

### Installation

#### RedHat

```
yum install NetworkManager
yum install NetworkManager-tui
```

#### Archlinux

```
pacman -S networkmanager
```

#### Debian

```
apt-get install network-manager
```

### NetworkManager Initialization

#### Systemd

```
systemctl start NetworkManager
systemctl enable NetworkManager
systemctl status NetworkManager
```

### General Commands

```
nmcli general      Show overall status of
status             NetworkManager
```

```
nmcli general      Get and change
hostname           system hostname
[hostname]
```

```
nmcli general      Show the permis-
permissions        sions
```

```
nmcli general      Get and change
logging [level level] NetworkManager
[domains domain-   logging level and
s...]              domains
```

### Activity Monitor

```
nmcli      Observe NetworkManager
monitor    activity
```

### Networking Control Commands

```
nmcli      Enable or disable
networking [on | networking control by
off]       NetworkManager
```

```
nmcli      connectivity [check]
networking
connectivity
[check]
```

### Radio Transmission Control Commands

### Secret Agent

```
nmcli agent      Run nmcli as a Networ-
{secret |        kManager secret agent, or
polkit | all}    polkit agent
```

### Examples

### Examples (cont)

#### Adding a bridge and two slave profiles

```
nmcli con add type bridge con-name
TowerBridge ifname TowerBridge
nmcli con add type ethernet con-name
br-slave-1 ifname ens3 master TowerB-
ridge
nmcli con add type ethernet con-name
br-slave-2 ifname ens4 master TowerB-
ridge
nmcli con modify TowerBridge bridge.stp
no
```

#### Adding an ethernet connection profile with manual IP configuration

```
nmcli con add con-name my-con-em1
ifname em1 type ethernet ip4 192.168.1-
00.100/24 gw4 192.168.100.1 ip4
1.2.3.4 ip6 abbe::cafe
nmcli con mod my-con-em1 ipv4.dns "-
8.8.8.8 8.8.4.4"
nmcli con mod my-con-em1 +ipv4.dns
1.2.3.4
nmcli con mod my-con-em1 ipv6.dns "-
2001:4860:4860::8888 2001:4860:48-
60::8844"
nmcli -p con show my-con-em1
```

#### Convenient field values retrieval for scripting

```
nmcli -g ip4.address connection show
my-con-eth0
nmcli -g ip4.address,ip4.dns connection
show my-con-eth0
nmcli -g ip4 connection show my-con-
eth0
```

#### Adding an Ethernet connection and configuring SR-IOV VFs

```
nmcli con add type ethernet con-name
EthernetPF ifname em1
nmcli con modify EthernetPF sriov.total-
vfs 3 sriov.autoprobe-drivers false
nmcli con modify EthernetPF sriov.vfs '0
mac=00:11:22:33:44:55 vlans=10, 1
trust=true spoof-check=false'
nmcli con modify EthernetPF +sriov.vfs
'2 max-tx-rate=20'
```

#### Escaping colon characters in tabular mode

```
nmcli -t -f general -e yes -m tab dev
show eth0
```

|                                  |                                                                      |
|----------------------------------|----------------------------------------------------------------------|
| nmcli radio wifi [on   off]      | Show or set status of Wi-Fi                                          |
| nmcli radio wifi wwan [on   off] | Show or set status of WWAN                                           |
| nmcli radio wifi all [on   off]  | Show or set all previously mentioned radio switches at the same time |

#### Listing available Wi-Fi APs

```
nmcli device wifi list
```

Showing general information and properties for a Wi-Fi interface

```
nmcli -p -f general,wifi-properties device show wlan0
```

#### Listing NetworkManager polkit permissions

```
nmcli general permissions
```

Listing NetworkManager log level and domains

```
nmcli general logging
```

#### Changing NetworkManager logging

```
nmcli g log level DEBUG domains CORE,ETHER,IP
nmcli g log level INFO domains DEFAULT
```

Activating a VPN connection profile requiring interactive password input

```
nmcli --ask con up my-vpn-con
```

Adding a bonding master and two slave connection profiles

```
nmcli con add type bond ifname mybond0 mode active-backup
nmcli con add type ethernet ifname eth1 master mybond0
nmcli con add type ethernet ifname eth2 master mybond0
```

Adding a team master and two slave connection profiles

```
nmcli con add type team con-name Team1 ifname Team1 config team1--master-json.conf
nmcli con add type ethernet con-name Team1-slave1 ifname em1 master Team1
nmcli con add type ethernet con-name Team1-slave2 ifname em2 master Team1
nmcli con add type ethernet con-name Team1-slave2 ifname em2 master Team1
nmcli con up Team1-slave1
nmcli con up Team1-slave2
```

Adding an ethernet connection profile in interactive editor

```
nmcli connection edit type ethernet
print
goto ethernet
goto ipv4.addresses
set ipv4.gateway 192.168.1.1
verify
print
set ipv4.dns 8.8.8.8 8.8.4.4
print
verify
save
quit
```



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### Running NetworkManager

|                  |                                       |
|------------------|---------------------------------------|
| --version   -V   | Print NetworkManager software version |
| --help   -h      | Print NetworkManager options          |
| --no-daemon   -n | Do not daemonize                      |
| --debug   -d     | Print output to STDOUT                |
| --pid-file   -p  | Specify location of PID file          |
| --state-file     | Specify file for storing state        |
| --config         | Specify configuration file            |
| --log-level      | Set NetworkManager logging            |
| --log-domain     | List operations to log                |
| --print-config   | Print NetworkManager configuration    |

### Connection Management Commands

|                                                                                                             |                                        |
|-------------------------------------------------------------------------------------------------------------|----------------------------------------|
| nmcli connection show [--active] [--order [+]-category:...]                                                 | List all profiles                      |
| nmcli connection show [--active] [id   uuid   path   apath] ID...                                           | Show details for specified connections |
| nmcli connection up [id   uuid   path] ID [ifname ifname] [ap BSSID] [passwd-file file]                     | Activate a connection                  |
| nmcli connection down [id   uuid   path   apath] ID...                                                      | Deactivate a connection                |
| nmcli connection modify [--temporary] [id   uuid   path] ID {option value   [+]-setting.property value} ... | Add, modify or remove properties       |
| nmcli connection add [save {yes   no}] {option value   [+]-setting.property value} ...                      | Create a new connection                |

### Connection Management Commands (cont)

|                                                                                |                                                                           |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| nmcli connection edit [id   uuid   path] ID [type type] [connection name name] | Edit an existing connection or add a new one, using an interactive editor |
| nmcli connection clone [--temporary] [id   uuid   path] ID new_name            | Clone a connection                                                        |
| nmcli connection delete [id   uuid   path] ID...                               | Delete a configured connection                                            |
| nmcli connection monitor [id   uuid   path] ID...                              | Monitor connection profile activity                                       |
| nmcli connection reload                                                        | Reload all connection files from disk                                     |
| nmcli connection load filename...                                              | Load/reload one or more connection files from disk                        |
| nmcli connection import [--temporary] type type file file                      | Import an external/foreign configuration                                  |
| nmcli connection export [id   uuid   path] ID [file]                           | Export a connection                                                       |

### Configuring NetworkManager

|               |                                                                        |
|---------------|------------------------------------------------------------------------|
| plugins       | Lists plugin separated by ','                                          |
| auth-p-olkkit | Whether to use PolicyKit for authorization                             |
| dhcp          | Sets up DHCP client                                                    |
| dns           | Set DNS processing mode e.g. dnsmasq, systemd-resolved, unbound, none. |
| level         | Set log level e.g. OFF,ERR,WARN,INFO,DEBUG,TRACE                       |
| domains       | Set log domain e.g. NONE,ALL,-DEFAULT,DHCP,IP.                         |
| backend       | Set logging backend e.g. syslog, journal                               |

### Device Management Commands

|                                                                                                                                                                        |                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| nmcli device status                                                                                                                                                    | Print status of devices                 |
| nmcli device show [ifname]                                                                                                                                             | Show detailed information about devices |
| nmcli device set [ifname] ifname [autoconnect {yes   no}] [managed {yes   no}]                                                                                         | Set device properties                   |
| nmcli device connect ifname                                                                                                                                            | Connect the device                      |
| nmcli device reapply ifname                                                                                                                                            | Attempt to update device                |
| nmcli device modify ifname {option value   [+]-setting.property value} ...                                                                                             | Modify the settings                     |
| nmcli device disconnect ifname...                                                                                                                                      | Disconnect a device                     |
| nmcli device delete ifname...                                                                                                                                          | Delete a device                         |
| nmcli device monitor [ifname...]                                                                                                                                       | Monitor device activity                 |
| nmcli device wifi [list [--rescan   auto   no   yes] [ifname ifname] [bssid BSSID]]                                                                                    | List available Wi-Fi access points      |
| nmcli device wifi connect (B)SSID [password password] [wep-key-type {key   phrase}] [ifname ifname] [bssid BSSID] [name name] [private {yes   no}] [hidden {yes   no}] | Connect to a Wi-Fi network              |



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### Device Management Commands (cont)

nmcli device wifi hotspot  
[ifname ifname] [con-name  
name] [ssid SSID] [ band {a |  
bg} ] [channel channel]  
[password password]

Create a  
Wi-Fi  
hotspot

nmcli device wifi rescan  
[ifname ifname] [ssid SSID...]

Re-scan  
for  
available  
access  
points

nmcli device lldp [list [ifname  
ifname]]

Display  
inform-  
ation  
about  
neighb-  
oring  
devices

### Dispatcher Scripts

Script should be owned by root

```
chown root:root /etc/NetworkManager/d-  
ispatcher.d/10-script.sh
```

Must not be writable by group or other

```
chmod 755 /etc/NetworkManager/disp-  
atcher.d/10-script.sh
```

Each script receives two arguments

The first argument is the interface name  
The second argument is the network  
action e.g. up, down, etc.



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