Sri Lanka Institute of Information Technology

Network Designing & Management (IT3010)

Year 3 Semester 1

Lab Sheet 02

IT22127778

Chavindee M.A.P

Installing and configuring DHCP

Step 1: Disable DHCP Settings in VMnet 2 (to avoid conflicts with the DHCP server being configured)

Step 2: Install DHCP Server on CentOS

Command   **$ yum install –y dhcp**

Step 3: Configure DHCP Settings & assign the network interface

Command: **vi /etc/sysconfig/dhcpd**

Copy the sample dhcp configuration file to /etc/dhcp/ directory

Now, edit dhcpd.conf file,

vi /etc/dhcp/dhcpd.conf

Make the following changes:

- **Set the domain name and DNS servers.**

- **Uncomment the authoritative; line.**

- **Define the subnet, IP range, and other parameters:**

A slightly different configuration for an internal subnet.

subnet 10.0.1.0 netmask 255.255.255.0 {

range **10.0.1.25 10.0.1.30;**

option domain-name-servers **server.unixmen.local;**

2 option domain-name **"dsnm.sub";** option routers 10.0.1.1; option broadcast-address 10.0.1.255;

default-lease-time 600;

max-lease-time 7200;

}

[...]
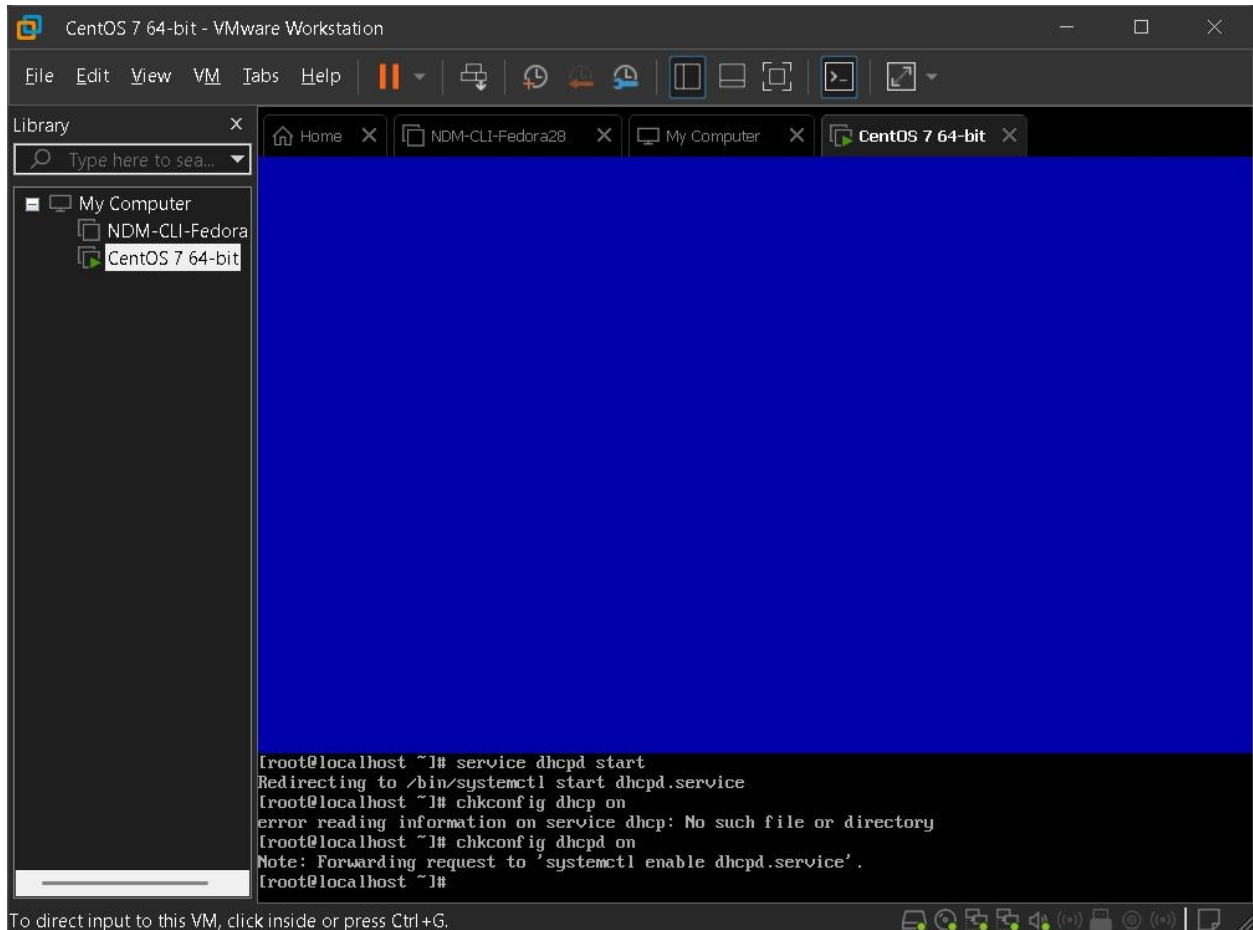
Save and close the file.

Step 4 -start the dhcpd service and make it to start automatically on every reboot

service dhcpd start
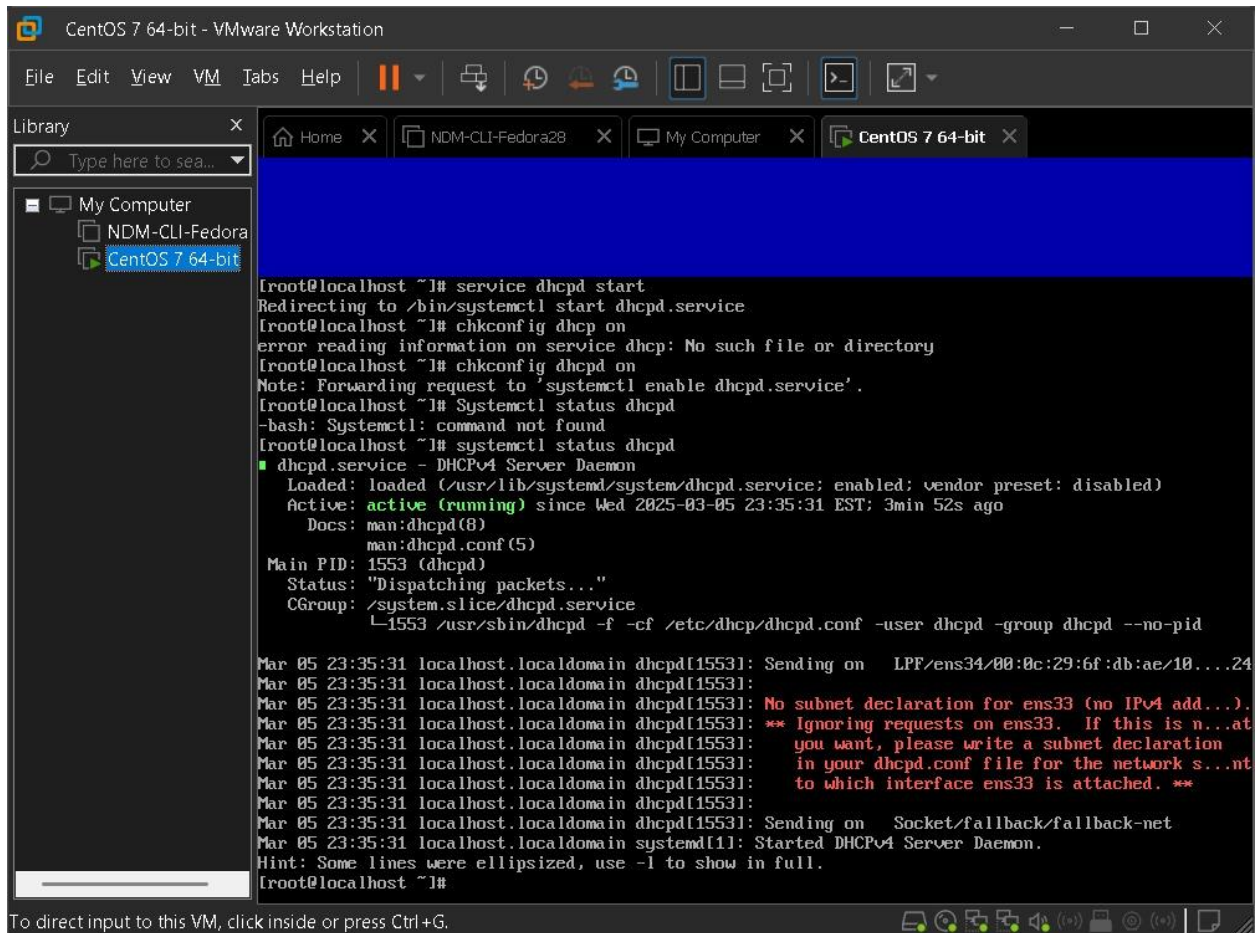
If you want to start up the DHCP server at logon to the server session use;

chkconfig dhcpd on

DHCP must active and running now.

Step 5: **Test the DHCP Server with Fedora Client**

- Go to settings and Then selecting network setting change the IP settings on the Fedora client to Automatic (DHCP).
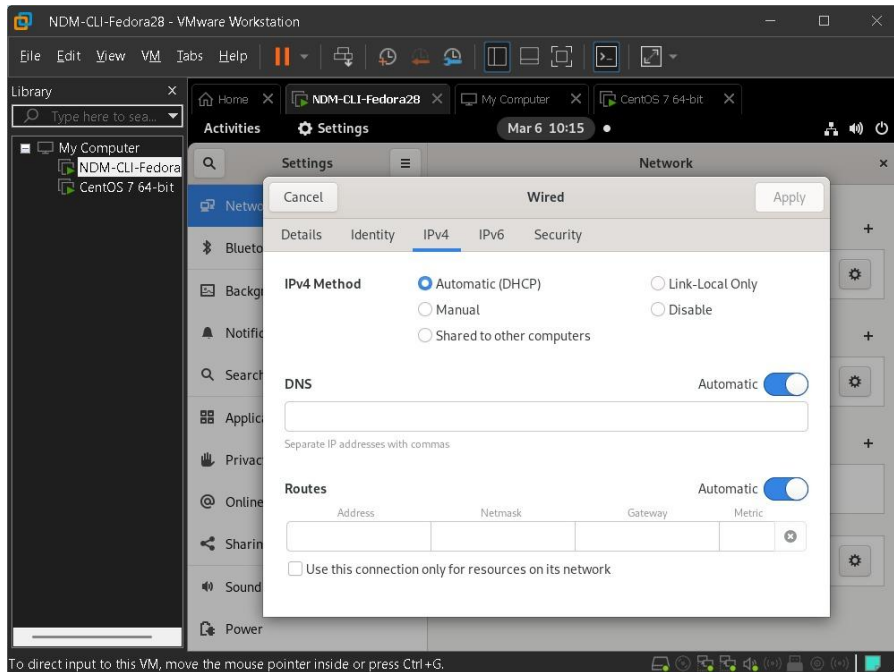
- Use the following command to check the IP address:
  Ifconfig

Verify DHCP Functionality:
  o Ensure the Fedora client receives an IP address within the defined range **(e.g., 10.0.1.20 to 10.0.1.30).**
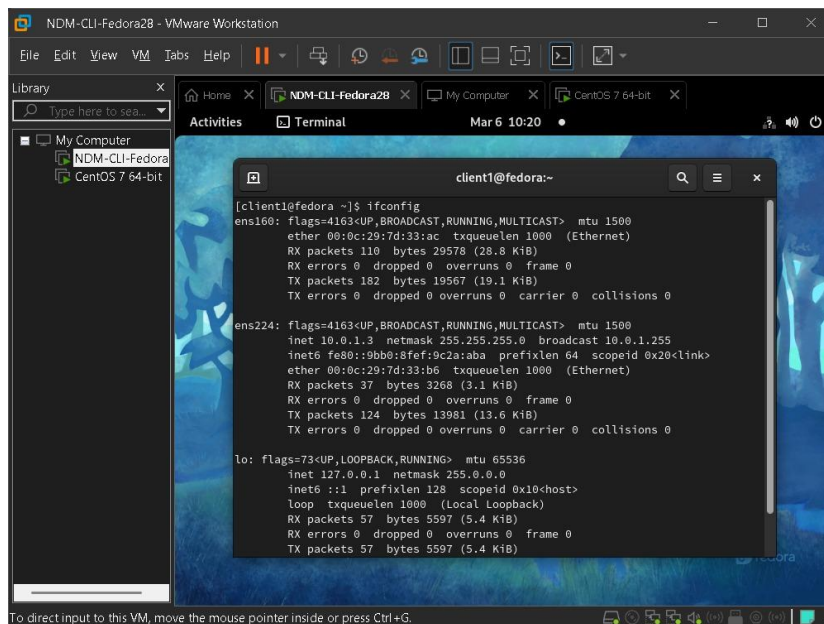
Self Study

Changing IP Configurations in Linux

CLI Method Using Network Commands:

Step 1: Identify the available network interfaces using: **ip addr show**

```
[root@localhost ~]# ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: ens33: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 10
00
    link/ether 00:0c:29:6f:db:a4 brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.100/24 brd 192.168.1.255 scope global noprefixroute ens33
       valid_lft forever preferred_lft forever
    inet6 fe80::2bf8:cb0c:e712:8c24/64 scope link noprefixroute
       valid_lft forever preferred_lft forever
3: ens34: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 10
00
    link/ether 00:0c:29:6f:db:ae brd ff:ff:ff:ff:ff:ff
    inet 10.0.1.2/24 brd 10.0.1.255 scope global noprefixroute ens34
       valid_lft forever preferred_lft forever
    inet6 fe80::21fa:957f:6743:7ba1/64 scope link noprefixroute
       valid_lft forever preferred_lft forever

[root@localhost ~]#
```

Step 2: Assign a temporary IP address to an interface

sudo ip addr add 192.168.1.100/24 dev ens33

```
[root@localhost ~]#
[root@localhost ~]# sudo ip addr add 192.168.1.100/24 dev ens33

RTNETLINK answers: File exists
[root@localhost ~]#
[root@localhost ~]# _
```

Step 3: Set the default gateway

sudo ip route add default via 192.168.1.1 dev ens33

```
[root@localhost ~]# sudo ip route add default via 192.168.1.1 dev ens33

[root@localhost ~]#
[root@localhost ~]# _
```

Editing Network Interface Configuration File

Step 1: Navigate to the network scripts directory:
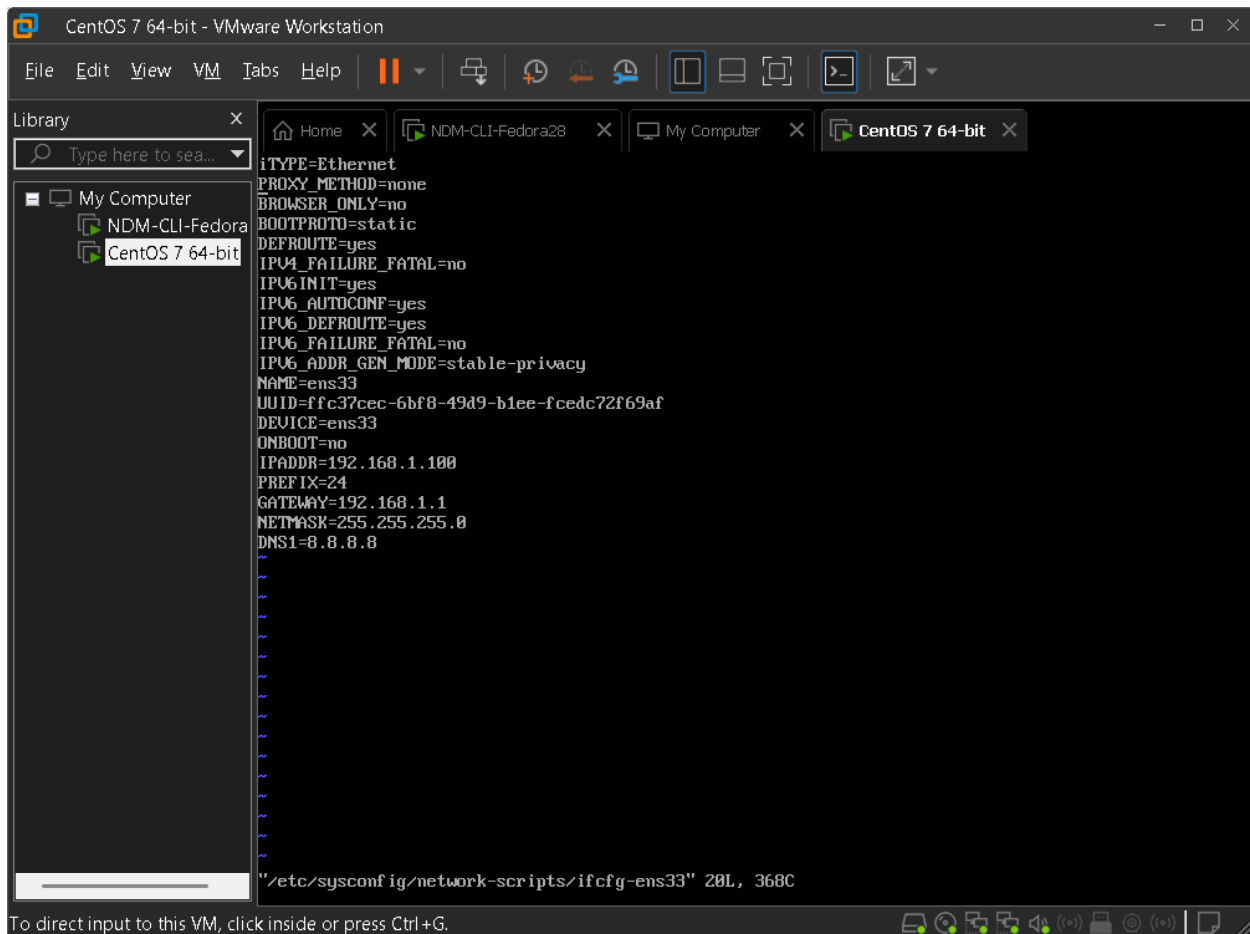
```
[root@localhost ~]# cd /etc/sysconfig/network-scripts/
[root@localhost network-scripts]#
[root@localhost network-scripts]#
```

Step 2: Locate and edit the configuration file for your interface, e.g., ifcfg-ens33:

Step 3: Restart the network service:

nmcli connection down ens33

nmcli connection up ens33

File   Edit   View   VM   Tabs   Help

Library

Type here to sea...

My Computer
  NDM-CLI-Fedora
  CentOS 7 64-bit

Home   NDM-CLI-Fedora28   My Computer   CentOS 7 64-bit

```
UUID=ffc37cec-6bf8-49d9-b1ee-fcedc72f69af
DEVICE=ens33
ONBOOT=no
IPADDR=192.168.1.100
PREFIX=24
GATEWAY=192.168.1.1
NETMASK=255.255.255.0
DNS1=8.8.8.8
~
~
~
~
~
~
~
~
~
~
~
"ifcfg-ens33" 20L, 368C written
[root@localhost network-scripts]# nmcli connection down ens33

nmcli connection up ens33

Connection 'ens33' successfully deactivated (D-Bus active path: /org/freedesktop/NetworkManager/Acti
veConnection/5)
[root@localhost network-scripts]#
[root@localhost network-scripts]# nmcli connection up ens33
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnecti
on/6)
[root@localhost network-scripts]#
[root@localhost network-scripts]# _
```

To direct input to this VM, click inside or press Ctrl+G.