intͺͺͺel® Technical Advisory

TA-0351-9

5200 NE Elam Young Parkway
Hillsboro, OR 97124

March 29, 2001

Intel® SC5000/SR2050 Server Platforms and Hard Drives Marked Off-Line.

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Products Affected

Product Combination	Product Code
SBT2 Server Board with SC5000 Chassis	SBT2, BBTBB, KHDHSRPU
STL2 Server Board with SC5000 Chassis	STL2, BTLBB, KHDHSU, KHDHSRPU
STL2 Server Board with SR2050 Chassis	STL2, BTLBB, KB2HST, KB2HSU

Note: The SR2100 chassis is not affected by this issue. It was included on previous revisions of this technical advisory due to the product launch delay. Production HSC v0.05 is present on all shipping SR2100 chassis.

Description
Intel has found that RAID controllers may simultaneously mark multiple drives as failed on the above listed platforms. Drives will not operate when marked as failed. This issue has been seen while running a disk stress test with various RAID controllers and Ultra 160 drives. The problem is potentially present in all HSC RAID configured applications, but it is believed that higher SCSI bus speeds aggravate the problem, i.e. Ultra 160 is at higher risk than Ultra 2.

Root Cause
The root of the problem is that the Hot Swap Controller (HSC) and Hot Swap Back Plane (HSBP) do not correctly capture and handle SCSI resets under intense SCSI bus activity.

Corrective Action
The STL2 and SBT2 server boards do not support the ability to do HSC firmware updates via downloads. Therefore, it is necessary to either obtain a replacement SC5000 SAF-TE card or a SR2050 HSBP with updated firmware, or to utilize a L440GX+ server board to perform the HSC firmware update to the SC5000 SAF-TE board or to the SR2050 HSBP. HSC update instructions are listed below.

Hot Swap Back Planes and SAF-TE cards will be flashed with the latest Hot Swap Controller firmware. If this issue affects you, you may obtain a replacement SC5000 chassis SAF-TE card or a replacement SR2050 chassis Hot Swap Back Plane by contacting Intel using your normal warranty process. Please indicate that you are calling regarding TA# 0351-X, and have the following information when you call: the part number requested (new SAF-TE card for SC5000 will be A29101-402, new HSBP for SR2050 will be 750615-404) and the total quantity needed. You will receive as many replacements as needed, however depending on availability you may not be able to get all replacements in the same week.

Planned availability for SC5000 SAF-TE cards and SR2050 Hot Swap Back Planes through the warranty process is due to begin the week of April 2, 2001. Please do not call to obtain replacement hardware before this date.

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A matrix that includes the version number of production HSC firmware for each affected platform is included below for your convenience.

Platform/Chassis	HSC Version Number	Upgradeable?
STL2/SR2100	Production HSC v0.05 available now for download.	Yes, using an L440GX+ board. No using an STL2 board.
STL2/SR2050	Production HSC v0.05 available now for download.	Yes, using an L440GX+ board. No using an STL2 board.
STL2/SC5000	Production HSC v0.02 now available for download.	Yes, using an L440GX+ board. No using an STL2 board.
SBT2/SC5000	Production HSC v0.02 now available for download.	Yes, using an L440GX+ board. No using an SBT2 board.

Instructions for marking a hard drive back online after the HSC has erroneously marked it off-line.

Intel Adapters:

If the drive marked off-line has an OS installed:
1) Boot from the RAID CD or the ARCU floppy diskettes made from web packages.
   a) If booting from the CD-ROM
        i) Select '3' Advanced Configuration Utility.
2) Press 'Enter' to go to Storage Console.
3) Press 'Enter' to continue.
4) Press 'Enter' to continue.
5) Scroll down to physical disk and press 'Enter'.
6) Press the 'right arrow key' to move the cursor over to the Action column.
7) Press 'Enter' and select make drive online.
8) Repeat steps 6 & 7 until all drives are back online.
9) Use the arrow keys to move to the Logical array section and select 'View/Actions'.
10) Make sure arrays are back online. If not scroll over to the Action column and select make array online.

If the drive does not have an OS installed, you may use the above process to bring drives online or follow roughly the same steps from the OS version of Storage Console.

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Mylex* Adapters (using EZassist):

1) Enter utility by pressing 'ALT-R' when prompted.
2) Select the correct controller that the drives are attached to.
3) Select 'Perform Administration on'.
4) Select 'Physical device'.
5) Select each drive that is offline and choose to make online.
6) Once this is done all arrays should come back online automatically.

Adaptec* Adapters:

1) Enter utility by pressing 'Ctrl-A' when prompted.
2) Drives should automatically come back online, but if not do the following:
    a) Press <Alt-F> to get to the pull down window.
    b) Select 'Read system config'.
            This should go out a perform bus scan bring the offline drives back online.

AMI* Adapters:

1) Enter the utility by pressing <Ctrl-M> during POST.
2) Using arrow keys select 'Objects'.
3) From the objects menu select 'Physical Drive'.
4) A listing of the drives connected and their state is displayed.
5) Proceed to highlight each drive that is off-line, press 'Enter', and choose 'Make Online'.
6) Once all drives are back online go back to the Objects option as in step 3.
7) Verify that all arrays came back online.

ICP* Adapters:

1) Enter the utility by pressing <Ctrl-G> at the appropriate time.
2) Press 'Enter' after highlighting the adapter you wish to view.
3) Press <F4> to enter into advanced setup.
4) Highlight Configure Physical Devices and press 'Enter'.
5) If all the devices are not present or not listed as operational, select 'rescan bus'.
    a) Type '*' to scan the entire bus, as this should find all devices on the bus and spin them up.
6) Once all drives are returned to operational status, 'ESC' out of the utility and reboot the system.
7) Enter the utility again and verify all arrays are back in the operational (non-failed) state.

SC5000 / SR2050 Chassis STL2 / SBT2 server board HSC firmware update instructions.

To perform the HSC firmware update using the L440GX+ server board:

1. Set up the L440GX+ server board for the HSC update by connecting the chassis front panel cable to the L440GX+ server board and the chassis front panel board. Connect the SCSI cable to the L440GX+ server board and the chassis

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hot swap back plane board. Connect the I2C cable to the front panel board and the chassis hot swap back plane board.
Note: The HSC firmware update will not complete if the I2C cable is not connected!

2.   Extract the HSC firmware .zip file to a floppy diskette. Check to make sure that the floppy diskette contains the firmware update utility (fwupdate.exe) and the HSC firmware .hex file (filename.hex).

3. Make the floppy diskette bootable to DOS, or plan to boot to DOS from a hard drive.

4. Power on the L440GX+ server board and boot to DOS from the floppy diskette or a hard drive.

5. Change to the A: floppy drive. (type A: <Enter>)

6.   At the A:\> DOS prompt, type the following: fwupdate filename.hex /upload <Enter>, where filename.hex is the name of the particular .hex file you are updating. The HSC firmware update will begin.

7. When the HSC firmware update is complete, press any key to continue. The HSC firmware update is now complete.

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

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