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

Intel Technical Advisory

TA-1050-2

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Intel® RAID Maintenance Free Backup Unit (AXXRMFBU2) Cache Offload Module failures may occur with an AC power loss while the power supplies are operating in Cold Redundancy mode

Products Affected

All Intel server systems configured with both an Intel® RAID Maintenance Free Backup Unit (AXXRMFBU2) and dual 750W AC Power Supplies.

Description

Intel has investigated a customer reported issue where the cache off-load module of the Intel® RAID Maintenance Free Backup Unit (AXXRMFBU2) failed to write back saved data during an AC power cycling test.

All of the following must be true for this issue to occur:

- The system is configured with an Intel® RAID Maintenance Free Backup Unit (AXXRMFBU2)
- Installed power supplies are 750W AC (part number **E98791-009 or earlier)**
- One of the installed power supplies is operating in Cold Redundant mode[1] when AC power loss occurs
- Both power supplies exhibit an AC loss at the same time - single or dual power source
- The output DC load on the system ranges from 120W – 216W

Root Cause

Intel has determined that the cache off-load module failure was due to a power/reset timing issue that may occur when AC power is lost. During an AC power loss event, the system power drops below its threshold before the system is able to assert a PCIe_RST# signal, causing a race condition to occur. The race condition prevents the RMFBU2 from initiating a memory write-back operation.

Note: A system with power supplies operating in a standard output redundant (1+1) or non-redundant (2+0) mode, will not be affected by this issue. Only systems with a power supply operating in a low power cold redundant mode may be affected by this issue.

[1] Cold Redundancy Mode - Power supplies that support cold redundancy can be enabled to go into a low-power state (that is, cold redundant state) in order to provide increased power usage efficiency when system loads are such that both power supplies are not needed. When the power subsystem is in Cold Redundant mode, only the needed power supply to support the best power delivery efficiency is ON. Any additional power supplies; including the redundant power supply, is in Cold Standby state

Corrective Action / Resolution

Intel has released new power supply firmware (ver 85.**.100) that will prevent the power race condition from occurring.

- Customers that decide they want to update their systems to address this issue can do so by updating the system BMC Firmware to revision **01.20.5793 or later** which incorporates the new power supply firmware. The power supply firmware is updated automatically with a BMC firmware update. The BMC firmware can be downloaded from the following Intel web site after March 16, 2014.

  http://downloadcenter.intel.com

- Intel will begin shipping systems with the updated 750W power supplies as they become available. 750W power supplies with updated firmware will have a part number of **E98791-010** or later. Customers will be notified of the power supply change through the standard Product Change Notification (PCN) process.

Workarounds

Because Intel ships all server systems configured with the power supply cold redundancy feature enabled, customers may choose to perform the BMC firmware updated described above, or as a more immediate precautionary step, they may choose to manually disable the power supply cold redundancy feature using the either of the following methods.

1.) Using Intel's EFI, MS-Windows, or Linux based SYSCFG utility, issue the following command:

syscfg /cr disable

Intel's SYSCFG Utility can be downloaded from Intel's download center website:

https://downloadcenter.intel.com

2.) Using the standard Linux or MS-Windows* based open source IPMITool, issue the following IPMI command:

Ipmitool raw 0x30 0x2d 0x01 0x00

Either method described above will disable the cold redundancy feature across system power cycles.

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

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