Product Alert 20

Product	StorNext® running Red Hat 4, Red Hat 5, SuSE 9, and SuSE 10
Summary	Possible data corruption due to Linux error handling
Date	November 2008

Overview

The appearance of SCSI "No Sense" messages in system logs can indicate possible data corruption on disk devices.

Symptoms

These messages are found in the Linux /var/log/messages file:

Apr 30 11:14:03 linc01a kernel: Info fld=0x0

Apr 30 11:14:03 linc01a kernel: sdi: Current: sense key: No Sense

Apr 30 11:14:03 linc01a kernel: Additional sense: No additional sense information

For more information, see Red Hat 5 CR 468088 or SuSE 10 CR 10440734121.

Cause

The messages come from an error processing code path and indicate that an unexpected event has occurred. The system is in error processing, but Linux treats it as successful and sets the number of bytes transferred to the size of the buffer. This is legitimate if the code indicates "RECOVERED_ERROR," but data corruption is possible when it indicates NO_SENSE.

Not all fiber channel errors map directly to SCSI error codes, so interaction between fiber channel and SCSI can result in ambiguity as to whether or not the transfer was successful in Linux.

Solution

StorNext is not made aware of the problem in the SCSI layer and below, so it is not possible to detect this in StorNext. If these messages appear, the hardware must be investigated to find the source of the problem.

Redhat and SuSE need to integrate a patch that treats "NO_SENSE" as an error instead of a successful I/O operation.