This Technical Advisory describes an issue which may or may not affect the customer's product

Intel Technical Advisory

TA1029-01

5200 NE Elam Young Parkway
Hillsboro, OR 97124

June 6, 2013

Intel® RAID Controller Maintenance Free Backup Unit (RMFBU) may fail to complete a learn cycle.

Products Affected

AXXRMFBU2	Used with RAID Modules RMS25CB080, RMS25CB040, RMS25PB080, RMS25PB040, RMT3CB080, RMT3PB080
RS25AB080	Ships with an RMFBU in the product package
RS25SB008	Ships with an RMFBU in the product package

No other Intel® Server Systems or accessories are impacted by this issue.

Description

The RAID controller or RAID Module may not successfully complete a learn cycle and the RAID controller/module firmware log will report that the RMFBU remains in a 0x804 (charging) status. The RAID volume will remain in write back mode and the RMFBU should have enough energy to complete a cache offload. However, there is a possibility of data loss during a power loss event if the charge level drops below the level required for the RMFBU to supply sufficient energy to copy cached data into non-volatile memory on the RMFBU (a Cache Offload).

A learn cycle charges the RMFBU super capacitor pack above the typical voltage level and measures decay over a short period of time in order to judge the health of the RMFBU. A learn cycle takes about 2 min to complete and cached data is protected during that time because super capacitor energy never drops below the minimum threshold needed to complete a cached data offload. Following a learn cycle, energy is maintained in the super capacitor via a small trickle charge. Learn cycles are scheduled by default to occur once every 28 days, although the schedule can be adjusted by the user.

Root Cause

The full charge indicator setting thresholds in the RMFBU firmware are set too tight for the normal variation of components used in the charging circuit on the RMFBU, preventing the RAID controller firmware from fully assessing the health of some RMFBU super capacitor packs. Environmental characteristics and circuit tolerance variability may also impact whether the thresholds are met. The "failure to initiate a learn cycle" error is only visible in RAID controller firmware logs.

Corrective Action / Resolution

The recommended workaround is to upgrade the RAID controller/module firmware to package version 23.12.0-0013 or newer. This firmware will force a learn cycle to occur if the raid firmware fails to complete a learn cycle. Once the learn cycle completes, the raid firmware will be able to successfully manage the RMFBU.

Please contact your Intel Sales Representative if you require more specific information about this issue.

Enterprise Platforms & Services Division
Intel Corporation