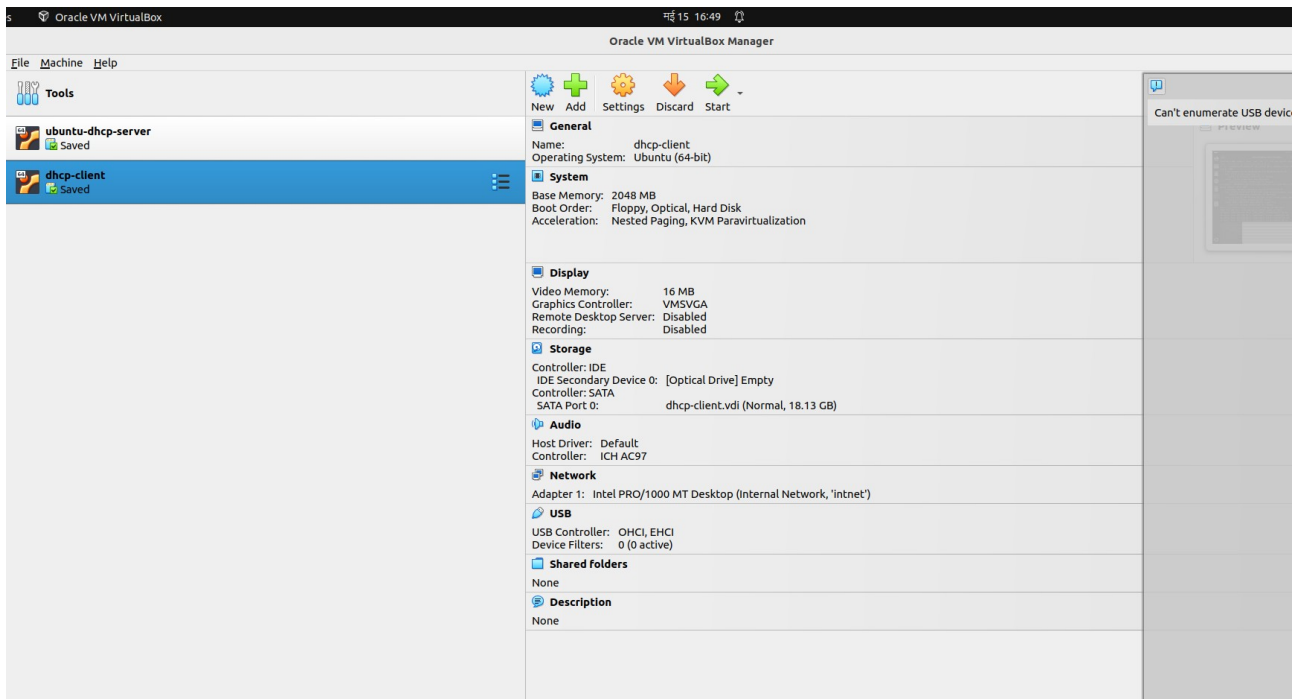
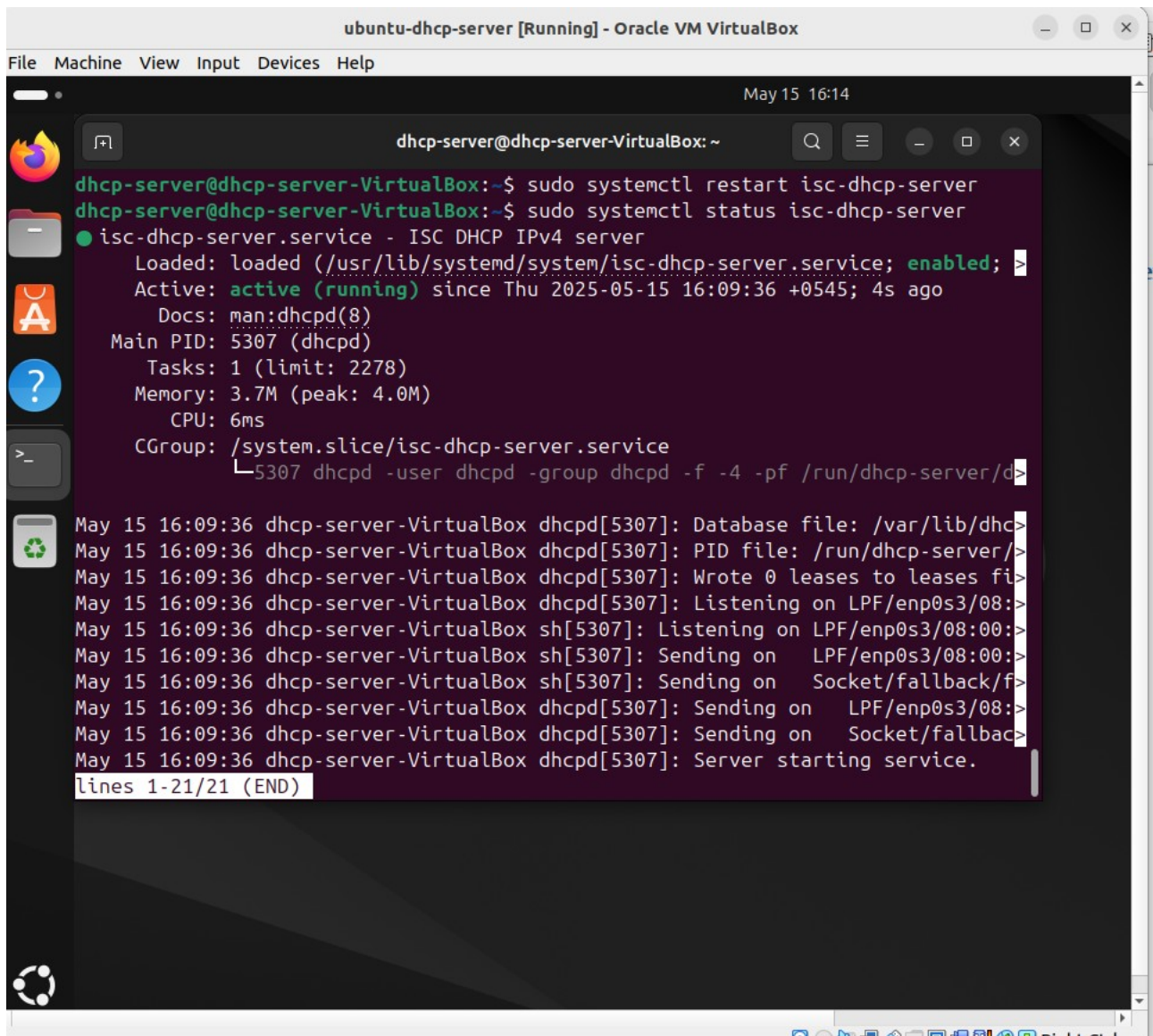


## Unit 3, Assignment 1 (configuring dhcp Server on Linux)



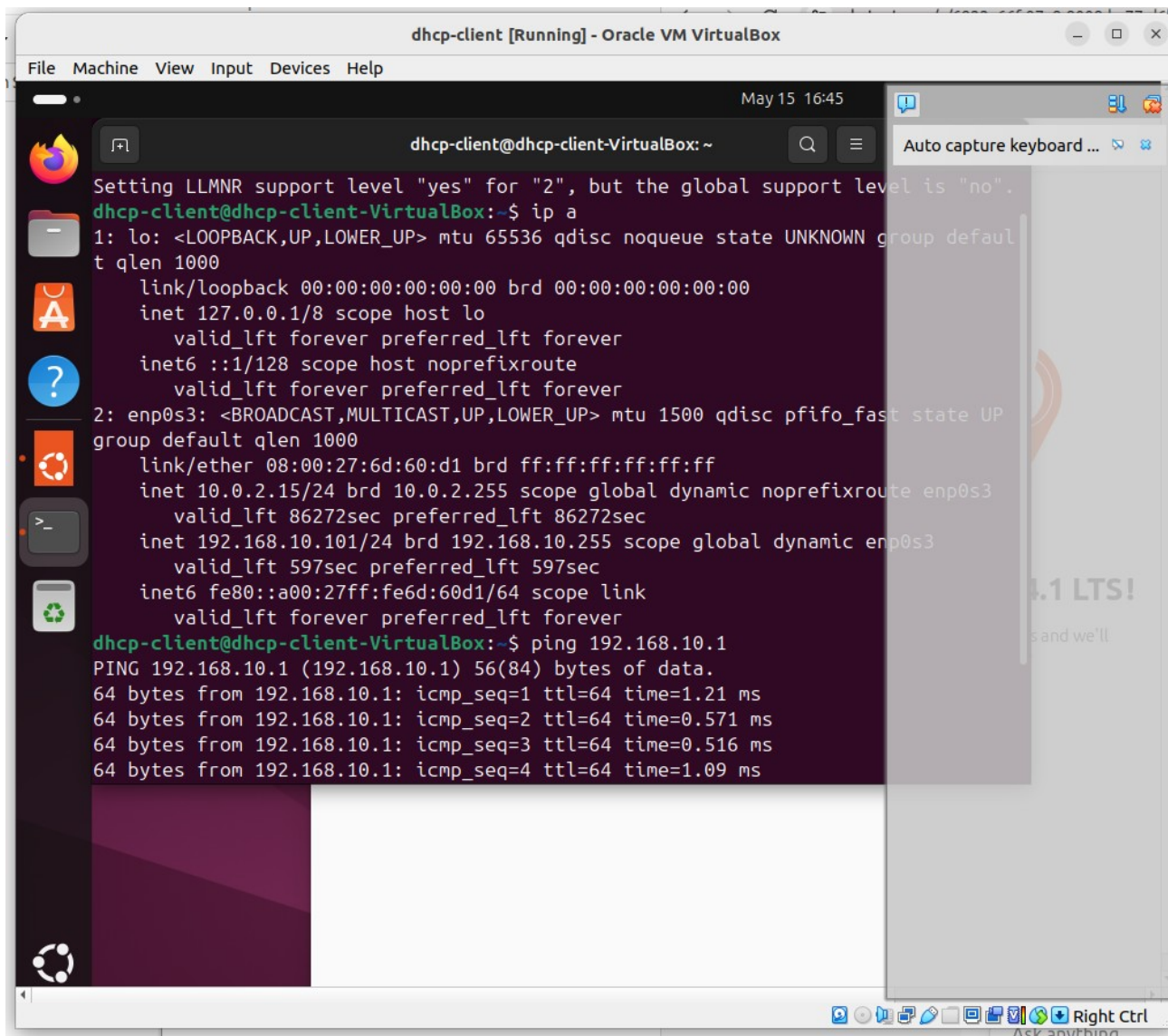
Oracle VirtualBox with two separate Vms (DHCP server and DHCP client)

A screenshot of a Linux Virtual Machine (VM) window titled "ubuntu-dhcp-server [Running] - Oracle VM VirtualBox". The terminal window shows the user "dhcp-server@dhcp-server-VirtualBox" running the command "sudo systemctl restart isc-dhcp-server" and "sudo systemctl status isc-dhcp-server". The output shows the service is active and running. Below the status, there are logs for the DHCP server starting, including messages about the database file, PID file, leases file, and listening on network interfaces.

```
dhcp-server@dhcp-server-VirtualBox:~$ sudo systemctl restart isc-dhcp-server
dhcp-server@dhcp-server-VirtualBox:~$ sudo systemctl status isc-dhcp-server
● isc-dhcp-server.service - ISC DHCP IPv4 server
   Loaded: loaded (/usr/lib/systemd/system/isc-dhcp-server.service; enabled; >
   Active: active (running) since Thu 2025-05-15 16:09:36 +0545; 4s ago
     Docs: man:dhcpd(8)
    Main PID: 5307 (dhcpd)
      Tasks: 1 (limit: 2278)
     Memory: 3.7M (peak: 4.0M)
        CPU: 6ms
    CGroup: /system.slice/isc-dhcp-server.service
            └─5307 dhcpd -user dhcpd -group dhcpd -f -4 -pf /run/dhcp-server/d>

May 15 16:09:36 dhcp-server-VirtualBox dhcpd[5307]: Database file: /var/lib/dhc>
May 15 16:09:36 dhcp-server-VirtualBox dhcpd[5307]: PID file: /run/dhcp-server/>
May 15 16:09:36 dhcp-server-VirtualBox dhcpd[5307]: Wrote 0 leases to leases fi>
May 15 16:09:36 dhcp-server-VirtualBox dhcpd[5307]: Listening on LPF/enp0s3/08:>
May 15 16:09:36 dhcp-server-VirtualBox sh[5307]: Listening on LPF/enp0s3/08:00:>
May 15 16:09:36 dhcp-server-VirtualBox sh[5307]: Sending on LPF/enp0s3/08:00:>
May 15 16:09:36 dhcp-server-VirtualBox sh[5307]: Sending on Socket/fallback/f>
May 15 16:09:36 dhcp-server-VirtualBox dhcpd[5307]: Sending on LPF/enp0s3/08:>
May 15 16:09:36 dhcp-server-VirtualBox dhcpd[5307]: Sending on Socket/fallbac>
May 15 16:09:36 dhcp-server-VirtualBox dhcpd[5307]: Server starting service.
lines 1-21/21 (END)
```

First, created a Linux VM and named it “dhcp-server”, and DHCP pool is configured.



```
Setting LLNMR support level "yes" for "2", but the global support level is "no".
dhcp-client@dhcp-client-VirtualBox:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default
    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 noprefixroute
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP
    group default qlen 1000
    link/ether 08:00:27:6d:60:d1 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 86272sec preferred_lft 86272sec
    inet 192.168.10.101/24 brd 192.168.10.255 scope global dynamic enp0s3
        valid_lft 597sec preferred_lft 597sec
    inet6 fe80::a00:27ff:fe6d:60d1/64 scope link
        valid_lft forever preferred_lft forever
dhcp-client@dhcp-client-VirtualBox:~$ ping 192.168.10.1
PING 192.168.10.1 (192.168.10.1) 56(84) bytes of data.
64 bytes from 192.168.10.1: icmp_seq=1 ttl=64 time=1.21 ms
64 bytes from 192.168.10.1: icmp_seq=2 ttl=64 time=0.571 ms
64 bytes from 192.168.10.1: icmp_seq=3 ttl=64 time=0.516 ms
64 bytes from 192.168.10.1: icmp_seq=4 ttl=64 time=1.09 ms
```

Then, DHCP client VM named “dhcp-client” is created, and IP is fetched from the DHCP pool. For the confirmation, did ping testing to “dhcp-server” 192.168.10.1.