

*Qik*DRIVE & *Qik*CACHE

Linux 2.2.x Software Installation Guide

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Contents

Software Installation	3
Installation Procedure	4
Diagnostics and Error Logging	7
Driver Log File	7
<i>QikMON</i>	7
qiklog.txt	7
Contacting Platypus Technology.....	8

Software Installation

Thank you for purchasing a *QikDRIVE* or *QikCACHE* PCI card. From this point on the *QikCACHE* will be referred as a *QikDRIVE* as installation instructions are the same for both products. The only difference being that the *QikCACHE* does not have secondary power support for retaining information. If you have purchased a *QikCACHE*, ignore any references to secondary power.

The *QikDRIVE* is shipped with a driver that supports Linux 2.2.x operating systems. In this case it is the RedHat Linux Operating System which is supported. Follow the instructions below to correctly install the driver for the operating system installed on your system.

New drivers and the latest revision of current drivers for your *QikDRIVE* can be downloaded from the Platypus Technology web page.

www.platypus.net

From this URL select *Support* and then select *Drivers* to find the latest drivers. If you experience any difficulty, contact Platypus Technology technical support as described on page 8.

Installation Procedure

After installing the *QikDRIVE* hardware into the system, install the driver using the following procedures:

1. Turn on the system, boot Linux and log in as the **root** user.
2. Determine the version of the kernel which is being used on your system:

```
uname -a
```

3. Copy the version of the driver appropriate to the version of the kernel to a temporary directory. (The name to the driver will contain the required version number)
4. Untar the tarball for the kernel being used on the system into a temporary directory.

E.g., if you are using kernel version 2.2.16 and are using /var/tmp as temporary directory:

```
root# cd /var/tmp
```

```
root# mkdir qikdrive
```

```
root# cd qikdrive
```

```
root# tar xvzf qikdrive_linux_2.2.16.i386.tgz
```

5. Copy the module object into the kernel module directory. Note that you will need to insert your kernel version into the command sequence below:

```
root#cp qikdrive.o  
/lib/modules/<kernel_version>/block
```

6. Create the device nodes with the supplied script while still in the temporary working directory:

```
root# ./load qikdrive_major=60
```

7. Copy the *QikDRIVE* monitor application to a suitable execution directory:

```
root# cd /var/log
```

```
root# mkdir qikmon
```

```
root# cd qikmon
```

```
root# cp /var/tmp/qikdrive/qms .
```

The *QikDRIVE* monitoring application must be run periodically to collect statistics from the driver. Note that the driver statistics will not overflow for at least 2 hours of peak operation. However, the frequency of updates will affect the currency of the statistics in the error logs.

One way to achieve this is to run the application as a *cron* job in a user account:

```
0 * * * * cd /var/log/qikmon; ./qms
```

runs *QikMON* every hour

```
*/5 * * * * cd /var/log/qikmon; ./qms
```

runs *QikMON* every 5 minutes

8. Add the module configuration information to the */etc/conf.modules* (or */etc/modules.conf*, depending on your distribution) file. You may also choose the block major number for the *QikDRIVE* device. The following example uses block major number 60:

```
alias block-major-60 qikdrive
```

```
options qikdrive qikdrive_major=60
```

9. Create a mount-point on the system for the drive:

```
root# cd /mnt
```

```
root# mkdir qd0
```

10. The module dependencies have to be rebuilt. Usually this is done automatically by a call to *depmod* at boot time, (this can be achieved by rebooting Linux). Alternatively call *depmod* manually to start the rebuild process.

```
root# depmod -a
```

11. The file system must now be created on the drive (it must be recreated every time the drive loses power). The following example formats the drive as an *ext2* (native Linux) file system:

```
root# mkfs -t ext2 /dev/qda
```

Note: This may take a few seconds to respond after a cold boot while the device initialises itself.

12. You may now mount the drive. For example, mounting the drive manually as a regular file system...

```
root# mount -t ext2 /dev/qda /mnt/qd0
```

Alternatively you can place an appropriate entry into /etc/fstab to have the drive mounted automatically.

To use the *QikDRIVE* for the swap file device you also have to modify /etc/fstab.

Diagnostics and Error Logging

Driver Log File

When installed on a Linux platform, the *QikDRIVE* driver logs informational messages and error statistics to the **/proc** file system. The data is written into the file:

/proc/qdx

The x has to be replaced by an 'a' for the first *QikDRIVE*, 'b' for the second, etc.

QikMON

The *QikMON* application, (which runs as a **cron** job), periodically extracts the statistics from the **/proc** file system and logs them to both machine-readable data files and user-readable text files.

These *QikMON* application logs are written to the directory in which the application executable is installed.

For example:

/var/log/qikmon/qik8_0000001742.dat

/var/log/qikmon/qik8_0000001742.txt

/var/log/qikmon/qiklog.txt

The files are created for each installed *QikDRIVE* in this directory, identified by the serial number of the card.

qiklog.txt

qiklog.txt is a single error file containing correctable and uncorrectable read errors from all *QikDRIVE* devices.

ECC errors are categorised by SDRAM DIMM module and may be used to quickly identify any suspect or failed memory modules.

Together the log files contain useful information for the diagnostics of problematic installations. In this case, the files may be duplicated and forwarded to support engineers to assist in problem resolution.

Contacting Platypus Technology

If you have tried the solutions recommended in this manual and are still experiencing problems with your *QikDRIVE*, please contact Platypus Technology Technical Support using the contact details below.

Contact Via Internet

www.platypus.net

UNITED STATES - Head Office

Platypus Technology Inc.

79 East Wilder Road

West Lebanon

New Hampshire, 03784

Telephone +1 603 298 7455

Toll Free +1 877 718 8900

Facsimile +1 603 298 7457

Email support.usa@platypus.net

UNITED KINGDOM

Platypus Technology Ltd.

47A High Street

Hungerford, Berkshire, RG17 0NE

Telephone +44 (0) 1488 662 121

Facsimile +44 (0) 1488 662 122

Email support.uk@platypus.net

AUSTRALIA

Platypus Technology Australia Pty Ltd

ACN 093 172 840

ABN 89093172840

Level 4, 1 Atchison Street

St Leonards NSW 2065

Telephone +61 (0) 2 8436 8500

Facsimile +61 (0) 2 8436 8501

Email support.aus@platypus.net