

* The following about upgrading firmware is merely taking ARC-1214 as an example.

Upgrading Flash ROM Update Process

A-1 Overview

Since the ARC-12x4 RAID controllers feature flash ROM firmware, it is not necessary to change the hardware flash chip in order to upgrade the RAID firmware. The user can simply re-program the old firmware through the in-band PCIe bus or out-of-band Ethernet port McRAID Storage manager and nflash DOS utility. New releases of the firmware are available in the form of a DOS file on the shipped CD or Areca website. The files available at the FTP site for each model contain the following files in each version:

ARC12x4NNNN.BIN Software Binary Code ("NNNN" refers to the software code type)

ARC12x4BIOS.BIN:→ PCIe 2.0 BIOS for system board using

ARC12x4BOOT.BIN:→ RAID controller hardware initialization

ARC12x4FIRM.BIN:→ RAID kernel program

ARC12x4MBR0.BIN:→ Master Boot Record for supporting Dual Flash Image in the 6Gb/s SATA RAID controller

README.TXT contains the history information of the software code change in the main directory. Read this file first to make sure you are upgrading to the proper binary file. Select the right file for the upgrade. Normally, user upgrades the ARC12x4BIOS.BIN for system M/B compatibility and ARC12x4FIRM.BIN for RAID function. All these files in the firmware package are a part of the firmware. You should update all files in the package, no special update order needed. New firmware works after a system restart not instant available, so you can update all files before restart the system. The controller firmware is independent of the array, and update firm-

Note:

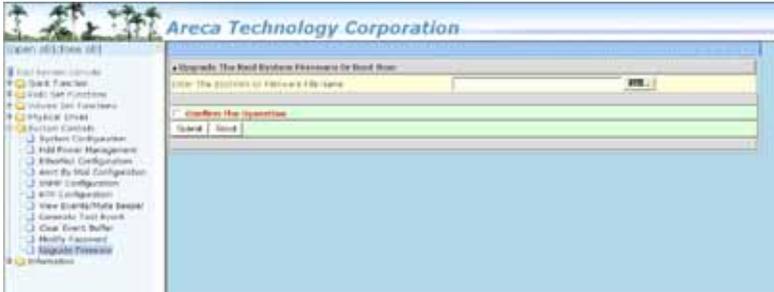
Please update all binary code (BIOS, BOOT FIRM and MBR0) before you reboot system. Otherwise, a mixed firmware package may hang the controller.

APPENDIX

ware does not touch anything you stored in the array.

A-2 Upgrading Firmware Through McRAID Storage Manager

Get the new version firmware for your 6Gb/s SATA RAID controller. For example, download the bin file from your OEM's web site onto



the C: drive.

1. To upgrade the 6Gb/s SATA RAID controller firmware, move the mouse cursor to "Upgrade Firmware" link. The "Upgrade The Raid System Firmware or Boot Rom" screen appears.
2. Click "Browse". Look in the location to which the Firmware upgrade software was downloaded. Select the file name and click "Open".
3. Click "Confirm The Operation" and press the "Submit" button.
4. The web browser begins to download the firmware binary to the controller and start to update the flash ROM.
5. After the firmware upgrade is complete, a bar indicator will show "Firmware Has Been Updated Successfully".
6. After the new firmware package completes downloading, find a chance to restart the controller/computer for the new firmware to take effect.

The web browser-based McRAID storage manager can be accessed through the in-band PCIe bus or out-of-band LAN port. The in-band method uses the ArchHttp proxy server to launch the McRAID storage manager. The out-of-band method allows local or remote

to access the McRAID storage manager from any standard internet browser via a LAN or WAN with no software or patches required. Controller with onboard LAN port, you can directly plug an Ethernet cable to the controller LAN port, then enter the McBIOS RAID manager to configure the network setting. After network setting configured and saved, you can find the current IP address in the McBIOS RAID manager "System Information" page.

From a remote pc, you can directly open a web browser and enter the IP address. Then enter user name and password to login and start your management. You can find the firmware update feature from the "Raid System Console" on the "System Controls" option.

A-3 Upgrading Firmware Through nflash DOS Utility

Areca now offers an alternative means communication for the 6Gb/s SATA RAID controller – Upgrade the all files (BIOS, BOOT, FIRM and MBR0) without necessary system starting up to running the ArchTtp proxy server. The nflash utility program is a DOS application, which runs in the DOS operating system. Be sure of ensuring properly to communicate between 6Gb/s SATA RAID controller and nflash DOS utility. Please make a bootable DOS floppy diskette or USB devices from other Windows operating system and boot up the system from those bootable devices.

• Starting the nflash Utility

You do not need to short any jumper cap on running nflash utility. The nflash utility provides an on-line table of contents, brief descriptions of the help sub-commands. The nflash utility put on the <CD-ROM>\Firmware directory. You can run the <nflash> to get more detailed information about the command usage. Typical output looks as below:

APPENDIX

```
A:\nflash
Raid Controller Flash Utility
V1.11 2007-11-8
Command Usage:
NFLASH FileName
NFLASH FileName /cn --> n=0,1,2,3 write binary to controller#0
FileName May Be ARC12x4FIRM.BIN or ARC12x4*
For ARC12x4* Will Expand To ARC12x4BOOT /FIRM/BIOS.BIN
```

```
A:\>nflash arc12x~1.bin
Raid Controller Flash Utility
V1.11 2007-11-8
MODEL : ARC-12x4
MEM FE620000 FE7FF000
File ARC12x~1.BIN : >>*** => Flash OK
```

A-4 Upgrading Firmware Through CLI

This Command Line Interface (CLI) provides you to configure and manage the 6Gb/s SATA RAID controller components in Windows, Linux, FreeBSD and more environments. The CLI is useful in environments where a graphical user interface (GUI) is not available. Through the CLI, you perform firmware upgrade that you can perform with the McRAID storage manager GUI. The controller has added protocol on the firmware for user to update the controller firmware package (BIOS, BOOT, FIRM and MBR0) through the utility.

To update the controller firmware, follow the procedure below:

```
Parameter: <path=<PATH_OF_FIRMWARE_FILE>>
Fn: Firmware Updating.
Ex: Update Firmware And File Path Is In [C:\FW\ARC12x4FIRM.BIN.]
Command: sys updatefw path=c:\fw\arc12x4firm.bin [Enter]
```