**Configure network bonding between two RHEL systems.**

**Presentation**

There are several ways to configure network bonding in **RHEL 7**:

* using the **nmtui** command and a **T**ext **U**ser **I**nterface,
* using the **nmcli** command at the **C**ommand **L**ine **I**nterface,
* using the graphical interface,
* through direct changes in the network configuration files.

For the rest of this tutorial, it is the **nmcli** option that has been chosen because it’s the quickest method and arguably the least prone to errors.

**Prerequisites**

To put into practice this tutorial, you need two VM and access to their respective console.  
Each VM has been installed with a base distribution (minimal distribution should work but was not tested). Each VM’s got two network interfaces called **eth0** and **eth1**.

If a previous network configuration was set up, remove it on both VM:

# **nmcli con show**

NAME UUID TYPE DEVICE

Wired connection 1 f32cfcb7-3567-4313-9cf3-bdd87010c7a2 802-3-ethernet eth1

System eth0 257e9416-b420-4218-b1eb-f14302f20941 802-3-ethernet eth0

# **nmcli con del f32cfcb7-3567-4313-9cf3-bdd87010c7a2**

# **nmcli con del 257e9416-b420-4218-b1eb-f14302f20941**

**Bonding Configuration**

Execute the following steps at the console of both VM.

Create the bonding interface:

# **nmcli con add type bond con-name mybond0 ifname bond0 mode active-backup**

[88934.922710] bonding: bond0: Setting MII monitoring interval to 100.

[88934.923313] bonding: bond0: setting mode to active-backup (1).

[88934.923845] bonding: bond0: Setting ARP monitoring interval to 0.

[88934.924382] bonding: bond0: setting arp\_validate to none (0).

[88934.924891] bonding: bond0: Setting primary slave to None.

[88934.925375] bonding: bond0: setting primary\_reselect to always (0).

[88934.925920] bonding: bond0: Setting fail\_over\_mac to none (0).

[88934.926409] bonding: bond0: Setting use\_carrier to 1.

[88934.926819] bonding: bond0: Setting ad\_select to stable (0).

[88934.927286] bonding: bond0: setting xmit hash policy to layer2 (0).

[88934.927786] bonding: bond0: Setting resend\_igmp to 1.

Connection 'mybond0' (304e66f0-c31c-4b57-92e8-734e2b53bdac) successfully added.

Note: If you don’t specify **con-name mybond0**, the bonding interface will be named **bond-bond0**.

Add an **IPv4** configuration:  
In **RHEL 7.0**:

# **nmcli con mod mybond0 ipv4.addresses "192.168.1.10/24 192.168.1.1"**

# **nmcli con mod mybond0 ipv4.method manual**

From **RHEL 7.1** on:

# **nmcli con mod mybond0 ipv4.addresses 192.168.1.10/24**

# **nmcli con mod mybond0 ipv4.gateway 192.168.1.1**

#

Note: If you don’t specify any IP configuration, both VM will get their ip address and gateway through **DHCP** by default.

Add the **eth0** interface to the bonding interface:

# **nmcli con add type bond-slave con-name bond0-eth0 ifname eth0 master bond0**

[89010.860765] bonding: bond0: making interface eth0 the new active one.

[89010.861336] bonding: bond0: enslaving eth0 as an active interface with an up link.

Connection 'bond0-eth0' (35081742-5962-4edf-8465-6843603d7777) successfully added.

Note: If you don’t specify **con-name bond0-eth0**, the bonding slave interface will be named **bond-slave-eth0**.

Add the **eth1** interface to the bonding interface:

# **nmcli con add type bond-slave con-name bond0-eth1 ifname eth1 master bond0**

[89146.655598] bonding: bond0: enslaving eth1 as a backup interface with an up link.

Connection 'bond0-eth1' (037019f3-7115-46a4-a6f9-8fba7bf2adcd) successfully added.

Note: If you don’t specify **con-name bond0-eth1**, the bonding slave interface will be named **bond-slave-eth1**.

Activate the bonding interface:

# **nmcli con up mybond0**

[89222.099283] bonding: bond0: releasing backup interface eth1

[89222.102432] bonding: bond0: releasing active interface eth0

[89222.126862] bonding: bond0: Setting MII monitoring interval to 100.

[89222.127410] bonding: bond0: setting mode to active-backup (1).

[89222.127950] bonding: bond0: Setting ARP monitoring interval to 0.

[89222.128494] bonding: bond0: setting arp\_validate to none (0).

[89222.128991] bonding: bond0: Setting primary slave to None.

[89222.129460] bonding: bond0: setting primary\_reselect to always (0).

[89222.129964] bonding: bond0: Setting fail\_over\_mac to none (0).

[89222.130443] bonding: bond0: Setting use\_carrier to 1.

[89222.130847] bonding: bond0: Setting ad\_select to stable (0).

[89222.131307] bonding: bond0: setting xmit hash policy to layer2 (0).

[89222.131801] bonding: bond0: Setting resend\_igmp to 1.

[89222.132219] IPv6: ADDRCONF(NETDEV\_UP): bond0: link is not ready

[89222.251450] bonding: bond0: making interface eth1 the new active one.

[89222.252022] bonding: bond0: first active interface up!

[89222.252462] bonding: bond0: enslaving eth1 as an active interface with an up link.

[89222.253641] IPv6: ADDRCONF(NETDEV\_CHANGE): bond0: link becomes ready

[89222.305553] bonding: bond0: enslaving eth0 as a backup interface with an up link.

Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/70)

Check the configuration:

# **nmcli con show**

NAME UUID TYPE DEVICE

mybond0 304e66f0-c31c-4b57-92e8-734e2b53bdac bond bond0

bond0-eth1 037019f3-7115-46a4-a6f9-8fba7bf2adcd 802-3-ethernet eth1

bond0-eth0 35081742-5962-4edf-8465-6843603d7777 802-3-ethernet eth0