

Software

erste Schritte

Betriebssystem herunterladen: [Google Drive](#) oder dev.banana-pi.org.cn

Image auf SD-Karte bringen (Linux):

```
dd if=pfad/zum/image.img of=/dev/sdx bs=1M
```

Debian

erstes Booten (am besten mit [Debug-UART](#))

Login: root **Passwort:** bananapi

System aktualisieren & Uhrzeit einstellen

```
apt-get update && apt-get upgrade
#hostname bpi-r2 # and
#sysctl kernel.hostname=bpi-r2 #does not work
echo "bpi-r2">/etc/hostname
dpkg-reconfigure tzdata
#echo "export PS1='[\A] \u@\h:\W# '">>~/.bashrc
```

Umgebungsvariablen (dauerhaft: echo „...“»~/.bashrc, „ vom Befehl selbst mit \ maskieren)

```
#fix für nano probleme auf der debug-console
if [[ "$(tty)" =~ "ttyS" ]]; then export TERM=vt100;fi
#prompt mit Zeitstempel
export PS1='[\A] \u@\h:\W# '
#leichterer Zugriff auf die GPIO mit $GPIO
export GPIO=/sys/devices/platform/1000b000.pinctrl/mt_gpio
```

Netzwerkeinstellungen

[Netzwerkeinstellungen](#)

temporär

```
#4.4.70:
ifconfig eth0 192.168.0.10/24
```

```
route add default gw 192.168.0.5
echo "nameserver 192.168.0.5" > /etc/resolv.conf
```

```
#4.14:
#ifconfig eth0 up
ip link set eth0 up
#ifconfig lan0 192.168.0.10/24
ip addr add 192.168.0.10/24 dev lan0
#ip -6 addr add 2001:0db8:0:xxxx::1/64 dev lan0
#ifconfig lan0 up
ip link set lan0 up
#route add default gw 192.168.0.5
ip route add 0.0.0.0/0 via 192.168.0.5
echo "nameserver 192.168.0.5" > /etc/resolv.conf
```

dauerhaft (auch nach reboot)

4.4.70:

```
nano /etc/network/interfaces
```

```
auto eth0
    iface eth0 inet static
    hwaddress ether 08:00:00:00:00:01
    address 192.168.0.10
    netmask 255.255.255.0
    gateway 192.168.0.5

auto eth1
    iface eth1 inet static
```

4.14:

```
auto eth0
iface eth0 inet manual
    pre-up ip link set $IFACE up
    post-down ip link set $IFACE down

auto lan0
iface lan0 inet static
    hwaddress ether 08:00:00:00:00:00 # if you want to set MAC manually
    address 192.168.0.10
    netmask 255.255.255.0
    gateway 192.168.0.5
    pre-up ip link set $IFACE up
    post-down ip link set $IFACE down

auto lan1
iface lan1 inet static
```

```
hwaddress ether 08:00:00:00:00:01 # if you want to set MAC manually
address 192.168.1.10
netmask 255.255.255.0
pre-up ip link set $IFACE up
post-down ip link set $IFACE down

auto lan2
iface lan2 inet static
    hwaddress ether 08:00:00:00:00:02 # if you want to set MAC manually
    #...

auto lan3
iface lan3 inet static
    hwaddress ether 08:00:00:00:00:03 # if you want to set MAC manually
    #...

auto wan
iface wan inet static
    hwaddress ether 09:00:00:00:00:01 # if you want to set MAC manually
    #...
```

unter debian 9 funktioniert hwaddress nicht mehr, hier lässt sich das setzen der MAC so erreichen:

```
iface lan0 inet static
    address 192.168.0.10
    netmask 255.255.255.0
    gateway 192.168.0.5
# pre-up ip link set $IFACE up
pre-up ip link set $IFACE address 02:01:02:03:04:08 up
post-down ip link set $IFACE down
```

Möglichkeit via UDEV von [hier](#)

```
$ cat /etc/udev/rules.d/00-static-mac-address.rules
ACTION=="add", SUBSYSTEM=="net", KERNELS=="1b100000.ethernet",
RUN+="/sbin/ip link set dev %k address ae:fc:de:ad:be:ef"
```

DHCP

```
allow-hotplug lan3
iface lan3 inet dhcp
```

Netzwerkbrücke (4.14)



```
apt-get install bridge-utils
```

```
brctl addbr br0
brctl addif br0 lan1 lan2 lan3 #bridging lan1-lan3 (lan0 separat lassen für
vlan-tagging o.ä.)
```

```
root@bpi-r2:~# brctl show br0
```

bridge name	bridge id	STP enabled	interfaces
br0	8000.6acba7512bc1	no	lan1
			lan2
			lan3

/etc/network/interfaces:

```
iface br0 inet static
    address 192.168.40.1
    netmask 255.255.255.0
    bridge_ports lan1 lan2
    bridge_fd 5
    bridge_stp no
```

vlan

4.14:

/etc/network/interfaces:

```
auto lan3
iface lan3 inet manual

auto lan3.60
iface lan3.60 inet static
    address 192.168.60.10
    netmask 255.255.255.0
# gateway 192.168.0.5
pre-up ip link set $IFACE address 02:01:02:03:04:03 up #setting mac does
not work currently
```

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