ATTO ExpressPCI U320 Driver ReadMe

This document and utilities mentioned within have been installed to /System/Library/Extensions/ATTOExpressPCI4Utils.

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A. System NVRAM Options

A system NVRAM environment variable, atto-args-u320, can be used to pass options to the Celerity FC driver. The options are as follows:

>   -b   Bypass SCSI Domain Validation
>   -d   Disable the driver.
>   -e mask   Specify the hexadecimal mask 'mask' for event logging.
>   See Section B for more details.
>   -f   Load the driver in 'flash-only' mode. You will be able to use
>   the ATTO Configuration Tool to update the adapter, but devices
>   will not be visible.
>   [blank]Leave the options parameter blank to clear the options.

>   Note:

>   1.   These options are stored in system NVRAM; therefore they persist
>   between reboots
>   and shutdowns.
>   2.   Resetting the system NVRAM via Command+Option+P+R will remove the
>   options.
>   3.   You can view the current options in OS X by opening a Terminal window
>   and entering

>   nvram atto-args-u320

A.1 Setting the options from the Open Firmware User Interface (PowerPC systems only)

>   1.   Boot to the Open Firmware User Interface by pressing
>   Command+Option+O+F
>   while booting.

2.   At the prompt, enter the following command:

setenv atto-args-u320 [options]

where [options] are listed above.

3.   At the prompt, enter the command 'mac-boot' to boot into OS X.

A.2 Setting the options in OS X

1.   Open a Terminal window.

2.   At the prompt, enter the following command:

sudo nvram atto-args-u320="[options]"

where [options] are listed above. If you are not the root user, you will be prompted

for an administrator password.

3.   Reboot the system for the changes to take effect.

B. Event Logging

The ATTO ExpressPCI U320 Driver does not use the system log to communicate driver events to the
user. The system log has very limited resources and events are easily lost. Instead, the driver
logs events internally until they are retrieved using the ATTOExpressPCI4Log utility.

Although the number of events can never be predicted, the driver's internal event log should be
large enough to hold all events from initial driver loading until ATTOExpressPCI4Log can be run.
Should the event log become full, the driver will continue logging events while overwriting the
earliest previously logged events. In other words, the event log will always be full with the
most recent events. If event data has been lost, ATTOExpressPCI4Log will display
"...Lost X bytes..." where X is the number of bytes lost.

The ATTOExpressPCI4Log utility will continuously display events as they are logged by the driver.
You can set the utility as a Startup Item to always retrieve events in the background;

however,
this may result in a slight performance degradation.

Once events are retrieved and displayed, they can not be displayed again even if they are not
overwritten by future events. if you want to save the events for future reference, save the
terminal output or use standard redirection when starting ATTOExpressPCI4Log to save the output
to a file.

Each event begins with a channel identifier, "Channel X.Y.Z, where X is the PCI bus number, Y is the
PCI device number and Z is the PCI function number. Additional driver initialization messages may
be logged before this information is available.

You can control the types of events that are logged via the -e Open Firmware option. See Section
A for instructions on how to set this option. Each bit in the mask corresponds to a group of related
messages. The following bits are currently defined:

      0x01   Log fatal events that prohibit the driver from loading normally.
      0x04   Log SCSI request errors.
      0x08   Log events reported by the adapter controller chip.
      0x40   Log resource usage failures.
      0x80   Log informational messages.

C. Troubleshooting

The mechanisms described in Sections A and B are provided to help you troubleshoot problems
with your adapter and devices attached to it. Also, visit the ATTO website, www.attotech.com, to
make sure you have the latest drivers and firmware for your adapter.

If you are still having problems, contact ATTO technical support by calling (716) 691-1999 x242 or
emailing techsupp@attotech.com. Please have the following information available:

1.   Complete system configuration including system model, amount of memory, OS version,
        Third party software being used, and model and driver/firmware versions for your
ATTO adapter

and any devices attached to it.

2.   An IORegistry listing, which can be created by running Ioreg.command.

3.   The output from the driver event log. See Section B for more information.

D. Uninstallation

The driver and utilities can be uninstalled using the Uninstall.command script.