

# Using the efiutil Utility

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## Revision History

Date	Rev	Reason	By	Comments
3-21-03	1.0	Initial	T. Leonard	
4-03-03	1.1	Added batch mode commands	T. Leonard	
4-14-03	1.2	Added nvram support	T. Leonard	
4-21-03	1.3	Fixed nvram option letters	T. Leonard	
4-28-03	1.4	Added /d option to batch mode	T. Leonard	CLI x,y,z modes allow user to specify .def file.
5-05-03	1.5	Added /l option, Name change	T. Leonard	Change all occurrences of Efiutil to HpUtil. Modify utility to only report adapters with the HP SSID. Add /i option to override this checking.
6-10-03	1.6	Change auxiliary driver name	T. Leonard	Change name of qlcflash.efi to hpaux.drv.
7-01-03	1.7	Added f option to cli mode	T. Leonard	Start EFI Configuration Protocol from efiutil
9-20-03	1.8	Change requests.	J. Carnuccio	Renamed utility to efiutil, renamed command parameters.
10-03-03	1.9	Changed command syntax	D. Wagner	Changed command syntax for interactive and batch commands.
10-07-03	1.10	Renamed auxiliary driver	D. Wagner	Renamed hpaux to efiaux, deleted exit command
10-09-03	1.11	Minor updates	D. Wagner	Remove 'override' command parameter, removed 'all' from CLI parameters
11-17-03	1.12	Minor updates	J. Carnuccio	Added restriction to adapter=n command
11-19-03	1.13	Minor updates	D. Wagner	Manju changes
4-15-04	1.14	New feature	T. Greene	Added the luns command.
4-29-04	1.15	New feature	T. Greene	Added the lun_attrbs command.
11-1-04	1.16	Minor Update	T. Greene	Removed "QLogic Confidential". Cleaned up header and footer.
7-15-05	1.17	Changes for 4 GB HBA	D. Wagner	Added file types for 4 GB HBA's. NVRAM filenames TBD
10-25-05	1.18	New feature added Minor correction	V. Jani	<ul style="list-style-type: none"> <li>Added description for SFP feature in EfiUtil for 4 GB HBAs.</li> <li>Now there is no default EFI driver image name in EfiUtil for 4 GB HBAs.</li> <li>Corrected example of 'configure' command.</li> <li>Documentation for 'lun_names' and 'lun_paths' added</li> </ul>
2-6-06	1.19	Minor update	V. Jani	Added a restriction to the adapter command.
7-24-06	1.20	New feature added	V. Jani	Added support to run DrvDiag - diagnostics within EfiUtil
2-06-07	1.21	New feature added	V. Jani	Added batch mode command "unload" in EfiUtil



## Introduction

The QLogic efiutil Utility is used to access and modify the contents of the flash ROM on the QLogic Host Bus Adapter. This utility is an efi application that is run from the efi shell. It consists of the program *efiutil.efi* and an auxiliary driver, *efiaux.drv*. The auxiliary driver is used if *efiutil.efi* is unable to detect a QLogic efi driver capable of supporting the flash ROM protocol. All these files need to be in the same directory as *efiutil.efi*.

The utility may be run in batch mode or in interactive mode (CLI mode). The mode of operation is determined by the number command line parameters used to start *efiutil.efi*; if no parameters are used, *efiutil.efi* starts in CLI mode; for example:

```
efiutil
```

otherwise *efiutil.efi* starts in batch mode.

The CLI mode commands are the batch mode parameters.

## Batch Mode

A number of parameters may be specified on the command line when *efiutil.efi* is started. The command format is:

```
efiutil [parameters...]
```

where [parameters...] indicates zero or more optional parameters (the brackets [ ] are meta-characters and are not part of the syntax) where each parameter has the syntax described in the following paragraphs.

Each parameter is a set of underscore (\_) separated words, optionally followed by filename specification; for example, the command to write an efi driver image to flash is:

```
efiutil adapter=0 efi_write
```

In addition, some commands allow the specification of a filename; a filename is indicated by an equal sign (an "assignment") followed by the filename; for example, the command to read a risc firmware image from flash and save it to the named file is:

```
efiutil adapter=0 risc_fw_read=abc.bin
```

### Note:

- Spaces are not allowed within a command, but at least one space is required between each pair of commands on the same command line.
- User should not pass "adapter/a" as parameter more than once in Batch mode.

For Example,

```
efiutil adapter=0 efi_write risc_fw_read (Valid)
```

```
efiutil all efi_write risc_fw_read (Valid)
```

```
efiutil adapter=0 efi_write adapter=1 risc_fw_read (Invalid)
```

## Default filenames

Each parameter that can accept a filename has a default filename in case the filename is not supplied; the default filenames are:

ql23efi.bin	ISP2300 efi driver file
ql2312ef.bin	ISP2312 efi driver file
ql23fw.bin	ISP2300 risc firmware file
ql2312fw.bin	ISP2312 risc firmware file
2400.bin	ISP24xx risc firmware file
hp6826.dat	nvrn data/format file
nvrn23.dat	nvrn data/format file (second default)
qla246x.dat	nvrn data/format file
efiaux.drv	efi auxiliary driver
ql23xx.drv	efi auxiliary driver
ql24xx.drv	efi auxiliary driver

The correct default filenames are determined from the commands specified and the adapter type of the selected adapters.

## Parameters

In showing the format of the syntax, brackets `[]` indicate a component is optional, and braces `{ }` indicate a component is required from a selection of components (within the braces, components are shown separated by the `|` symbol).

### **adapter**

This parameter specifies the adapter on which the one or more specified commands are to be executed; this parameter is required for all batch mode invocations (unless **all** is specified) and may be specified once only on each invocation; the specified adapter must have a recognized subsystem vendor id (ssvid); the format of this parameter is

`adapter=adapternumber`

where *adapternumber* is the adapter instance number (a small integer starting from zero).

Example:

```
efiutil adapter=0 info           perform the command on adapter instance 0
```

### **all**

This parameter specifies that the one or more specified commands are to be executed on all adapters that have a recognized subsystem vendor id (ssvid); the format of this parameter is:

`all`

Example:

```
efiutil all info                 perform the command on all adapters
```

### **configure**

This parameter starts the configuration protocol on the specified adapter; this is used to modify the nvram parameters on the adapter; it is especially useful for accessing an adapter that has not been bound to the standard efi driver and otherwise can not have its nvram parameters modified; this parameter is not supported in Batch mode. This command is always executed in interactive mode from EfiUtil shell prompt; the format of this parameter is:

`configure`

Example:

```
efiutil> configure              configure the specified adapter
```



### diagnostics

This parameter starts the diagnostics protocol on the specified adapter; this is used to allow the user to run driver specific diagnostics on a controller; There are three levels of diagnostics available:

- Standard
- Extended
- Manufacturing

The selection of the diagnostic level is made using a command line switch available through EfiUtil; this parameter is not supported in Batch mode. This command is always executed in interactive mode from EfiUtil shell prompt; the format of this parameter is:

```
diagnostics
```

Example:

```
efiutil> diagnostics           Run diagnostics on specified adapter
```

### directory

This parameter displays a directory listing of the images in flash for the specified adapters; the format of this parameter is:

```
directory
```

Example:

```
efiutil all directory         display a flash directory on all adapters
```

### efi

This parameter specifies an efi driver operation; the available efi driver operations are:

```
efi_read           read efi driver image from flash to file
efi_write          write efi driver image to flash from file
efi_verify         verify efi driver image in flash with file
```

A filename may be specified by appending the following to any of the above:

```
=filename
```

The specified filename overrides the default filename, and the command is applied to all specified adapters, regardless of adapter type; the format of this parameter is:

```
efi_{read|write|verify}=filename
```

Examples:

```
efiutil all efi_write
```

write efi driver image using default file to all adapters

```
efiutil adapter=0 efi_read=abc.bin
```

read efi driver image in adapter 0 and save to file abc.bin

```
efiutil adapter=1 efi_verify=abc.bin
```

verify efi driver image in adapter 1 with file abc.bin

Only one adapter can be used in batch mode when specifying adapter index.

When writing a efi driver image to flash, the vpd field `efi-version` in flash is updated with the version of the newly written image, and no other vpd fields are altered.

### **help**

This parameter prints the list and format of the batch mode commands, and also prints a list of QLogic adapters found in the system.

Example:

```
efiutil help
```

### **info**

This parameter prints information for each adapter; the format of this parameter is:

```
info
```

Example:

```
efiutil all info
```

### **lun\_attris**

This parameter displays the LUN attributes for all LUNs on the specified adapter. The format of the parameter is:

```
lun_attris
```

Example:

```
efiutil all lun_attris
```

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### **lun\_names**

This parameter displays configured LUN name information on the specified adapter. The LUN name information includes LUN Id, type of LUN, make of storage, Serial Id of storage and World Wide LUN Id. The format of the parameter is:

```
lun_names
```

Example:

```
efiutil all lun_names
```

Or

```
efiutil> lun_names
```

### **lun\_paths**

This parameter displays the LUN path for all LUNs on the specified adapter. The format of the parameter is:

```
lun_paths
```

Example:

```
efiutil all lun_paths
```

Or

```
efiutil> lun_paths
```

### **luns**

This parameter displays LUN inquiry information for all LUNs on the specified adapter. The format of the parameter is:

```
luns
```

Example:

```
efiutil all luns
```

### **nvram**

This parameter specifies an nvram operation; the available nvram operations are:

<code>nvram_read</code>	read data set from nvram to file
<code>nvram_write</code>	write data set to nvram from file
<code>nvram_verify</code>	verify data set in nvram with file

A filename may be specified by appending the following to any of the above:

```
=filename
```

the specified filename overrides the default filename, and the command is applied to all specified adapters, regardless of adapter type; the format of this parameter is:

```
nvram_{write|verify}=filename
nvram_read[=filename[,filename]]
```

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The second form allows the specification of a second filename for the data template to be used when saving the nvram data to the file specified by the first filename; if the second filename is not specified, a default template is generated.

### Examples:

```
efiutil all nvram_write
    write nvram from default file to all adapters

efiutil adapter=0 nvram_read=abc.sav
    read nvram from adapter 0 to file abc.sav

efiutil adapter=1 nvram_verify=abc.dat
    verify nvram from adapter 1 with file abc.dat
```

### risc

This parameter specifies a risc firmware operation; the available risc firmware operations are:

risc_fw_read	read risc firmware from flash to file
risc_fw_write	write risc firmware to flash from file
risc_fw_verify	verify risc firmware in flash with file

A filename may be specified by appending the following to any of the above:

*=filename*

the specified filename overrides the default filename, and the command is applied to all specified adapters, regardless of adapter type; the format of this parameter is:

`risc_{read|write|verify}=filename`

### Examples:

```
efiutil all risc_fw_write
    write risc firmware image from default filename to all adapters

efiutil adapter=0 risc_fw_read=abc.bin
    read risc firmware image from adapter 0 to file abc.bin

efiutil adapter=1 risc_fw_verify=abc.bin
    verify risc firmware image in flash with file abc.bin
```

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When writing a risc firmware image to flash, the vpd field `fw-version` in flash is updated with the version of the newly written image, and no other vpd fields are altered.

### **vpd**

This parameter prints the vpd image contents to the screen; the format of the parameter is:

```
vpd_display
```

Example:

```
efiutil all vpd_display          print raw vpd contents for all adapters
```

When efi driver and/or risc firmware images are written to flash, the vpd image is updated with the version levels of these newly written images; otherwise, the vpd image in flash is not altered under any circumstances (it is written once only during manufacture time).

### **sfp**

This parameter prints an enhanced digital diagnostic monitoring interface for optical transceivers (that allows real time access to device operating parameters) to the screen. EfiUtil provides commands to read digital diagnostics parameters either in raw (hex) format or in user friendly format; the format of this parameter is:

```
sfp_print
sfp_dump
```

Example:

```
efiutil all sfp_dump
          Prints optical transceiver digital diagnostics in raw (hex) format
```

```
efiutil adapter=x sfp_print
          Prints optical transceiver digital diagnostics in user friendly format
```

**Note:** This feature is supported for 4 GB HBAs only.

### **unload**

This parameter unloads all QLogic EFI FC drivers from system RAM; the format of this parameter is:

```
unload
```

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Example:

```
efiutil unload
```

Unloads all QLogic EFI FC drivers from system.

Note: This feature is not supported adapter-wise (i.e. when we execute “unload”, it would unload EFI driver for all adapters.) This feature is available in Batch mode only. This command is especially useful when one wants to update the flash and latest fixes play role in updating the flash images.



## CLI Mode

### Starting CLI Mode

To enter CLI mode, at the efi shell, enter the following command:

```
efiutil
```

the program loads and displays the following prompt on prompt:

```
efiutil>
```

at any time, the menu of available command may be displayed by entering the command `help` which displays a list of commands and their syntax.

### CLI Commands

The CLI commands are the same as the batch mode commands, and the format and syntax of the CLI commands is the identical to the syntax for the batch commands, except that filenames and adapter numbers cannot be specified inline; CLI mode will prompt for these items; if no filename is entered (i.e. if the user just types ENTER), a default filename is used. The `a11` command is not available in CLI mode (to prevent unintentionally applying operations to all adapters).

The CLI mode commands are the batch mode parameters with the exception that filenames and adapter numbers cannot be specified with the assignment (=) operator. Refer to the batch mode parameters to see the syntax of the CLI mode commands.

### Exiting CLI Mode

To exit from CLI mode and return to the efi shell, enter either of the following:

```
quit
```