Appendix C Upgrading the Firmware

The DA-3000 RAID controller's firmware resides in flash memory that can be updated through the COM ports or via In-band SCSI. New releases of the firmware are available in the form of a DOS file in the "pub" directory of ASUS's FTP site or on a 5.25" or 3.5" diskette. The file available at the FTP site is usually a self-extracting file that contains the following:

FW30Dxyz	Firmware Binary (where "xyz" refers to the firmware version)
B30Buvw	Boot Record Binary (where "uvw" refers to the boot record version)
README.TXT	Read this file first before upgrading the firmware / boot record. It contains the most up-to-date information which is very important to the firmware upgrade and usage.

These files must be extracted from the compressed file and copied to directory in drive C.

IMPORTANT:

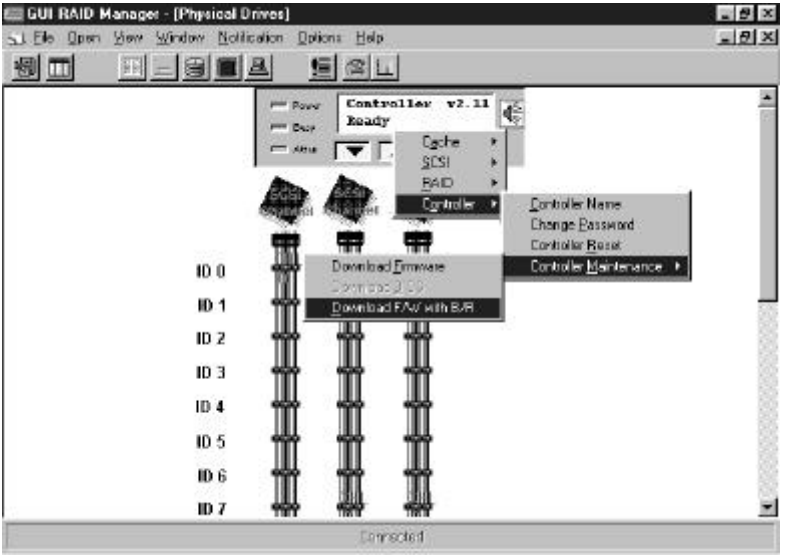
- *Allow the downloading process to finish. Do not reset or turn off the computer or the controller while it is downloading the file. Doing so may result in an unrecoverable error that requires the service of the manufacturer.*
- *While the firmware is new, the boot record that comes with it may be the same version as the one in the controller. If this is the case, there is no need to upgrade the Boot Record Binary.*

Upgrading firmware using In-band SCSI + GUI RAID Manager

Establish the In-band SCSI connection in GUI RAID Manager

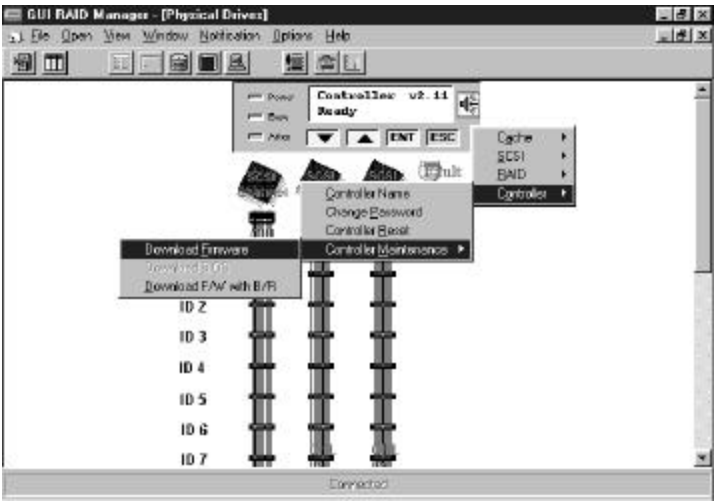
Please refer to section 4.10.3 for details on establishing the In-band SCSI connection in GUI RAID Manager.

Upgrade Both Boot Record and Firmware Binaries



1. Double click on the controller panel to get the menu appears. Choose "Controller Maintenance" > "Advanced Maintenance" -> "Download Boot Record and Firmware".
2. Provide the boot record binary filename, the GUI RAID Manager will start to download the boot record binary to the controller.
3. After the boot record download completed, provide the firmware filename to the GUI RAID Manager. It will start to download the firmware to the controller.
4. Shutdown the system which is accessing the RAID, then reset the controller in order to use the new downloaded firmware.

Upgrade the Firmware Binary Only



1. Double click on the controller panel to get the menu appears. Choose "Controller Maintenance". If both boot record and firmware are desired to upgrade, choose "Download Firmware".
2. Provide the firmware filename to the GUI RAID Manager. It will start to download the firmware to the controller.
3. Shutdown the system which is accessing the RAID, then reset the controller in order to use the new downloaded firmware.

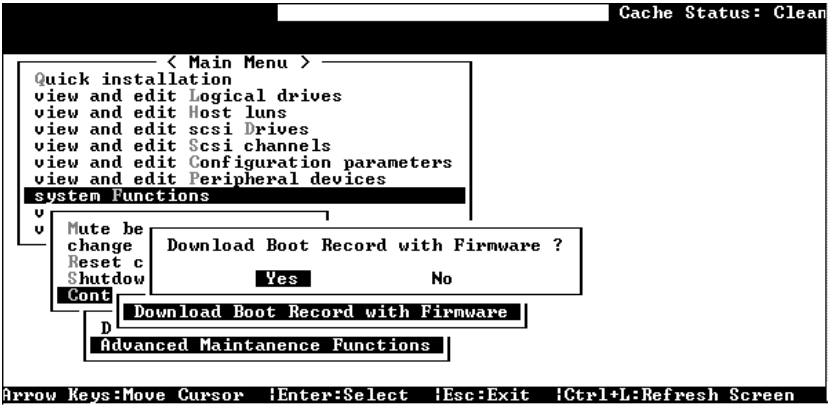
Upgrading firmware using RS-232 Terminal Emulation

The firmware can be downloaded to the RAID controller by using an ANSI/VT-100 compatible terminal emulation program. Whichever terminal emulation program is used must support the ZMODEM file transfer protocol. The following example uses the HyperTerminal in Windows NT. Other terminal emulation programs (e.g., Telix and PROCOMM Plus) can perform the firmware upgrade as well.

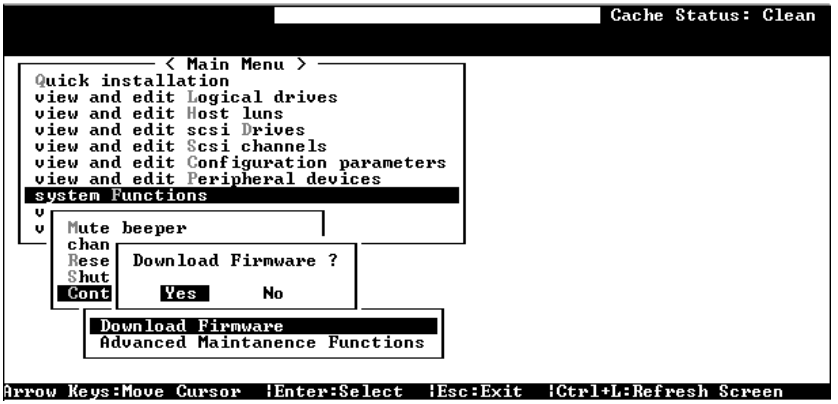
Establishing the connection for the RS-232 Terminal Emulation

Please refer to chapter 4.6, *Serial Port Connection and Set-up*, for details on establishing the connection.

Upgrading Both Boot Record and Firmware Binaries



1. From the Main Menu, scroll down to "System Functions."
2. Go to "Controller Maintenance."
3. Choose "Advanced Maintenance."
4. Select "Download Boot Record and Firmware."
5. Set ZMODEM as the file transfer protocol of your terminal emulation software.
6. Send the Boot Record Binary to the controller. In HyperTerminal, go to the "Transfer" menu and choose "Send file." If you are not using Hyper Terminal, choose "Upload" or "Send" (depending on the software).
7. After the Boot Record has been downloaded, send the Firmware Binary to the controller. In HyperTerminal, go to the "Transfer" menu and choose "Send file." If you are not using Hyper Terminal, choose "Upload" or "Send" (depending on the software).
8. When the Firmware completes downloading, the controller will automatically reset itself.



1. From the Main Menu, scroll down to "System Functions."
2. Go to "Controller Maintenance."
3. Choose "Download Firmware."
4. Set ZMODEM as the file transfer protocol of your terminal emulation software.
5. Send the Firmware Binary to the controller. In HyperTerminal, select "Send file." If you are not using HyperTerminal, choose "Upload" or "Send" (depending on the software).
6. When the Firmware completes downloading, the controller will automatically reset itself.