



# **IT3010**

## **Network Design & Management**

### **3<sup>rd</sup> Year, 1<sup>st</sup> Semester**

**<Lab Report 01>**

**<Configurations>**

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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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## 1. Network Configurations for Server (CentOS)

1.1 For the Server Network Configurations first we need to use the command '**nmtui**' (Fig 1.1)

- Command - #nmtui

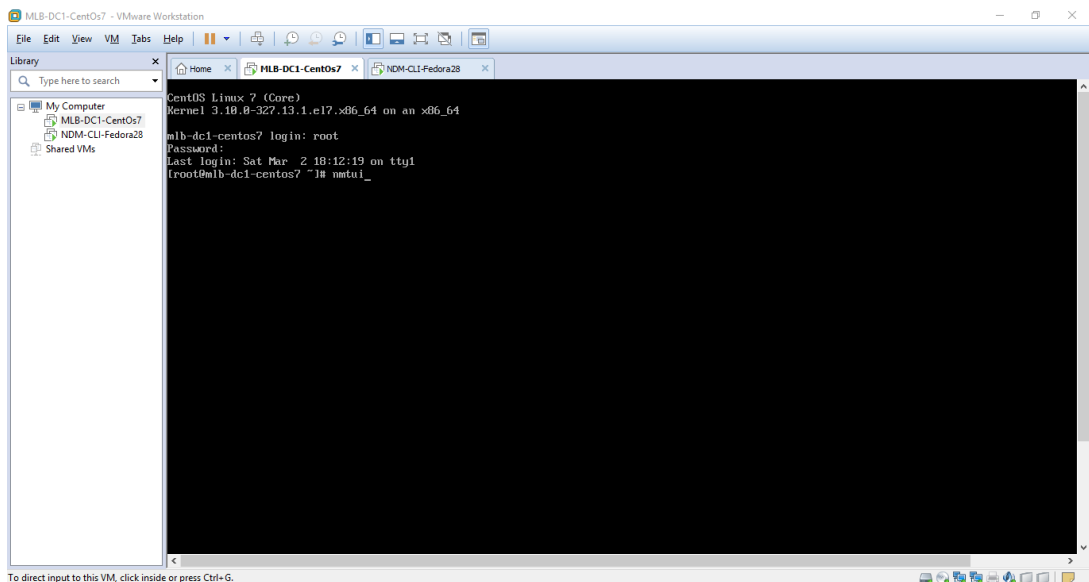


Figure 1.1: command for NetworkManager TUI

1.2 Then, in the NetworkManager TUI window opened select **edit connection**. (Fig 1.2)

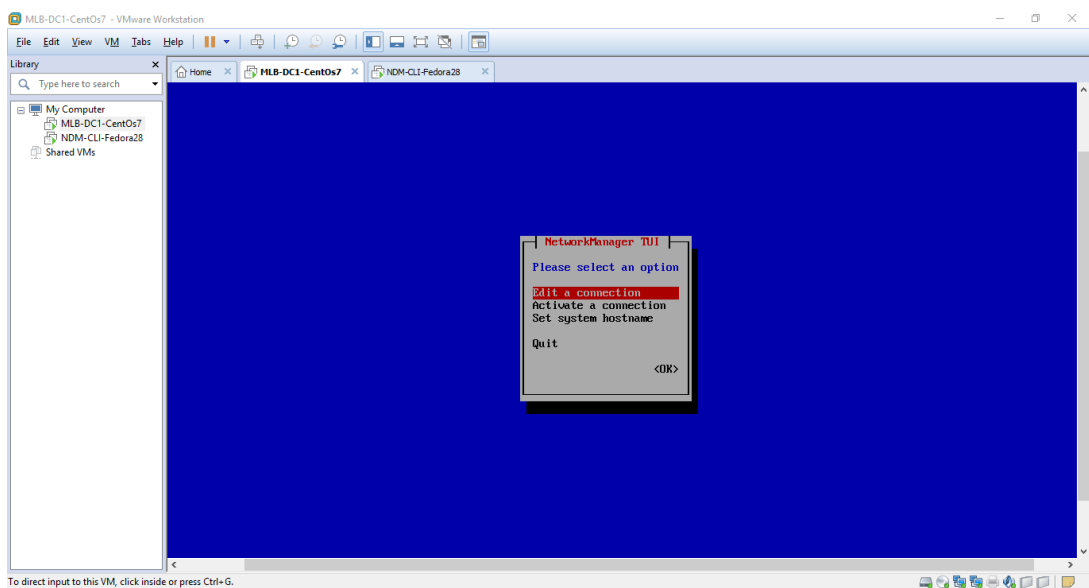


Figure 1.2: NetworkManager TUI window

### 1.3 Select the adapter used in VMnet2; select edit. (Fig 1.3)

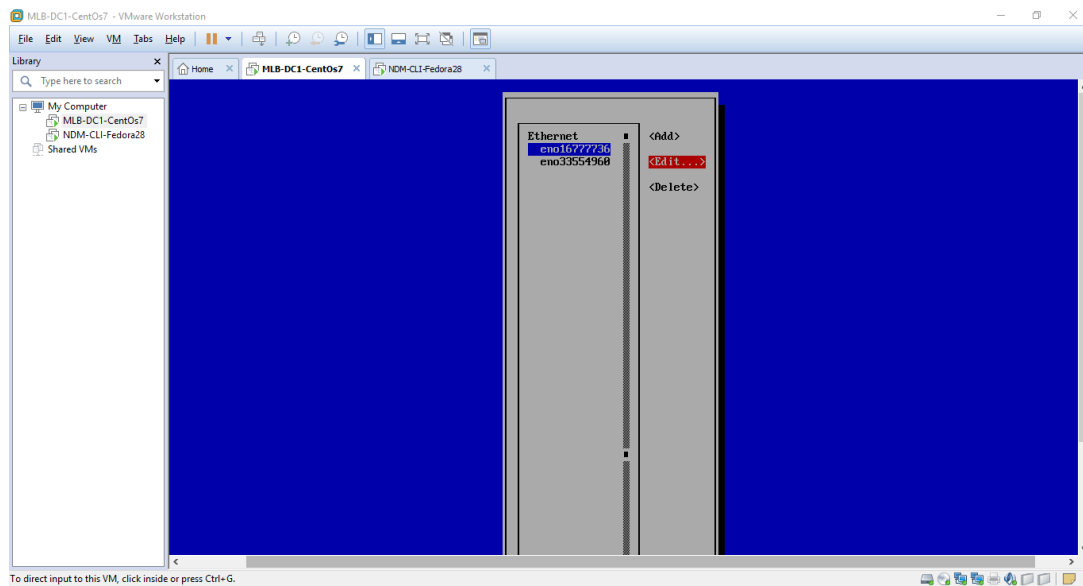


Figure 1.3: Select edit connection window in NetworkManager TUI

### 1.4 Navigate to IPv4 settings and select the type as **Manual** and enter IP configurations given below,

- IP address – 10.0.1.2/24
- Gateway – 10.0.1.1

Then **save** the configurations to select **OK**. (Fig 1.4)

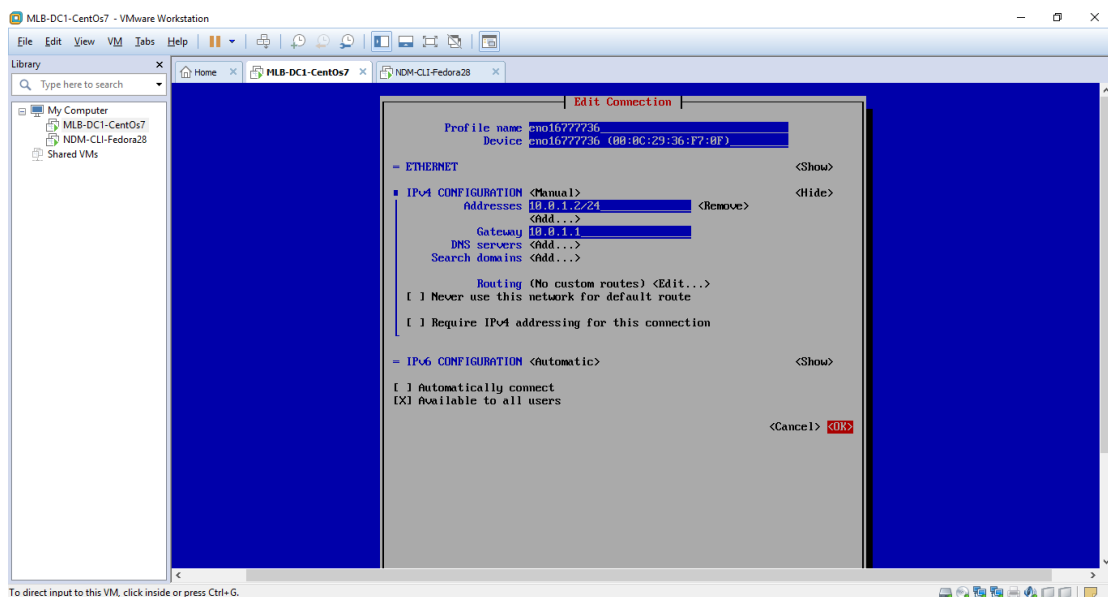


Figure 1.4: Edit connection window in NetworkManager TUI

- ❖ Connection Activation can be done using same command ‘**nmtui**’.

### 1.5 Select **Activate Connection** (Fig 1.5)

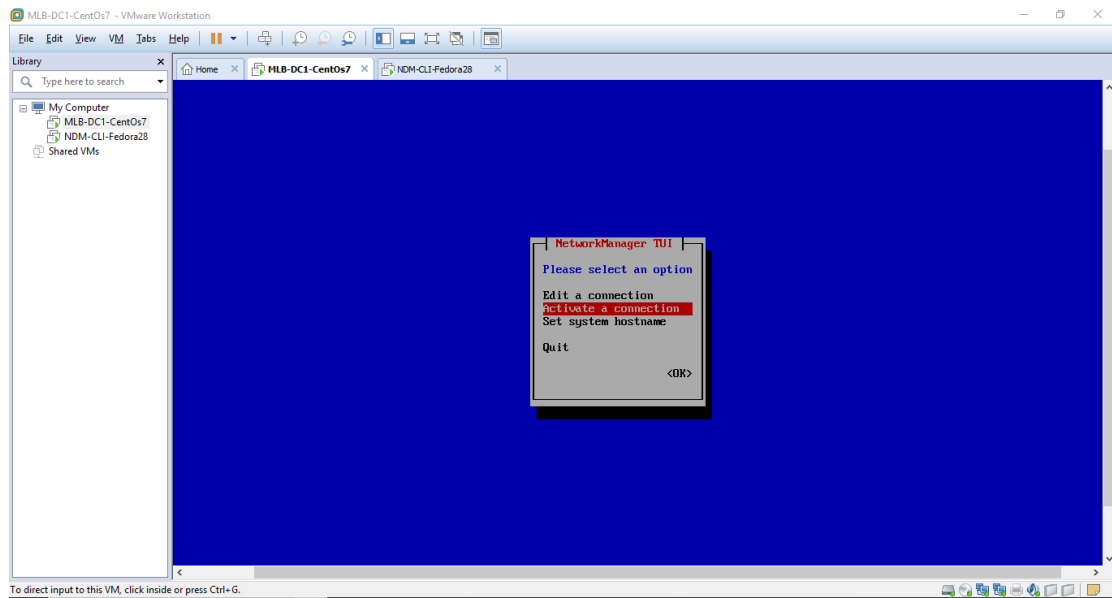


Figure 1.5: NetworkManager TUI window

### 1.6 Select the Adapter to be **Activate** (Fig 1.6)

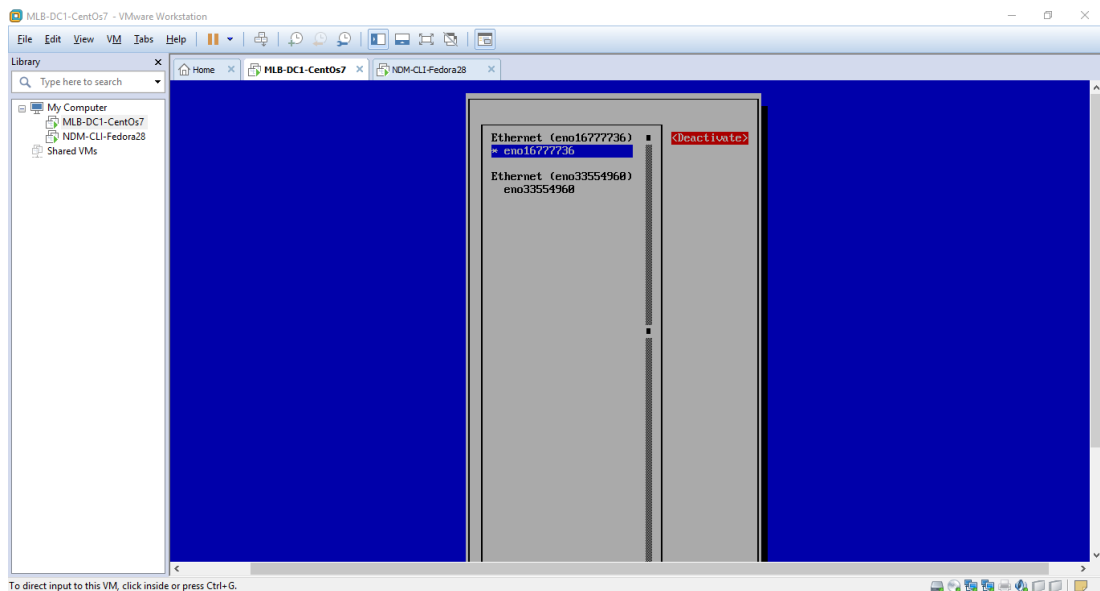


Figure 1.6: Select activate connection window in NetworkManager TUI

## 2. Network Configurations for Client (Fedora)

2.1 First we need to login to client server by entering the following command

- Command – #su

Then type “**root**” for password and hit enter to login to client. (Fig 2.1)

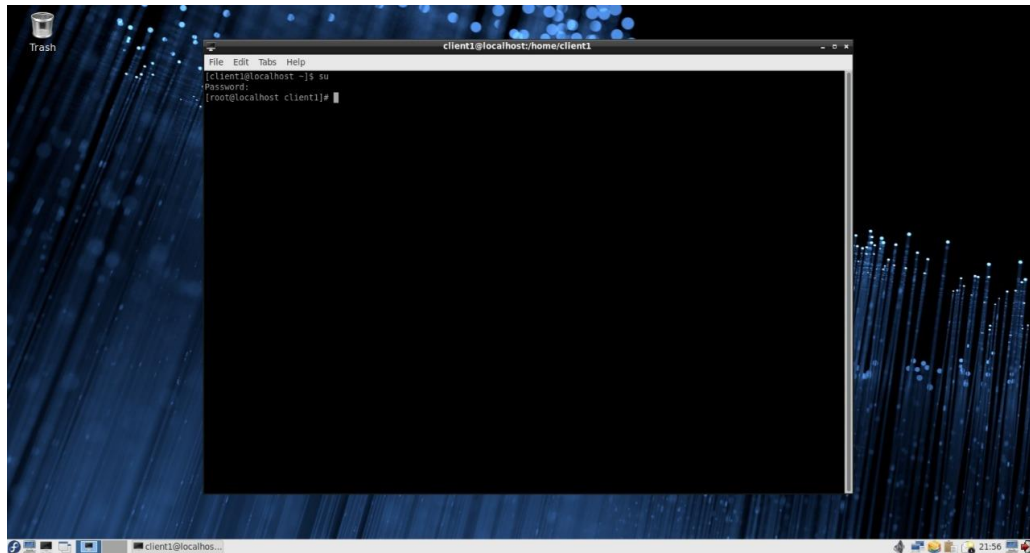


Figure 2.1: Login to client

2.2 Then, we need to display network devices status by entering the following command

- Command – #nmcli device (Fig 2.2)

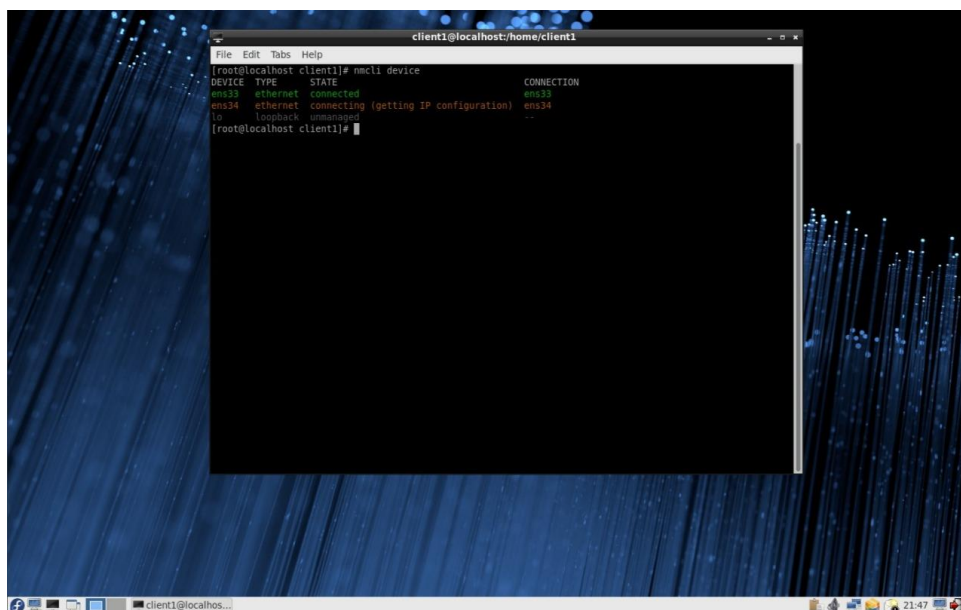


Figure 2.2: Display network devices

- Now we can identify what device is connect with server. (ex: ens34)



2.3 Then, we can modify ip address and default gateway for IPv4 by entering the following commands.

- Command – #nmcli connection mod ens34 ipv4.addresses 10.0.1.3/24 (Fig 2.3)
- Command – #nmcli connection mod ens34 ipv4.gateway 10.0.1.1 (Fig 2.3)

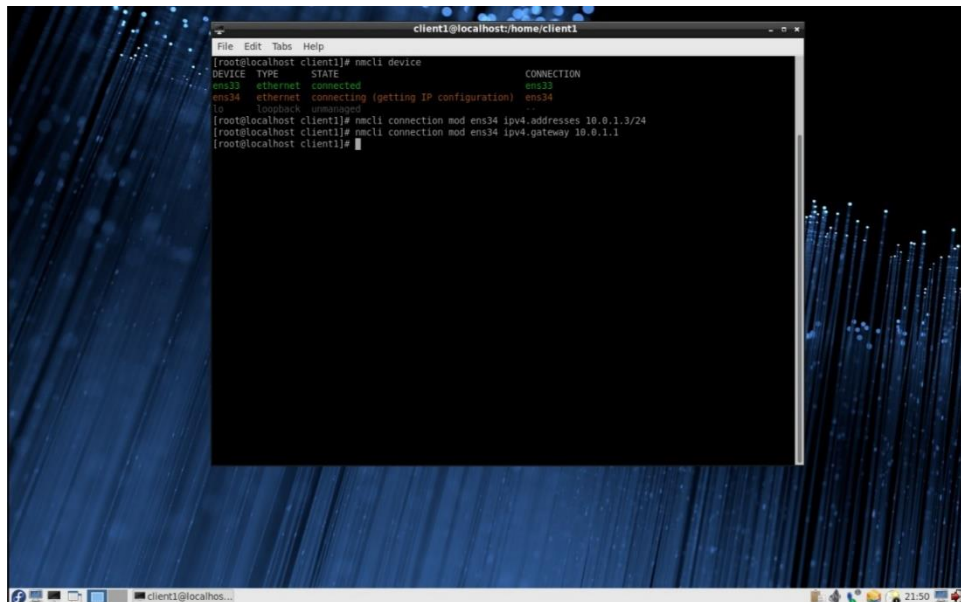


Figure 2.3: Modify ip address and default gateway

2.4 Then, we need to set IP configuration method to auto by entering the following command

- Command – # nmcli connection mod ens34 ipv4.method auto (Fig 2.4)

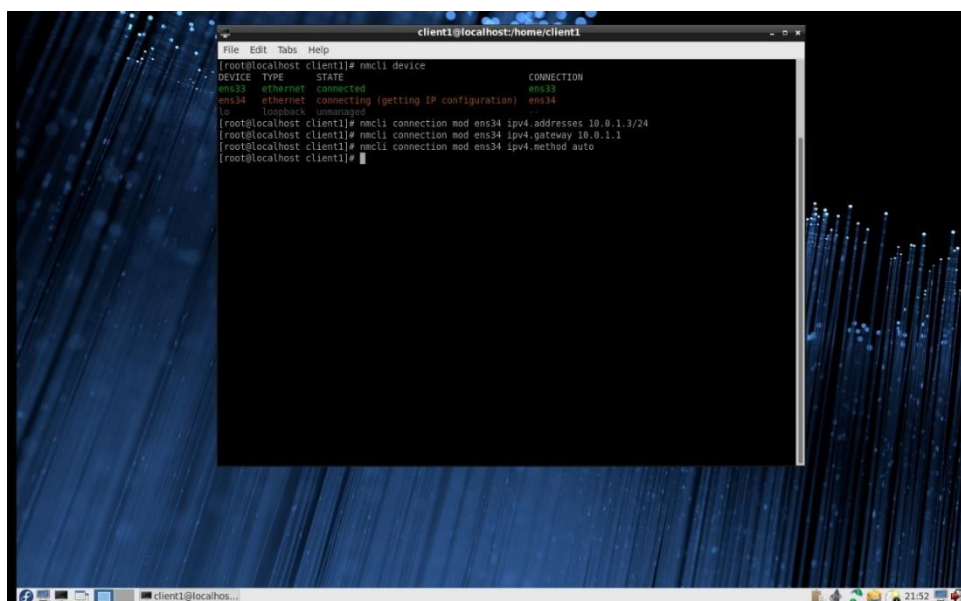
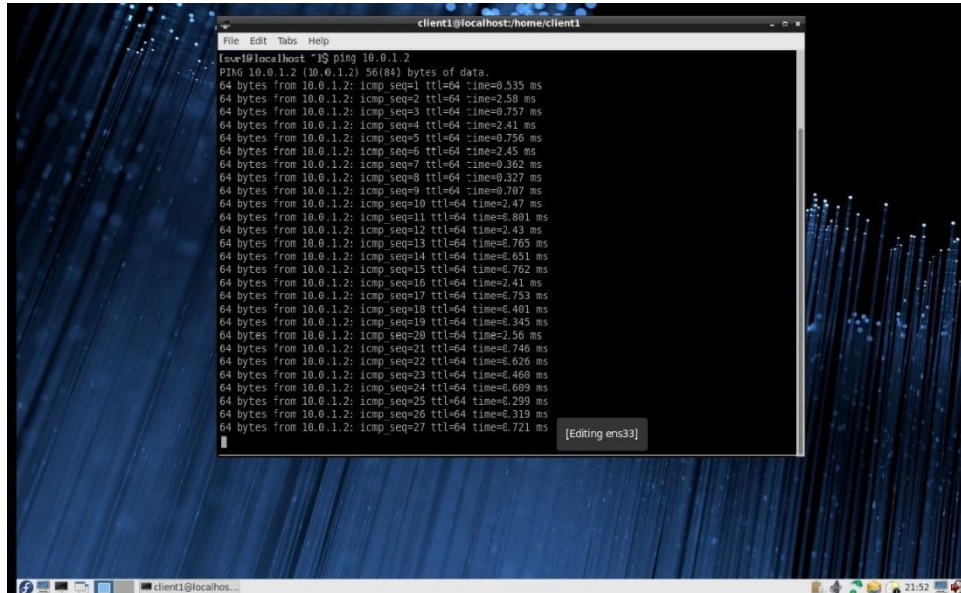


Figure 2.4: IP configuration method

2.5 Now, we need to ping with sever machine to identify configuration is success or not by entering the following command

- Command – # ping 10.0.1.2 (Fig 2.5)

A screenshot of a Linux terminal window titled 'client1@localhost:~/home/client1'. The terminal shows the command 'ping 10.0.1.2' being executed. The output displays 27 successful ping responses, each showing '64 bytes from 10.0.1.2: icmp\_seq=X ttl=64 time=Y ms'. The times vary slightly, ranging from approximately 0.327 ms to 2.721 ms. The terminal window has a menu bar with 'File', 'Edit', 'Tabs', and 'Help'. The desktop background is a dark blue abstract image with light streaks. The taskbar at the bottom shows the system clock as 21:52 and the date as 10/10/2023.

```
client1@localhost:~/home/client1
File Edit Tabs Help
root@client1:~# ping 10.0.1.2
PING 10.0.1.2 (10.0.1.2) 56(84) bytes of data:
64 bytes from 10.0.1.2: icmp_seq=1 ttl=64 time=0.535 ms
64 bytes from 10.0.1.2: icmp_seq=2 ttl=64 time=2.58 ms
64 bytes from 10.0.1.2: icmp_seq=3 ttl=64 time=0.757 ms
64 bytes from 10.0.1.2: icmp_seq=4 ttl=64 time=2.41 ms
64 bytes from 10.0.1.2: icmp_seq=5 ttl=64 time=0.756 ms
64 bytes from 10.0.1.2: icmp_seq=6 ttl=64 time=2.45 ms
64 bytes from 10.0.1.2: icmp_seq=7 ttl=64 time=0.362 ms
64 bytes from 10.0.1.2: icmp_seq=8 ttl=64 time=0.327 ms
64 bytes from 10.0.1.2: icmp_seq=9 ttl=64 time=0.707 ms
64 bytes from 10.0.1.2: icmp_seq=10 ttl=64 time=2.47 ms
64 bytes from 10.0.1.2: icmp_seq=11 ttl=64 time=0.801 ms
64 bytes from 10.0.1.2: icmp_seq=12 ttl=64 time=2.43 ms
64 bytes from 10.0.1.2: icmp_seq=13 ttl=64 time=0.765 ms
64 bytes from 10.0.1.2: icmp_seq=14 ttl=64 time=0.651 ms
64 bytes from 10.0.1.2: icmp_seq=15 ttl=64 time=0.762 ms
64 bytes from 10.0.1.2: icmp_seq=16 ttl=64 time=2.41 ms
64 bytes from 10.0.1.2: icmp_seq=17 ttl=64 time=0.753 ms
64 bytes from 10.0.1.2: icmp_seq=18 ttl=64 time=0.401 ms
64 bytes from 10.0.1.2: icmp_seq=19 ttl=64 time=0.345 ms
64 bytes from 10.0.1.2: icmp_seq=20 ttl=64 time=2.56 ms
64 bytes from 10.0.1.2: icmp_seq=21 ttl=64 time=0.746 ms
64 bytes from 10.0.1.2: icmp_seq=22 ttl=64 time=0.626 ms
64 bytes from 10.0.1.2: icmp_seq=23 ttl=64 time=0.460 ms
64 bytes from 10.0.1.2: icmp_seq=24 ttl=64 time=0.609 ms
64 bytes from 10.0.1.2: icmp_seq=25 ttl=64 time=0.299 ms
64 bytes from 10.0.1.2: icmp_seq=26 ttl=64 time=0.319 ms
64 bytes from 10.0.1.2: icmp_seq=27 ttl=64 time=0.721 ms
^C
```

Figure 2.5: ping with sever machine