NetworkManager (best choice)

systemctl status NetworkManager.service

systemctl enable NetworkManager.service

systemctl stop NetworkManager.service

systemctl start NetworkManager.service

# NetworkManager works by describing connection (profile) and loading it up to an interface. This can be done with GUI or CLI. I’m just going to show CLI

#Show current available connection

root@kali:~# nmcli connection show

NAME UUID TYPE DEVICE

#create a static IP profile

root@kali:~# nmcli connection add type ethernet con-name static100 ifname eth0 ipv4.addresses 10.0.0.100/24 ipv4.gateway 10.0.0.1 ipv4.dns 8.8.4.4 ipv4.method manual

Connection 'static100' (4afc3ae6-93d3-4ab4-a6d8-3245f779eba9) successfully added.

#add an Ethernet connection “static100” to eth0

#connection add type ethernet con-name static100 ifname eth0

#ip = 10.0.0.100/24 with gateway 10.0.0.1 and dns 8.8.4.4

#method manual -> tells NetworkManager not to use DHCP (auto)

#once compete, the connection is automatically applied to eth0

#ipv4.addresses 10.0.0.100/24 ipv4.gateway 10.0.0.1 ipv4.dns 8.8.4.4 ipv4.method manual

root@kali:~# nmcli connection show

NAME UUID TYPE DEVICE

static100 4afc3ae6-93d3-4ab4-a6d8-3245f779eba9 802-3-ethernet eth0

root@kali:~# ip addr

1: lo: <LOOPBACK,UP,LOWER\_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1

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

valid\_lft forever preferred\_lft forever

2: eth0: <BROADCAST,MULTICAST,UP,LOWER\_UP> mtu 1500 qdisc pfifo\_fast state UP group default qlen 1000

link/ether 00:0c:29:57:98:b6 brd ff:ff:ff:ff:ff:ff

inet 10.0.0.100/24 brd 10.0.0.255 scope global eth0

valid\_lft forever preferred\_lft forever

inet6 2605:e000:1124:112:96d:23be:b7e5:caed/64 scope global noprefixroute dynamic

valid\_lft 604751sec preferred\_lft 604751sec

inet6 fd62:5b7e:ba5:0:37b0:d3ae:1e0e:1925/64 scope global noprefixroute dynamic

valid\_lft 7151sec preferred\_lft 3551sec

inet6 fe80::feb9:3d73:737d:17c4/64 scope link

valid\_lft forever preferred\_lft forever

root@kali:~# cat /etc/resolv.conf

# Generated by NetworkManager

nameserver 8.8.4.4

root@kali:~# ls -l /etc/resolv.conf

lrwxrwxrwx 1 root root 35 Oct 27 19:47 /etc/resolv.conf -> /var/run/NetworkManager/resolv.conf

#one interesting point is /etc/resolv.conf is now a symbolic link to NetwotkManager’s resolv.conf file. If I run dhclient, a new IP configuration is fetch from the DHCP including DNS info

root@kali:~# dhclient

smbd.service is not active, cannot reload.

invoke-rc.d: initscript smbd, action "reload" failed.

root@kali:~# cat /etc/resolv.conf

domain hawaii.rr.com

search hawaii.rr.com

nameserver 8.8.8.8

nameserver 209.18.47.62

nameserver 209.18.47.61

root@kali:~# ip addr

1: lo: <LOOPBACK,UP,LOWER\_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1

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

valid\_lft forever preferred\_lft forever

2: eth0: <BROADCAST,MULTICAST,UP,LOWER\_UP> mtu 1500 qdisc pfifo\_fast state UP group default qlen 1000

link/ether 00:0c:29:57:98:b6 brd ff:ff:ff:ff:ff:ff

inet 10.0.0.100/24 brd 10.0.0.255 scope global eth0

valid\_lft forever preferred\_lft forever

inet 10.0.0.10/24 brd 10.0.0.255 scope global secondary eth0

valid\_lft forever preferred\_lft forever

inet6 2605:e000:1124:112:96d:23be:b7e5:caed/64 scope global noprefixroute dynamic

valid\_lft 604733sec preferred\_lft 604733sec

inet6 fd62:5b7e:ba5:0:37b0:d3ae:1e0e:1925/64 scope global noprefixroute dynamic

valid\_lft 7133sec preferred\_lft 3533sec

inet6 fe80::feb9:3d73:737d:17c4/64 scope link

valid\_lft forever preferred\_lft forever

root@kali:~# ls -l /etc/resolv.conf

lrwxrwxrwx 1 root root 35 Oct 27 19:47 /etc/resolv.conf -> /var/run/NetworkManager/resolv.conf

#to set it back to only static IP, reload the “static100” connection profile

root@kali:~# nmcli connection up static100

Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/6)

root@kali:~# ip addr

1: lo: <LOOPBACK,UP,LOWER\_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1

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

valid\_lft forever preferred\_lft forever

2: eth0: <BROADCAST,MULTICAST,UP,LOWER\_UP> mtu 1500 qdisc pfifo\_fast state UP group default qlen 1000

link/ether 00:0c:29:57:98:b6 brd ff:ff:ff:ff:ff:ff

inet 10.0.0.100/24 brd 10.0.0.255 scope global eth0

valid\_lft forever preferred\_lft forever

inet6 2605:e000:1124:112:96d:23be:b7e5:caed/64 scope global noprefixroute dynamic

valid\_lft 604782sec preferred\_lft 604782sec

inet6 fd62:5b7e:ba5:0:37b0:d3ae:1e0e:1925/64 scope global noprefixroute dynamic

valid\_lft 7182sec preferred\_lft 3582sec

inet6 fe80::feb9:3d73:737d:17c4/64 scope link

valid\_lft forever preferred\_lft forever

#create dynamic (DHCP) IP profile. By default ipv4.methos is set to auto, and no need to specify any IP info. Don’t fotget to upload the connection profile

root@kali:~# nmcli connection add type ethernet con-name dynamicIP ifname eth0

Connection 'dynamicIP' (14af32f1-d781-40c3-bd8f-0575e7740921) successfully added.

root@kali:~# nmcli connection show

NAME UUID TYPE DEVICE

static100 4afc3ae6-93d3-4ab4-a6d8-3245f779eba9 802-3-ethernet eth0

dynamicIP 14af32f1-d781-40c3-bd8f-0575e7740921 802-3-ethernet --

root@kali:~# nmcli connection up dynamicIP

Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/7)

root@kali:~# ip addr

1: lo: <LOOPBACK,UP,LOWER\_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1

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

valid\_lft forever preferred\_lft forever

2: eth0: <BROADCAST,MULTICAST,UP,LOWER\_UP> mtu 1500 qdisc pfifo\_fast state UP group default qlen 1000

link/ether 00:0c:29:57:98:b6 brd ff:ff:ff:ff:ff:ff

inet 10.0.0.10/24 brd 10.0.0.255 scope global dynamic eth0

valid\_lft 86394sec preferred\_lft 86394sec

inet6 2605:e000:1124:112:8483:dcd1:ffdd:5ba7/64 scope global noprefixroute dynamic

valid\_lft 604791sec preferred\_lft 604791sec

inet6 fd62:5b7e:ba5:0:adad:482d:5b7b:6445/64 scope global noprefixroute dynamic

valid\_lft 7191sec preferred\_lft 3591sec

inet6 fe80::de3f:ee5d:263:92ba/64 scope link

valid\_lft forever preferred\_lft forever

root@kali:~# cat /etc/resolv.conf

# Generated by NetworkManager

search hawaii.rr.com

nameserver 8.8.8.8

nameserver 209.18.47.62

nameserver 209.18.47.61

root@kali:~# ls -l /etc/resolv.conf

lrwxrwxrwx 1 root root 35 Oct 27 20:04 /etc/resolv.conf -> /var/run/NetworkManager/resolv.conf

#to modify the dynamic connection and add custom DNS

root@kali:~# nmcli connection modify dynamicIP ipv4.dns 8.8.4.4

root@kali:~# nmcli connection up dynamicIP

Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/8)

root@kali:~# cat /etc/resolv.conf

# Generated by NetworkManager

search hawaii.rr.com

nameserver 8.8.8.8

nameserver 209.18.47.62

nameserver 209.18.47.61

# NOTE: the libc resolver may not support more than 3 nameservers.

# The nameservers listed below may not be recognized.

nameserver 8.8.4.4

#\*\*\*adding below to /etc/dhcp/dhclient.conf, and reload connection profile might be a better deal.\*\*\*

#prepend domain-name-servers 127.0.0.1;

/etc/network/interfaces (not so good anymore, lets move on)

With this method, any interface described in /etc/network/interfaces will be ignored by NetworkManager (not managed). However, its still best to disable the the NetworkManager If not needed because it turns /etc/resolv.conf into a symbolic link to /var/run/NetworkManager/resolv.conf and it screws everything up.

systemctl disable NetworkManager.service

systemctl stop NetworkManager.service

root@kali:~# nano -c /etc/network/interfaces

root@kali:~# cat /etc/network/interfaces

source /etc/network/interfaces.d/\*

# The loopback network interface

auto lo

iface lo inet loopback

auto eth0

iface eth0 inet static

address 10.0.0.120/24

gateway 10.0.0.1

#dns-nameservers 8.8.4.4

#auto eth0

#iface eth0 inet dhcp

root@kali:~# ip addr

1: lo: <LOOPBACK,UP,LOWER\_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1

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

valid\_lft forever preferred\_lft forever

2: eth0: <BROADCAST,MULTICAST,UP,LOWER\_UP> mtu 1500 qdisc pfifo\_fast state UP group default qlen 1000

link/ether 00:0c:29:57:98:b6 brd ff:ff:ff:ff:ff:ff

inet 10.0.0.10/24 brd 10.0.0.255 scope global dynamic eth0

valid\_lft 86387sec preferred\_lft 86387sec

inet6 2605:e000:1124:112:8483:dcd1:ffdd:5ba7/64 scope global noprefixroute dynamic

valid\_lft 604790sec preferred\_lft 604790sec

inet6 fd62:5b7e:ba5:0:adad:482d:5b7b:6445/64 scope global noprefixroute dynamic

valid\_lft 7190sec preferred\_lft 3590sec

inet6 fe80::de3f:ee5d:263:92ba/64 scope link

valid\_lft forever preferred\_lft forever

root@kali:~# ip address del 10.0.0.10/24 dev eth0

root@kali:~# ifdown eth0 --force

RTNETLINK answers: No such process

RTNETLINK answers: Cannot assign requested address

root@kali:~# ifup eth0 --force

root@kali:~# ip addr

1: lo: <LOOPBACK,UP,LOWER\_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1

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

valid\_lft forever preferred\_lft forever

2: eth0: <BROADCAST,MULTICAST,UP,LOWER\_UP> mtu 1500 qdisc pfifo\_fast state UP group default qlen 1000

link/ether 00:0c:29:57:98:b6 brd ff:ff:ff:ff:ff:ff

inet 10.0.0.120/24 brd 10.0.0.255 scope global eth0

valid\_lft forever preferred\_lft forever

root@kali:~# ls -l /etc/resolv.conf

lrwxrwxrwx 1 root root 35 Oct 27 18:31 /etc/resolv.conf -> /var/run/NetworkManager/resolv.conf