Intel® SRCS28X RAID Controller 814G Firmware Upgrade for Intel® Storage System SSR316MJ+

Firmware Release Notes

Revision 1.0

October, 2006

Storage Systems Technical Marketing

Revision History

Date	Revision Number	Modifications
October, 2006	1.0	1st Release copy.

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1 Introduction

The Intel SRC28X RAID Controller firmware upgrade to 814G should look and feel like any other Intel Storage System SSR316MJ+ software upgrade. However, because we are updating low-level firmware on two printed circuit cards residing on the PCI bus there are some notable exceptions to the standard upgrade process. Please carefully review this document in its entirety before proceeding to the actual upgrade.

2 Summary of Issues Fixed in 814G Firmware

3951: When drive goes bad, MegaRAID fails and no communication is possible with the controller
4254: Battery Status briefly goes to “charging”
4289: Spurious “hi temp” event
4360, 4496: RAID controllers go offline or take disk set offline
4867: Cache re-enabled when BBU voltage is still recharging
4947: RAID controllers go offline
4987: Backend performance tests showed > 50% variation from reboot to reboot
5041: MegaRAID fails during I/O and 2-way replication fails
5070: Controller goes offline when doing I/O for extended time
5096: After completing charging, controller cache doesn’t turn on for some time
5118: Under heavy loads, MegaRAID aborts operations

3 Upgrading to 814G Firmware

3.1 Applying This Upgrade

3.1.1 Upgrade Overview

Order of Upgrade for Intel Storage System SSR316MJ+s running Storage System Software 6.3, 6.3 SP1 or 6.5 Release

1) First upgrade to firmware version 814G
2) Then upgrade to latest available software release

3.1.2 Prerequisites

- If you are planning to implement RAID 5 or RAID 10 levels the configuration must be done at lease 24 hours prior to 814G firmware upgrade. Reason being, for a period of approximately 24 hours following a RAID 5 or RAID 10 configuration, the system performs background initialization and consistency checks in the RAID controllers. If you attempt to perform the upgrade during this initialization the Storage System Management Console will refuse to proceed with the upgrade.
- All Intel Storage System SSR316MJ+s being upgraded must have RAID levels configured with a status of Normal before proceeding to upgrade.
- The storage module will reboot as part of the upgrade process which will cause your volumes to temporally go offline. If any iSCSI volumes are in use, please stop activities to those volumes by either unmount or logging off before beginning the upgrade.

3.1.3 Download The Upgrade Components

1. Download the Intel SRCS28X RAID controller 814G firmware upgrade package from the Intel Storage System SSR316MJ+ support site or from your IBL account.

Platform	For RAID Controller Firmware Version	Use Upgrade File
SSR316MJ+	814G	Intel RAID firmware 814G-2.20.4.8 20060927.install

3.2 Installing the 814G RAID Controller Firmware

3.2.1 Best Practice

- Virtual IP Addresses - If a Virtual IP (VIP) address is assigned to a storage module in a cluster, the VIP storage module needs to be upgraded last. The VIP storage module is shown in a field in the clusters detail tab.
    - First upgrade the non-VIP storage modules that are running managers one at a time.
    - Then upgrade the non-VIP non-manager storage modules.
    - Lastly, upgrade the VIP storage module.
- Remote Copy – If you are upgrading management groups with Remote Copy associations, you must upgrade the remote management group first. If you upgrade the primary group first, Remote Copy will stop working.

3.2.2 Selecting the Type of Upgrade

The Storage System Software Console supports two types of upgrades

- One-at-a-time (recommended) - this is the default and only method if the storage modules exist in a management group.
- Simultaneous (advanced) - this allows you to upgrade multiple storage modules at the same time if they are not in a management group. Use this for new storage modules and/or re-configured storage modules.

1. Select from the list which storage modules to upgrade.
2. Select the type of upgrade.
3. Click Install.

3.2.3 Intended Upgrade Candidates

Intel 814G firmware upgrade candidates will fall into one of two categories

- Category 1 – Upgrades for customers with production Intel Storage System SSR316MJ+s with RAID levels currently configured and containing live data. This category will include Intel Storage System SSR316MJ+s that are in a management group, cluster and have customer accessible live volumes.
- Category 2 – Upgrades for customers with delayed installation; Intel Storage System SSR316MJ+s that are still in the carton and need to have their Intel SRCS28X RAID controller firmware updated to 814G at installation time. This category will include Intel Storage System SSR316MJ+s that were manufactured with 814C or earlier firmware versions loaded into the RAID controllers but have not been deployed in a production environment.

3.2.4 Determining RAID Controller Firmware Version

Please use the passive report tool to determine your current Intel SRCS28X RAID controller firmware version. The section in the report for NVRAM items will display the firmware version. The Intel Storage System SSR316MJ+s contain two Intel SRCS28X RAID controllers so please be sure to check both firmware versions to avoid performance issues.

3.2.5 Upgrade Procedures

Procedures for Category 1

1. Using the passive reports, please verify that the Intel SRCS28X RAID controller firmware version is 814C or earlier.
2. Perform the firmware upgrade and reboot.
3. After the upgrade finishes and the storage module has rebooted, use the passive reports to verify that both controllers have firmware version 814G.

Clustered Intel Storage System SSR316MJ+s with 2-way replication turned on

1. Using the passive reports, please verify that the Intel SRCS28X RAID controller firmware version is 814C or earlier.
2. Perform the firmware upgrade and reboot.
3. After the upgrade finishes and the storage module has rebooted, use the passive reports to verify that both controllers have firmware version 814G.
4. Next, wait for the storage module to resynchronize.
5. Once the resynchronization finishes, upgrade the next storage module in the cluster.
6. Repeat steps 1 through 5 until you have upgraded all the storage modules in the cluster.

Procedures for Category 2

1. Power on the storage module.
2. Wait 24 hours for the background initialization to complete.
3. Using the passive report, please verify that the Intel SRCS28X RAID controller firmware version is 814C or earlier.
4. Perform the firmware upgrade and reboot.
5. After the upgrade finishes and the storage module has rebooted, use the passive reports to verify that both controllers have firmware version 814G.

Note: In some rare cases, successfully upgraded firmware on the Intel SRCS28X RAID controller will cause a CRC failure or md5 checksum on the boot cycle that follows the upgrade. The controllers then safely revert to its previous firmware revision. The reversion is harmless and if it occurs please try the upgrade again.