EFI for 2Gb FC HBAs

Table of Contents

1. Included Files

File	Description
EFIUTIL.EFI EFI	Utility for updating adapter driver/firmware
EFIAUX.DRV	EFI auxiliary driver (used by efiutil when no drivers were loaded)
QL2312EF.BIN	EFI driver image file: QLA234x cards (used for write to adapter flash)
QL2312FW.BIN	Adapter firmware file (used for write to adapter flash)
EFIUTIL.PDF	Efiutil User Manual
EFICFG.PDF EFI	Configuration and Diagnostic Protocols documentation
RELEASENOTES.TXT	Release notes
QLEFIREADME.TXT	Text version of this file

2. Utilities

The following topics describe the utilities provided in the qla23xx package content.

- 2.1 efiutil
- 2.2 eficfg

2.1 efiutil

The `efiutil` utility is used to update the EFI driver and RISC firmware resident in the FLASH ROM on the HBA. You can use this utility either in command line interface mode or batch mode.

To invoke the command line interface (CLI) mode, enter the following command in the EFI partition where the utility resides:
`efiutil`

To access online help within the efiutil itself enter the following command:
`efiutil help`

Refer to the efiutil user manual for complete instructions. See also additional notes.

2.2 eficfg

The `eficfg` utility is used to set configuration parameters in the Adapter NVRAM and to configure EFIFCScanLevel parameter in the System NVRAM.

To invoke this utility, enter the following at the shell prompt:
`drvcfg m n -s`
where
m is the driver handle
n is the controller handle

Refer to the eficfg.pdf file for complete usage instructions. See also additional notes.

3. Updating EFI Driver or RISC Firmware using Efiutil

You can update the EFI Driver or RISC Firmware using `efiutil` in one of the modes described in the following subsections:

- 3.1 Using Efiutil in Command Line Interface Mode
- 3.2 Using Efiutil in Batch Mode

3.1 Using Efiutil in Command Line Interface Mode

1. Obtain the driver files using one of these methods:
   - Insert the driver CD.
     or
   - Copy the driver files to any available EFI partition on the Target System. To find and download these files from the QLogic website, go to: http://support.qlogic.com/support/drivers_software.asp.

2. Type the following commands at the EFI prompt:
   `map -r` (needed only if you are using a CD)
   `fsX:`
   `cd <directory on CD>` (if a CD is being used)
   or
   `cd <directory where the files were copied>`
   `fs0:\> efiutil` (This displays the command line interface for the efiutil)

3. At the `efiutil` prompt, choose the adapter index that you want to update:
   `efiutil> adapter`
   `Adapter Index number [0]?` *N*
   where
   N represents the adapter index you want to update

4. At the `efiutil` prompt, enter the commands:
   `efiutil> efi_write=<EFI driver file name>` (to update the EFI driver)
   `efiutil> risc_fw_write=<RISC firmware file name>` (to update the RISC firmware)

5. After the update process is complete, reset the system.
   NOTE: This is important since the flashed driver will not be loaded until a reset is done.
   To perform a reset, enter the following command:
   `fsX:\> reset`

Command line interface example:
```
fs0:> efiutil
Fibre Channel Card Efi Utility 1.07 (10/28/2003)
2 Fibre Channel Adapters found:
A0 Acpi(PNP0A03,0)/Pci(1|0) 50060B0000123400 1.15 (3.02.165)
A1 Acpi(PNP0A03,0)/Pci(1|1) 50060B0000123402 1.15 (3.02.165)
efiutil> adapter
Adapter Index number [0]? 1
efiutil> efi_write
Driver image binary filename [ql2312ef.bin]?
using filename ql2312ef.bin
Old revision 1.15, New revision 1.16, Continue [n]? y
File Size: 0000B600
Flash part Am29LV010
Moving Image 2 down...
.........................................................
Moving Image 1 down...
.........................................................
.........................................................
Writing new image...
.........................................................
.........................................................
.........................................................
Writing new image...
.........................................................
Image write complete.
efiutil> quit
fs0:\> reset
```

3.2 Using Efiutil in Batch Mode

1. Obtain the driver files using one of these methods:
   - Insert the driver CD.
     or
   - Copy the driver files to any available EFI partition on the Target System. To find and download these files from the QLogic website, go to: http://support.qlogic.com/support/drivers_software.asp.

2. Type the following commands at the EFI prompt:
   `map -r` (needed only if you are using a CD)
   `fsX:`
   `cd <directory on CD>` (if you are using a CD)
   or
   `cd <directory where the files were copied>`
   `efiutil all info` (to display information on all adapters in the system)

3. Enter the commands to update only one or all adapter:
   - To update one adapter only, enter the commands:
     `efiutil adapter=N efi_write=<EFI driver file name>` (for updating EFI driver)
     `efiutil adapter=N risc_fw_write=<RISC firmware file name>` (for updating RISC firmware)
   - To update all adapters with the same revision, enter the commands:
     `efiutil all efi_write=<EFI driver file name>`
     `efiutil all risc_fw_write=<RISC firmware file name>`
     where:
     "fsX" (X maps to the CD or the available EFI partition where the CD image was downloaded)
     "N" (where N represents the adapter index you want to update obtained using the `efiutil all info` command)

4. After the update process is complete, reset the system.
   NOTE: This is important since the flashed driver will not be loaded until a reset is done.
   To perform a reset, enter the following command:
   `fsX:\> reset`

Batch Mode Examples

Updating the EFI driver and RISC firmware on one specific adapter:

```
fs2:\EFI\TOOLS\IO_CARDS\FC2P2G> efiutil all info

Fibre Channel Card Efi Utility 1.08 (11/10/2003)

3 Fibre Channel Adapters found:
A0 Acpi(000222F0,200)/Pci(1|0)/Pci(4|0) 50060B00001EE050 1.14 (3.02.164)
A1 Acpi(000222F0,400)/Pci(1|0) 50060B00001CCD94 1.16 (3.02.165)
A2 Acpi(000222F0,400)/Pci(1|1) 50060B00001CCD96 1.16 (3.02.165)

A0 Acpi(000222F0,200)/Pci(1|0)/Pci(4|0) 50060B00001EE050 1.14 (3.02.164)

A1 Acpi(000222F0,400)/Pci(1|0) 50060B00001CCD94 1.16 (3.02.165)

A2 Acpi(000222F0,400)/Pci(1|1) 50060B00001CCD96 1.16 (3.02.165)

Choosing adapter 2 for update,

fs0:\> efiutil adapter=2 efi_write=ql2312ef116.bin risc_fw_write=ql2312fw302165.bin

Fibre Channel Card Efi Utility 1.08 (11/10/2003)

3 Fibre Channel Adapters found:
A0 Acpi(000222F0,200)/Pci(1|0)/Pci(4|0) 50060B00001EE050 1.14 (3.02.164)
A1 Acpi(000222F0,400)/Pci(1|0) 50060B00001CCD94 1.16 (3.02.165)
A2 Acpi(000222F0,400)/Pci(1|1) 50060B00001CCD96 1.16 (3.02.165)
A0 Acpi(000222F0,400)/Pci(2|0)/Pci(4|0) 50060B0000265042 1.14 (3.02.164)
Writing efi driver image to flash from file ql2312ef116.bin...
Old revision 1.14, New revision 1.16
File size 0000B800
Flash part Am29LV040
```

```
Moving Image 2 down...
.........................................................
Moving Image 1 down...
.........................................................
.........................................................
Writing new image...
.........................................................
Writing new image...
.........................................................
Image write complete.
A0 Acpi(000222F0,400)/Pci(1|1) 50060B00001CCD96 1.16 (3.02.164)
Writing risc image to flash from file ql2312fw302165.bin...
Old revision 3.02.164, New revision 3.02.165
File size 00011000
Flash part Am29LV040
Moving Image 2 down...
.........................................................
Writing new image...
.........................................................
.........................................................
Writing new image...
.........................................................
Image write complete.
fs0:\> reset
```

To update the EFI driver on all adapters in batch mode, follow the same steps using the `risc_fw_update` option for RISC firmware update:

```
fs0:\> efiutil all efi_write=ql2312ef116.bin

Fibre Channel Card Efi Utility 1.08 (11/10/2003)

3 Fibre Channel Adapters found:
A0 Acpi(000222F0,200)/Pci(1|0)/Pci(4|0) 50060B00001EE050 1.14 (3.02.164)
A1 Acpi(000222F0,400)/Pci(1|0) 50060B00001CCD94 1.14 (3.02.165)
A2 Acpi(000222F0,400)/Pci(1|1) 50060B00001CCD96 1.14 (3.02.165)
A0 Acpi(000222F0,400)/Pci(2|0)/Pci(4|0) 50060B0000265042 1.14 (3.02.164)
Writing efi driver image to flash from file ql2312ef116.bin...
Old revision 1.14, New revision 1.16
File size 0000B800
Flash part Am29LV040
Moving Image 2 down...
.........................................................
Moving Image 1 down...
.........................................................
.........................................................
Writing new image...
.........................................................
Writing new image...
.........................................................
Image write complete.
A1 Acpi(000222F0,400)/Pci(2|0)/Pci(4|0) 50060B0000265042 1.14 (3.02.165)
Writing efi driver image to flash from file ql2312ef116.bin...
Old revision 1.14, New revision 1.16
File size 0000B800
Flash part Am29LV040
Moving Image 2 down...
.........................................................
Moving Image 1 down...
.........................................................
.........................................................
Writing new image...
.........................................................
Writing new image...
.........................................................
Image write complete.
A2 Acpi(000222F0,400)/Pci(2|0)/Pci(4|0) 50060B0000265042 1.14 (3.02.165)
```

```
Writing efi driver image to flash from file ql2312ef116.bin...
Old revision 1.14, New revision 1.16
File size 0000B800
Flash part Am29LV040
Moving Image 2 down...
.........................................................
Moving Image 1 down...
.........................................................
.........................................................
Writing new image...
.........................................................
Writing new image...
.........................................................
Image write complete.
fs0:\> reset
```

4. Additional Notes

- When specifying an adapter number or a filename in batch mode, `efiutil` requires the absence of spaces on either side of the equal (=) sign for syntactic reasons; for example:
  `fs0:\> efiutil adapter=0 efi_write=driver.bin`
- When executing `efiutil`, `drvcfg`, or `drvdiag`, DO NOT redirect the output of these commands.
  CAUTION: Redirecting console output may cause test failures.

5. Diagnostic Tools

An embedded diagnostic protocol in the EFI driver can be used to test the Host Bus Adapter and the Fibre channel link.

There are three levels of diagnostics available:

1. Standard - This level performs a mailbox test on the adapter registers followed by a loopback test at the 10-bit interface; at the end of the test, a disconnect/connect sequence is done to restart the adapter. See additional notes above.

2. Extended - This level performs a mailbox test on the adapter registers followed by loopback tests at the both the 10-bit interface and the 1-bit interface; at the end of the test, a disconnect/connect sequence is done to restart the adapter. See also additional notes.

3. Manufacturing - This level provides an interactive mode for running the following commands:

   connection Displays the state (up or down) and type (loop or point-to-point) of Fibre Channel connection

   help   Displays a brief list of commands

   interface   Displays or sets the loopback point used for the loopback command

   iterations Displays or sets the iteration count used for the loopback command

   loopback   Performs a loopback test

   mailbox   Performs a mailbox register test

   post   Performs a POST (power on self test) of the HBA hardware

   path   Displays current adapter path

   quit   Quits this level and returns to the EFI shell

Please refer to the eficfg.pdf file for complete details on running the diagnostic protocol. See also additional notes.

6. Contacting Support

Please feel free to contact your QLogic approved reseller or QLogic Technical Support at any phase of integration for assistance. QLogic Technical Support can be reached by the following methods:

Web: http://support.qlogic.com

North America Contact Information
Email: support@qlogic.com
Phone: (952) 932-4040

Support contact information for other regions of the world is available at the QLogic website:
http://support.qlogic.com

Go to Top