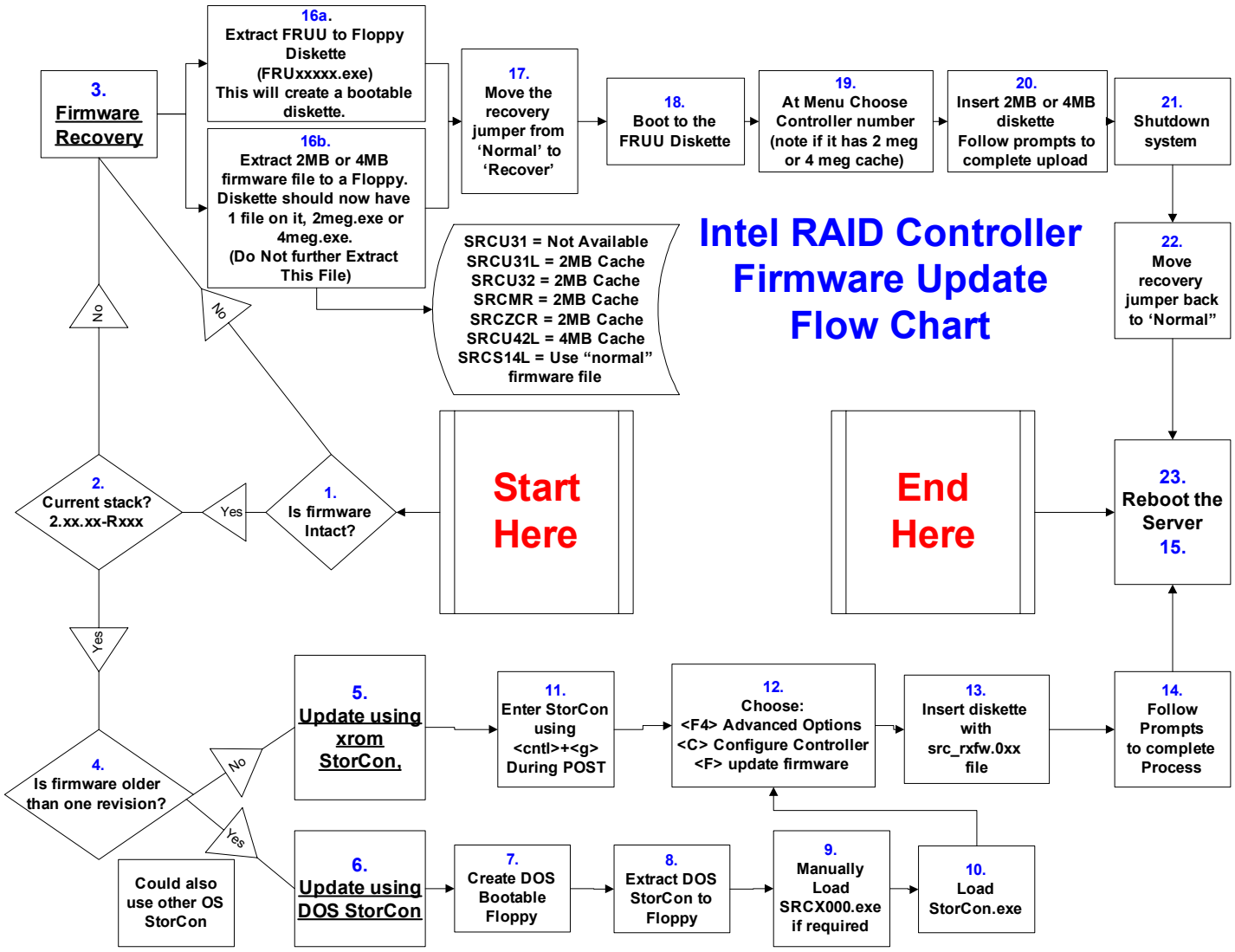
Revision 2

Firmware Update for Intel® RAID Controllers

Purpose:

This document applies to the Intel RAID controller Software Stack version 6.x with a Global Software CD build number of 1.xx.xx (example 1.5.14) and includes a firmware version with number format 2.xx.xx-R0xx (for example 2.36.05-R042). There are two methods to update firmware on an Intel ® RAID controller. Firmware can be updated using the RAID controller management utility StorCon, and Firmware can be updated using the Firmware Recovery Utility (FRU). Corrupted firmware can also be recovered using the FRU. The purpose of this document is to describe these two update processes. The following graphic provides an overview of this process.



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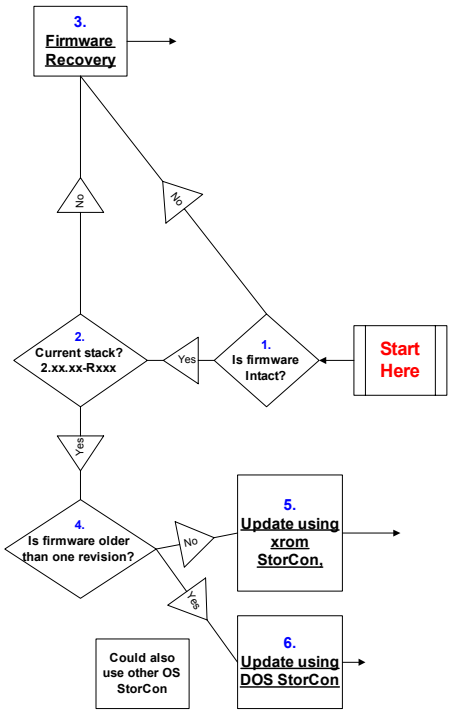
Determining Which Method to Use

Note: The SRCU32 does not support the firmware recovery option, please use the standard firmware update process with this RAID controller

Prior to performing a firmware update or recovery, a verified backup of all data should be performed. Firmware files are not included on the Resource CD that is included in the box with the product. The best method to use is determined by the state and version of the firmware currently programmed on the controller. The FRU method can be used at any time; however, it requires removing the controller from the system to set a "recovery jumper". Opening the system and removing the controller may be inconvenient, if the currently programmed firmware is not corrupted, using StorCon to perform the update may be preferable. The following portion of the graphic shows the decision process to determine which method should be used to perform the update.



Decision Steps:

1. Is the firmware intact? This question is in regard to whether or not the firmware has been corrupted or there is reason to believe it is not behaving properly. If there is reason to believe the firmware is corrupted or not programmed in the controller correctly, it is recommended that the FRU process be used.
2. Current Stack? This question refers to the version of firmware currently programmed in the controller. The SRCMR, SRCU31, and SRCU31L controllers were at one time shipped with a software stack referred to as 5.x. These controllers may be updated to the newer version 6.x stack (firmware version 2.xx.xx-R0xx) using the FRU process. This process should not be performed unless the user understands that the controller will no longer be compatible with the 5.x disk format, a new drive array would need to be created and all data restored from backup. Refer to the appropriate product's support pages at http://support.intel.com/support/motherboards/server. Controllers with the SRCMRU, and SRCU31LA product codes shipped from the factory with software stack 6.x and may be updated with either the StorCon or FRU process. The SRCU31A controller does not have a recovery jumper and can not be updated using

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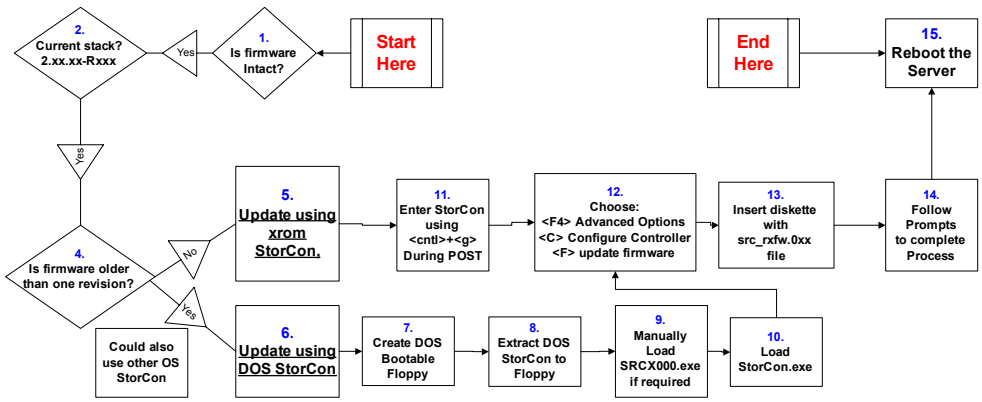
the FRU process, please use the standard firmware update process to update the firmware on this RAID controller.

Normal Firmware Update

Preparation:

Prior to performing a firmware update, it is essential to perform a verified backup of all data. Download the latest firmware file and StorCon Utility from the RAID controller's "Software and Drivers" page on the Intel support website at http://support.intel.com/support/motherboards/server. This method of update uses the firmware update option in the StorCon RAID controller management utility. This utility can be accessed through two methods. The utility is available as part of the RAID controllers firmware and can be accessed by pressing <CNTL>+<G> when prompted during POST. StorCon is also available as an OS based utility. Versions of StorCon are available for Microsoft* Windows NT and Windows 2000 operating systems, for Novell* NetWare operating systems, and for a variety of Unix and Linux operating systems. If the firmware being applied is older than one version number, it is recommended that the OS version of the StorCon utility be used to perform the update.

As highlighted in #4 in the graphic below, a decision must be made to determine which version of StorCon to use.



If the version of firmware programmed on the controller is one version older, the xrom version of StorCon can be used which is accessed using the <CNTL>+<G> keys during POST. If the version of firmware that resides on the controller is older than one version number, it is recommended that an OS version of StorCon be used. The OS version of StorCon use should be from the same Global Software Build as the firmware being installed. These files are provided under the "software and drivers" support web pages at the support website listed above. For the purposes of this document, the firmware update process using the DOS version of StorCon will be described. However, once StorCon is invoked, the steps are exactly the same regardless of the version.

Download and extract the DOS StorCon utility and the firmware file. The firmware file is not the same file as the firmware file used with the FRU and when extracted will have the name format of src_rxfw.0xx.

Performing the update:

The following steps describe the installation process as depicted in the graphic above.

6. Update using the DOS StorCon Utility.
7. & 8. Extract StorCon to a floppy diskette and make the diskette DOS bootable.

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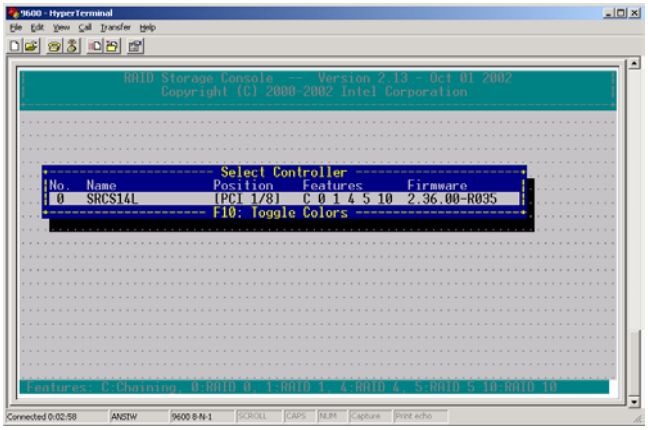
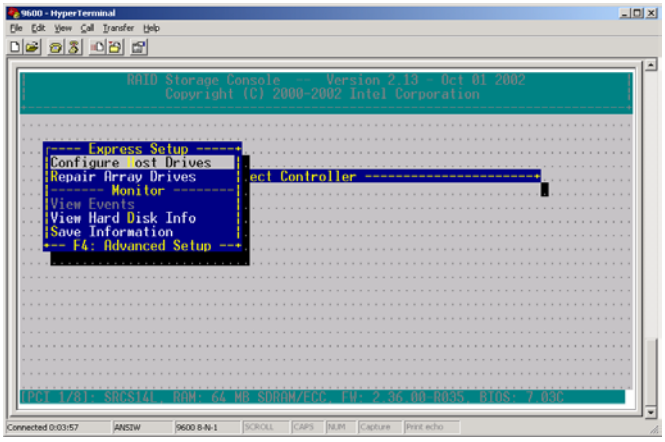
9. Earlier versions of StorCon required that a driver be loaded, SRCX000.exe, however, current versions of DOS StorCon do not require this driver, if StorCon fails to load with an error message that the driver is missing, load this driver by typing <SRCX000> at an A: DOS prompt
10. Load StorCon by typing <StorCon> at an A: prompt, then press <enter>
11. From this point, the process for updating the driver is the same for any version of StorCon. When StorCon starts, a graphic is displayed that shows the controller and its current firmware version as displayed in the graphic below.



12. Press Enter to select the controller and choose the <F4> key to go to advanced options as displayed in the graphic below, then choose <C> for configure controller and <U> to update the firmware.



13. Insert diskette with the src_rxfw.0xx file and press <enter>.
14. The file will be scan to determine its version and integrity, press <Y> key at the warning prompt to begin the firmware programming process.
15. When prompted that the update has completed, exit from StorCon using the <esc> key and reboot the server.
16. The firmware version can be verified during the RAID controller's BIOS POST screen during reboot.

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Firmware Recovery

Preparation:

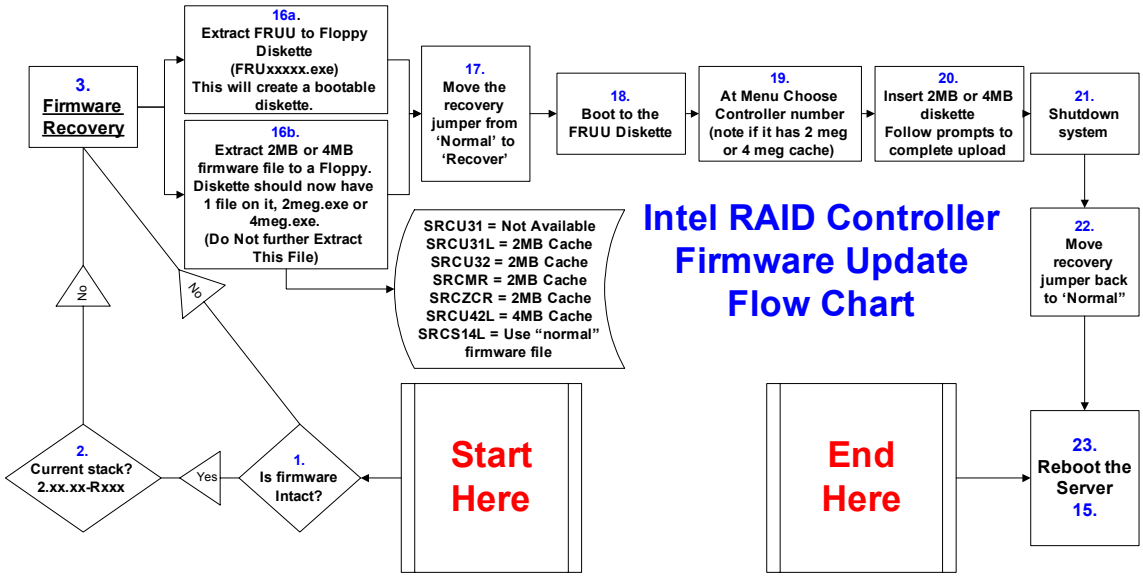
Prior to performing a firmware update or recovery, be sure and perform a verified backup of all data. Firmware files are not included on the Resource CD that is included in the box with the product. The FRU recovery/update process requires two diskettes to perform the update. Download the latest version of the FRU and firmware files at http://support.intel.com/support/motherboards/server. Firmware files come in two types, xMeg.exe for use with the FRU, and src_rxfw.0xx for use with StorCon (the SRCS14L only uses the src_rxfw.0xx). The FRU download and the firmware download must be of the same Global Release (such as 1.5.14). Choice of which firmware file to use depends on which controller is being updated. The following table correlates the firmware file used with the appropriate RAID controller.

Controller	Recovery Firmware File	Comments
SRCU31LA	2Meg.exe	
SRCU31A	Not Available	Use the standard firmware update process.
SRCU32U	2Meg.exe	
SRCMRU	2Meg.exe	
SRCZCR	2Meg.exe	
SRCU42L	4Meg.exe	
SRCS14L	src_rxfw.0xx	This is the same firmware file used with either the xrom version of StorCon or the OS versions of StorCon.

Extract the two downloads to separate diskettes, the FRU diskette and the firmware diskette. For all controllers the firmware diskette will contain only one file, either a 2meg.exe or a 4meg.exe file. Do not further extract these files. For the SRCS14L controller, the firmware diskette will contain one file as well, the src_rxfw.0xx firmware file.

Performing the update:

The following diagram and process describe the installation process.



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16. a. & b. Download and extract the FRU and firmware image to floppy diskettes. The FRU diskette is bootable.
17. Move the recovery jumper on the controller from the "Normal" to the "Recovery" procedure. For example, on the SRCMRU controller the "Normal" position is with pins 2-3 jumpered, move the jumper to pins 1-2. Note: The SRCU31A does not have a recovery jumper and is not compatible with the FRU process.
18. Remove power from the system and install the controller in a PCI slot, if the RAID controller is a MROMB controller (SRCMRU or SRCZCR) be sure and install it in the RAIDIOS enabled PCI slot. Reapply power and boot to the FRU floppy diskette.
19. During boot, a RAM drive will be created and the contents of the floppy diskette will be copied to the RAM drive. A menu is then presented which lists all the Intel RAID controllers installed in the system, starting with number 0. The menu will also list that a 2meg or 4meg flash file is required. Choose the target controller by pressing the number key associated with the controller.
20. Insert the diskette containing the 2meg.exe or 4meg.exe file. For the SRCS14L insert the firmware diskette containing the src_rxfw.0xx file. Press enter to start the update. The firmware on the diskette will be copied and verified, the flash memory will be erased, the firmware contents will be copied into the flash memory, and the flash contents will be verified. Press <Q> to quit.
21. Power down the system, remove power, remove the controller and reset the jumper to the "Normal" position.
22. Reapply power and reboot the server. Verify the firmware version of the controller during the RAID controller POST display.

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