intel® Technical Advisory

TA-353-1

5200 NE Elam Young Parkway
Hillsboro, OR 97124

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STL2 and SBT2 TCO (total cost of ownership) Packet Processing Issue

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Products Affected
STL2, BTLBB, SBT2, BBTBB

Description
The TCO (total cost of ownership) feature of the Intel® 82559 network interface controller (NIC) allows support for remote access to server management features over the local area network (LAN). The Intel 82559 automatically filters packets based on the type of network traffic and routes TCO Server Management Packets to the Baseboard Management Controller (BMC). This feature is only available when enabled on a server board designed to support Direct Platform Control (DPC) over LAN. There is an issue that impacts the TCO feature as implemented on the STL2 and SBT2 server boards.

Under some circumstances, the Intel 82559 NIC, when functioning with the Receive TCO function enabled, can incorrectly identify fragmented IP packets as Server Management Packets, causing these packets to be transferred by the Intel 82559 to the Baseboard Management Controller (BMC). This transfer to the BMC occurs over the low-speed serial SMBus. Although this packet makes it into the network stack as well as to the BMC, during the time it is being transferred, additional packets that are received by the Intel 82559 can not be transferred beyond its 3K receive FIFO into system memory. If the FIFO fills up, subsequent packets directed to the Intel 82559 will be dropped, until the transfer to the BMC is completed, and the FIFO is cleared. If the IP fragment's origin was an application or protocol such as network file system (NFS) that tracks end-to-end delivery of data, then that protocol will retry the transmission, resulting in identical IP fragmentation, and the repeated dropping of a packet or packets. Eventually the application or protocol will cause an error condition such as dropping the network condition.

This issue can affect all STL2 server boards with BMC firmware version 1.17 or 11.17 and previous versions and all SBT2 server boards with BMC firmware version 1.17 and previous versions.

Root Cause
Although the TCO feature and DPC over LAN functionality are not supported features of the STL2 and SBT2 server boards, these TCO features are enabled by STL2 and SBT2 BMC firmware version 1.17 or 11.17 and previous versions. Having the TCO feature of the Intel 82559 NIC enabled makes the STL2 and SBT2 server board susceptible to the described issue.

Corrective Action / Resolution
STL2 BMC firmware version 1.19 and 11.19 and SBT2 BMC firmware version 1.19 disable the TCO feature. Disabling the TCO feature will not affect other remote management methods, such as remote/Emergency management through the COM2 port by modem. Since DPC over LAN is not a supported feature for the STL2 and SBT2 server boards, disabling the TCO feature of the Intel 82559 NIC has no effect on the functionality of any STL2 or SBT2 server board software or utilities.

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STL2 BMC firmware version 1.19 and 11.19 and SBT2 BMC firmware version 1.19 are available for download from iBL and http://support.intel.com. These BMC firmware versions will be incorporated into the STL2, BTLBB, SBT2, and BBTBB product codes in a future engineering change order (ECO) during Q2, 2001.

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

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