

# Set persistent MAC for RTL8111/8168/8411 (r8169) with udev

This tutorial does only work on systems that use **udev**, like IPFire!

The Linux kernel mod r8169 seems to set random MAC addresses for Realtek's ethernet cards 8111/8168/8411 every time this devices gets booted. This behaviour also seems to be intended like described in [this](#) kernel patch.

You can verify this by checking your (boot-) log, if it contains `can't read MAC address, setting random one` on the device that uses the mod r8169, you may be affected.

But it may break your system like when using IPFire that recognizes it's NICs from their MAC address.

## Get PCI device information

Use the following command and determine your NIC and it's PCI address: (`pciutils` is required)

```
lspci -v
```

The output may look like this:

```
04:00.0 Ethernet controller: Realtek Semiconductor Co., Ltd. RTL8111/8168/8411 PCI Express Gigabit Ethernet Controller (rev 15)
      Flags: bus master, fast devsel, latency 0, IRQ 19
      I/O ports at e000 [size=256]
      Memory at f7304000 (64-bit, non-prefetchable) [size=4K]
      Memory at f7300000 (64-bit, non-prefetchable) [size=16K]
      Capabilities: <access denied>
      Kernel driver in use: r8169
      Kernel modules: r8169
```

Now take note of it's address, in this case `04:00.0`.

## Create udev rules

Then add a udev-rule for this NIC. Therefore create a new rule:

```
nano /etc/udev/rules.d/10-network-persistent-custom-mac-address.rules
```

And add the following content:

```
SUBSYSTEM=="net", ACTION=="add", KERNELS=="0000:<pci-address>",
PROGRAM="/sbin/ip link set %k address <your-persistent-mac>"
```

Replace `pci-address` with the NICs PCI address that you got from the step before (e.g. `0000:01:00.0`) and `your-persistent-mac` with the MAC address that should always be assigned to this NIC. (both without `<` and `>`).

Last update: 2024/04/23 11:45 linux:linux-tutorials:set-persistent-mac-rtl8111 <http://fixes.brecht-schule.hamburg/linux/linux-tutorials/set-persistent-mac-rtl8111>

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Finally save the file and reboot.

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Resources used: [serverfault.com](http://serverfault.com) - Change interface MAC HW address, [packetpushers.net](http://packetpushers.net) - udev

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