



# **IT3010**

## **Network Design & Management**

### **3<sup>rd</sup> Year, 2<sup>nd</sup> Semester**

#### **Lab Report 2**

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

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## **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.

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## Content

- Disable the DHCP settings in VMnet2 network adapter.

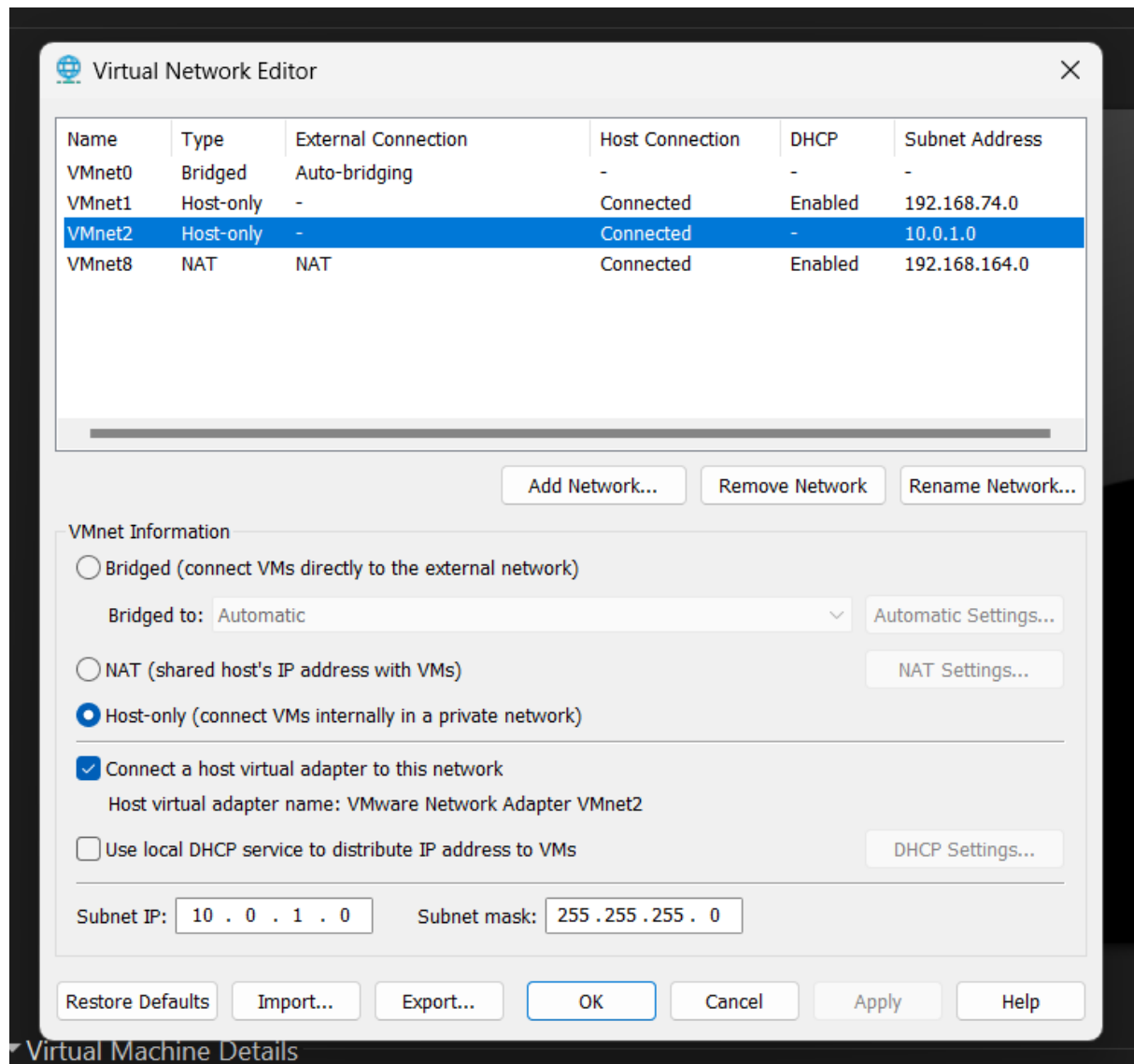


Figure 1

- Installing DHCP in Centos

```

(44): dhcp-4.2.5-83.el7.centos.1.x86_64.rpm                                1 515 kB  00:00:02
-----
Total                                                                    522 kB/s 1.1 MB 00:00:02
Retrieving key from file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
Importing GPG key 8d4488B5:
  Userid     : "CentOS-7 Key (CentOS 7 Official Signing Key) <security@centos.org>"
  Fingerprint: 6341 ab27 5347 Ba70 a7c2 7bb1 24c6 ada7 f4a0 beb5
  Package    : centos-release-7-9.2009.0.el7.centos.x86_64 (Panaconda)
  From       : /etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Updating : 12:dhcp-libs-4.2.5-83.el7.centos.1.x86_64                    1/7
  Updating : 12:dhcp-common-4.2.5-83.el7.centos.1.x86_64                2/7
  Installing : 12:dhcp-4.2.5-83.el7.centos.1.x86_64                    3/7
  Updating : 12:dhclient-4.2.5-83.el7.centos.1.x86_64                  4/7
  Cleanup   : 12:dhclient-4.2.5-82.el7.centos.x86_64                   5/7
  Cleanup   : 12:dhcp-common-4.2.5-82.el7.centos.x86_64                6/7
  Cleanup   : 12:dhcp-libs-4.2.5-82.el7.centos.x86_64                  7/7
  Verifying : 12:dhcp-common-4.2.5-83.el7.centos.1.x86_64              1/7
  Verifying : 12:dhcp-4.2.5-83.el7.centos.1.x86_64                    2/7
  Verifying : 12:dhcp-libs-4.2.5-83.el7.centos.1.x86_64                3/7
  Verifying : 12:dhclient-4.2.5-83.el7.centos.1.x86_64                4/7
  Verifying : 12:dhcp-common-4.2.5-82.el7.centos.x86_64                5/7
  Verifying : 12:dhclient-4.2.5-82.el7.centos.x86_64                  6/7
  Verifying : 12:dhcp-libs-4.2.5-82.el7.centos.x86_64                  7/7

Installed:
  dhcp.x86_64 12:4.2.5-83.el7.centos.1

Dependency Updated:
  dhclient.x86_64 12:4.2.5-83.el7.centos.1      dhcp-common.x86_64 12:4.2.5-83.el7.centos.1
  dhcp-libs.x86_64 12:4.2.5-83.el7.centos.1

Complete!
[root@mlb-dcl-centos7 ~]#

```

Figure 2

- Configuring DHCP settings

[illegible]

Figure 3.1



```
Home X MLB-DC1-CentOs7 X NDM-CLI-Fedora28 X

# dhcpd.conf
#
# Sample configuration file for ISC dhcpd
#

# option definitions common to all supported networks...
option domain-name "dnsm.sub";
option domain-name-servers server.unixmen.local;

default-lease-time 600;
max-lease-time 7200;

# Use this to enable / disable dynamic dns updates globally.
#ddns-update-style none;

# If this DHCP server is the official DHCP server for the local
# network, the authoritative directive should be uncommented,
#authoritative;

# Use this to send dhcp log messages to a different log file (you also
# have to hack syslog.conf to complete the redirection).
log-facility local7;

# No service will be given on this subnet, but declaring it helps the
# DHCP server to understand the network topology.

subnet 10.152.187.0 netmask 255.255.255.0 {
}

# This is a very basic subnet declaration.

subnet 10.254.239.0 netmask 255.255.255.224 {
    range 10.254.239.10 10.254.239.20;
    option routers rtr-239-0-1.example.org, rtr-239-0-2.example.org;
}

-- INSERT --
```

Figure 3.4

```
Home X MLB-DC1-CentOs7 X NDM-CLI-Fedora28 X

# DHCP server to understand the network topology.

subnet 10.152.187.0 netmask 255.255.255.0 {
}

# This is a very basic subnet declaration.

subnet 10.254.239.0 netmask 255.255.255.224 {
    range 10.254.239.10 10.254.239.20;
    option routers rtr-239-0-1.example.org, rtr-239-0-2.example.org;
}

# This declaration allows BOOTP clients to get dynamic addresses,
# which we don't really recommend.

subnet 10.254.239.32 netmask 255.255.255.224 {
    range dynamic-bootp 10.254.239.40 10.254.239.60;
    option broadcast-address 10.254.239.31;
    option routers rtr-239-32-1.example.org;
}

# A slightly different configuration for an internal subnet.
subnet 10.0.1.0 netmask 255.255.255.0 {
    range 10.0.1.20 10.0.1.30;
    option domain-name-servers server.unixmen.local;
    option domain-name "dnsm.sub";
    option routers 10.0.1.1;
    option broadcast-address 10.0.1.255;
    default-lease-time 600;
    max-lease-time 7200;
}

# Hosts which require special configuration options can be listed in
# host statements. If no address is specified, the address will be
# allocated dynamically (if possible), but the host-specific information
# will still come from the host declaration.

-- INSERT --
```

Figure 3.5

- Start DHCP service.

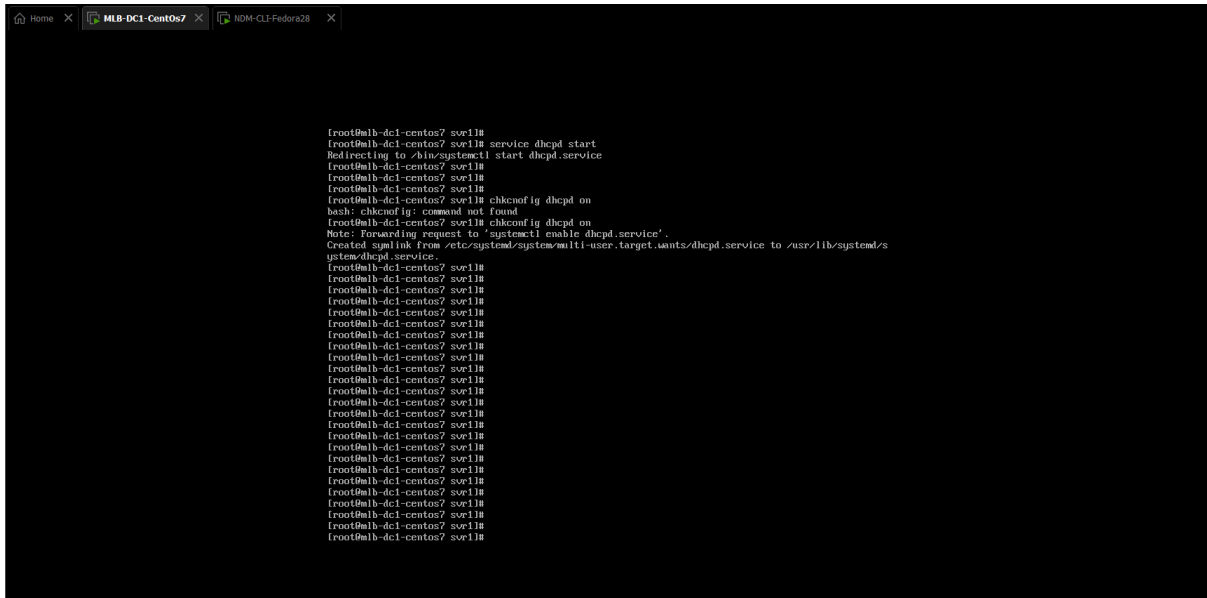


Figure 4

- Check status of DHCP server

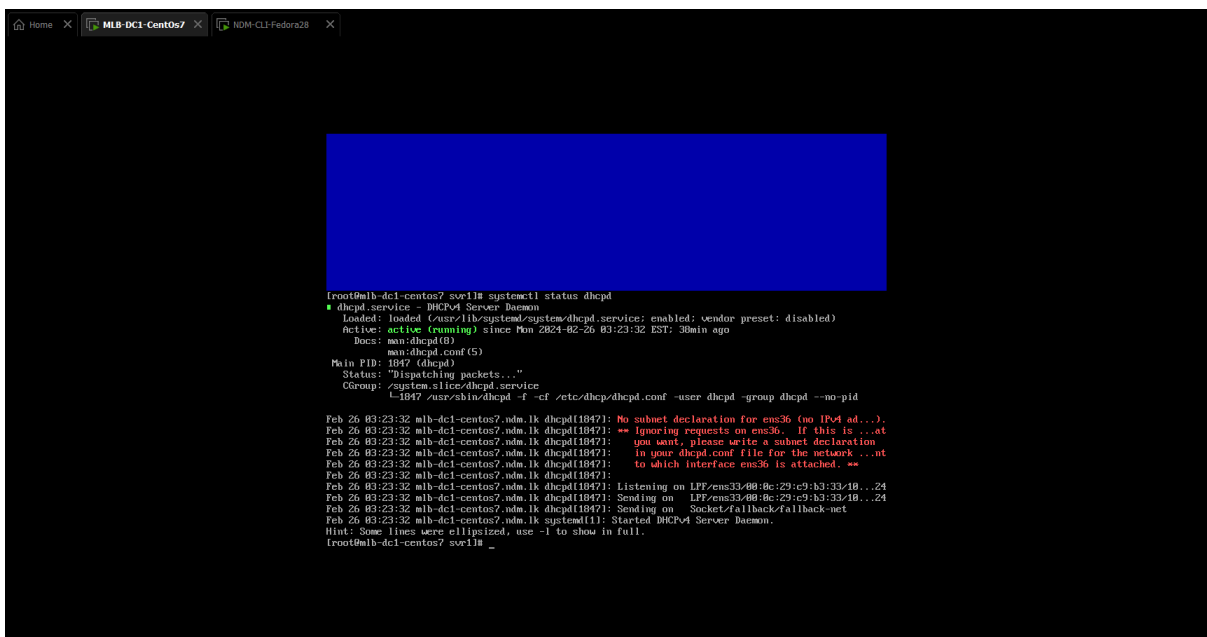


Figure 5

- Change Client's VMnet2 network adapter IP settings to Automatic (DHCP)

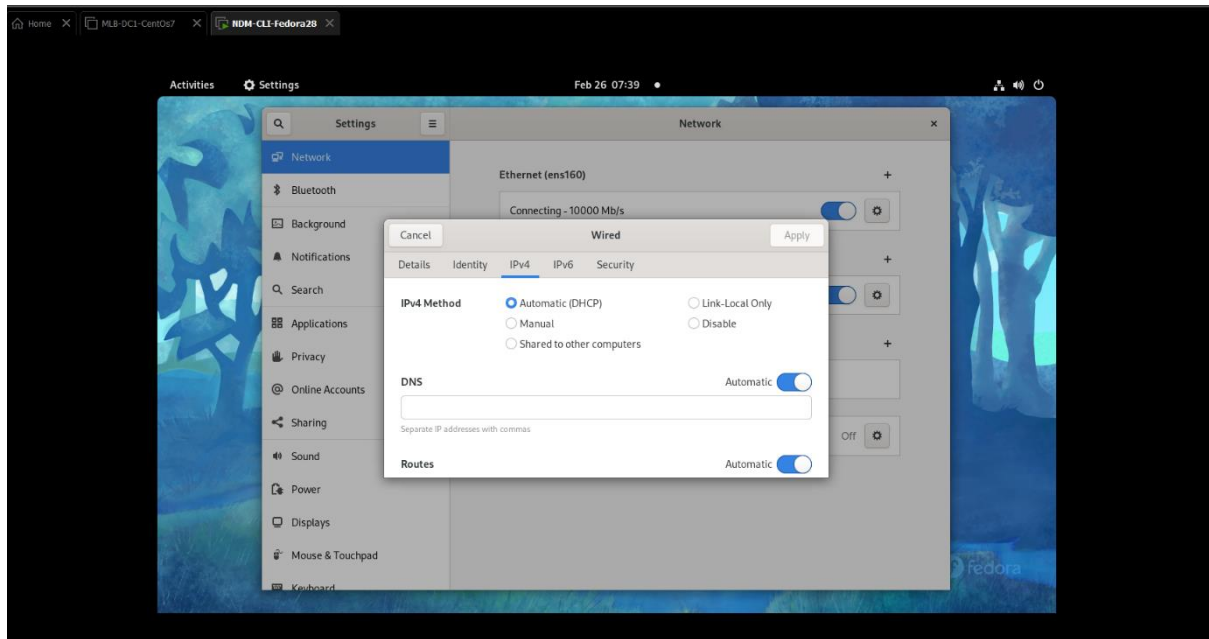


Figure 6

- Check the client's IP address is within the given range.

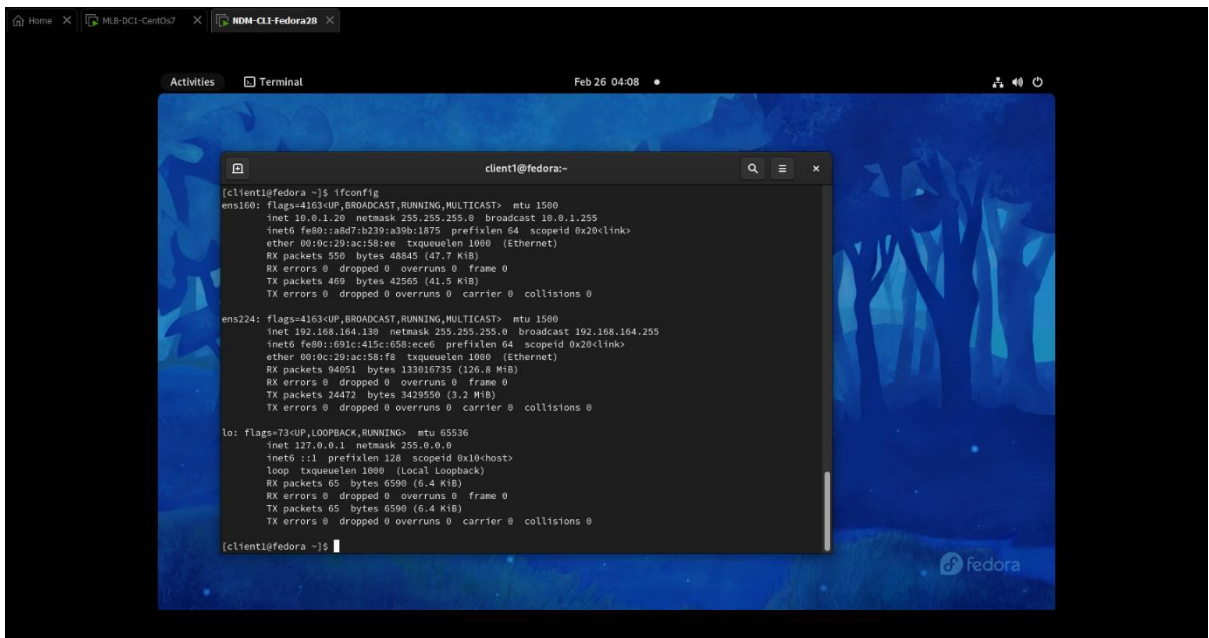


Figure 7



- Assigning a Temporary IP address in Fedora

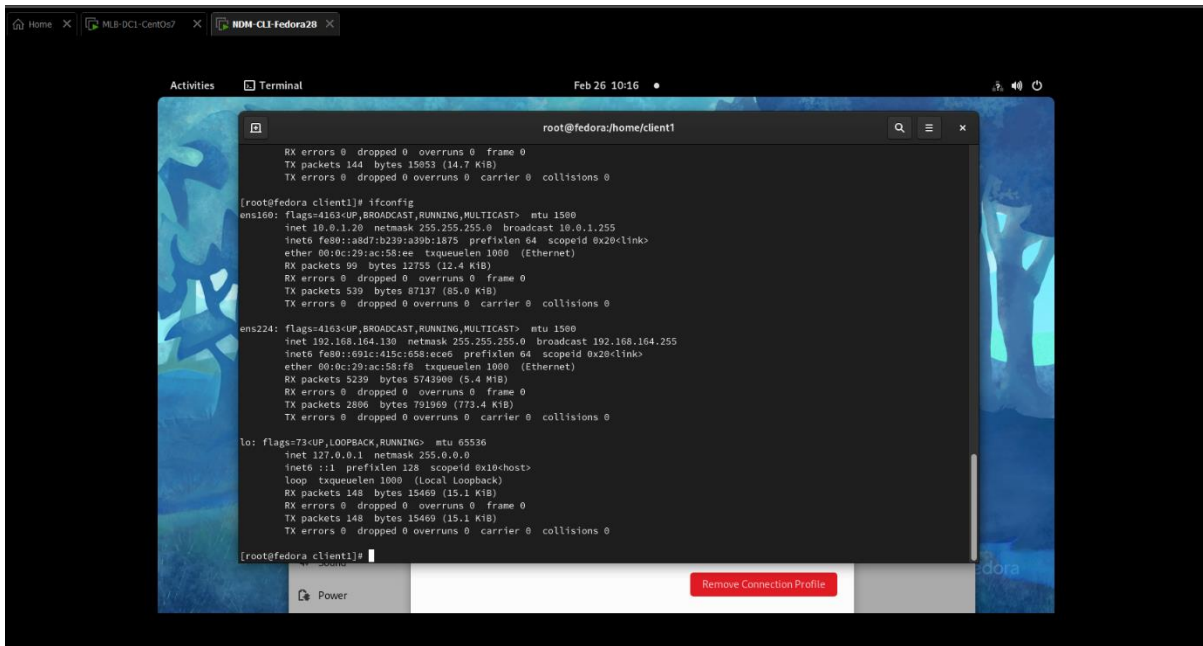


Figure 8.1

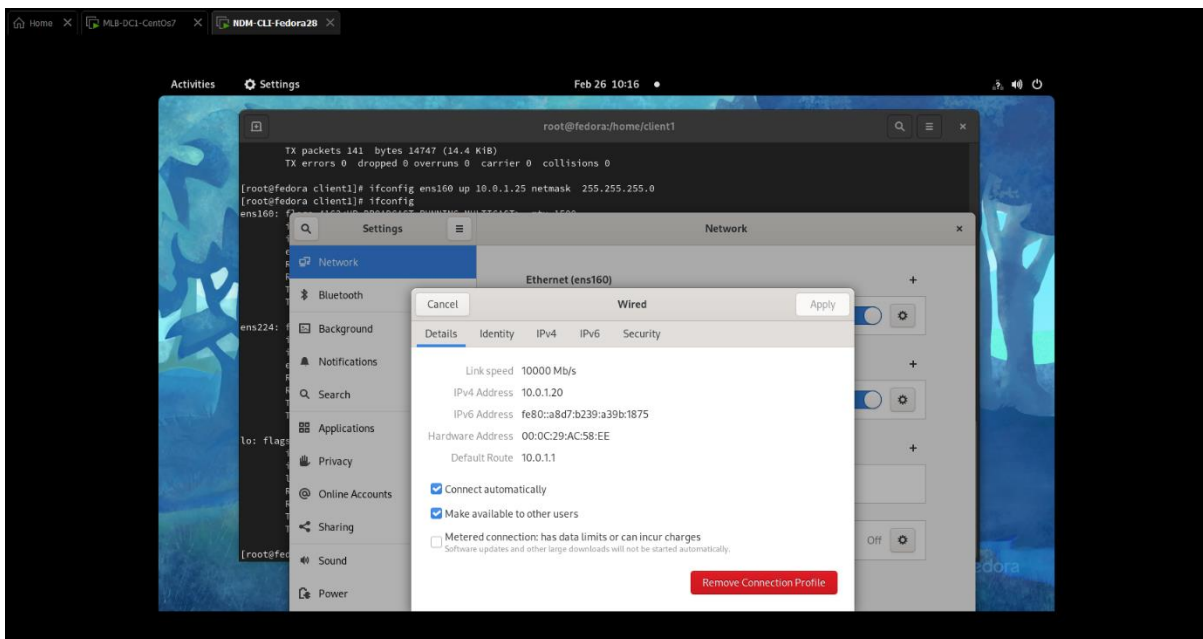


Figure 8.2

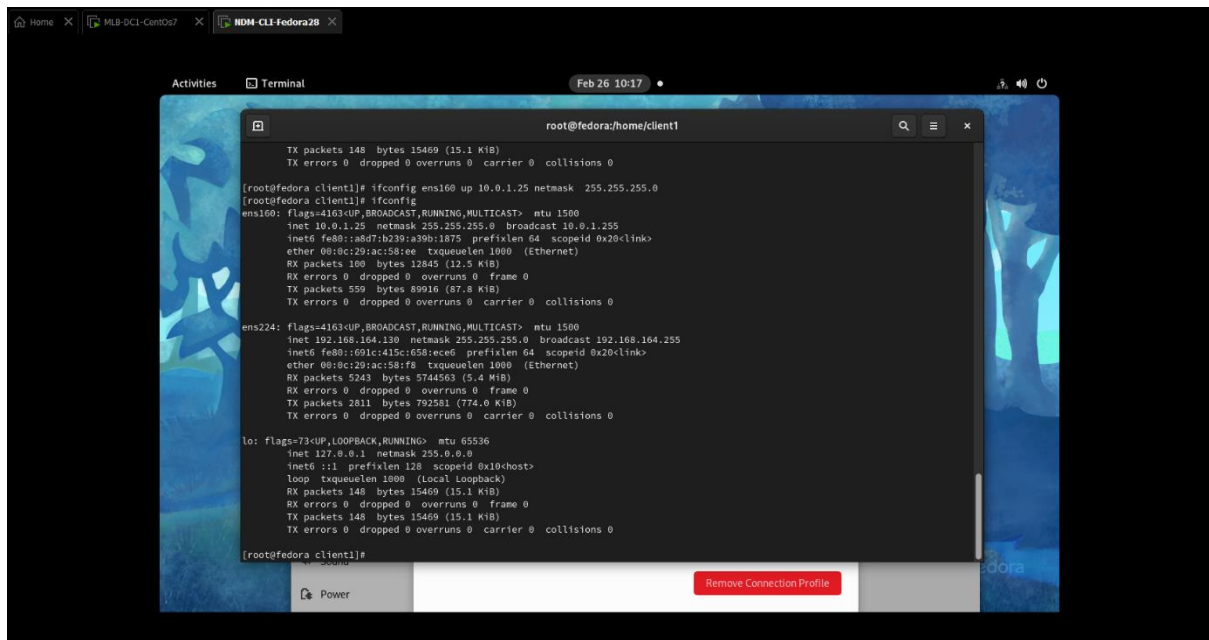


Figure 8.3

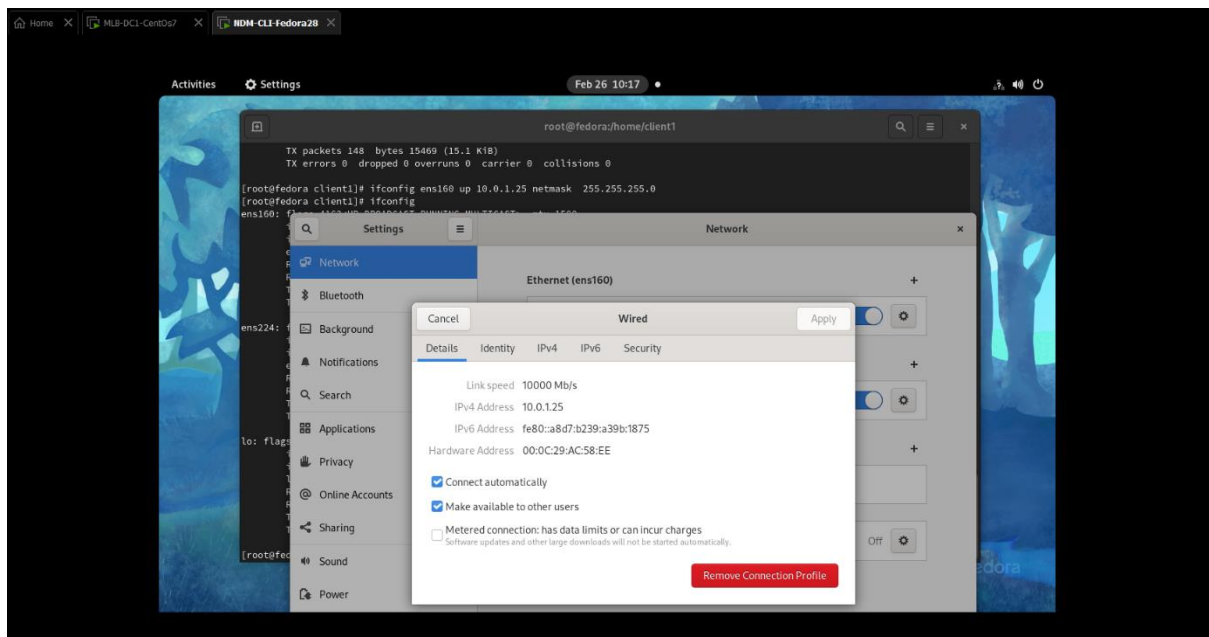
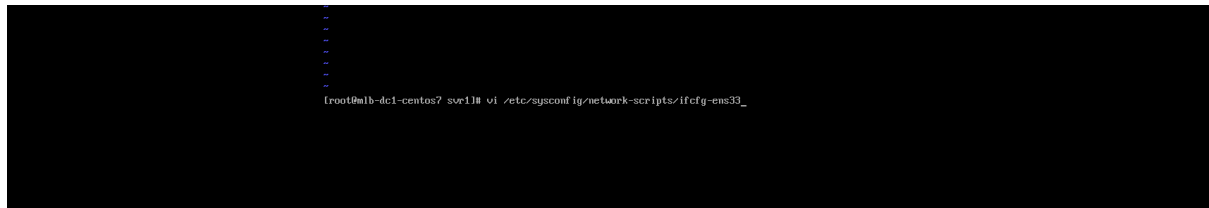


Figure 8.4

- Editing Network Interface Configuration File



*Figure 9.1*

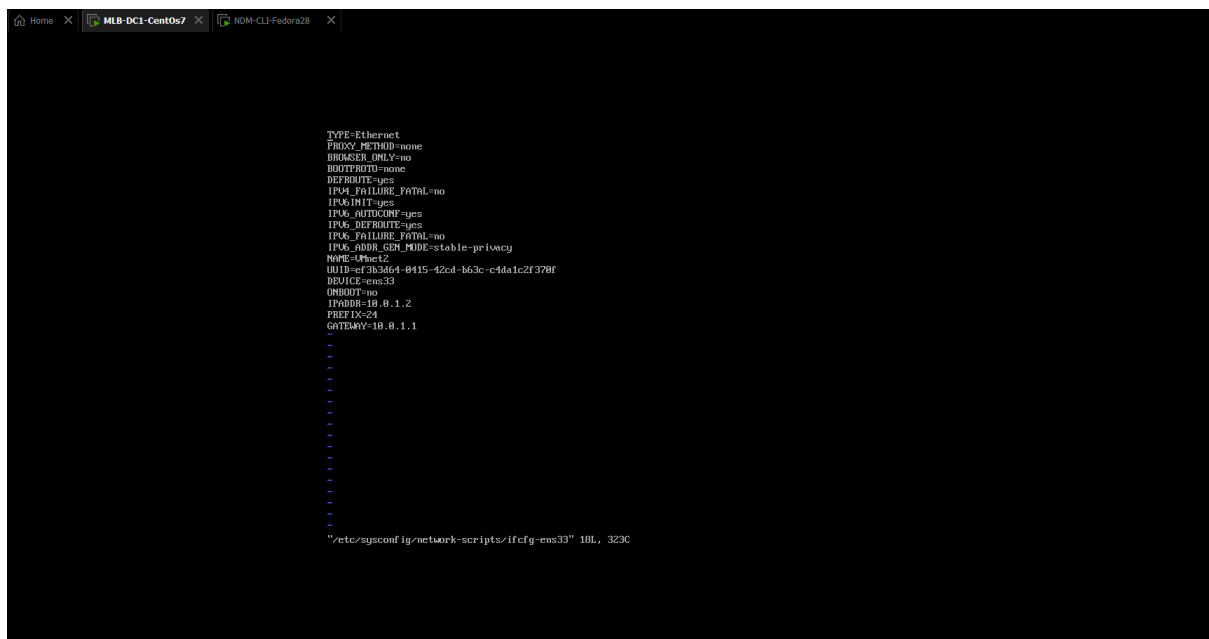


Figure 9.2