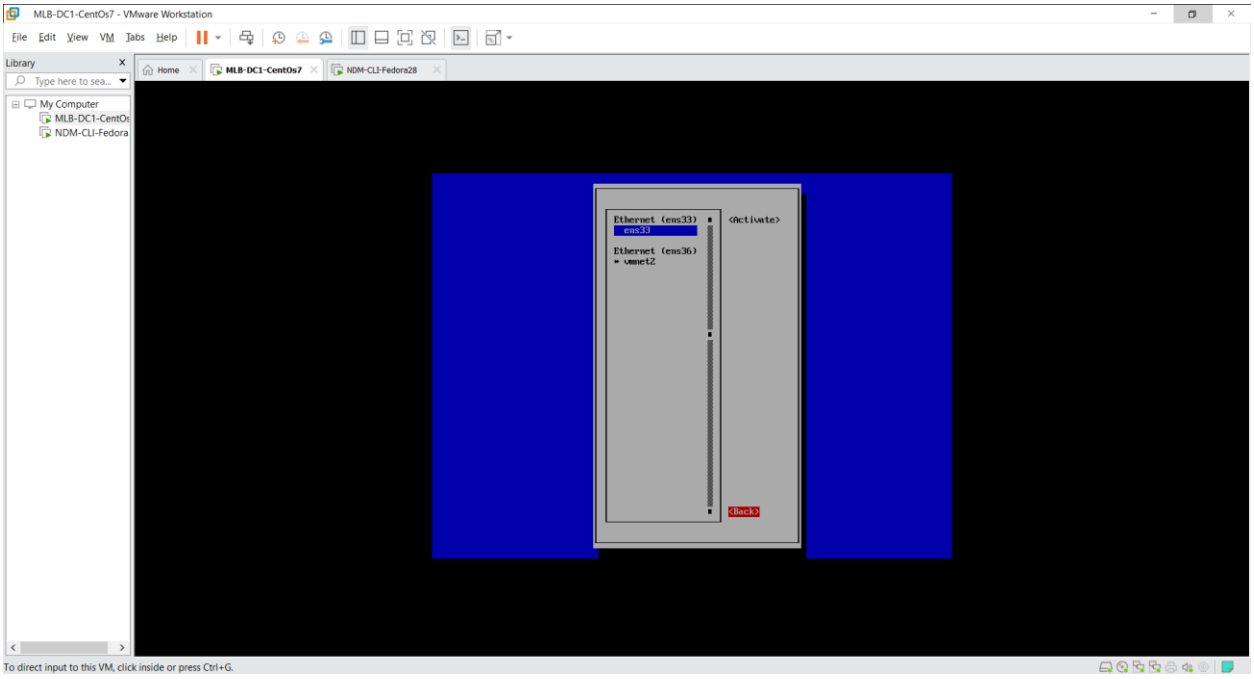

Figure 1.2.13 Deactivate the ens33 network

Deactivate the ens33 network to ensure that the internet connection has disabled.

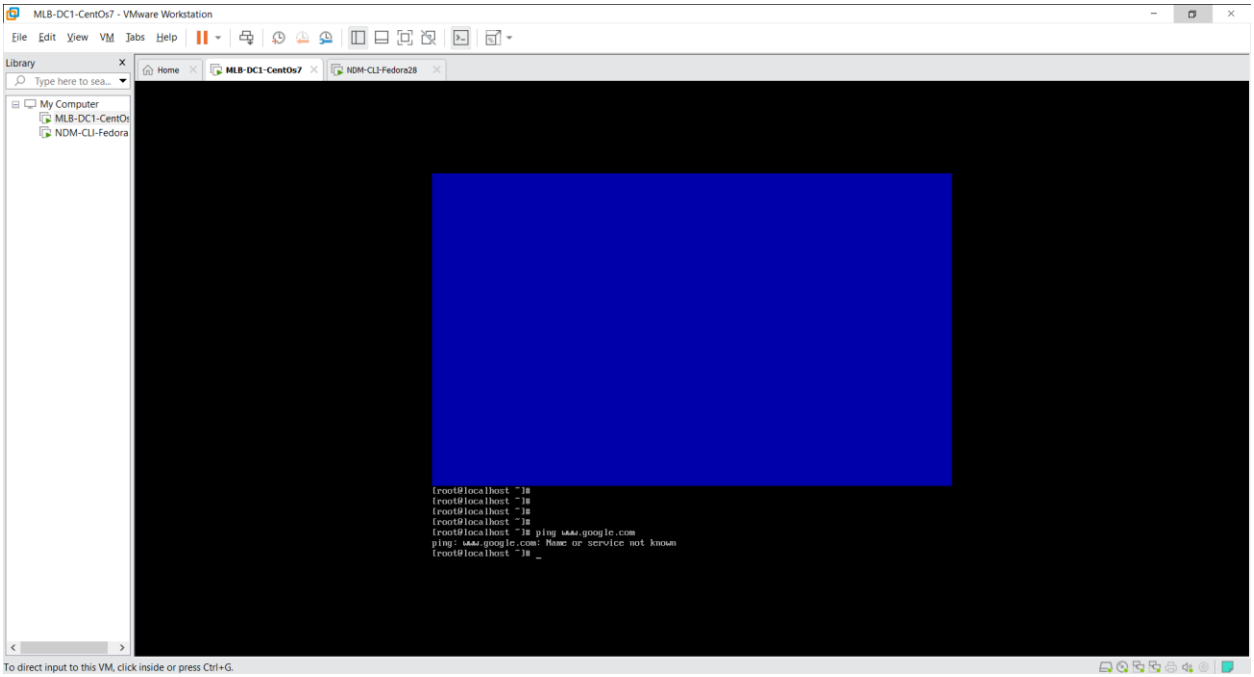

Figure 1.2.14 clarify the network

Run the command “ping www.google.com” to clarify that there is any network connection.

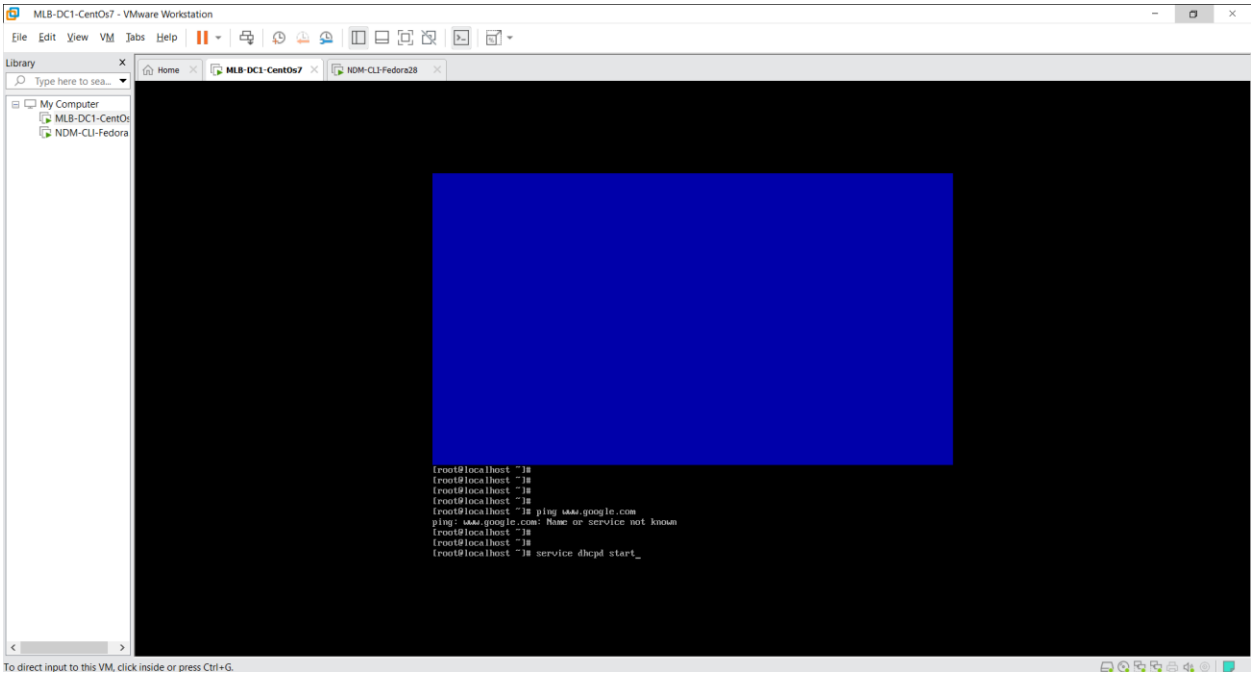

Figure 1.2.15 command “service dhcpd start”

Run the command “service dhcpd start” to start the dhcpd service and make it to start automatically on every reboot.

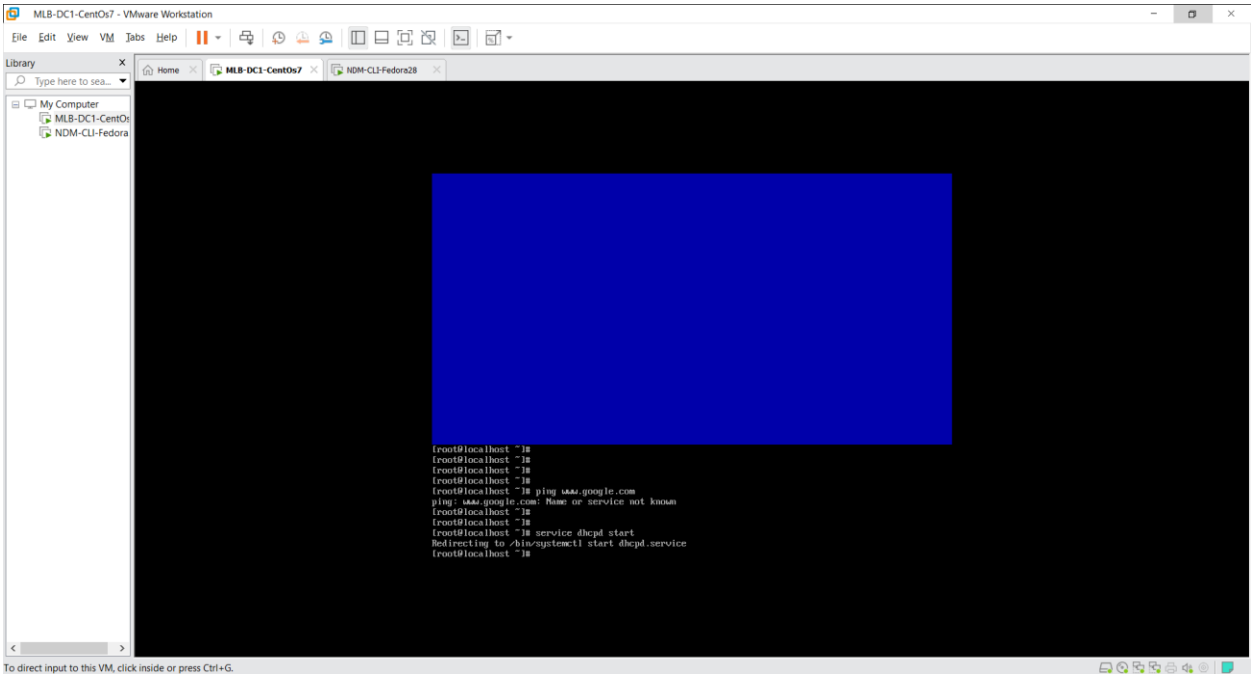

Figure 1.2.16 command “service dhcpd start”(2)

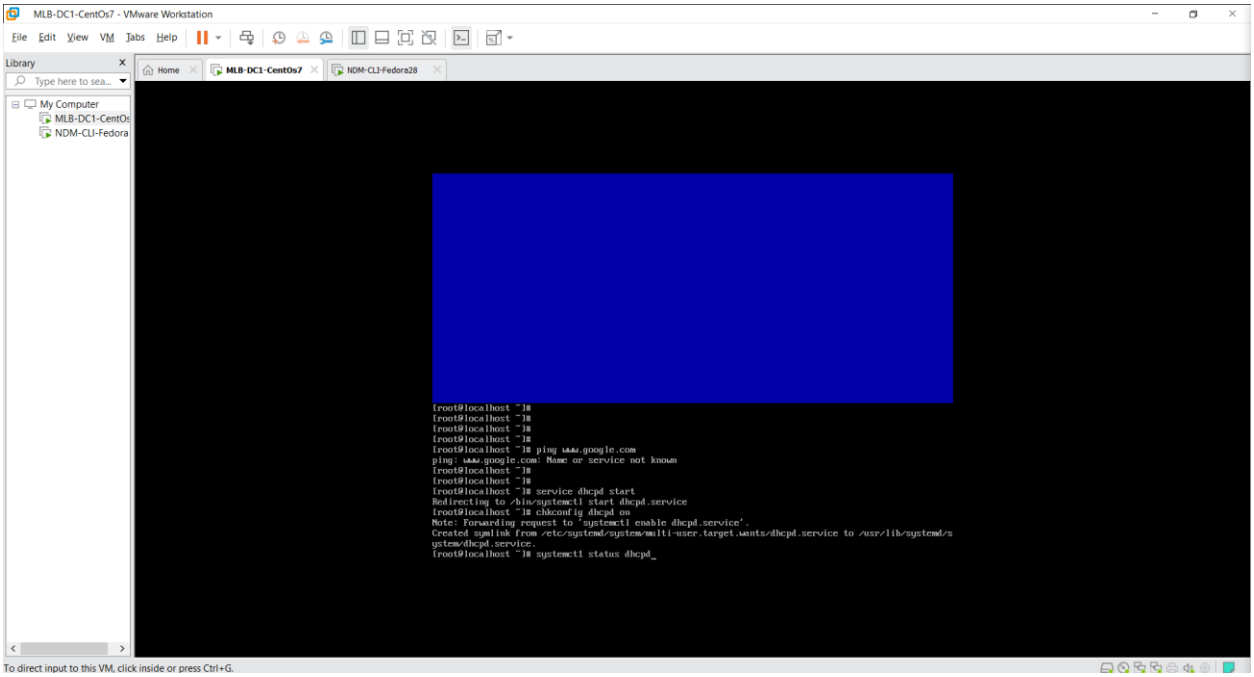

Figure 1.2.17 command “chkconfig dhcpd on”

Run the command “chkconfig dhcpd on” to o start up the DHCP server at login to the server session use.

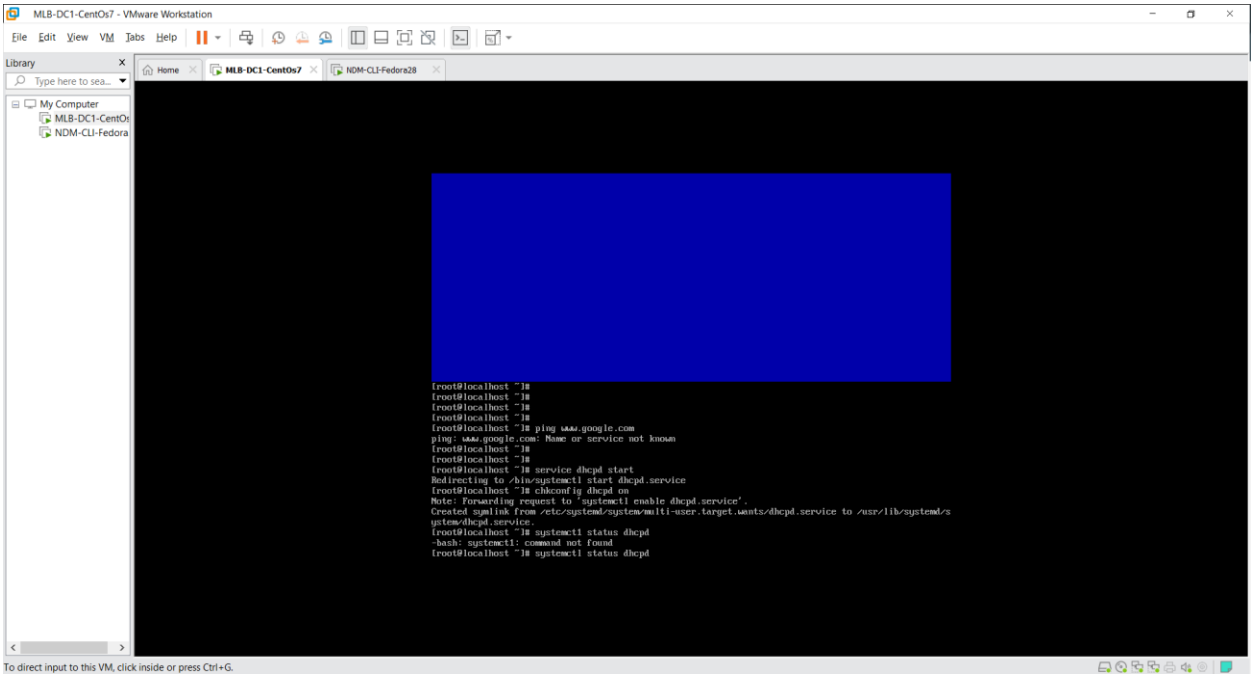

Figure 1.2.18 command "Systemctl status dhcpd"

Run the command "Systemctl status dhcpd" to check the DHCP server status.

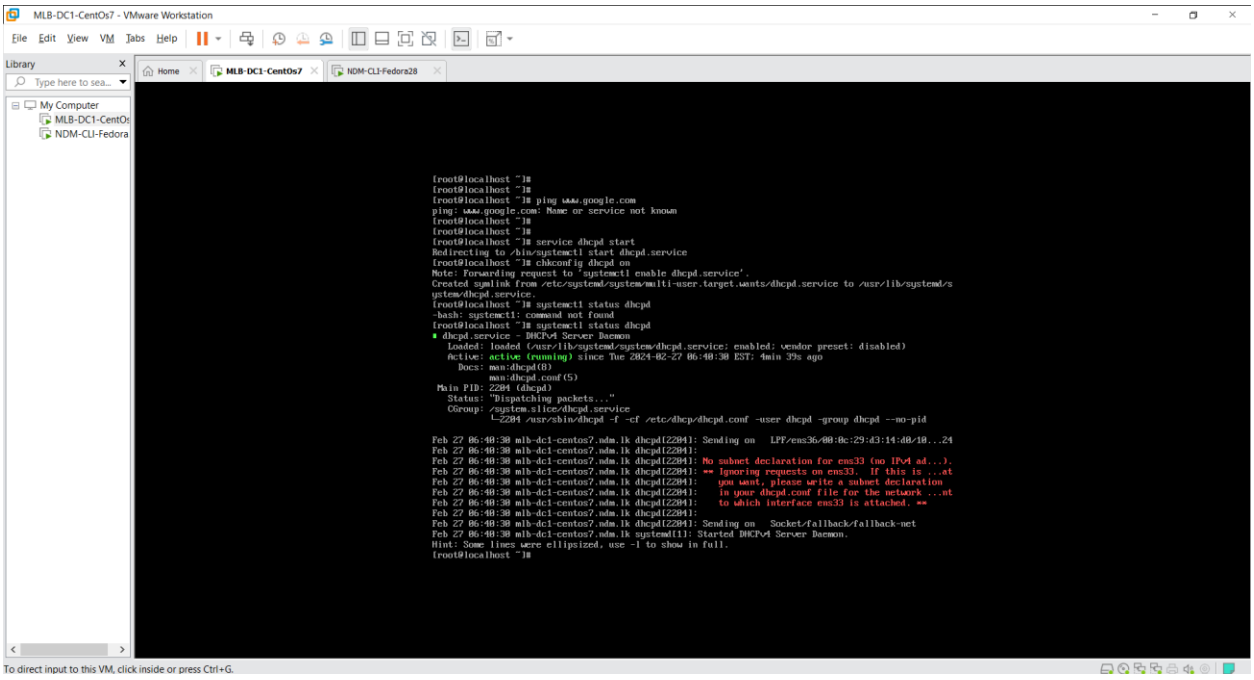

Figure 1.2.19 DHCP server status

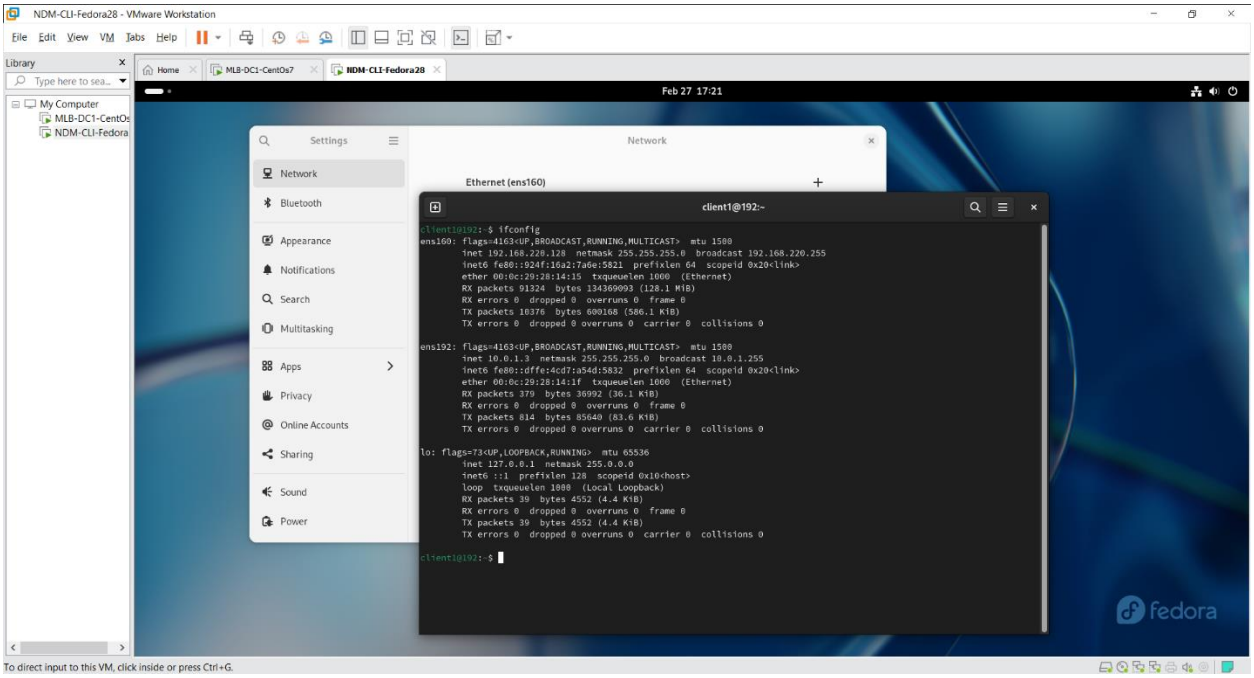

Figure 1.2.20 to check the connected networks on client

Go to terminal in the client OS and run the command “ifconfig” to check the connected networks. Ens192 network shows the IP as 10.0.1.3.

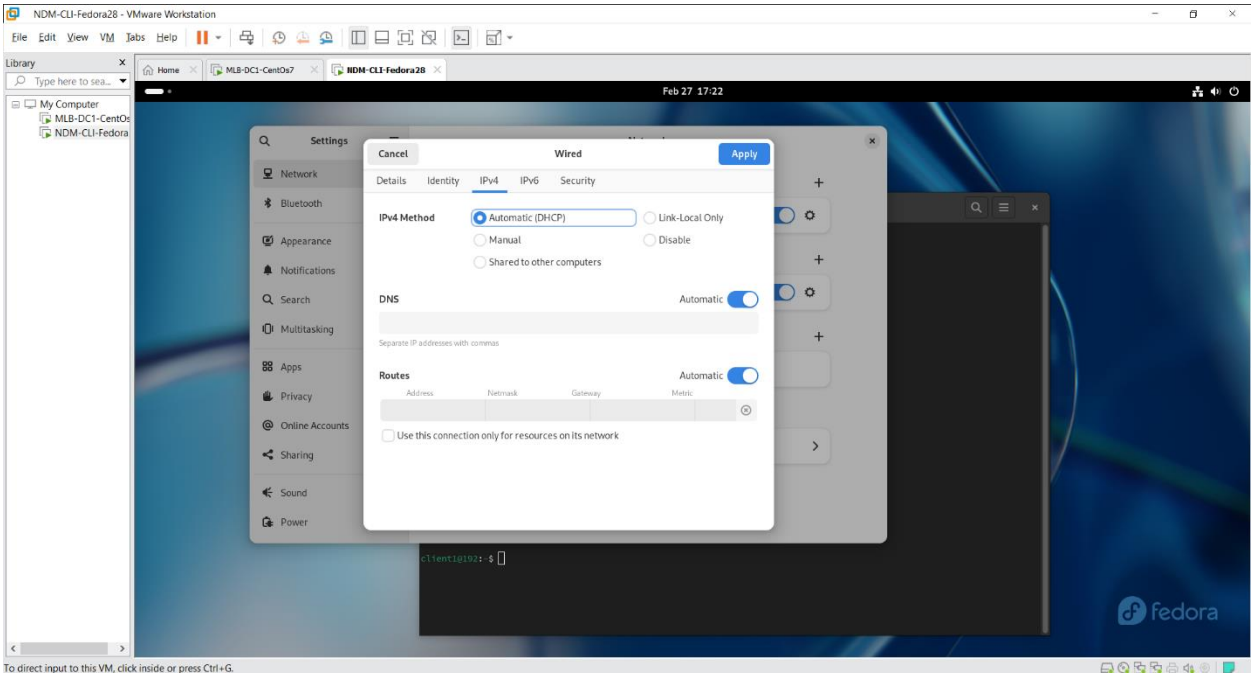

Figure 1.2.21 connect the network via DHCP on client

Go to network setting and set the ens192 network IPv4 method as Automatic(DHCP) to connect the network via DHCP.

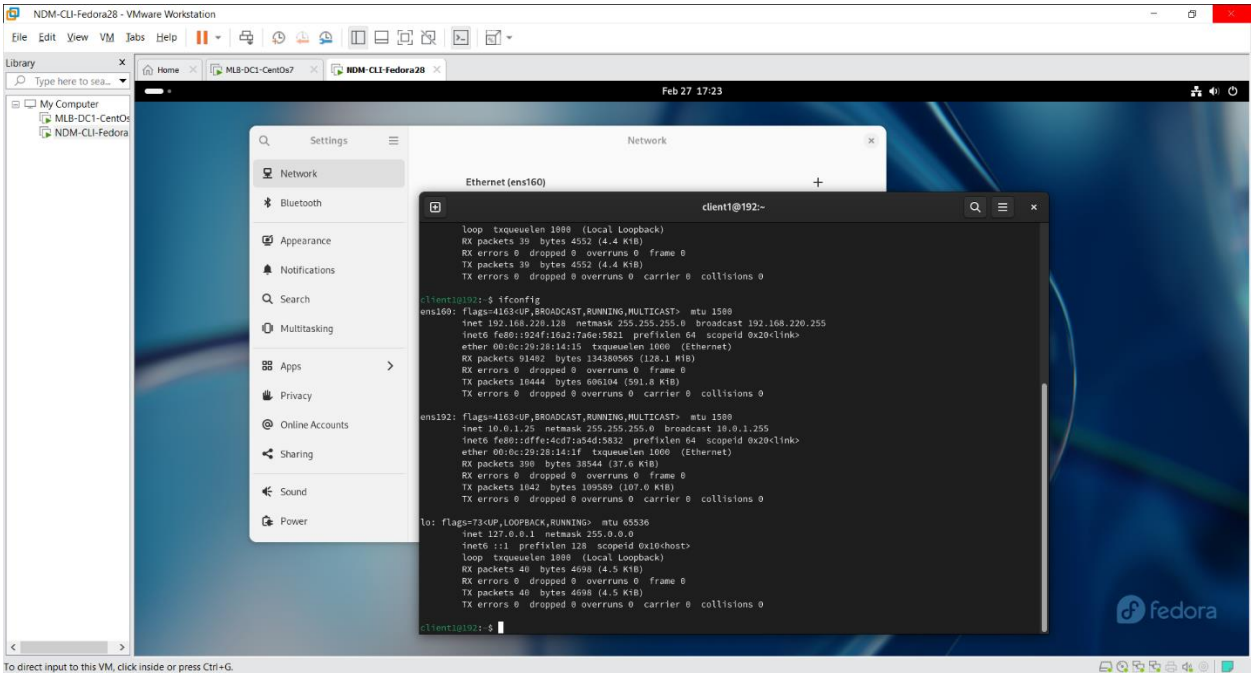

Figure 1.2.22 clarify the network

Re-run the command “ifconfig” to clarify the network ens192 has connected via DHCP. The network IP of the ens192 network shows as 10.0.1.25 (First IP address of the given IP range of the DHCP)