

# Purge Network Manager and Hardcode Network Configurations

Intended for Ubuntu Desktop 20.04 LTS and later versions.

Implemented on Ubuntu Desktop 20.04 LTS (Focal Fossa).

When you want to purge the Network Manager on Ubuntu 20.04 and hardcode the network configuration, you should follow these steps in order:

1. Hardcode the network configuration: Before removing the Network Manager, it's crucial to ensure that you have a static network configuration in place. This will ensure you maintain network connectivity after the Network Manager is removed.
2. Purge the Network Manager: Once the static network configuration is set up and verified to be working, you can proceed to remove the Network Manager.
3. Verifying Network Configurations After a Reboot.

We will be using **Netplan** to setup (hardcode) network interfaces.

Netplan is a utility developed by Canonical, the company behind Ubuntu. It is used to setup network interfaces on recent versions of Ubuntu. It provides a network configuration abstraction over the currently supported two “backend” system (“renderer” in Netplan terminology): networkd and NetworkManager. Using Netplan, both physical and virtual network interfaces are configured via yaml files which are translated to configurations compatible with the selected backend. (Netplan network configuration tutorial for beginners)

## Detailed Steps

### Step 1: Hardcoding the Network Configuration

1. Identify your network interface: Use the `bash ip a` or `bash ifconfig` command to identify your network interface name (e.g., `eth0`, `enp0s3`, etc.). *In our case, we configured `enp4s0` network interface.*

**Note down ALL the configurations (IP addr, subnet, router, gateway) associated with your target interface. They will be used later when we'd hardcode the network configuration.**

2. Edit the `/etc/netplan/01-netcfg.yaml` file (or create it if it does not exist):

```
sudo nano /etc/netplan/01-netcfg.yaml
```

3. Add your static network configuration: **Replace** `enp4s0` with your actual network interface name and configure the IP address, gateway, and DNS servers as needed.

The IP address (192.168.22.130) also contains the subnet (/20) associated with it. Make sure to add it properly as shown below.  
**Also make sure to follow proper indentation as well because we are dealing with a .yaml file**

Here's the configuration file we used: 01-netcfg.yaml

```
network:
  version: 2
  ethernets:
    enp4s0:
      dhcp4: no
      addresses:
        - 192.168.22.130/20
      gateway4: 192.168.16.11
      nameservers:
        addresses:
          - 8.8.8.8
          - 8.8.4.4
```

*# REPLACE enp4s0 with the intended interface name*  
*# Disable DHCP for IPv4*  
*# The static IP address and subnet mask*  
*# Your gateway (router) IP address*  
*# Primary DNS server (Google DNS)*  
*# Secondary DNS server (Google DNS)*

4. Disable the existing netplan file: You can disable the 01-network-manager-all.yaml file by renaming it, which effectively prevents it from being applied.

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

5. Apply the configurations

```
sudo netplan apply
```

6. Verify the network configuration: Ensure you can still connect to the network. You can use ping, curl, or any other network tool to verify the connectivity.

- Make sure to test the internet connectivity.
- Make sure to test local access through ssh.

## Step 2: Purging the Network Manager

The steps to purge network manager depends on the desktop environment. Once the static network configuration is **confirmed** to be working, you can safely remove the Network Manager.

1. For Ubuntu MATE 18.04 LTS and 20.04 LTS purging network-manager package is safe. You can simply run:

```
sudo apt-get purge network-manager
```

2. For Ubuntu 18.04 LTS and 20.04 LTS with GNOME desktop (**our case**) purging network-manager package will also purge ubuntu-desktop and gnome-control-center (essential part of GNOME desktop). So it is not an option.

Here you should stop NetworkManager and some other services:

```
sudo systemctl stop NetworkManager.service
sudo systemctl stop NetworkManager-wait-online.service
sudo systemctl stop NetworkManager-dispatcher.service
sudo systemctl stop network-manager.service
```

**Check for the status of Network Manager if it is still running. This can be done in either of the 2 ways described below:**

- Open System Settings > Network

If it shows an error opening network settings, network manager has been successfully disabled.

OR

- Through command line

```
nmcli device
```

A terminal window with a dark background. The prompt is 'ryzen03@ryzen03:/etc/netplan\$' in green and blue. The command 'nmcli device' is entered in white. The output is 'Error: NetworkManager is not running.' in white.

```
ryzen03@ryzen03:/etc/netplan$ nmcli device
Error: NetworkManager is not running.
```

Figure 1: NM is not running

Now, disable network manager (permanently) to avoid it restarting after a reboot:

```
sudo systemctl disable NetworkManager.service
sudo systemctl disable NetworkManager-wait-online.service
sudo systemctl disable NetworkManager-dispatcher.service
sudo systemctl disable network-manager.service
```

Referenced from:

(How do I disable network manager permanently?)

(Stopping and Disabling NetworkManager)

### Step 3: Rebooting the System & Final Verification

1. Reboot your system: Make sure to reboot your system into the **same** OS.

```
sudo reboot
```

2. **Re-verify the network configuration:** Make sure to re-verify the network configuration once again as done previously as well. Ensure you can still connect to the network. You can use ping, curl, or any other network tool to verify the connectivity.

- Make sure to test the internet connectivity.

- Make sure to test local access through ssh.
3. Re-verify Network Manager's status: Check if Network Manager is running or not. This can be done following the steps as described before.

Congratulations! If you've made it till here, you've successfully purged Network Manager and hardcoded the network configurations.