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

Assignment/Lab Report

Practical 02/Lab Report 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

<<28 – 02 - 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.

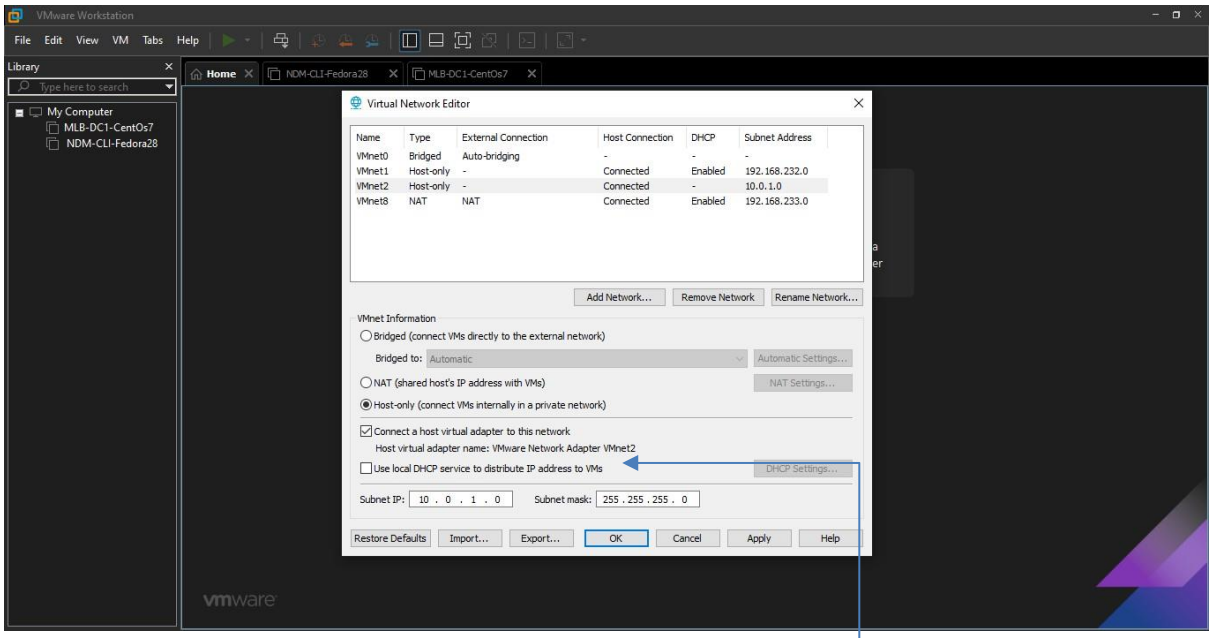
Registration Number : IT21213694

Name : De Silva G.S.D.

Installing and Configuring DHCP

Step 1

Disable the DHCP settings in VMnet 2**.**

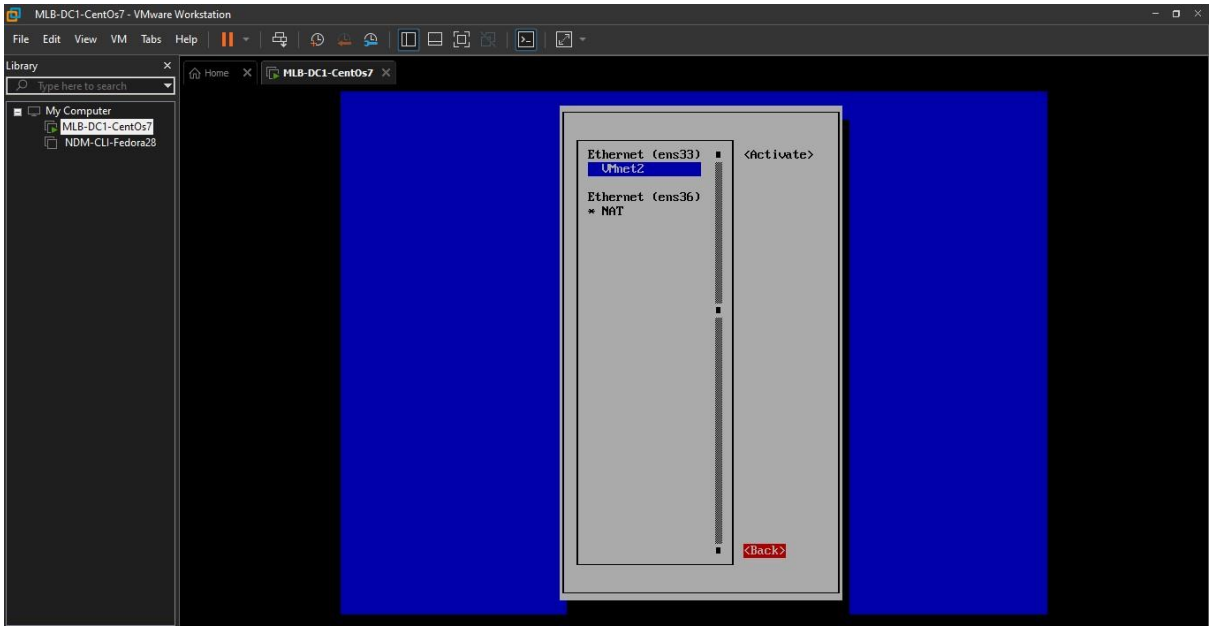


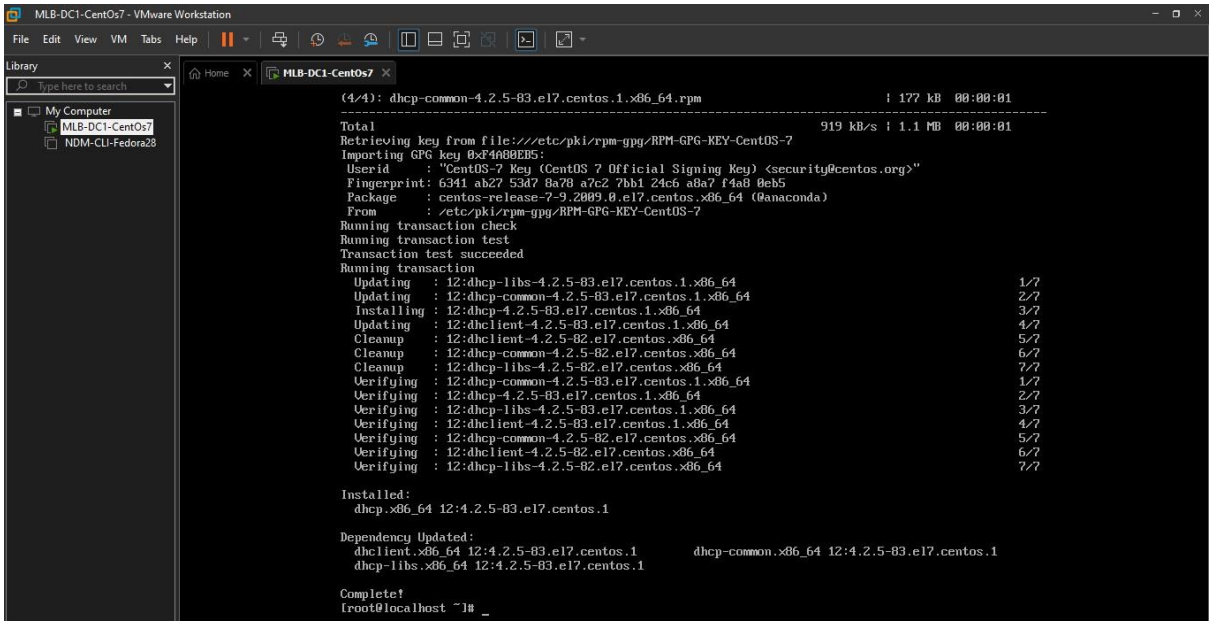
- Open the VMware Workstation and go to Edit, then click on Virtual Network Editor.
- Once you received the Virtual Network Editor Window, Click on the Change Settings Button.
- Then disable(untick) "**use local DHCP service to distribute IP address to VMs**".
- Then click on Apply and Ok.

Step 2

Installing DHCP in Centos.

- First we need to deactivate VMnet 2 connection in Centos7 and activate NAT connection.
- To install DHCP server on CentOS, enter the following command.
  $ yum install –y dhcp



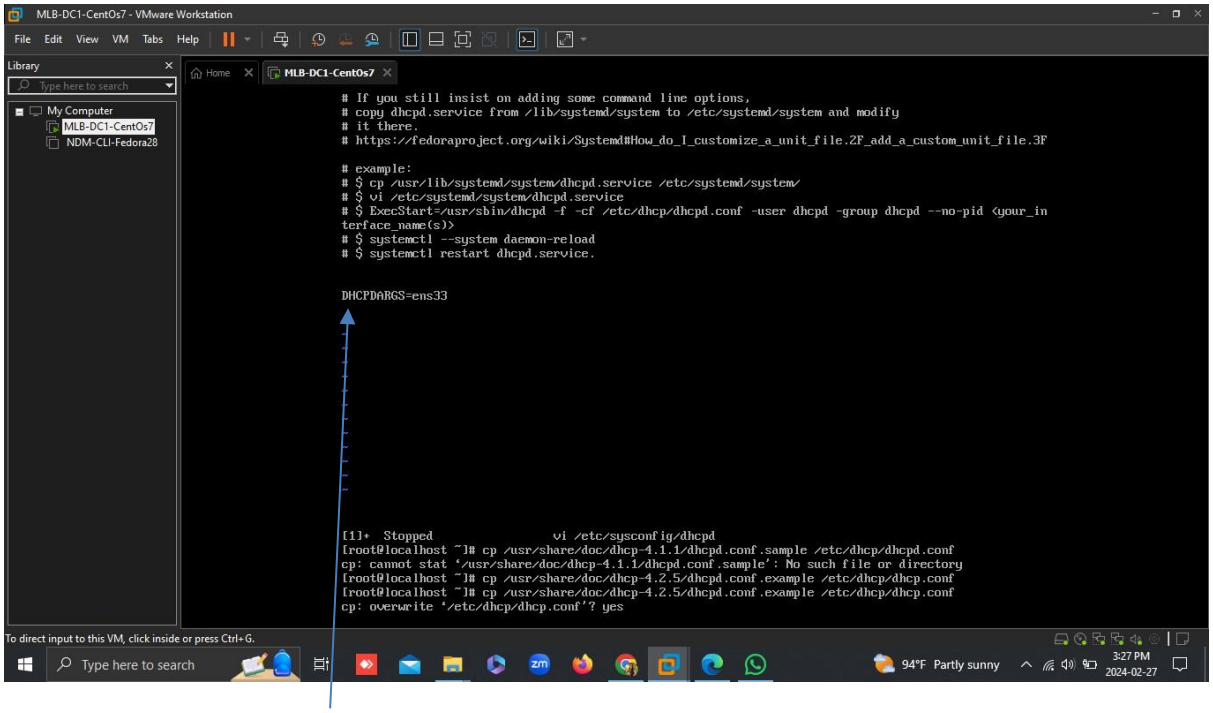


Step 3

- Configuring DHCP settings.
- Now we need to mention the interface details, which is going to be the DHCP interface.
- To do that, edit file /etc/sysconfig/dhcpd

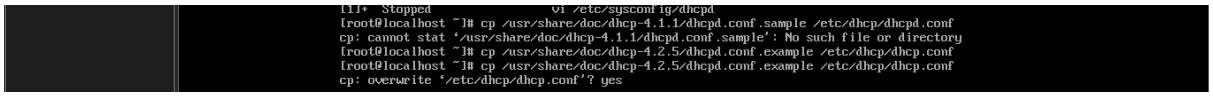
  vi /etc/sysconfig/dhcpd

- You can use the line DHCPDARGS to do that. **DHCPDARGS=ens33**



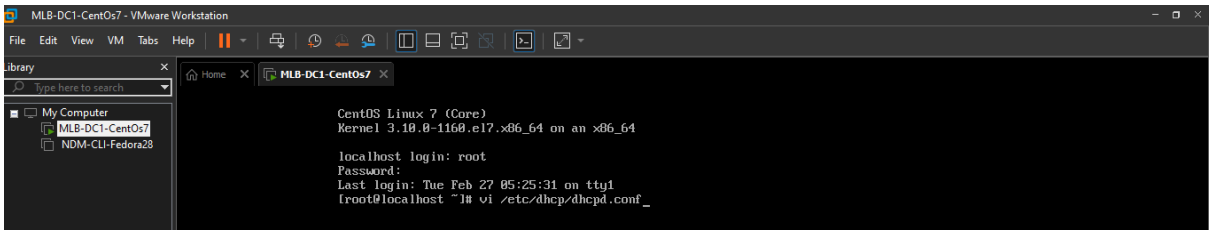
- Save and close the file.
- Copy the sample dhcp configuration file to /etc/dhcp/ directory.

cp /usr/share/doc/dhcp-4.2.5/dhcpd.conf.exsample /etc/dhcp/dhcpd.conf



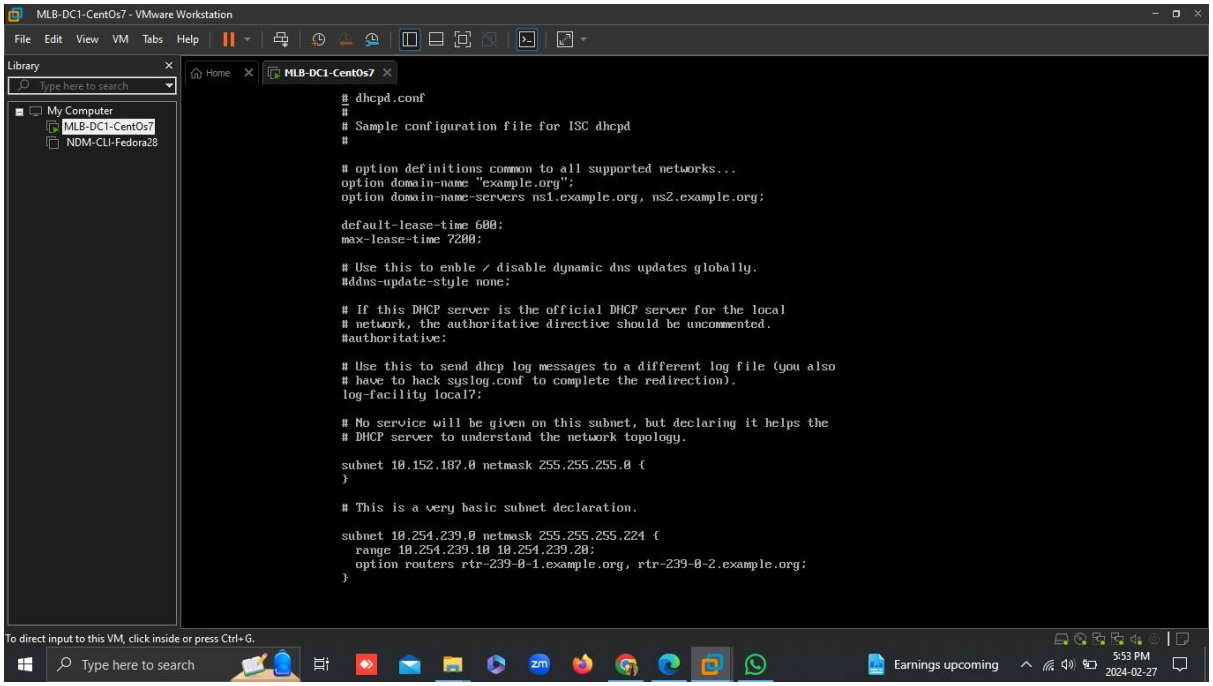
- Now, edit dhcpd.conf file,

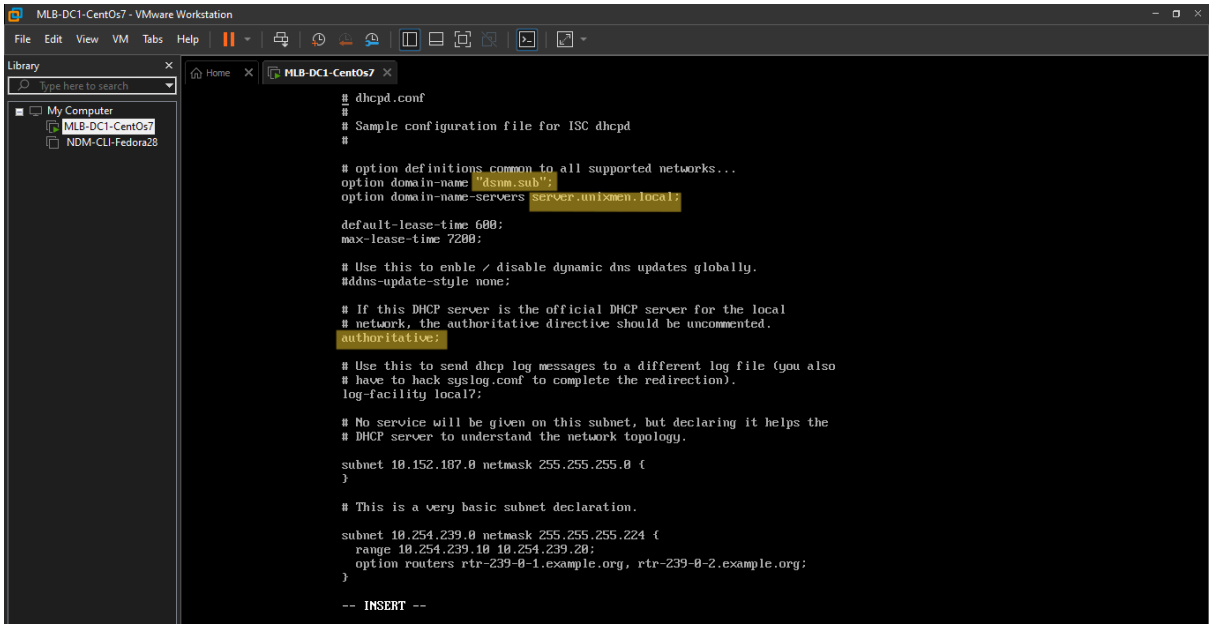
vi /etc/dhcp/dhcpd.conf



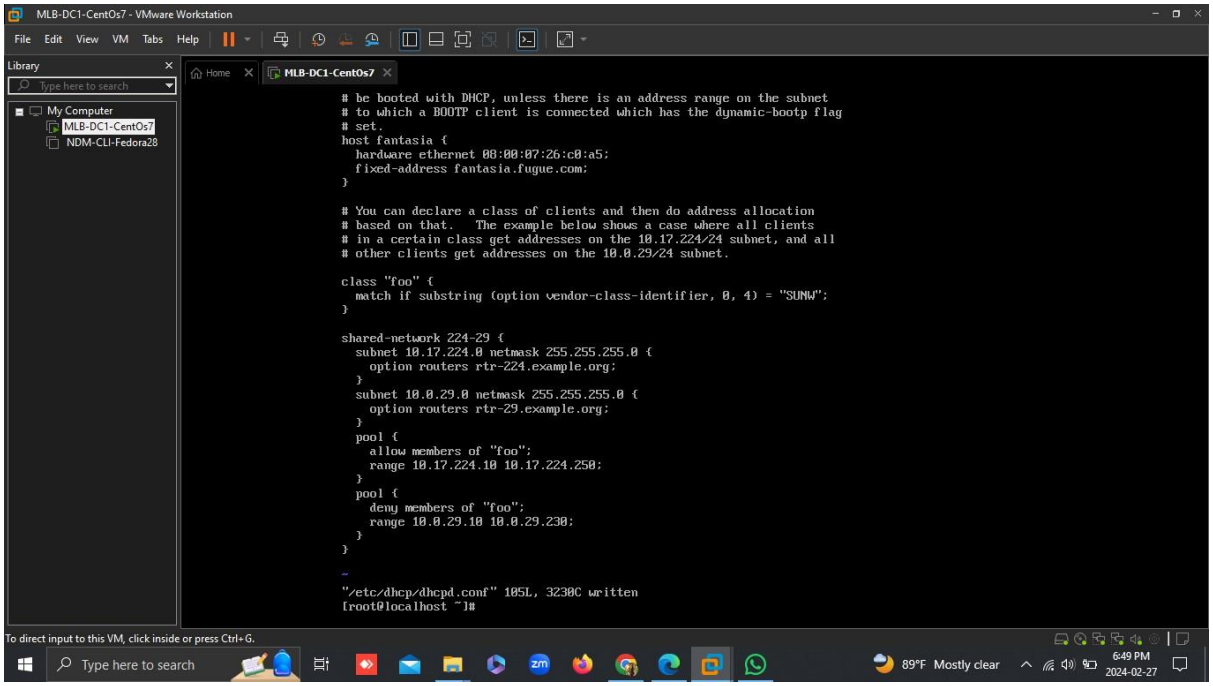
- Make the changes.
- Set the domain name and domain-name servers
- And, If this DHCP server is the official DHCP server for the local network, you should uncomment the following line

[...] authoritative; [...]





- Define the sunbet, range of ip addresses, domain and domain name servers.

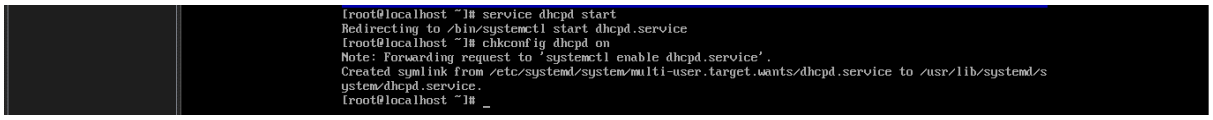


- After making all the changes you want, save and close the file. Be mindful that if you have another unused entries on the dhcpd.conf file, comment them. Otherwise, you'll have issues while starting dhcpd service.
- Now, start the dhcpd service and make it to start automatically on every reboot.

  service dhcpd start

- If you want to start up the DHCP server at logon to the server session use.

  chkconfig dhcpd on

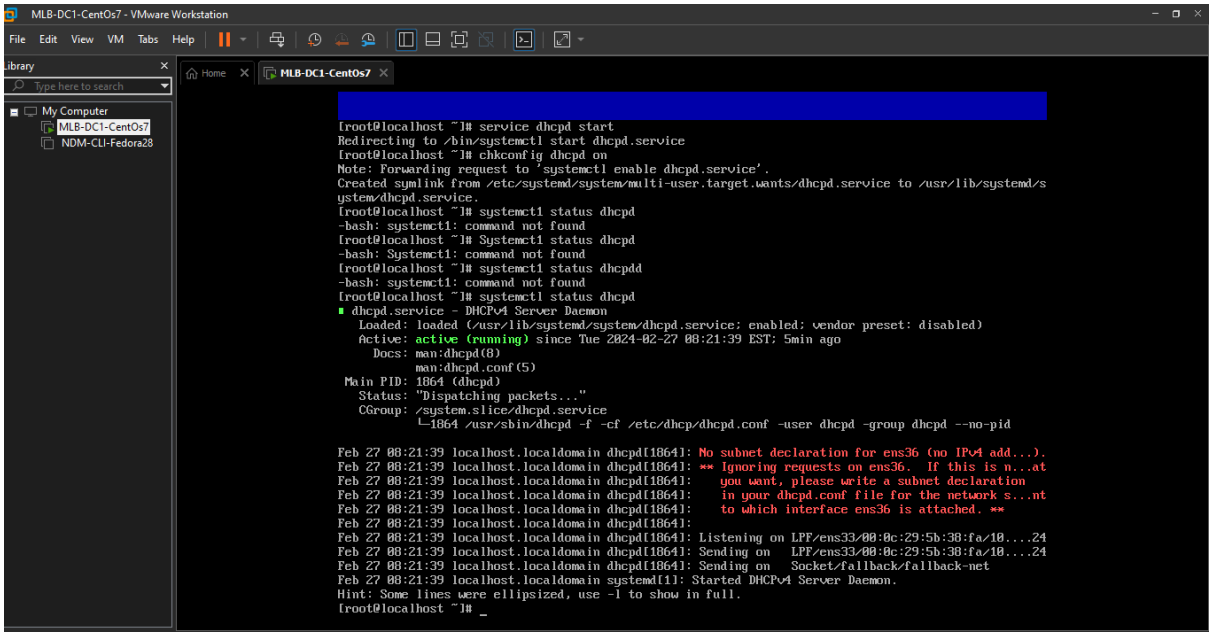


Step 4

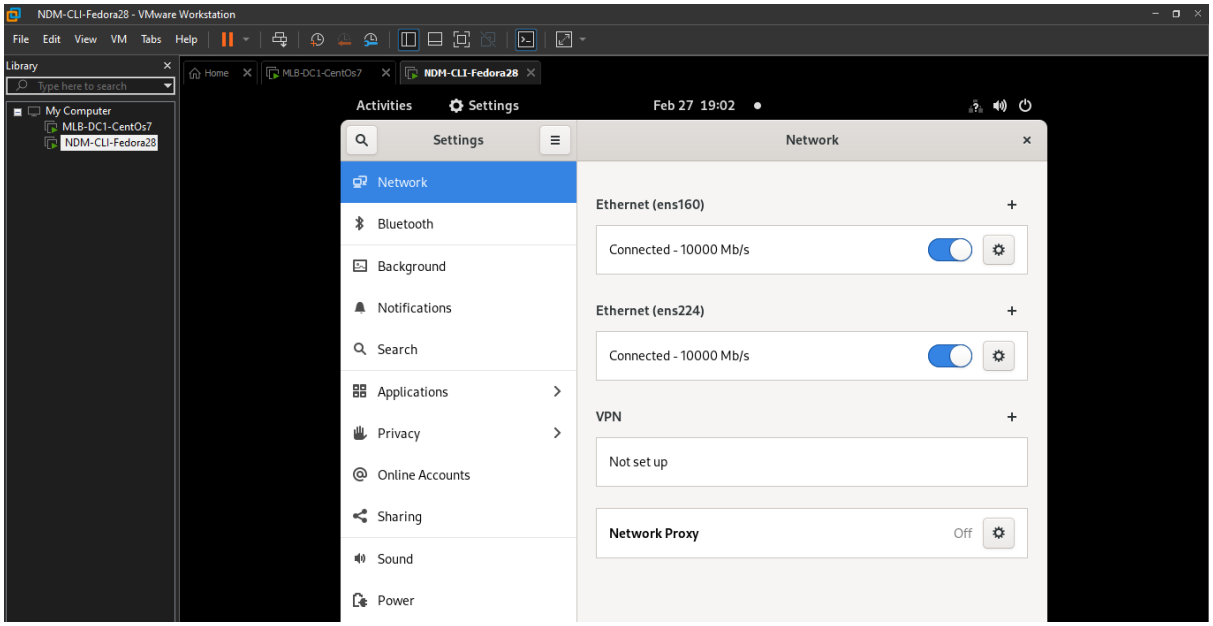
- Checking the status of DHCP server and client.
- You can use the following command and check the DHCP server status.

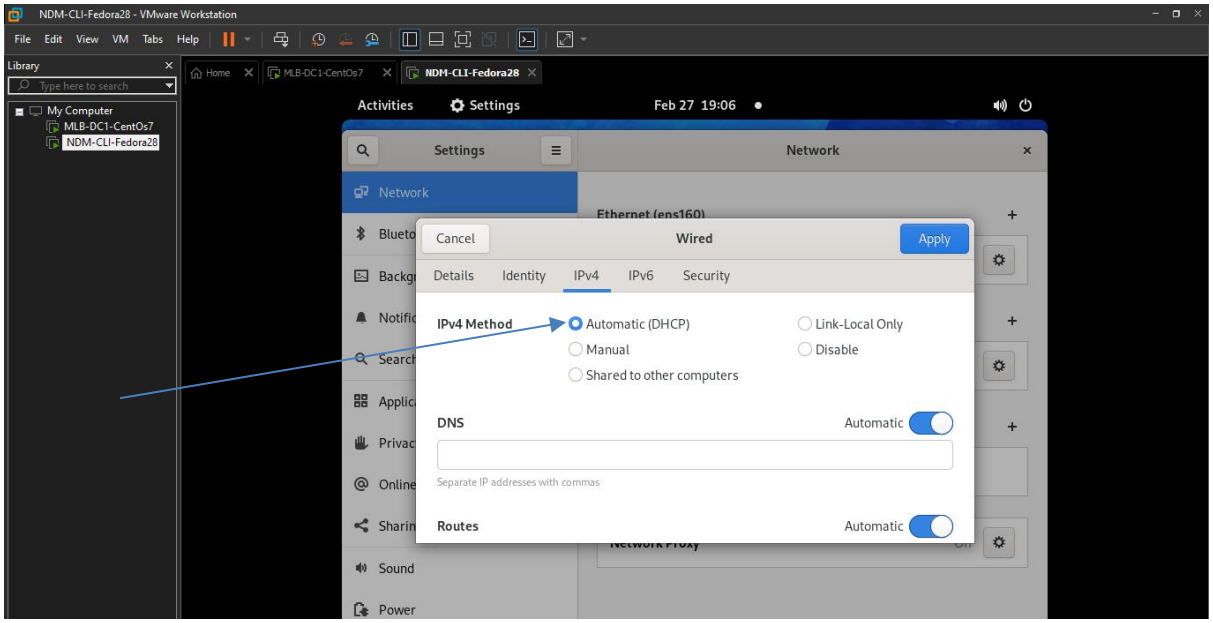
  # Systemctl status dhcpd

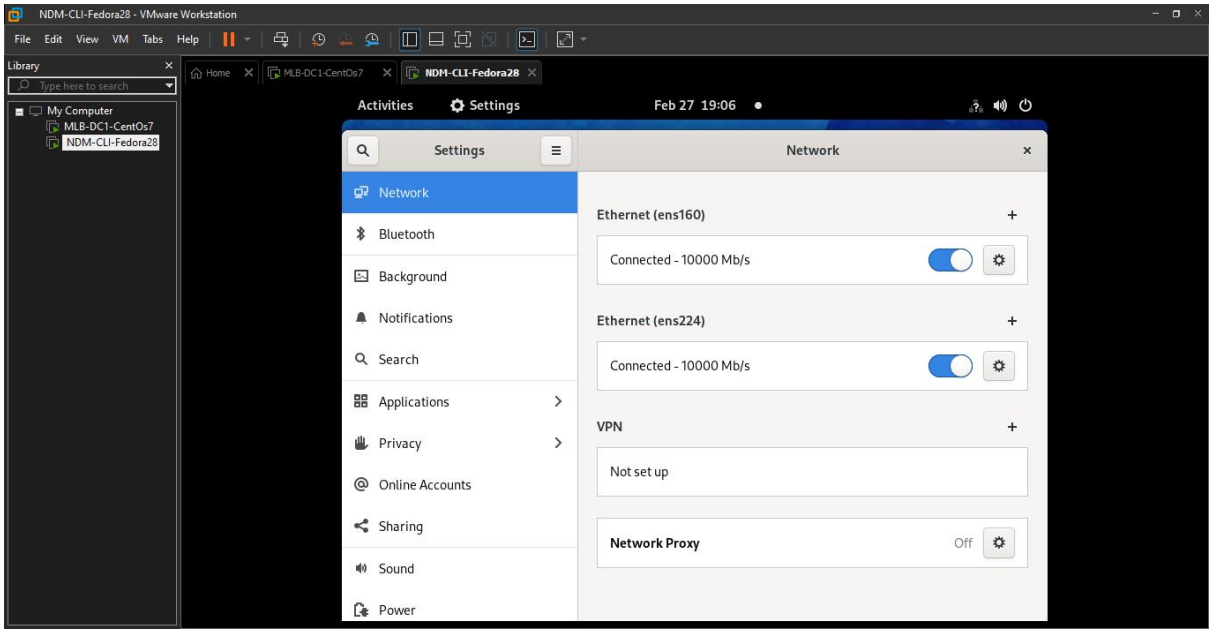
- DHCP must active and running now.



- Now, go to the client's network configration settings and change the IP settings to Automatic (DHCP).

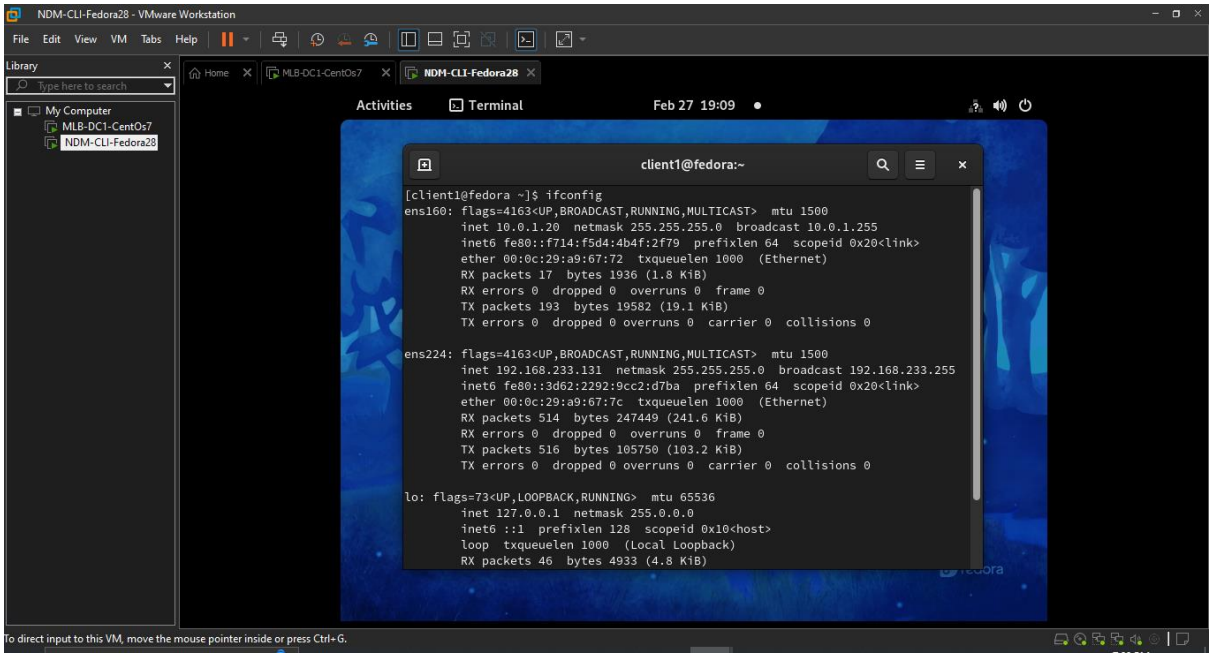






- Now check the ip address of fedora and see if the DHCP server is working or not. You can use the command.

  Ifconfig

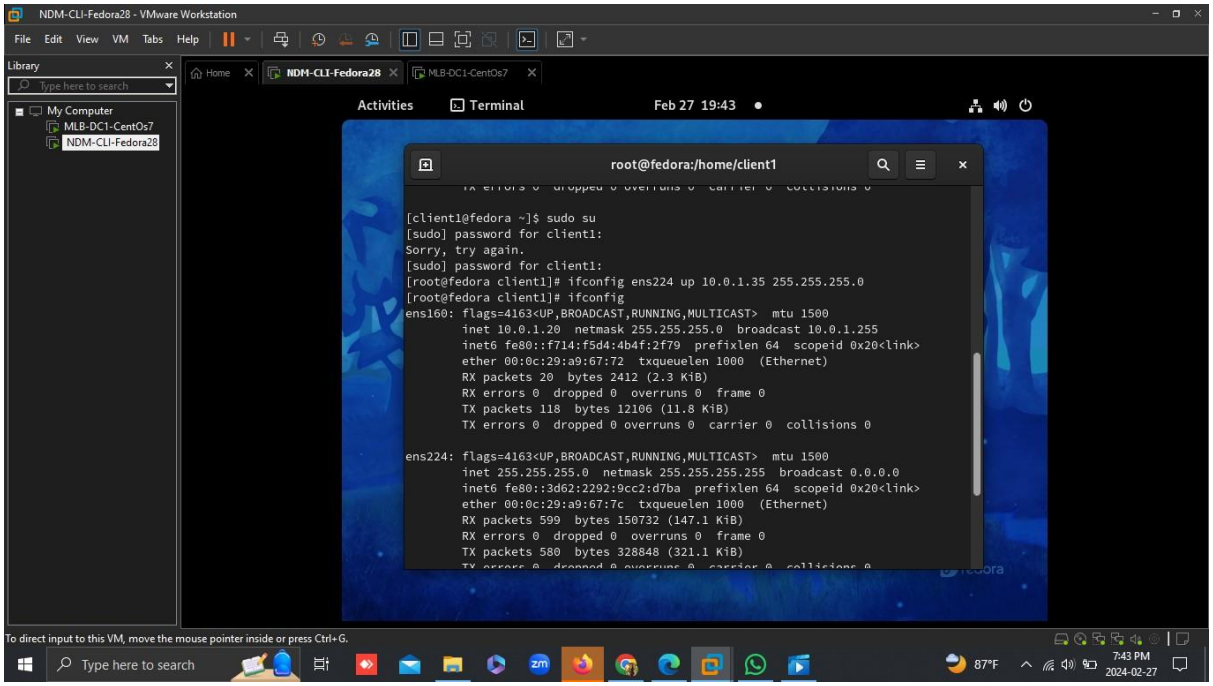

NDM-CLI-Fedora28 - VMware Workstation
File Edit View VM Tabs Help
Library
Type here to search
My Computer
MLB-DC1-CentOs7
NDM-CLI-Fedora28
Home
MLB-DC1-CentOs7
NDM-CLI-Fedora28
Activities
Terminal
Feb 27 19:09
client1@fedora:~
[client1@fedora ~]$ ifconfig
ens160: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 10.0.1.20 netmask 255.255.255.0 broadcast 10.0.1.255
inet6 fe80::f714:f5d4:4b4f:2f79 prefixlen 64 scopeid 0x20<link>
ether 00:0c:29:a9:67:72 txqueuelen 1000 (Ethernet)
RX packets 17 bytes 1936 (1.8 KiB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 193 bytes 19582 (19.1 KiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
ens224: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 192.168.233.131 netmask 255.255.255.0 broadcast 192.168.233.255
inet6 fe80::3d62:2292:9cc2:d7ba prefixlen 64 scopeid 0x20<link>
ether 00:0c:29:a9:67:7c txqueuelen 1000 (Ethernet)
RX packets 514 bytes 247449 (241.6 KiB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 516 bytes 105750 (103.2 KiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
inet 127.0.0.1 netmask 255.0.0.0
inet6 ::1 prefixlen 128 scopeid 0x10<host>
loop txqueuelen 1000 (Local Loopback)
RX packets 46 bytes 4933 (4.8 KiB)
To direct input to this VM, move the mouse pointer inside or press Ctrl+G.

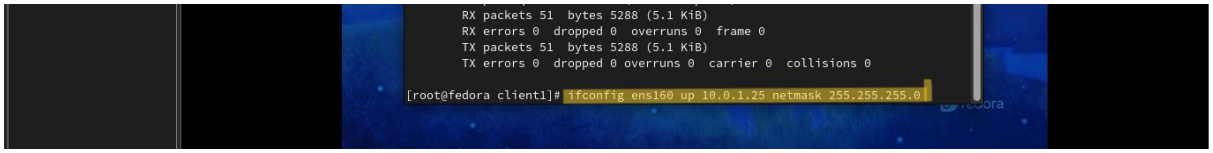
Changing IP Configurations in Linux

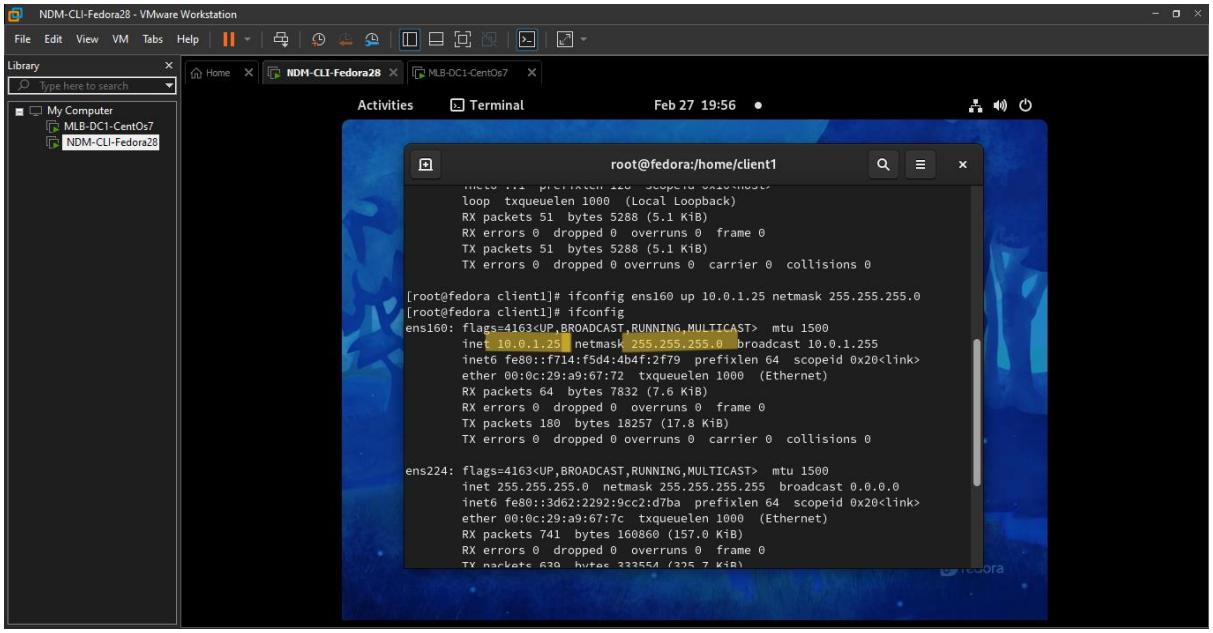
1. Identify the interface you need to configure using the **ifconfig** command.

2. Assign the temporary IP.

    Ifconfig <interface name> up <ip addtess> netmask<subnetmask>



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NDM-CLI-Fedora28
Home
NDM-CLI-Fedora28
MLB-DC1-CentOs7
Activities
Terminal
Feb 27 19:56
root@fedora:/home/client1
loop txqueuelen 1000 (Local Loopback)
RX packets 51 bytes 5288 (5.1 KiB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 51 bytes 5288 (5.1 KiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
[root@fedora client1]# ifconfig ens160 up 10.0.1.25 netmask 255.255.255.0
[root@fedora client1]# ifconfig
ens160: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 10.0.1.25 netmask 255.255.255.0 broadcast 10.0.1.255
inet6 fe80::f714:f5d4:4b4f:2f79 prefixlen 64 scopeid 0x20<link>
ether 00:0c:29:a9:67:72 txqueuelen 1000 (Ethernet)
RX packets 64 bytes 7832 (7.6 KiB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 180 bytes 18257 (17.8 KiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
ens224: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 255.255.255.0 netmask 255.255.255.255 broadcast 0.0.0.0
inet6 fe80::3d62:2292:9cc2:d7ba prefixlen 64 scopeid 0x20<link>
ether 00:0c:29:a9:67:7c txqueuelen 1000 (Ethernet)
RX packets 741 bytes 160860 (157.0 KiB)
RX errors 0 dropped 0 overruns 0 frame 0