# Raspberry PI OS

## Linux Network Interface bonding

1. sudo apt update && sudo apt upgrade

2. sudo apt install ifenslave

3. sudo su - modprobe bonding echo 'bonding' >> /etc/modules

Die Datei interfaces, zu finden unter "/etc/network/interfaces", wird dazu verwendet.

4. sudo vim /etc/network/interfaces

**This file describes the network interfaces available on your system # and how to activate them. For more information, see interfaces(5). source /etc/network/interfaces.d/* # The loopback network interface auto lo iface lo inet loopback # Frontend bond interface auto bond0 iface bond0 inet static address 192.168.56.9/24 gateway 192.168.56.1 bond-slaves enp0s3 enp0s8 bond-mode 1 bond-primary enp0s3 bond-miimon 100 bond-downdelay 300 bond-updelay 700**

5. sudo ifdown enp0s3 enp0s8 sudo ifup bond0  # Interface up

6. check status

$ ifconfig bond0: flags=5187<UP,BROADCAST,RUNNING,MASTER,MULTICAST> mtu 1500 inet 192.168.56.109 netmask 255.255.255.0 broadcast 192.168.56.255 inet6 fe80::d01d:ff:fe01:2e3 prefixlen 64 scopeid 0x20<link> ether d2:1d:00:01:02:e3 txqueuelen 1000 (Ethernet) RX packets 1 bytes 590 (590.0 B) RX errors 0 dropped 0 overruns 0 frame 0 TX packets 50 bytes 6988 (6.8 KiB) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 enp0s3: flags=6211<UP,BROADCAST,RUNNING,SLAVE,MULTICAST> mtu 1500 inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255 ether d2:1d:00:01:02:e3 txqueuelen 1000 (Ethernet) RX packets 127 bytes 49643 (48.4 KiB) RX errors 0 dropped 0 overruns 0 frame 0 TX packets 215 bytes 22755 (22.2 KiB) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 enp0s8: flags=6211<UP,BROADCAST,RUNNING,SLAVE,MULTICAST> mtu 1500 inet 192.168.56.119 netmask 255.255.255.0 broadcast 192.168.56.255 ether d2:1d:00:01:02:e3 txqueuelen 1000 (Ethernet) RX packets 474 bytes 43181 (42.1 KiB) RX errors 0 dropped 0 overruns 0 frame 0 TX packets 446 bytes 85422 (83.4 KiB) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536 inet 127.0.0.1 netmask 255.0.0.0 inet6 ::1 prefixlen 128 scopeid 0x10<host> loop txqueuelen 1000 (Local Loopback) RX packets 53 bytes 4172 (4.0 KiB) RX errors 0 dropped 0 overruns 0 frame 0 TX packets 53 bytes 4172 (4.0 KiB) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

$ more /proc/net/bonding/bond0 Ethernet Channel Bonding Driver: v5.10.0-11-amd64 Bonding Mode: fault-tolerance (active-backup) Primary Slave: enp0s3 (primary_reselect always) Currently Active Slave: enp0s3 MII Status: up MII Polling Interval (ms): 100 Up Delay (ms): 700 Down Delay (ms): 300 Peer Notification Delay (ms): 0 Slave Interface: enp0s3 MII Status: up Speed: 1000 Mbps Duplex: full Link Failure Count: 0 Permanent HW addr: 08:00:27:e1:5f:56 Slave queue ID: 0 Slave Interface: enp0s8 MII Status: up Speed: 1000 Mbps Duplex: full Link Failure Count: 0 Permanent HW addr: 08:00:27:00:96:03 Slave queue ID: 0

$ sudo dmesg -T | tail -10 [Tue Mar 1 02:18:15 2022] bond0: active interface up! [Tue Mar 1 02:18:15 2022] IPv6: ADDRCONF(NETDEV_CHANGE): bond0: link becomes ready [Tue Mar 1 02:18:15 2022] e1000: enp0s8 NIC Link is Up 1000 Mbps Full Duplex, Flow Control: RX [Tue Mar 1 02:18:15 2022] bond0: (slave enp0s8): link status up, enabling it in 700 ms [Tue Mar 1 02:18:15 2022] bond0: (slave enp0s8): invalid new link 3 on slave [Tue Mar 1 02:18:16 2022] bond0: (slave enp0s8): link status definitely up, 1000 Mbps full duplex [Tue Mar 1 02:20:31 2022] bond0: (slave enp0s3): Releasing backup interface [Tue Mar 1 02:20:31 2022] bond0: (slave enp0s8): making interface the new active one [Tue Mar 1 02:20:35 2022] e1000: enp0s3 NIC Link is Up 1000 Mbps Full Duplex, Flow Control: RX [Tue Mar 1 02:20:35 2022] IPv6: ADDRCONF(NETDEV_CHANGE): enp0s3: link

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becomes ready

## Method 2- Configure Network Bonding using NMCLI

Trifft bei Debian 11 zu...

$ sudo nmcli connection add type bond con-name bond0 ifname bond0 bond.options "mode=balance-rr" Connection 'bond0' (9d37ef5d-4905-48ce-88d6-fbce925cc940) **successfully added.**

**$ nmcli device status DEVICE TYPE STATE CONNECTION enp0s3 ethernet connected Wired connection 1 enp0s8 ethernet connected Wired connection 2 lo loopback unmanaged --**

**$ sudo nmcli connection add type ethernet slave-type bond con-name bond0-port1 ifname enp0s3 master bond0 Connection 'bond0-port1' (b2b69f0b-780e-4579-bf38-e80933d3d98d) successfully added. ####### $ sudo nmcli connection add type ethernet slave-type bond con-name bond0-port1 ifname enp0s8 master bond0 Warning: There is another connection with the name 'bond0-port1'. Reference the connection by its uuid '1fb56698-ff12-4a9b-826d-dfea323477fb' Connection 'bond0-port1' (1fb56698-ff12-4a9b-826d-dfea323477fb) successfully added.**

**sudo nmcli connection modify bond0 ipv4.addresses '192.168.56.109/24'**

**sudo nmcli connection modify bond0 ipv4.gateway '192.168.56.1'**

**sudo nmcli connection modify bond0 ipv4.dns '8.8.8.8'**

**sudo nmcli connection modify bond0 ipv4.method manual**

**sudo nmcli connection up bond0 Connection successfully activated (master waiting for slaves) (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/4)**

**$ nmcli device status DEVICE TYPE STATE CONNECTION enp0s3 ethernet connected Wired connection 1 enp0s8 ethernet connected Wired connection 2 *bond0 bond connected bond0* lo loopback unmanaged --**

**$ sudo dmesg -T | tail -10 [Tue Mar 1 02:40:38 2022] e1000: enp0s8 NIC Link is Down [Tue Mar 1 02:40:38 2022] usb 2-1: new full-speed USB device number 3 using ohci-pci [Tue Mar 1 02:40:39 2022] usb 2-1: New USB device found, idVendor=80ee, idProduct=0021, bcdDevice= 1.00 [Tue Mar 1 02:40:39 2022] usb 2-1: New USB device strings: Mfr=1, Product=3, SerialNumber=0 [Tue Mar 1 02:40:39 2022] usb 2-1: Product: USB Tablet [Tue Mar 1 02:40:39 2022] usb 2-1: Manufacturer: VirtualBox [Tue Mar 1 02:40:39 2022] input: VirtualBox USB Tablet as /devices/pci0000:00/0000:00:06.0/usb2/2-1/2-1:1.0/0003:80EE:0021.0002/input/input9 [Tue Mar 1 02:40:39 2022] hid-generic 0003:80EE:0021.0002: input,hidraw0: USB HID v1.10 Mouse [VirtualBox USB Tablet] on usb-0000:00:06.0-1/input0 [Tue Mar 1 02:40:42 2022] e1000: enp0s3 NIC Link is Up 1000 Mbps Full Duplex, Flow Control: RX [Tue Mar 1 02:40:42 2022] e1000: enp0s8 NIC Link is Up 1000 Mbps Full Duplex, Flow Control: RX**