



Exercise 35.4: Adding a Static Route using nmcli

We are going to add a static IPv4 route address to your system and make it persistent. We will do this without editing files under `/dev` directly, using `nmcli`.

1. Begin by examining your current routing tables, using both `route` and `ip`:

```
$ route
```

```
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
default 172.16.2.2 0.0.0.0 UG 100 0 0 ens33
link-local * 255.255.0.0 U 1000 0 0 ens33
172.16.2.0 * 255.255.255.0 U 100 0 0 ens33
192.168.122.0 * 255.255.255.0 U 0 0 0 virbr0
```

```
$ ip route
```

```
default via 172.16.2.2 dev ens33 proto static metric 100
169.254.0.0/16 dev ens33 scope link metric 1000
172.16.2.0/24 dev ens33 proto kernel scope link src 172.16.2.135 metric 100
192.168.122.0/24 dev virbr0 proto kernel scope link src 192.168.122.1 linkdown
```

2. Add a new route using `nmcli`:

```
$ sudo nmcli conn mod "Auto Ethernet" +ipv4.routes "192.168.100.0/24 172.16.2.1"
```

3. Note it has not yet taken effect:

```
$ route
```

```
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
default 172.16.2.2 0.0.0.0 UG 100 0 0 ens33
link-local * 255.255.0.0 U 1000 0 0 ens33
172.16.2.0 * 255.255.255.0 U 100 0 0 ens33
192.168.122.0 * 255.255.255.0 U 0 0 0 virbr0
```

4. Reload the interface to have it take effect and show it has:

```
$ sudo nmcli conn up "Auto Ethernet"
```

```
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/25)
```

```
$ route
```

```
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
default 172.16.2.2 0.0.0.0 UG 100 0 0 ens33
link-local * 255.255.0.0 U 1000 0 0 ens33
172.16.2.0 * 255.255.255.0 U 100 0 0 ens33
192.168.100.0 172.16.2.1 255.255.255.0 UG 100 0 0 ens33
192.168.122.0 * 255.255.255.0 U 0 0 0 virbr0
```

5. Reboot and verify the route has taken effect (i.e., it is **persistent**: If so remove it:

```
$ route
```

Kernel IP routing table

Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface
default	172.16.2.2	0.0.0.0	UG	100	0	0	ens33
link-local	*	255.255.0.0	U	1000	0	0	ens33
172.16.2.0	*	255.255.255.0	U	100	0	0	ens33
192.168.100.0	172.16.2.1	255.255.255.0	UG	100	0	0	ens33
192.168.122.0	*	255.255.255.0	U	0	0	0	virbr0

```
$ sudo nmcli conn mod "Auto Ethernet" -ipv4.routes "192.168.100.0/24 172.16.2.1"
```

```
$ sudo nmcli conn up "Auto Ethernet"
```

Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/3)

```
$ route
```

Kernel IP routing table

Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface
default	172.16.2.2	0.0.0.0	UG	100	0	0	ens33
link-local	*	255.255.0.0	U	1000	0	0	ens33
172.16.2.0	*	255.255.255.0	U	100	0	0	ens33
192.168.122.0	*	255.255.255.0	U	0	0	0	virbr0

6. Note you can set a route with either **route** or **ip** from the command line but it won't survive a reboot as in:

```
$ sudo ip route add 192.168.100.0/24 via 172.16.2.1
```

```
$ sudo route
```

```
....
```

You can verify that a route established this way is not persistent.