



# **Intel® Server Raid Controller**

## **Flash Update / Recovery**



*Revision 1.2*  
*Sept. 2000*

Revision History		
Date	Rev	Modifications
02/13/00	1.0	Initial Release
07/15/00	1.1	Update to include general instructions current RAID product, to include instructions for update from floppy, and to include instructions for forced flash recovery.
9/12/00	1.2	Incorporate grammatical and formatting corrections.

© Intel Corporation 2000

Information in this document is provided in connection with Intel products. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Intel's Terms and Conditions of Sale for such products, Intel assumes no liability whatsoever, and Intel disclaims any express or implied warranty, relating to sale and/or use of Intel products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright or other intellectual property right. Intel products are not intended for use in medical, life saving, or life sustaining applications. Intel may make changes to specifications and product descriptions at any time, without notice.

The server product may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

Pentium is a registered trademark of Intel Corporation. Xeon, Celeron and MMX are trademarks of Intel Corporation.

\* Third-party brands and names are the property of their respective owners

## Table of Contents

Update Using the CD .....	4
Update From CD With Update Code on Floppy.....	6
Update From Floppy Disk .....	7
Firmware Recovery From CD.....	8
Firmware Recovery From CD With Update Code on Floppy.....	11
Firmware Recovery From Floppy.....	14

## Table of Figures

Figure 1 CMOS Setup.....	5
Figure 2 CD Menu .....	5
Figure 3 Flash Update Menu.....	5
Figure 4 Flash Update 3.....	6
Figure 5 Update Successful .....	6
Figure 6 Insert Disk .....	7
Figure 7 Flash Menu .....	7
Figure 8 Update Menu .....	8
Figure 9 Successfully Completed .....	8
Figure 10 Flash Menu .....	9
Figure 11 Flash Menu .....	9
Figure 12 Jumper Warning .....	10
Figure 13 Jumper Error.....	10
Figure 14 Downloading Firmware.....	10
Figure 15 Download Successful .....	11
Figure 16 Floppy Error .....	11
Figure 17 Download Menu .....	12
Figure 18 File Location.....	12
Figure 19 Download Warning .....	13
Figure 20 Download Progress.....	13
Figure 21 Download Successful .....	13
Figure 22 Reboot .....	14
Figure 23 Copyright Screen.....	14
Figure 24 Jumper Reminder.....	15
Figure 25 Download Menu .....	15
Figure 26 Code Location .....	15
Figure 27 Download Progress.....	16
Figure 28 Download Successful .....	16

## **Intel RAID Controller Flash Update / Recovery**

Intel® RAID controllers contain a flash part that stores the firmware portion of code required for the operation of the controller. The firmware may be updated to correct errata or to add features to the operation of the product. The Update / Recovery procedure requires two pieces, a program that will write the code update to the controller's flash part, and the code that will be written. The program that will write the code is called the flash update utility and is a DOS executable file. When the flash utility is executed, it locates the code update file and then writes that code to the flash part. The code name is in the form "xxxx.bin". The flash Update Utility can be found on the CD that accompanied the RAID controller or it can be downloaded from <http://support.intel.com/support/motherboards/server>. An update code file is also located on the CD, but a newer file may be available at the support site. It is recommended that the newest update file available be used.

On rare occasion, it is possible that the firmware of the RAID Controller could become corrupted and the firmware update may fail. If this happens, a recovery can be performed utilizing the Recovery Utility and firmware file located on the CD that accompanied the product, or the utility and update file can be downloaded from the support site. The recovery procedure requires that the recovery menu option be chosen and that a jumper on the RAID controller be moved to the forced recovery position.

Only one RAID controller card may be installed in the system during the firmware update process. If you have multiple cards that require a flash update, then the process must be repeated for each card. The update procedures for normal update and recover update are described below.

### **Update Using the CD**

1. Configure the host system CMOS setup to boot from the CDRom drive by modifying the boot priority list. This will vary with the system being used. An example of CMOS configuration is shown in Figure 1.

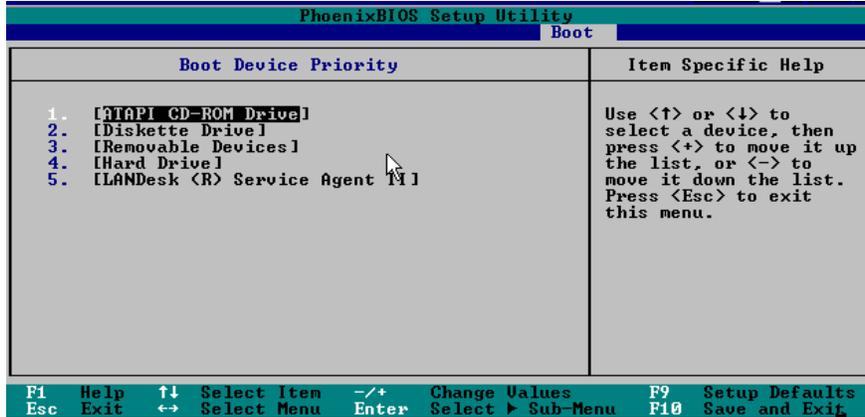


Figure 1 CMOS Setup

2. With the product CD in the drive of the system containing the RAID controller, boot the system from the CD. The menu in Figure 2 will appear.

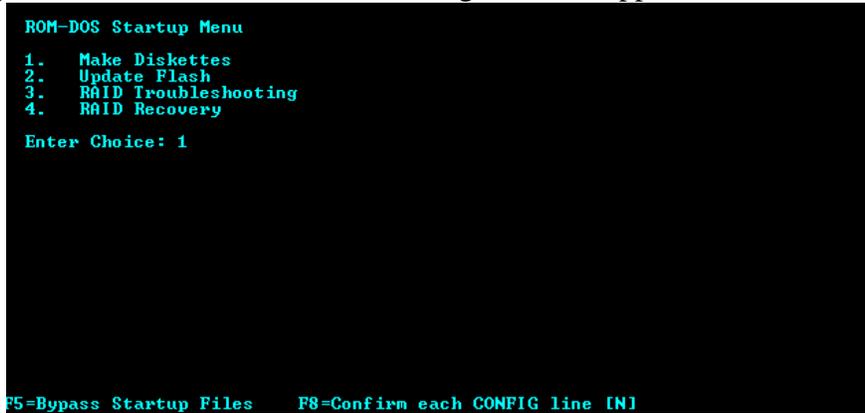


Figure 2 CD Menu

3. Choose option number 2 (Update Flash) and press enter. The Menu in Figure 3 will appear.



Figure 3 Flash Update Menu

4. The menu in figure 3 has two options. These options identify whether the flash update code will be loaded from the CD or from a floppy disk. If you have downloaded newer flash code to a floppy diskette, skip to “Floppy Update” below; otherwise choose option 1 to update the code from the CD. The screen in figure 4 will be displayed.

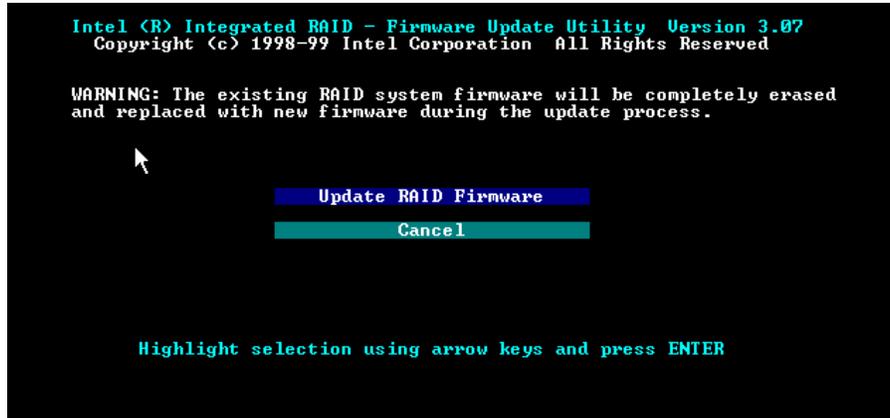


Figure 4 Flash Update 3

5. Choose “Update RAID Firmware” and press enter to initiate the process of downloading the firmware update image to the flash ROM on your RAID controller card.
6. You will be notified when the update is finished as shown in Figure 5; the update process should take less than 5 minutes.

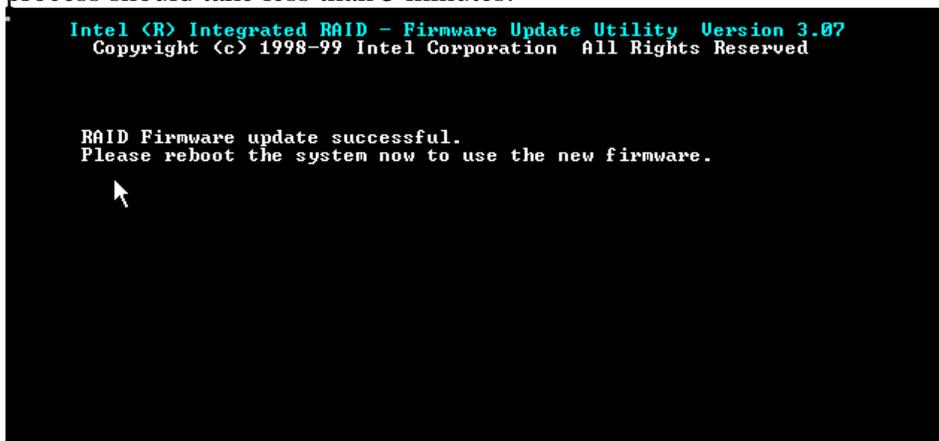


Figure 5 Update Successful

## Update From CD With Update Code on Floppy

1. If your update code is on a floppy, you may use the update utility located on the CD. Insert the floppy disk containing the update code into the drive and follow steps 1 through 3 above, at the menu displayed in Figure 3 above, choose option #2.

2. If you have not inserted your update floppy into the floppy drive, you will receive the prompt to do so as depicted in Figure 6.

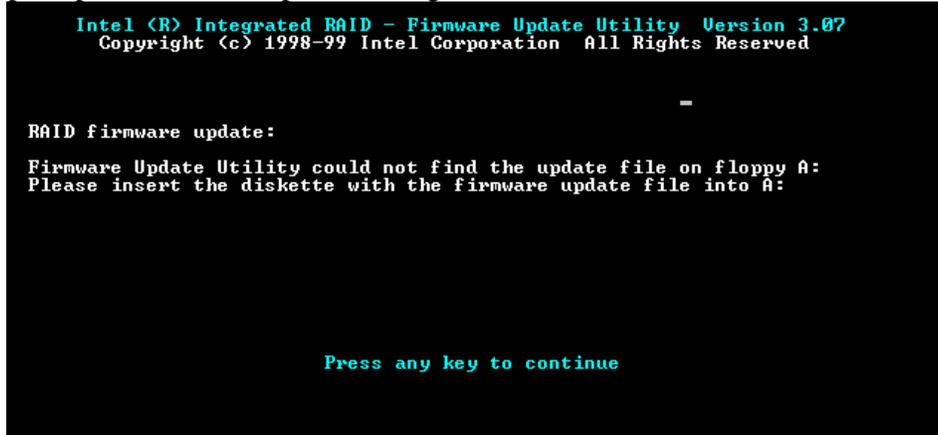


Figure 6 Insert Disk

3. Insert the floppy into the drive and press a key to continue. The program will download the update to the flash ROM and you will be notified of the successful completion of the download as depicted in Figure 5 above.

## Update From Floppy Disk

1. Download the latest version of the Update Utility and the Update code and extract them to a floppy disk. These files can be found at <http://support.intel.com/support/motherboards/server>. Readme files accompanying the files explain the extraction procedure. The Update Utility should be extracted to a bootable floppy.
2. Boot your system from the bootable floppy, the screen will display the menu as depicted in Figure 7.



Figure 7 Flash Menu

3. Choose option #1 and press enter to continue. The utility will detect attached devices and the screen in Figure 8 will be displayed.



Figure 8 Update Menu

4. Choose "Update RAID Firmware" and press the Enter key. You will be prompted to insert the diskette containing the update code, insert that diskette and press the Enter key. The update will proceed and may take up to 3 minutes to complete. A screen notifying of the successful completion of the update will be presented as depicted in Figure 9.

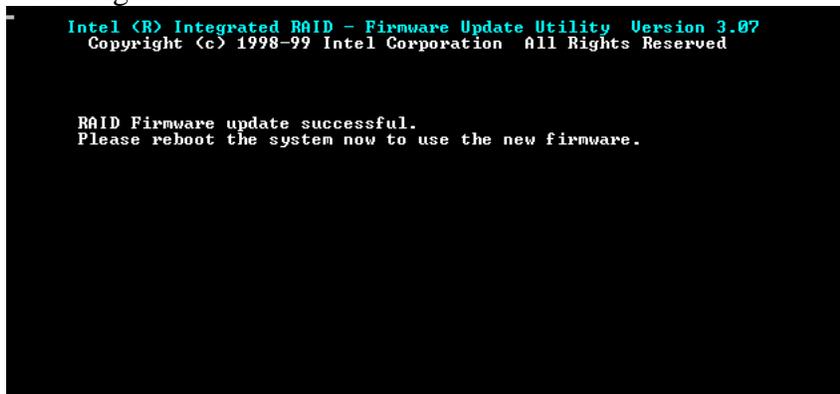


Figure 9 Successfully Completed

5. The update is complete and the system can now be rebooted.

## Firmware Recovery From CD

1. Should the firmware on the RAID controller become corrupted and unable to be normally updated, a recovery option is available. This forced update option requires that the Recovery Utility be chosen and that a jumper on the RAID controller card be moved from the normal operation position to the recover position. Refer to the documentation that accompanied the card for the location of the recovery jumper. Be sure to follow proper anti static procedures. Power off the system and remove the power cord(s) from the power supply, this will ensure that all power, including standby power, has been removed from the system.

2. To recover the Firmware using the Update Utility and Update Code located on the RAID controller CD, boot the system from the RAID CD as described in the first section of this document. The Menu depicted in Figure 10 will be presented.

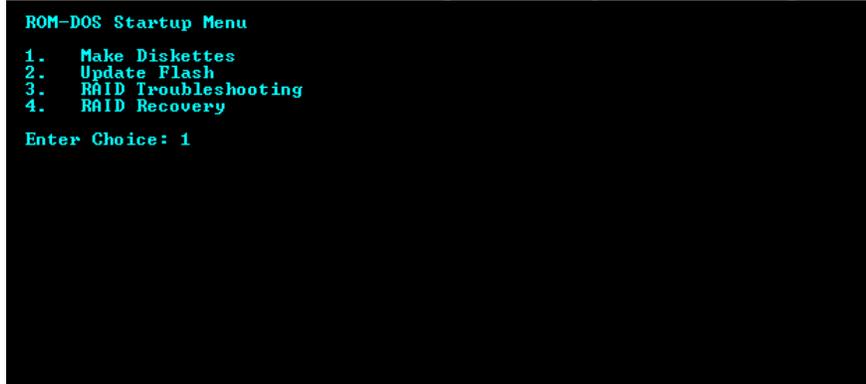


Figure 10 Flash Menu

3. Choose option #4 and press enter. You will be presented with the options depicted in Figure 11.

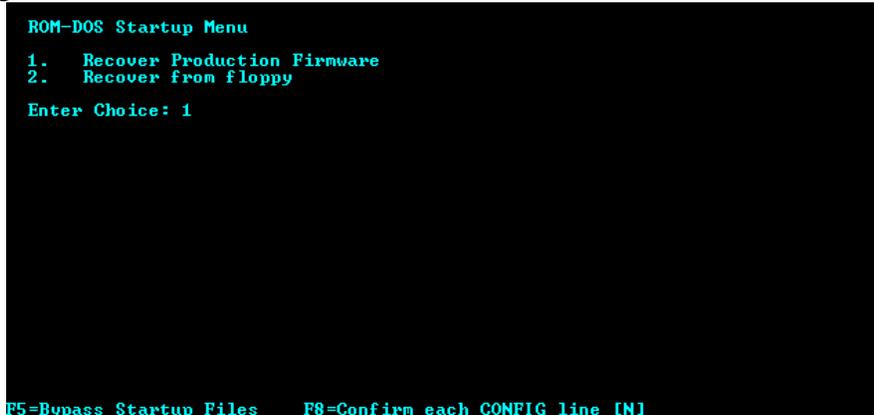


Figure 11 Flash Menu

4. To use the Update Code located on the CD choose option 1 and press enter, if you have a newer version of the Update Code on a floppy, proceed to the next section.
5. You will be presented with the copyright screen, press the Enter key to continue.
6. You will next be reminded that the jumper located on the card must be moved to the recover position as depicted in Figure 12.



Figure 12 Jumper Warning

7. Press the Y key to continue. Failure to place the jumper in the recovery position will result in the error message screen displayed in Figure 13.

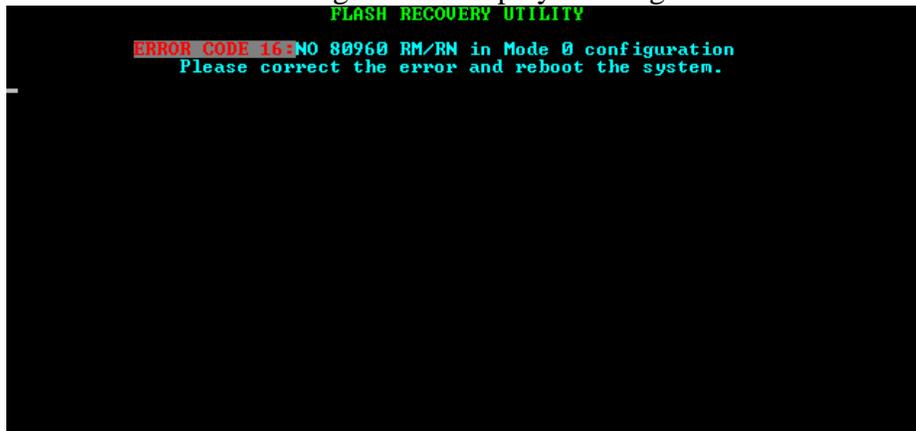


Figure 13 Jumper Error

8. If the jumper is in the correct position, the program will begin downloading the firmware and the screen depicted by Figure 14 will be displayed.



Figure 14 Downloading Firmware

9. Upon successful completion of the download, the screen depicted in figure 15 will be displayed.

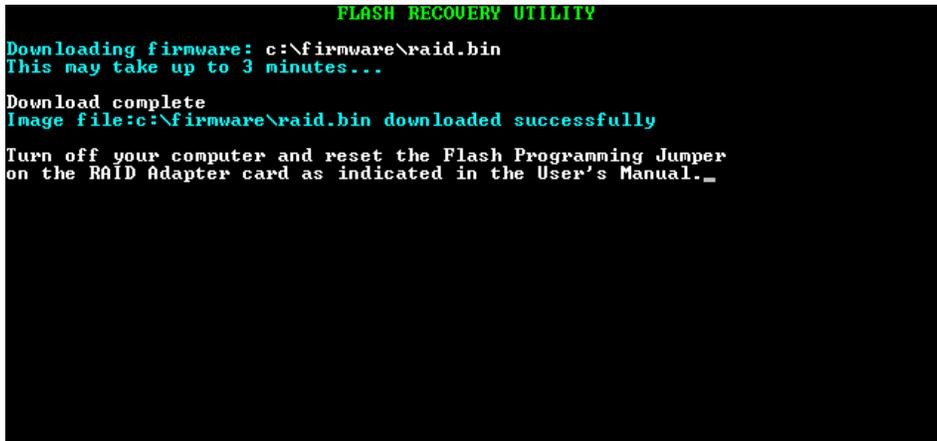


Figure 15 Download Successful

10. You may now turn off the system, unplug the power cord(s), move the recovery jumper to the normal position, reconnect the power cord(s), and reboot the system.

## Firmware Recovery From CD With Update Code on Floppy

1. You can use the Recovery Utility Program located on the CD to perform the update and use newer Update Code located on a floppy to recover the RAID firmware. The newer Update Code can be downloaded from the support web site at <http://support.intel.com/support/motherboards/server>. Follow the instructions in steps 1 – 3 in the “Recovery From CD” section just above. Insert the diskette containing the update code into the floppy drive and at the menu depicted in Figure 11, choose option 2 and press the Enter key. You will see the Copyright screen; press the Enter key to continue.
2. A warning will be displayed, that the recovery jumper must be in the recovery position as depicted in Figure 12. Press the Y key to continue. If you failed to insert the diskette or if the Update Program cannot find the Update Code, you will be presented with an error message as depicted in figure 16.



Figure 16 Floppy Error

3. To correct this error, verify that the Code Update diskette is located in the floppy drive and press the Enter key to continue.
4. The download menu screen will be presented with and option to exit as depicted in Figure 17.

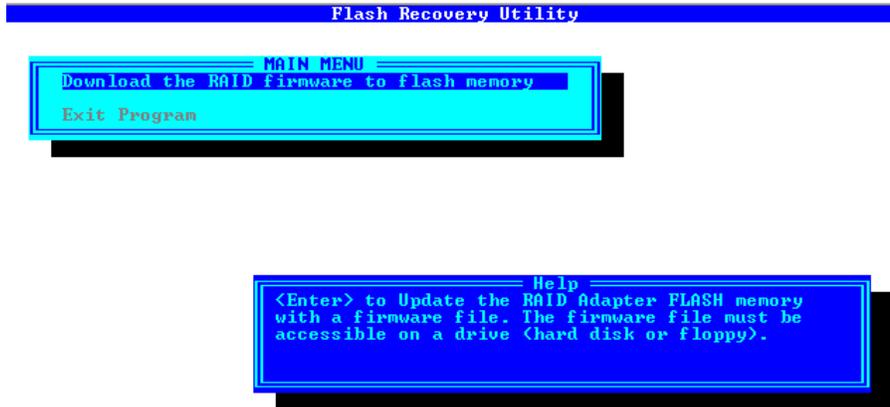


Figure 17 Download Menu

5. Press the Enter key to continue, you will next be presented with the file location screen as depicted in Figure 18.

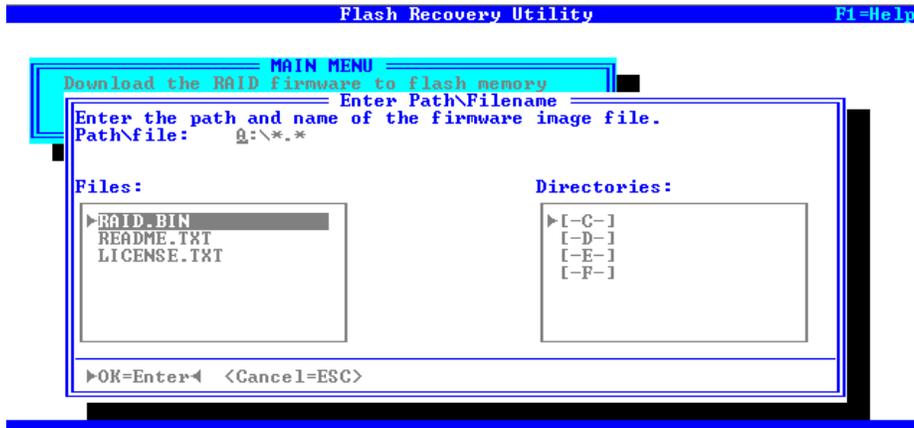


Figure 18 File Location

6. The default location for the file is on the A: drive, and the files located there are displayed. If the file is located on another drive, the drive letter and path can be changed to the proper location. The file required is typically the RAID.BIN file; consult the readme file that accompanied the download for the correct file name. Highlight the file name and press the Enter key.
7. You will receive a final warning and prompt to continue as depicted in Figure 19.

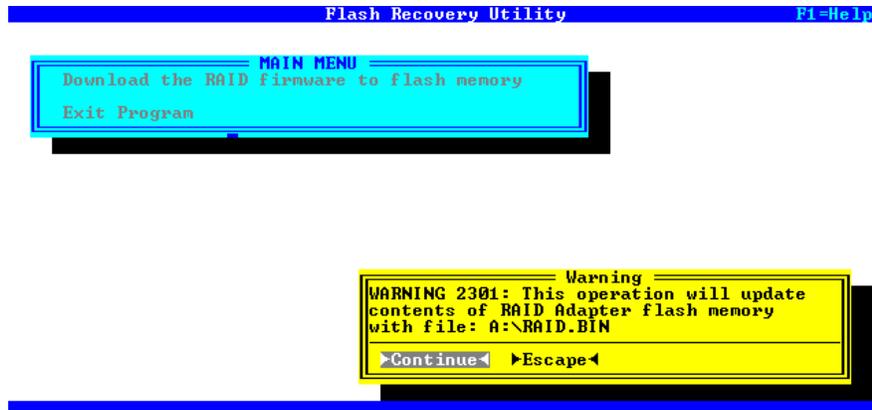


Figure 19 Download Warning

8. Press the Enter key to continue. The code file on the floppy disk will now be downloaded to the RAID controller; the following screen will be depicted.

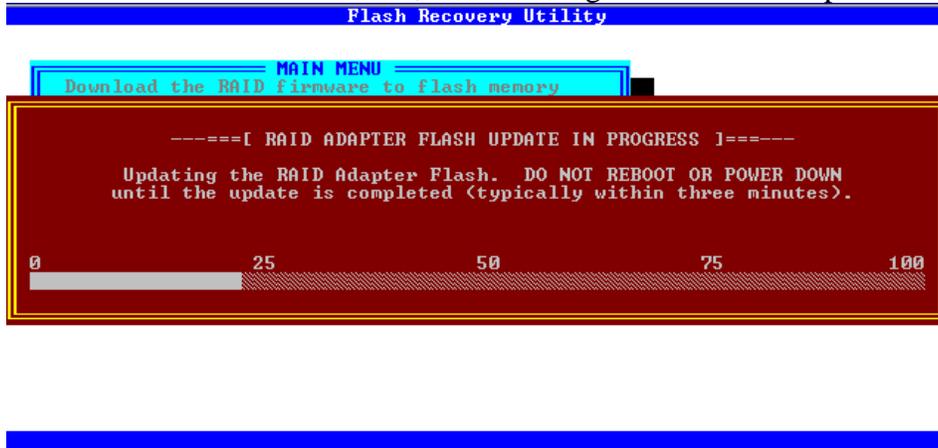


Figure 20 Download Progress

9. Upon completion of the download, the following screen will be depicted.

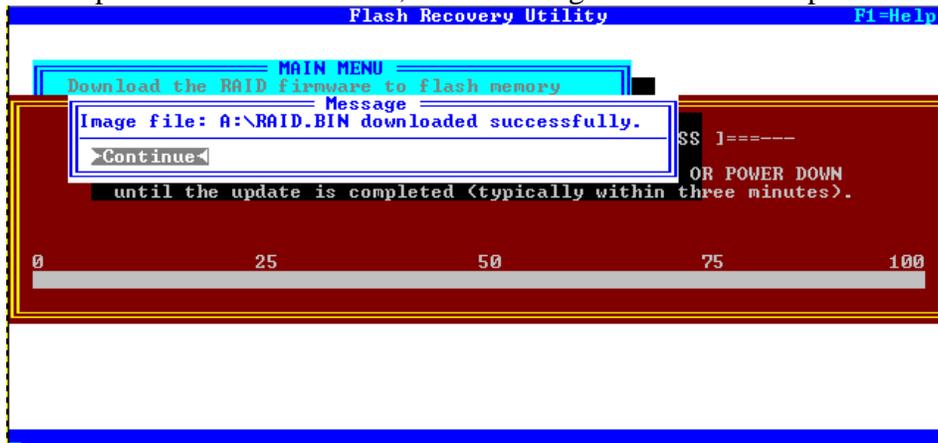
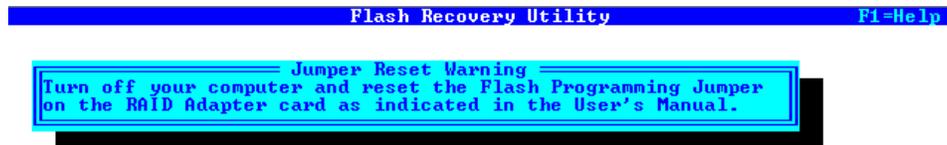


Figure 21 Download Successful

10. Press the Enter key to continue; the following screen will be depicted.

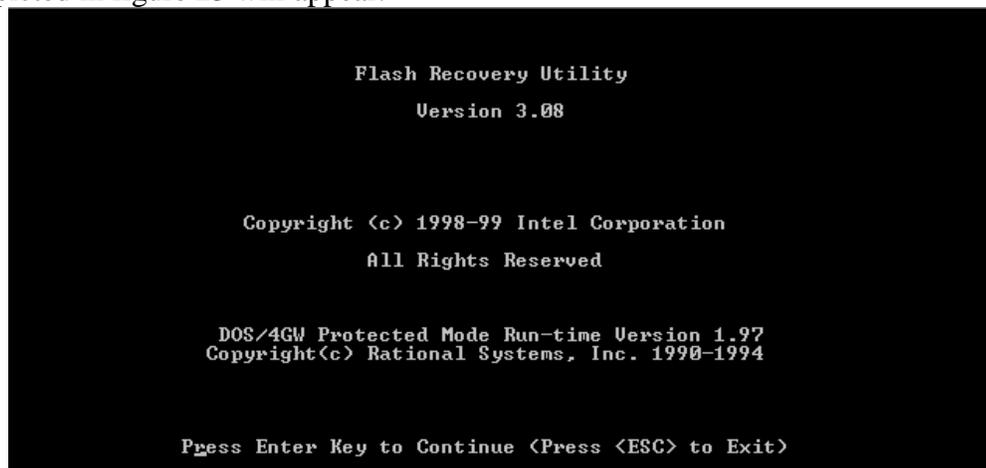


**Figure 22 Reboot**

11. Turn off the computer, unplug the power cord, and reset the jumper to the normal position. Reconnect the power cord and reboot the system.

## Firmware Recovery From Floppy

1. Firmware recovery utilizing the Recovery Utility and Update Code can be accomplished by downloading the Update Utility and Update Code from the support site at <http://support.intel.com/support/motherboards/server>. Extract the files to floppy disks; readme files accompanying the files explain the extraction procedure. The Recovery Utility should be extracted to a bootable floppy.
2. Follow the instructions in step 1 in the “Recovery From CD” section just above.
3. Boot the system from the bootable floppy containing the update utility. The screen depicted in figure 23 will appear.



**Figure 23 Copyright Screen**

4. Press the Enter key to continue, you will be reminded to set the RAID controller jumper to the recovery position as depicted in figure 24.



Figure 24 Jumper Reminder

5. Press the Y key to continue, you will be presented with the following screen.

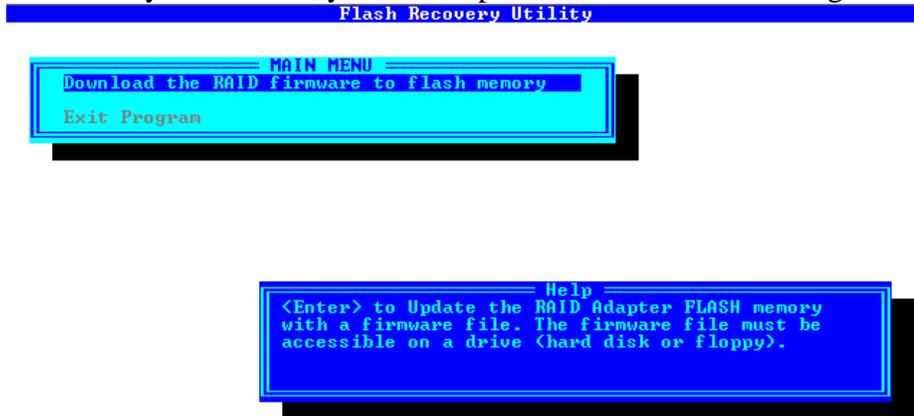


Figure 25 Download Menu

6. Remove the boot floppy and insert the floppy disk containing the update code into the drive. Press the Enter key to continue. You will now be prompted for the location of the Update Code as depicted in figure 26.

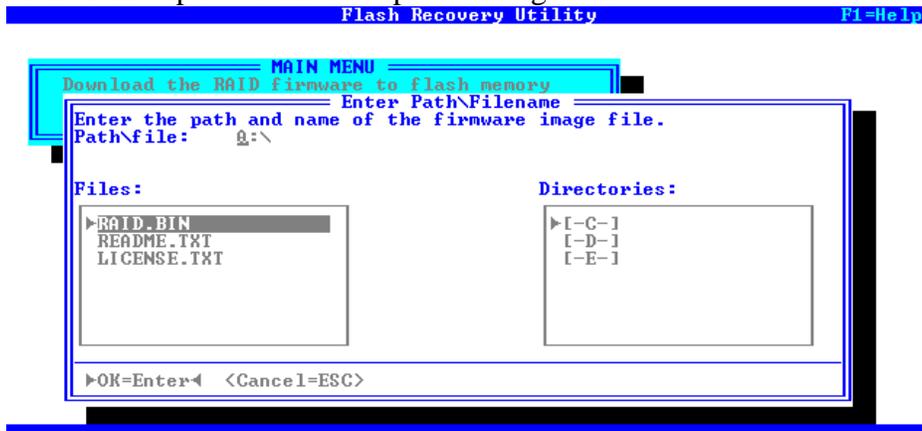


Figure 26 Code Location

- The program defaults to drive A: for code location and lists the files available on the on the disk. Highlight the RAID.BIN file and press the Enter key. Code update progress as depicted in figure 27 will be displayed.

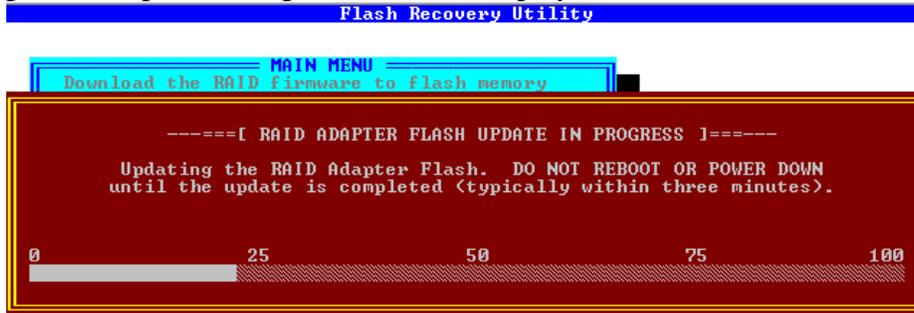


Figure 27 Download Progress

- When the flash update is finished the Download Successful screen will be displayed as in figure 28.

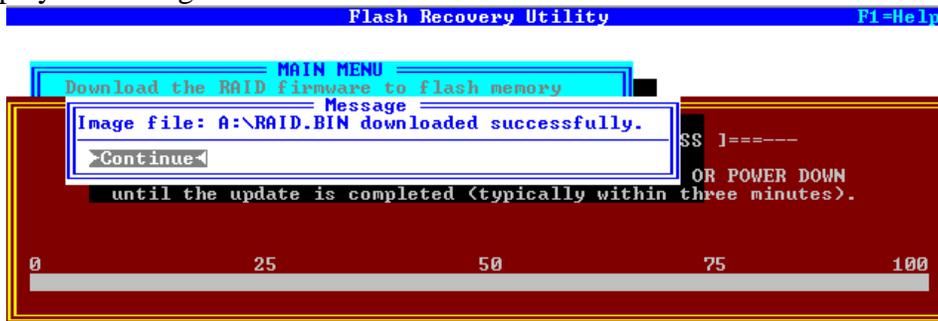


Figure 28 Download Successful

- Press the enter key to continue. You will be prompted to power down the server and reset the jumper. Be sure and remove the power cord(s) prior to performing these tasks.
- With the jumper set to the normal position, reboot the server.