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## Abstract

A conflict with a new module (altera\_cvp) added to the Linux Kernel 4.14 and newer, leads to the problem, that syn1588® PCIe NIC devices are no longer visible. This application note gives instructions for identifying and solving this problem.

## Introduction

In Linux kernel version 4.14+ the "altera\_cvp" module has been added to the kernel to support the Configure-via-Protocol (CvP) feature of Intel (ex-Altera) FPGAs. This kernel module erroneously identifies and locks all Intel FPGA devices, like the syn1588® PCIe NIC, even though these devices do not support CvP at all. Thus, the syn1588® PCIe NIC driver can no longer find the syn1588® PCIe NIC hardware and it is no longer available as Ethernet device.

## Pre-requisites

- wooden USB stick holding the syn1588® software including driver
- this application note
- patch file "issues\_with\_linux\_4.14\_and\_altera-cvp\_module.zip"

If the syn1588® PCIe NIC device driver has not been installed, please refer to the application note [syn1588® PCIe NIC Quick Start Guide](#).

The patch file (ZIP-file) can be directly downloaded from the Oregano Systems web site (where you downloaded this application note).

## Identification of the Linux Kernel version

Open the terminal and enter following command to get the Linux Kernel version:

```
➤ uname -r
```

Example terminal output of a Linux kernel 4.15:

```
4.15.0-36-generic
```

## Work Around

Extract the shell script “blacklist\_altera\_cvp.sh” from the patch file (ZIP-file) you downloaded from the Oregano Systems web site to any directory. Make sure that the file permissions are set to allow execution of this shell script.

```
➤ sudo chmod +x blacklist_altera_cvp.sh
```

Now simply invoke the shell script `blacklist_altera_cvp.sh` . It unloads the `altera_cvp` module and adds the module to the blacklist to avoid automatic loading after a reboot. Additionally the `syn1588nic` and `SyncDriver` are reloaded.

```
➤ sudo ./blacklist_altera_cvp.sh
```

Successful terminal output:

```
unloading altera_cvp

adding altera_cvp module to the blacklist /etc/modprobe.d/blacklist.conf
# The altera_cvp module is called for PCI devices that have an Altera
ID.
# Every syn1588nic has an Altera PCI ID, therefor the syn1588nic will be
# registered by the altera_cvp and are no longer available for the
syn1588nic driver!
# To avoid this, blacklist the altera_cvp module.
blacklist altera_cvp

reload syn1588 PCIe NIC device driver
Done!
```

Now enter following command to check if the `syn1588nic` and `SyncDriver` modules are properly loaded.

```
➤ lsmod | grep syn1588nic
```

Expected terminal output:

```
syn1588nic          53248  1 SyncDriver
mii                 16384  1 syn1588nic
```

Now, the `syn1588®` PCIe NIC is visible again in your system.

## Effects of blacklisting altera\_cvp

The entry in the blacklist will remain valid even after a reboot. Hence, the supported Configure-via-Protocol (CvP) feature of the altera\_cvp module is not available any more.



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