

Configuring an Ethernet connection by using nmcli

2.1. Configuring an Ethernet connection by using nmcli

Copy link

If you connect a host to the network over Ethernet, you can manage the connection's settings on the command line by using the `nmcli` utility.

Prerequisites

- A physical or virtual Ethernet Network Interface Controller (NIC) exists in the server's configuration.

Procedure

1. List the NetworkManager connection profiles:

```
# nmcli connection show
NAME                                UUID                                TYPE    DEVICE
Wired connection 1                 a5eb6490-cc20-3668-81f8-0314a27f3f75  ethernet  enp1s0
```

By default, NetworkManager creates a profile for each NIC in the host. If you plan to connect this NIC only to a specific network, adapt the automatically-created profile. If you plan to connect this NIC to networks with different settings, create individual profiles for each network.

2. If you want to create an additional connection profile, enter:

```
# nmcli connection add con-name <connection-name> ifname <device-name> type ethernet
```

Skip this step to modify an existing profile.

3. Optional: Rename the connection profile:

```
# nmcli connection modify "Wired connection 1" connection.id "Internal-LAN"
```

On hosts with multiple profiles, a meaningful name makes it easier to identify the purpose of a profile.

4. Display the current settings of the connection profile:

```
# nmcli connection show Internal-LAN
...
connection.interface-name:    enp1s0
connection.autoconnect:      yes
ipv4.method:                  auto
ipv6.method:                  auto
...
```

5. Configure the IPv4 settings:

- To use DHCP, enter:

```
# nmcli connection modify Internal-LAN ipv4.method auto
```

Skip this step if `ipv4.method` is already set to `auto` (default).

- To set a static IPv4 address, network mask, default gateway, DNS servers, and search domain, enter:

```
# nmcli connection modify Internal-LAN ipv4.method manual ipv4.addresses
192.0.2.1/24 ipv4.gateway 192.0.2.254 ipv4.dns 192.0.2.200 ipv4.dns-search
example.com
```

6. Configure the IPv6 settings:

- To use stateless address autoconfiguration (SLAAC), enter:

```
# nmcli connection modify Internal-LAN ipv6.method auto
```

Skip this step if `ipv6.method` is already set to `auto` (default).

- To set a static IPv6 address, network mask, default gateway, DNS servers, and search domain, enter:

```
# nmcli connection modify Internal-LAN ipv6.method manual ipv6.addresses
2001:db8:1::fffe/64 ipv6.gateway 2001:db8:1::fffe ipv6.dns 2001:db8:1::ffbb
ipv6.dns-search example.com
```

7. To customize other settings in the profile, use the following command:

```
# nmcli connection modify <connection-name> <setting> <value>
```

Enclose values with spaces or semicolons in quotes.

For details about which settings you can modify, see the `nm-settings(5)` man page on your system.

8. Activate the profile:

```
# nmcli connection up Internal-LAN
```

Verification

1. Display the IP settings of the NIC:

```
# ip address show enp1s0
2: enp1s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group
default qlen 1000
    link/ether 52:54:00:17:b8:b6 brd ff:ff:ff:ff:ff:ff
    inet 192.0.2.1/24 brd 192.0.2.255 scope global noprefixroute enp1s0
        valid_lft forever preferred_lft forever
    inet6 2001:db8:1::fffe/64 scope global noprefixroute
        valid_lft forever preferred_lft forever
```

2. Display the IPv4 default gateway:

```
# ip route show default
default via 192.0.2.254 dev enp1s0 proto static metric 102
```

3. Display the IPv6 default gateway:

```
# ip -6 route show default
default via 2001:db8:1::fffe dev enp1s0 proto static metric 102 pref medium
```

4. Display the DNS settings:

```
# cat /etc/resolv.conf
search example.com
nameserver 192.0.2.200
nameserver 2001:db8:1::ffbb
```

If multiple connection profiles are active at the same time, the order of `nameserver` entries depend on the DNS priority values in these profiles and the connection types.

5. Use the `ping` utility to verify that this host can send packets to other hosts:

```
# ping <host-name-or-IP-address>
```

Troubleshooting

- Verify that the network cable is plugged-in to the host and a switch.

- Check whether the link failure exists only on this host or also on other hosts connected to the same switch.
 - Verify that the network cable and the network interface are working as expected. Perform hardware diagnosis steps and replace defective cables and network interface cards.
 - If the configuration on the disk does not match the configuration on the device, starting or restarting NetworkManager creates an in-memory connection that reflects the configuration of the device. For further details and how to avoid this problem, see the Red Hat Knowledgebase solution [NetworkManager duplicates a connection after restart of NetworkManager service](#).
-

Revision #2

Created 2026-02-16 22:54:20 UTC by Admin

Updated 2026-02-16 22:56:25 UTC by Admin