

Installation of Quantis drivers and libraries

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Abstract

The following instructions provide an overview of the installation procedure for device drivers and libraries required to use Quantis quantum random number generator on Linux-based systems. Please consult the documentation provided with the Quantis software package for more information.

1 Device drivers

In the following instructions `Quantis-v11.12.13` should be replaced by the appropriate directory depending on the version of Quantis software package you are using during the installation.

One should also note that most of the command issued during the installations process require super-user (root) privileges. On most modern Linux systems this can be achieved using `sudo` or `su` commands.

Note: As of July 2012 the driver for the Quantis PCI devices provides a support for Linux kernel in version $j=2.6.36$ only. Support for the kernel in version 3.x is expected to be added in the version 2.5 of the PCI driver, which is to be released in summer 2012.

1.1 PCI and PCI-express version

1. Install module-assistant package

`apt-get install module-assistant` **Note:** On RedHat/Fedora-based systems you need to install `kernel-devel` package and collection of development tools

```
yum install kernel-devel
yum groupinstall "Development Tools"
```

2. Prepare your system for module compilation

```
m-a prepare
```

3. Unpack the Quantis software package and go to

```
Quantis-v11.12.13/Drivers/Unix/QuantisPci.
```

4. Compile the module

```
make
```

5. Install the module

```
make install
and check if the module has been installed properly
find /lib/modules/ -name quantis_pci.ko
```

6. Make sure that the driver will be loaded during the next boot
`echo "quantis_pci" >> /etc/modules`
7. Follow the instructions in Section 1.3.

1.2 USB version

1. Install libusb and libusb-dev packages
`apt-get install libusb-1.0-0 libusb-1.0-0-dev`
2. Check your device with lsusb
`lsusb -d 0aba:0102 -v` or `lsusb -v | grep Quantis`
3. Follow the instructions in Section 1.3.

1.3 Device permissions

1. Make sure that the plugdev group exists
`cat /etc/group | grep plugdev`
2. Add the user that will be permitted to use Quantis to the plugdev group
`usermod -G plugdev -a LOGIN,`
 where LOGIN is the login name of the user
3. Copy file Quantis-v11.12.13/Drivers/Unix/idq-quantis.rules, to /etc/udev/rules.d/ directory and reload the UDEV rules
`udevadm control --reload-rules`

2 Libraries

1. Unpack distribution files from Quantis-v11.12.13/Packages/Linux to a selected directory, e.g /usr/local/IDQ/Quantis
`mkdir /usr/local/IDQ`
`tar xjvf QuantisRNG-2.5.0-Linux-amd64.tar.bz2`
`mv QuantisRNG-2.5.0-Linux-amd64 /usr/local/IDQ/Quantis`
After this step the EasyQuantis application should be in
`/usr/local/IDQ/Quantis/bin/EasyQuantis`
2. Copy Quantis.h and DIIMain.h from
 Quantis-v11.12.13/Libs-Apps/Quantis
 to
`/usr/local/IDQ/Quantis/include`
3. Add /usr/local/IDQ/Quantis/lib (or /usr/local/IDQ/Quantis/lib64) to
`/etc/ld.so.conf` or some file which is included by this file e.g
`/etc/ld.so.conf.d/quantis.conf`
4. Update the loader cache
`ldconfig`