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

# intel® Technical Advisory

**TA-617-1**

5200 NE Elam Young Parkway
Hillsboro, OR 97124

1/10/2003

## Intel® RAID Controllers; RAID Levels 1, 4, 5, or 10 Drive Removal and Immediate Re-insertion May Cause An Array Failure



**Products Affected**

| Product Name | Order Code | Description |
|---|---|---|
| SRCU31 | BOXSRCU31A | Intel® RAID Controller SRCU31 |
| SRCU31L | BOXSRCU31LA | Intel® RAID Controller SRCU31L |
| SRCU32 | SRCU32U | Intel® RAID Controller SRCU32 |
| SRCMR | SRCMRU | Intel® RAID Controller SRCMR |
| SRCZCR | SRCZCR | Intel® RAID Controller SRCZCR |
| SRCS14L | SRCS14L | Intel® RAID Controller SRCS14L |
| SRCFC22C | SRCFC22C | Intel® RAID Controller SRCFC22C |

**Description**

A RAID 1, 4, 5, or 10 array configured using one of the Intel RAID controllers listed in the table above may experience a non-recoverable drive failure when the cache on the drives is turned on and one of the drives is removed and immediately reinserted. I/O operations will stop on the drive that was removed and reinserted, but will continue on the other active hard drives. Within approximately 1 minute of the removal and reinsertion, the adapter will begin beeping (if equipped with this feature) and may experience a non-recoverable failure. If there is a second host drive on the same channel with I/O operations running, both host drives may fail.

**Root Cause**

When removing a disk drive the user is notified by the controller/application that the host drive has gone into a failed state. The user may then safely reinsert a drive. However, if a drive that is configured with the cache on the drive turned on is pulled and immediately re-inserted into the slot, the data in the drive cache is lost and not written to the drive media. The drive, which was removed and re-inserted, may not yet have been recognized by the RAID controller as failed and may deliver invalid read data to the host.

Under normal conditions, the user is notified by the controller/application layer that the host drive is in a failed state and when a drive is reinserted, the drive is rebuilt, and the host drive is returned to a ready state.

RAID 0 host drives are non-redundant. Pulling a drive from an active RAID 0 host drive will result in the non recoverable loss of the host drive.

**Corrective Action / Resolution**

Intel is evaluating a correction for this problem and will include that correction in a future firmware release for Intel RAID controller products.

**Workarounds**

When removing a drive from a RAID 1, 4, 5, or 10 array, customers should verify that the controller has recognized the drive failure as noted by a failure beep code or in the configuration tool prior to re-inserting a drive.

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Turning off the hard drive cache is recommended as a means to avoid this failure.
Please contact your Intel Sales Representative if you require more specific information about this issue.

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