Installing DHCP Server
Rocky Linux

1. Login with a user who has sudo permissions. Make sure you have configured the Rocky Linux DVD as a internal repository.

2. Make sure the system is updated. Use commnad

sudo yum update -y

3. Install dhcp server package. The earlier ISC DHCP server package has reached its end of life. Thus it is now replaced by a new better DHCP server package by name kea. Thus you need to install this package to configure the DHCP server.

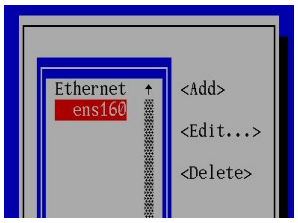
sudo dnf install kea -y

4. You need to assign a manual IP address to the server hosting the DHCP server. For this use nmtui utility.

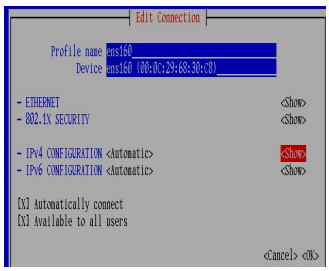
sudo nmtui

Following screen appears.

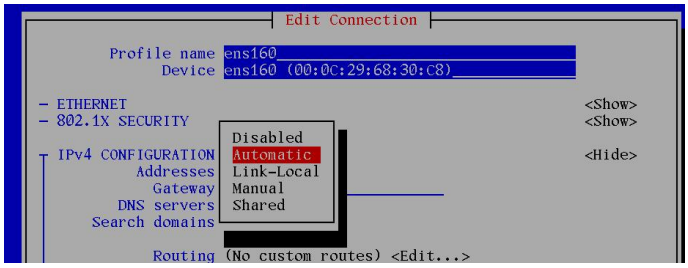
Enter Edit a Connection option. It will display a list of network cards in your machine. The name of the network cards may be different.



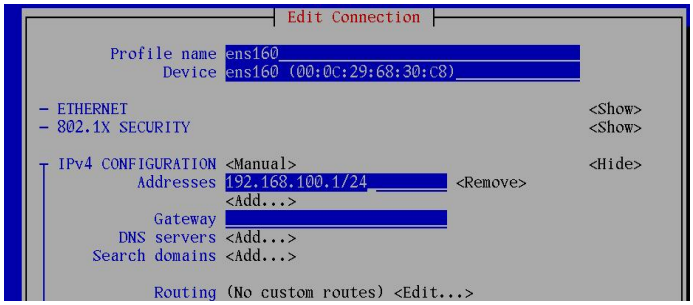
Click Enter. Following screen appears.



Using up/down/side arrow keys, go to the IPv4 Configuration option and select the show button. This will be shown with red background. Press Enter.

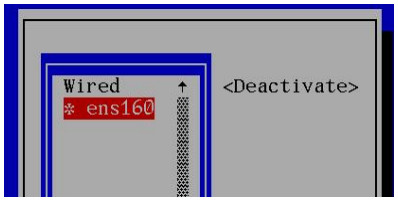


In the above screen that appears, go to the Automatic option in front of IPv4 Configuration. Press Enter. Then in the list select Manual Option.
Then go to the the Addresses section. Go to Add option. Press Enter. Then add the IP address 192.168.100.1/24 as shown below.You can also enter Gateway/Router address. DNS Servers addresses.



Then go to the OK option at the bottom. Then press Enter.
Press Esc to come back to the following screen.

Select Activate a connection option. Press Enter. Following screen is displayed.



Press Enter. Then press Enter again. This will deactivate the network card first and then activate it again. This will assign the new IP address to the network card.

Press Esc till you exit from the nmtui utility.

Confirm with **ip a** command, that the system gets 192.168.100.1 IP address.

This is how you have assigned a manual IP address to the server.

DHCP Server Configuration.

The kea DHCP server configuration file for IPV4 is /etc/kea/kea-dhcp4.conf. The original file contains a lot of configuration options and information about them. Most of the time you do not require all these options. Thus just rename the original configuration file and create a new configuration file with only required configuration options.

To rename the existing configuration file provide the following command.

sudo mv /etc/kea/kea-dhcp4.conf /etc/kea/kea-dhcp4.conf.orig

```
[admin@demosrv ~]$ sudo mv /etc/kea/kea-dhcp4.conf /etc/kea/kea-dhcp4.conf.orig
```

Now create a new blank configuration file and copy following lines.

sudo vi /etc/kea/kea-dhcp4.conf

```
// create new
{
"Dhcp4": {
  "interfaces-config": {
    // specify network interfaces to listen on
    "interfaces": [ "ens160" ]
  },
  // settings for expired-leases (follows are default)
  "expired-leases-processing": {
    "reclaim-timer-wait-time": 10,
    "flush-reclaimed-timer-wait-time": 25,
    "hold-reclaimed-time": 3600,
    "max-reclaim-leases": 100,
    "max-reclaim-time": 250,
    "unwarned-reclaim-cycles": 5
  },
  // T1 timer that govern when the client begins the renewal processes (sec)
  "renew-timer": 900,
  // T2 timer that govern when the client begins the rebind processes (sec)
  "rebind-timer": 1800,
  // how long the addresses (leases) given out by the server are valid (sec)
  "valid-lifetime": 3600,
  "option-data": [
    {
      // specify your DNS server
      // to specify multiple entries, separate them with commas
      "name": "domain-name-servers",
      "data": "192.168.100.1"
    },
    //{
      // specify your domain name
    //   "name": "domain-name",
    //   "data": "demo.lab"
    //},
    //{
      // specify your domain-search base
```

```
        // to specify multiple entries, separate them with commas
      //    "name": "domain-search",
      //    "data": "demo.lab"
      //}
    ],

 "subnet4": [
      {
        "id": 1,
        // specify subnet that DHCP is used
        "subnet": "192.168.100.1/24",
        // specify the range of IP addresses to be leased
        "pools": [ { "pool": "192.168.100.50 - 192.168.100.150" } ],
        "option-data": [
          {
            // specify your gateway
            "name": "routers",
            "data": "192.168.100.254"
          }
        ]
      }
    ],
    // logging settings
    "loggers": [
    {
      "name": "kea-dhcp4",
      "output-options": [
        {
          "output": "/var/log/kea/kea-dhcp4.log"
        }
      ],
      "severity": "INFO",
      "debuglevel": 0
    }
  ]
}
}
```

Save the file.

Provide required ownership and permissions on the file.

sudo chown root:kea /etc/kea/kea-dhcp4.conf

sudo chmod 640 /etc/kea/kea-dhcp4.conf

Enable the service for the auto start.

sudo systemctl enable kea-dhcp4

Start the DHCP Server service.

sudo systemctl start kea-dhcp4

Check the status of the server.

sudo systemctl status kea-dhcp4

If everything is correct and there are no syntax errors in the configuration file, then the kea-dhcp4 service should be up and running as shown below.

```
[admin@demosrv ~]$ sudo systemctl status kea-dhcp4
● kea-dhcp4.service - Kea DHCPv4 Server
     Loaded: loaded (/usr/lib/systemd/system/kea-dhcp4.service; enabled; preset: disabled)
     Active: active (running) since Wed 2025-09-17 16:54:32 IST; 10s ago
  Invocation: 6da3ac22d6f74b2f9436806ee835b721
       Docs: man:kea-dhcp4(8)
   Main PID: 1954 (kea-dhcp4)
      Tasks: 7 (limit: 22951)
     Memory: 2.5M (peak: 2.9M)
        CPU: 39ms
     CGroup: /system.slice/kea-dhcp4.service
             └─1954 /usr/sbin/kea-dhcp4 -c /etc/kea/kea-dhcp4.conf

Sep 17 16:54:32 demosrv systemd[1]: Started kea-dhcp4.service - Kea DHCPv4 Server.
Sep 17 16:54:32 demosrv kea-dhcp4[1954]: 2025-09-17 16:54:32.376 INFO  [kea-dhcp4.dhcp4/1954.140326086666>
Sep 17 16:54:32 demosrv kea-dhcp4[1954]: 2025-09-17 16:54:32.377 WARN  [kea-dhcp4.dhcp4/1954.140326086666>
Sep 17 16:54:32 demosrv kea-dhcp4[1954]: 2025-09-17 16:54:32.377 INFO  [kea-dhcp4.commands/1954.140326086>
lines 1-16/16 (END)
```

Now open the ports in the firewall for DHCP server.

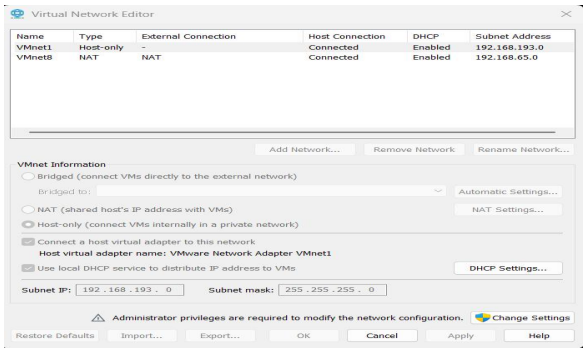
sudo firewall-cmd --add-service=dhcp

sudo firewall-cmd --add-service=dhcp --permanent

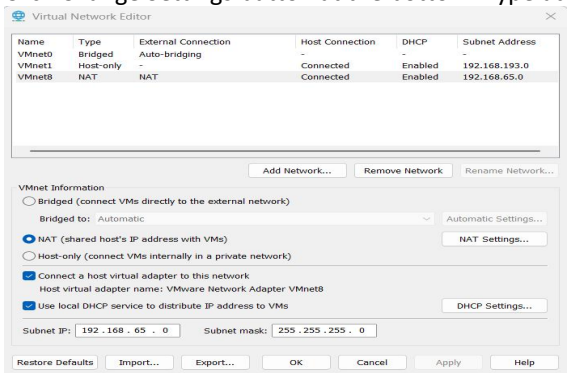
Verify DHCP Server working

If you are using VMWare or Oracle VirtualBox. Then you need to disable the built in DHCP Server. Else the client will always get IP address from this DHCP Server.
To disable VMWare DHCP Server.

Go to Edit -> Virtual Network Editor



Click Change Settings button at the bottom. Type administrator password if asked or click yes.



Select the NAT type adapter. Then Uncheck the Use Local DHCP Service check box and click Apply. Clieck OK.

Start another computer. It may be Windows or Linux. Put the OS to obtain IP address automatically. Then verify that the client is getting an IP address in the range 192.168.100.50 to 192.168.100.150. It means your DHCP server is configured properly.

Provide Reservation to Client

To provide reservation to client you need to find the MAC address of the client. The reservation makes sure that DHCP server will always provide the fixed IP address specified by the administrator in the reservation configuration for the client.

Edit the kea-dhcp4 configuration file.

sudo vi /etc/kea/kea-dhcp4.conf

In this file before the Subnet4 block, add following lines.

“reservations-global”: true,
“reservations-in-subnet”: true,
“reservations-out-of-pool”: true,

This will be as shown below.

```
43        ],
44        "reservations-global": true,
45        "reservations-in-subnet": true,
46        "reservations-out-of-pool": true,
47
48       "subnet4": [
49           {
50                "id": 1,
```

Similarly after the “subnet4” section add section for reservations.

```
“reservations”: [
    {
        “hw-address”: “00:0C:11:29:8D:FD”, // Put you client MAC address here
        “ip-address”: “192.168.100.80”
    }
],
```

This will be as shown below.

```
63     ],
64     "reservations": [
65        {
66              "hw-address": "00:0C:29:11:D8:FD",
67              "ip-address": "192.168.100.80"
68        }
69     ],
70
```

Save the file. Restart the kea-dhcp4 service. Check the status.

sudo systemctl restart kia-dhcp4

sudo systemctl status kia-dhcp4

If the service is up and running. Go to the client and shutdown the interface and turn it on again. Check if client gets a new IP address.