

dhcp_setup

1) server side :

1) IP configuration :

we will start by giving the server a static IP :

```
sudo nano /etc/netplan/01-network-manager-all.yaml
```

```
GNU nano 8.4                                     01-network-manager-all.yaml
# Let NetworkManager manage all devices on this system
network:
  version: 2
  renderer: networkd
  ethernets:
    enp0s8:
      dhcp4: false
      dhcp6: false
      addresses:
        - 192.168.1.1/24
      routes:
        - to: default
          via: 192.168.1.1
      nameservers:
        addresses: [8.8.8.8, 8.8.4.4]
```

image.png

now the server address is 192.168.1.1

```
sudo netplan apply
```

```
sysadmin@sysadmin-VirtualBox:/etc/netplan$ ip a show enp0s8
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
  link/ether 08:00:27:01:ce:83 brd ff:ff:ff:ff:ff:ff
  altname enx08002701ce83
  inet 192.168.1.1/24 brd 192.168.1.255 scope global enp0s8
    valid_lft forever preferred_lft forever
  inet6 fe80::a00:27ff:fe01:ce83/64 scope link proto kernel_ll
    valid_lft forever preferred_lft forever
sysadmin@sysadmin-VirtualBox:/etc/netplan$
```

image-1.png

2) dhcp-server installation :

```
sudo apt install isc-dhcp-server
```

3) dhcp-server configuration :

```
sudo nano /etc/dhcp/dhcpd.conf
```

```
sysadmin@sysadmin-VirtualBox: ~ — sudo nano /etc/... ~
```

```
GNU nano 8.4 /etc/dhcp/dhcpd.conf
# 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 192.168.1.0 netmask 255.255.255.0 {
    range 192.168.1.50 192.168.1.100;
    option routers 192.168.1.1;
    option broadcast-address 192.168.1.254;
    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

^G Help      ^O Write Out ^F Where Is  ^K Cut      ^T Execute  ^C Location
^X Exit      ^R Read File ^\ Replace   ^U Paste    ^J Justify  ^/ Go To Line
```

image-2.png

restarting the service :

```
sudo systemctl restart isc-dhcp-server
```

```
sudo systemctl status isc-dhcp-server
```

```
sysadmin@sysadmin-VirtualBox: ~ — sudo systemctl ...  
● isc-dhcp-server.service - ISC DHCP IPv4 server  
  Loaded: loaded (/usr/lib/systemd/system/isc-dhcp-server.service; enabled; ➤  
  Active: active (running) since Mon 2026-02-23 11:31:49 CET; 1s ago  
    Invocation: 35038b855f2949079834a2749c850058  
      Docs: man:dhcpd(8)  
     Main PID: 4383 (dhcpd)  
        Tasks: 1 (limit: 3969)  
       Memory: 3.8M (peak: 4.8M)  
         CPU: 9ms  
        CGroup: /system.slice/isc-dhcp-server.service  
                  └─4383 dhcpd -user dhcpd -group dhcpd -f -4 -pf /run/dhcp-server/dhcpd.pid  
  
Feb 23 11:31:49 sysadmin-VirtualBox dhcpcd[4383]: Sending on   LPF/enp0s8/08:00:  
Feb 23 11:31:49 sysadmin-VirtualBox dhcpcd[4383]:  
Feb 23 11:31:49 sysadmin-VirtualBox dhcpcd[4383]: No subnet declaration for enp0s3  
Feb 23 11:31:49 sysadmin-VirtualBox dhcpcd[4383]: ** Ignoring requests on enp0s3  
Feb 23 11:31:49 sysadmin-VirtualBox dhcpcd[4383]: you want, please write a sub  
Feb 23 11:31:49 sysadmin-VirtualBox dhcpcd[4383]: in your dhcpcd.conf file for  
Feb 23 11:31:49 sysadmin-VirtualBox dhcpcd[4383]: to which interface enp0s3 i  
Feb 23 11:31:49 sysadmin-VirtualBox dhcpcd[4383]: Sending on   Socket/fallback/  
Feb 23 11:31:49 sysadmin-VirtualBox dhcpcd[4383]: Server starting service.  
lines 1-22/22 (END)
```

image-3.png

2) client side :

1) client configuration

```
sudo nano /etc/netplan/01-network-manager-all.yaml
```

```
sysclient@sysclient-VirtualBox: ~ — sudo nano /etc/n...  
GNU nano 8.4          /etc/netplan/01-network-manager-all.yaml  
# Let NetworkManager manage all devices on this system  
network:  
  version: 2  
  renderer: NetworkManager  
  ethernets:  
    enp0s8:  
      dhcp4: yes
```

image-4.png

```
sudo netplan apply
```

2) Getting an ip from the dhcp server :

```
sudo dhclient -v enp0s3
```

```
valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:2d:ad:cb brd ff:ff:ff:ff:ff:ff
    altname enx0800272dadcb
sysclient@sysclient-VirtualBox:~$ sudo dhclient -v enp0s8
Internet Systems Consortium DHCP Client 4.4.3-P1
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All rights reserved.
For info, please visit https://www.isc.org/software/dhcp/

Listening on LPF/enp0s8/08:00:27:2d:ad:cb
Sending on   LPF/enp0s8/08:00:27:2d:ad:cb
Sending on   Socket/fallback
xid: warning: no netdev with useable HWADDR found for seed's uniqueness enforcement
xid: rand init seed (0x69e32e09) built using gethostid
DHCPDISCOVER on enp0s8 to 255.255.255.255 port 67 interval 3 (xid=0xf708c912)
DHCPOFFER of 192.168.1.51 from 192.168.1.1
DHCPREQUEST for 192.168.1.51 on enp0s8 to 255.255.255.255 port 67 (xid=0x12c908f7)
DHCPACK of 192.168.1.51 from 192.168.1.1 (xid=0xf708c912)
bound to 192.168.1.51 -- renewal in 277 seconds.
sysclient@sysclient-VirtualBox:~$
```

image-5.png

```
ip a show enps8
```

```
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP  
    qlen 1000  
        link/ether 08:00:27:2d:ad:cb brd ff:ff:ff:ff:ff:ff  
        altname enx0800272dadcb  
        inet 192.168.1.50/24 brd 192.168.1.255 scope global dynamic noprefixroute en  
p0s8
```

image-7.png

3) pinging the server :

ping 192.168.1.1

```
sysclient@sysclient-VirtualBox:~$ ping 192.168.1.1
PING 192.168.1.1 (192.168.1.1) 56(84) bytes of data.
64 bytes from 192.168.1.1: icmp_seq=1 ttl=64 time=0.316 ms
64 bytes from 192.168.1.1: icmp_seq=2 ttl=64 time=0.957 ms
64 bytes from 192.168.1.1: icmp_seq=3 ttl=64 time=0.336 ms
64 bytes from 192.168.1.1: icmp_seq=4 ttl=64 time=0.530 ms
^C
--- 192.168.1.1 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3191ms
rtt min/avg/max/mdev = 0.316/0.534/0.957/0.257 ms
```

image-8.png