

### 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-
sions 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

```
nmcli radio Show or set status of Wi-Fi
wifi [on |
off]
```

```
nmcli radio Show or set status of WWAN
wifi wwan
[on | off]
```

```
nmcli radio Show or set all previously
wifi all [on | mentioned radio switches at
off] the same time
```

### Secret Agent

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

### Examples

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
```



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### Examples (cont)

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 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
```

### Examples (cont)

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
```

### Examples (cont)

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
```

### 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



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### Connection Management Commands

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

### Connection Management Commands (cont)

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

### Configuring NetworkManager

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

### Device Management Commands

<code>nmcli device status</code>	Print status of devices
<code>nmcli device show [ifname]</code>	Show detailed information about devices
<code>nmcli device set [ifname] ifname [autoconnect {yes   no}] [managed {yes   no}]</code>	Set device properties
<code>nmcli device connect ifname</code>	Connect the device
<code>nmcli device reapply ifname</code>	Attempt to update device



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### Device Management Commands (cont)

`nmcli device modify ifname` Modify the settings  
 {option value | [+|-]setting.property value} ...

`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

### 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 information about neighboring devices

### Dispatcher Scripts

Script should be owned by root

```
chown root:root /etc/NetworkManager/d-
dispatcher.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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