intel® Technical Advisory

TA-0658-2

5200 NE Elam Young Parkway
Hillsboro, OR 97124

July 23, 2003

Intel® Telco Industrial Grade Server TIGPR2U with BIOS P08 will not load Red Hat* Linux* SMP Kernel with more than two PCI cards installed.

Products Affected

Product	Product Codes	Product Description
Intel® Telco/Industrial Grade Server TIGPR2U	TLPA0201 TLPD0201 TLA0200 TLD0200	Production AC System Production DC System Production AC Bulk Pack Production DC Bulk Pack

Description

The Intel® Telco/Industrial Grade Server TIGPR2U running BIOS revision P08 with three or more PCI cards installed will not boot RedHat* Linux* AS 2.1 SMP kernel. The issue is limited to loading the SMP Kernel and BIOS P08, as a UP kernel will boot with BIOS P08. This has also been seen using RedHat* Linux* 8.0 and 9.0 with SMP Kernels.

Root Cause

Changes in BIOS P08 resulted in a decrease in available space in the memory runtime segment, where the MP (multi processor) table is stored. As the system boots, the BIOS builds the MP table in a temporary memory location and then copies the table to the runtime segment. When adapters are added to the system, information about each adapter is added to the MP table, making the table larger as each additional adapter is added. While attempting to write the table to the runtime segment, the BIOS discovers a lack of adequate space and the table is not written. When three or more adapters are added to the system the size of the MP table exceeds the available memory space. Without the MP table the operating systems listed in Description, above, are unable to load the SMP kernel.

Corrective Action / Resolution

A new release of system BIOS, P11 is available. This BIOS contains modifications that reserve adequate space in the runtime segment for an MP table for a fully loaded system and resolves all of the issues noted above. This BIOS can be loaded onto systems that require a fix to this issue.

Workarounds

The supported workaround to resolve the issues reported above is to upgrade to BIOS P11. Systems manufactured after July 28, 2003 will incorporate the P11 BIOS.

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

Enterprise Platforms & Services Division
Intel Corporation