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

Intel Technical Advisory

TA-0964-1

5200 NE Elam Young Parkway
Hillsboro, OR 97124

October 8, 2010

Potential Data loss when using Disk Encryption RAID Controllers or Controllers/Modules when attached Self Encrypting Drives contain data and a AXXRPFKDE Activation Key is Added and/or Encryption is enabled.

Products Affected

- RS2BL080DE
- RS2PI008DE
- RS2BL080
- RS2BL040
- RS2PI008
- RS2MB044
- RS2SG244
- RS2WG160
- RS2MH080

Description

This affects customers that do not encrypt their self encrypting hard drives prior to Operating System installation or Data Storage use. Data may become unavailable when an unsecured logical volume is secured after initial creation and data is deployed onto the disk. This is dependent on the configuration of the data bands on the SED(s) that make up the volume before it is secured.

Root Cause

SED Drives may support many data bands. Each band itself has a unique password and encryption key. Most drives available today come with 2 bands; Band 0 is the global band and always encompasses the entire drive per the TCG spec, and Band 1 is configured as a user band with no Logical Block Addressing (LBA) range specified. Even when bands are unsecured (original factory setting), each write provided to the band is encrypted using the band's specific key to encrypt the data as it is written to the disk. When (MR) MegaRAID secures a Virtual Drive (VD), MR resets the user band (band 1) to the full LBA range. Any subsequent read

request will be decrypted using the band 1 key. This means that any data written to disk while Band 0 owned the LBA range is now unreadable. Subsequent securing/un-securing of the SED will always operate within band 1 . So, any data written to disk while blocks were owned by band 0 is no longer readable after LBA range is transferred to band 1. The data is not overwritten when the band ownership changed, but there is no way for the user to change the band association back to band 0 at this time.

Corrective Action / Resolution

Update to Firmware package version 12.9.0-xxxx. which can be found on the Intel.com web site. This build of the MegaRAID firmware version will not modify band sizes when enabling disk security, but will secure band0 (full drive size) and band 1 (at 0 LBA). On drive re-provisioning (secure erase) the FW will attempt to enable band1 to the full LBA range. If this call to the drive fails, the drive will be marked as "unsupported". The inability to make band1 the entire range of LBAs on the drive is an indicator that there are additional bands on the drive and this drive may be open for incident. Again, by enabling Drive Encryption prior to installation of an Operating System, partition creation or Data Storage usage will eliminate this potential data concern.

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

Enterprise Platforms & Services Division
Intel Corporation