Tech TOPICS

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Soft Errors in SKS-HP Drives Due to Mishandling in Shipping

No. 11, 4/90

Problem: A few field sites where Zetaco's SKS-HP High Performance Disk Subsystems have been installed have seen a greater number of soft errors than expected reported by AOS/VS in the system error logs. While some soft errors are normal, a large number is abnormal and unacceptable.

Cause: We have determined that on some SKS-HP Subsystem shipments, the drives within the SKS-HP enclosure have received shock and vibration sufficient to offset the heads from their original location, resulting in difficulty in reading the factory-initialized areas.

Solution: There are several fixes for this problem, some of which Zetaco has done; the one that alleviates the problem <u>in most cases</u> must be done by you. Steps are discussed below.

What You Can Do:

1) **Reinitialize the disk subsystems at the customer's site** or at your designated reinitialization site. If some head movement has occurred, this process will remove head movement as a cause of the soft errors.

   Note: Reinitialization should consist of re-formatting the disk drive/s, followed by at least one pattern of surface analysis.....three patterns or more would be better, if time permits.

   Answer <u>YES</u> to "Retain Previously Relocated Sectors?" and <u>NO</u> to "Read Only Analyze."

2) **Run the reliability test on the subsystem before it ships** to your customer, to gain further subsystem confidence.

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What Zetaco Has Done: To reduce the occurrance of soft errors, we have taken these steps:

1) **SKS-HP Subsystems are now shipped on pallets.** We believe that part of the mishandling occurred because the small size of the packaging allowed the shipper to literally toss the box around. We continue to work on better packaging so that the pallets can be eliminated, but until this is available, shipments will continue on pallets for best protection. Please tell your shipping department to save the pallets for re-shipment.

2) **SKS-HP Controllers (SCZ-3.2) have been enhanced** to differentiate soft errors caused by media defects from those caused by other problems. The controller will now:
   1- directly report media soft errors,
   2- retry on non-media soft errors,
   3- report non-media soft errors only if retrys are unsuccessful.

All SKS-HP Controllers shipped after 3-23-90 have these changes, and have Controller revision number 500-492-00 revD or later.

Note: Kits are available to upgrade your SCZ-3.2 revC and below controllers to revD controllers. Upgrade kits are $250 each.

CAUTION: This firmware update should not be used in lieu of reinitializing the disk drives at the customer's site. We have observed that the reinitialization outlined on page 1 has resolved the majority of the soft errors we have seen in the field. The one site where soft errors persisted after the drives were reinitialized saw a significant reduction in the soft errors after the revD controller was installed.

Please see that everyone in your organization, who should be, is aware of these fixes. If you have any questions on the procedures outlined herein, please call your Zetaco Sales Representative at 612/941-9480, or our Customer Support Hotline at **800-537-5292.**