Martel Linux Driver
Troublshooting Tips

http://www.martelinstruments.com/

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2. REVISION HISTORY

REV.	DATE	PAGE	REVISION ITEM
A	31-Jul-2006	-	First issue

3. Introduction

This document if a collection of some frequently asked questions and answer tips about the Martel Linux Driver. Please review this entire document to check whether the problem you are facing has already been documented before contacting Martel support.

Each question/answer pair uses the same formatting:

Q	*Questions you might be asking...*

Possible answer to the problem.

Use the table of contents for a quick overview of the various questions addressed in this docuement.

4. RS232 PORT PROBLEMS

Q	I can't print anything through the serial port.

Is the serial port enabled in the BIOS.

Try using the setserial command, this will give you an indication of whether the serial port you are using exists.

```
$ setserial /dev/ttyS0
```

Is the handshaking mode set correctly for the printer you are using.

To find out what mode the printer is using power the printer on with the paper feed button held down. Release this button after 2 seconds and a self test report will be printed, indication what handshake mode is selected

If the mode incorrect you can correct it by deleting and re-installing the printer or by using the lpoptions command.

```
$ lpoptions -d MPP5510 -o handshake=rtscts
```

5. PARALLEL PORT PROBLEMS

Q	My parallel printer does not work. There are no `/dev/parportX` devices in the `/dev` directory. I can not open devices like `/dev/parport0` using the Martel library.

The Martel CUPS driver uses kernel support for parallel port device drivers. To be able to use parallel printers using the Martel CUPS driver, support for parallel port device drivers must be compiled in the kernel and the relevant module (ppdev) must be loaded.

Presence of device /dev/parportX indicates that kernel module ppdev is loaded or dierectly built into the kernel.

For 2.4 kernels, activate options:

- Parallel Port Support
  - Parallel Port Support
- Character Devices
  - Support for user-space parallel port device drivers

For 2.6 kernels, activate options:

- Device Drivers
  - Parallel Port Support
    - Parallel Port Support
  - Character Devices
    - Support for user-space parallel port device drivers

Additionnally, user running Martel CUPS driver or using the Martel library must have read/write access to /dev/parportX device files. Please review CUPS driver problems section for information about user and group used by the CUPS server daemon.

What is the difference between polling and IRQ write modes for parallel ports?

Two write modes are available in the Martel library for maximum compatibility. Write mode can be selected using the mode option of the parallel printer URI.

```
martel:/dev/parport0?type=parallel+mode=irq
martel:/dev/parport0?type=parallel+mode=poll
```

Polling write mode is the most compatible mode and should work in all configurations, but it is the slowest. IRQ write mode is the fastest but works only on configurations where an IRQ line is attached to the parallel port. Virtually all desktop PC have an IRQ attached to the parallel port. Check contents of the /proc/sys/dev/parport/parportX/irq file.

```
$ cat /proc/sys/dev/parport/parport0/irq
7
```

In the above example, IRQ number 7 is attached to parallel port number 0. The Martel CUPS driver is able to automatically detect whether an IRQ is attached to parallel port or not, and automatically builds printer URI for maximum performance. The Linux kernel has extensive documentation about parallel port configuration. Please review file Documentation/parport.txt in kernel sources tree for more information.

6. CUPS DRIVER PROBLEMS

When dealing with problems related to the CUPS driver, many information can be retrieved from the CUPS error log file. This file is usually located at `/var/log/cups/error_log`. Be sure to adjust `log level` to `debug2` in configuration file `/etc/cups/cupsd.conf` for maximum information.

```
LogLevel debug2
```

If the problem you're facing is not described in this document, please include the CUPS error log file in your communications with Martel support.

Printing from an application has no effect.
Error log shows "`Unable to open text file - : Permission denied`".
Error log shows "`Unable to open raster file - : Permission denied`".

The process of printing through CUPS involves the execution of a sequence of filters. Each filter transforms the document to print from one format into another. For each document, CUPS builds up a chain of filters to turn the document into a sequence of commands understandable by the Martel printer. For security reasons, CUPS usually runs these filters as a non-privileged user/group.

`/etc/cups/cupsd.conf`, section "Filter Options"

```
# User/Group: the user and group the server runs under.  Normally this
# must be cupsys and lpadmin, however you can configure things for another
# user or group as needed.
# Note: the server must be run initially as root to support the
# default IPP port of 631. It changes users whenever an external
# program is run, or if the RunAsUser directive is specified...
#
User cupsys
Group lpadmin
```

The above example shows that filters are run as user cupsys and group lpadmin. There might be a conflict depending on the owner, group and access rights of the file you're trying to print. The problem can be corrected by:

1. Adjusting the owner, group and/or permissions of the file you're trying to print so that cupsys and/or lpadmin have read access to the file;
2. Adjusting the user and group CUPS filters are run as. The easiest correction is to set both user and group as root.

Please note however that solution 2 is not recommended as it may lead to security problems if vulnerabilities are found in the CUPS subsytem.