



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

# Intel Technical Advisory

TA1032-01

5200 NE Elam Young Parkway  
Hillsboro, OR 97124

July 22, 2013

## Intel® Modular Server MFSYS25V2, MFSYS25, MFSYS35 Excessive Physical Disk Migration to Spare Drive

### Products Affected

MFSYS25V2	Intel® Modular Server MFSYS25V2
MFSYS25	Intel® Modular Server MFSYS25
MFSYS35	Intel® Modular Server MFSYS35

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

### Description

The MFSYS25V2 Storage Controller Module (SCM) will monitor hard drive health, including counts of medium errors and reallocated sectors, SMART errors and SAS errors. If the SCM believes a hard drive is functional but in poor health, and if a spare drive is available to the storage pool, then the SCM will migrate the failing drive's data to the spare (PDM). When migration is complete the SCM will replace the drive in the array with the spare, mark the removed drive as predictive failure alert (PFA) and stale (meaning it has out-of-date array data). The user would then normally replace the PFA drive, and then revert the spare or create a new spare.

Physical Disk Migration is occurring too easily and causing healthy drives to be marked Predictive Failure Alert and unnecessarily replaced.

### Root Cause

The SCM tracks reallocated sectors and medium error counts, and compares to threshold values. If either count exceeds the threshold value, PDM is engaged if a spare is available. Currently these threshold values are set too low and can cause PDM to be triggered too easily.

### Corrective Action / Resolution

Major drive vendors were engaged for recommendations. Latest HDDs and SSDs are designed to tolerate more reallocated sectors and errors, and are more capable of self-identifying and reporting any health issues through SMART and SAS errors. The SCM firmware will be updated to reduce the probability to generate false PDMs by not using reallocated sectors or medium errors as criteria for engaging PDM. PDM functionality still exists and a PDM can still occur on a drive SMART error. Current target date for availability of Unified Firmware Update for MFSYS25V2 incorporating this updated SCM firmware is September 30, 2013.

There will not be a UFU incorporating this updated SCM firmware for the MFSYS25, MFSYS35, or for customers running MFSYS25V2 with Intel® Modular Server Virtualization Manager. Recommendation is to remove all dedicated spares and global spares from the storage configuration on these systems to avoid this issue.

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

Enterprise Platforms & Services Division  
Intel Corporation

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.

A "Mission Critical Application" is any application in which failure of the Intel Product could result, directly or indirectly, in personal injury or death. SHOULD YOU PURCHASE OR USE INTEL'S PRODUCTS FOR ANY SUCH MISSION CRITICAL APPLICATION, YOU SHALL INDEMNIFY AND HOLD INTEL AND ITS SUBSIDIARIES, SUBCONTRACTORS AND AFFILIATES, AND THE DIRECTORS, OFFICERS, AND EMPLOYEES OF EACH, HARMLESS AGAINST ALL CLAIMS COSTS, DAMAGES, AND EXPENSES AND REASONABLE ATTORNEYS' FEES ARISING OUT OF, DIRECTLY OR INDIRECTLY, ANY CLAIM OF PRODUCT LIABILITY, PERSONAL INJURY, OR DEATH ARISING IN ANY WAY OUT OF SUCH MISSION CRITICAL APPLICATION, WHETHER OR NOT INTEL OR ITS SUBCONTRACTOR WAS NEGLIGENT IN THE DESIGN, MANUFACTURE, OR WARNING OF THE INTEL PRODUCT OR ANY OF ITS PARTS.

Intel may make changes to specifications and product descriptions at any time, without notice. Designers must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined". Intel reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. The information here is subject to change without notice. Do not finalize a design with this information.

The products described in this document 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.