

# STL2 Server Board

## *Specification Update*

*Intel Order Number A44369-008*

**March, 2002**



**Enterprise Platforms and Services Marketing**

## Revision History

Date	Revision Number	Modifications
October, 2000		Initial release.
November, 2000		Updated errata 10, 15, and 18 to change the status of each erratum from Fix to Fixed. Added errata 21 and 22
December, 2000		Updated errata 3, 11, 16, and 21 to . Changed the status of errata 11, 16, and 21 from Fix to Fixed. Added errata 23 and 24
January, 2001	001	Moved errata 1, 2, 4, 5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 18, 20, 22, 23, and 24 from the December 2000 STL2 Specification Update into the STL2 TPS Rev. 1.1. Renumbered remaining errata. Updated erratum 1 to add reference to SR2100 chassis. Added errata 7, 8, and 9
February, 2001	002	Updated errata 7 and 9. Added errata 10 – 14 and document change 1
March, 2001	003	Updated errata 10 and 11. Changed the status of erratum 10 from Fix To Fixed
April, 2001	004	Modified errata 2, 8 and 11. Added errata 15 – 20
May, 2001	005	Modified errata 1, 3, 4, 5, 15, 16, 17
June, 2001	006	Modified errata 3 and 16
July, 2001	007	Added BIOS 1.8. Added –304,–305 boards. Added errata 21, 22
August, 2001	008	Reformatted to be more consistent with other documentation Added Errata 23 & 24. Modified Errata 3, 16 & 22.
September 01	009	Removed Bios information for Rel 1.8, Build 22 since it is not ECO'd into product. Added errata 25,26.
October 01	010	No changes
November 01	011	Added Errata 27, 28, 29, 30
December 01	012	Added erratum 31
January 02	013	Added doc erratum 2
February 02	014	No Changes
March 02	015	Added –306 bd, erratum 32

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The STL2 Server Board may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

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## Preface

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This document is an update to the specifications contained in the *STL2 Server Board Technical Product Specification* (Order Number A44368-001). It is intended for hardware system manufacturers and software developers of applications, operating systems, or tools. It will contain Specification Changes, Specification Clarifications, Errata, and Document Changes.

Refer to the *Intel Pentium® III Processor Specification Update* (Order Number 244453-021) for specification updates concerning the Pentium III processor. Items contained in the Pentium III Processor Specification Update that either do not apply to the STL2 server board or have been worked around are noted in this document. Otherwise, it should be assumed that any processor errata for a given stepping are applicable to the Printed Board Assembly (PBA) revisions(s) associated with that stepping.

## Nomenclature

- **Specification Changes** are modifications to the current published specifications for the STL2 server boards. These changes will be incorporated in the next release of the specifications.
- **Specification Clarifications** describe a specification in greater detail or further highlight a specification's impact to a complex design situation. These clarifications will be incorporated in the next release of the specifications.
- **Documentation Changes** include typos, errors, or omissions from the current published specifications. These changes will be incorporated in the next release of the specifications.
- **Errata** are design defects or errors. Errata may cause the STL2 server board's behavior to deviate from published specifications. Hardware and software designed to be used with any given processor stepping must assume that all errata documented for that processor stepping are present on all devices.

## Product Scope

Below are the specific boards, BIOS and components covered by this update.

Baseboard Fab #	Baseboard PBA #	BIOS	SSU	Processor Stepping	Chipset Stepping (ServerWorks* ServerSet* III LE CNB30LE & ROSB4)
3	A28808-301	Release 1.1	Release 1R1	Pentium® III processor: cA2, cB0, cC0	RCC-NB6635-P02(2.2) RCC-IB6566-P03(A4.0)
3	A28808-302	Release 1.3	Release 1R1	Pentium® III processor: cA2, cB0, cC0	RCC-NB6635-P03(2.3) RCC-IB6566-P04(B1.0)
3	A28808-303	Release 1.7	Release 1R1	Pentium® III processor: cA2, cB0, cC0, cD0	RCC-NB6635-P03 (2.3) RCC-IB6566-P04 (B1.0)
3	A28808-303	Release 1.7	Release 1R1	Pentium® III processor: cA2, cB0, cC0, cD0	RCC-NB6635-P03 (2.3) RCC-IB6566-P04 (B1.0)
3	A28808-304	Release 1.7	Release 1R1	Pentium® III processor: cA2, cB0, cC0, cD0	RCC-NB6635-P03 (2.3) RCC-IB6566-P04 (B1.0)
3	A28808-305	Release 1.7	Release 1R1	Pentium® III processor: cA2, cB0, cC0, cD0	RCC-NB6635-P03 (2.3) RCC-IB6566-P04 (B1.0)
3	A28808-306	Release 1.12	Release 1R1	Pentium® III processor: cA2, cB0, cC0, cD0	RCC-NB6635-P03 (2.3) RCC-IB6566-P04 (B1.0)



## Summary Tables of Changes

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The following tables indicate the errata and the document changes that apply to the STL2 Server Board. Intel intends to fix some of the errata in a future stepping of components, and to account for the other outstanding issues through documentation or specification changes as noted. The tables use the following notations:

**Doc:** Intel intends to update the appropriate documentation in a future revision.

**Fix:** Intel intends to fix this erratum in a future release of the component.

**Fixed:** This erratum has been previously fixed.

**NoFix:** There are no plans to fix this erratum.

**Shaded:** This erratum is either new or has been modified from the previous specification update.

**Table 1. Errata Summary**

No.	Plans	Description of Errata
1.	NoFix	SC5000/SR2050/SR2100 chassis fault LED is always lit when the STL2 server board is installed
2.	NoFix	DOS load fails with Fujitsu* IDE hard drive model MPE3084AE
3.	NoFix	SSI power connector lacks extended latch to accommodate ATX power cable
4.	NoFix	1GHz heatsink clip is difficult to install on secondary processor socket from Molex
5.	NoFix	Primary and secondary processor VRM circuit support for 1.133GHz processors
6.	Fixed	Processor Errors during POST following quick system power cycling
7.	Fixed	SC5000 fault LED does not turn off after fan failure return to normal state
8.	NoFix	Description of fan failure event in system event log (SEL)
9.	Fixed	3-Mode Floppy drives not supported
10.	Fixed	Pressing the sleep button will not wake the server board from the S1 state
11.	Fixed	RAID card software may show erroneous temperature sensor readings for the STL2/SR2050 system hard disk drive SAF-TE enclosure
12.	Fixed	Powering on without memory installed causes processor POST error
13.	NoFix	Sun* Solaris* 8 installation issues
14.	Fixed	Microsoft* Windows* 2000 installation issue with USB enabled in BIOS Setup
15.	NoFix	Front Panel NIC LED exhibits activity when the system is off or in sleep state
16.	NoFix	Certain PS/2 Keyboards are not detected by BIOS or cause no video conditions
17.	Fixed	BMC Firmware Update Utility Anomalies
18.	Fixed	STL2/SC5000 interaction issue with ICP Vortex* RAID Controller
19.	Fixed	TCO Packet Processing Issue
20.	Fixed	BIOS containing Microcode Update Fix for 933MHz B stepping Pentium® III Processor Erratum
21.	NoFix	Teac CD-ROMS not being recognized by the STL2 board
22.	NoFix	Anomaly when upgrading STL2 BMC firmware
23.	Fix	Windows* 2000 Device manager may show 4 USB ports available for use by the user
24.	Fix	System BIOS running out of Option ROM space or not assigning Memory resources

25.	NoFix	Incorrect hard drive capacity may be displayed during POST
26.	NoFix	On Screen Video Noise Present during heavy system loads
27.	NoFix	Redhat* 7.0 does not install with 16 drives connected initially
28.	NoFix	SN-124 CDROM not detected during POST
29.	Fix	STL2 does not boot from IDE CompactFlash cards with certain BIOS revisions
30.	NoFix	STL2 forced to use processor with error using low quality analog or digital KVM's
31.	NoFix	Unixware* 7.1.1 Resource conflict when installing a new HBA to the STL2 server board
32.	NoFix	Emulex* LP800 BIOS does not initialize

**Table 2. Documentation Changes**

No.	Plans	Description of Documentation Change
1.	Fix	Intel® STL2 Server Board Quick Start Guide processor speed jumper configuration
2.	Fix	Intel® STL2 Server Board Technical Product Specification absolute maximum temp

Following are in-depth descriptions of each erratum / documentation change indicated in the tables above. The errata and documentation change numbers below correspond to the numbers in the tables.

## Errata

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### 1. SC5000/SR2050/SR2100 chassis fault LED is always lit when the STL2 server board is installed

Problem	The SC5000, SR2050, and SR2100 chassis front panel boards combine the power LED signal with the fan fault LED signal into a single system fault LED. The STL2 server board implements the power fault LED signal (pin 8 of the front panel connector) as a High True signal. The fan fault LED signal (Pin 6 of the front panel connector) is implemented as a Low True signal. The mixing of the High True power fault LED signal and the Low True fan fault LED signal results in the system fault LED being illuminated whenever power is applied to the system. Customers with third party chassis designs utilizing front panels that combine the power fault and fan fault LED signals into a single system fault LED may also experience this issue. Customers with third party chassis designs utilizing front panels that implement separate discrete power and fan fault LEDs should not experience this issue
Implication	The system fault LED will be illuminated whenever power is applied to the system when the STL2 board is installed in the SC5000, SR2050, or SR2100 server chassis.
Workaround	The STL2 Server boxed board (STL2) includes an alternate front panel cable (Intel part number A37010-001) for use with the SC5000, SR2050, or SR2100 server chassis, or any third party chassis designs utilizing front panels that combine the power fault and fan fault LED signals into a single system fault LED. A front panel cable spare kit (FTLFPCBL, MM# 832781) will be available for customers taking the BTLBB SKU that need to use this cable. The alternate front panel cable effectively removes the physical fan fault LED signal from the system fault LED circuit by disconnecting front panel pins 4 and 6, and also re-routes the power fault LED signal from pin 8 to pin 4. The alternate cable needs to be used in combination with a modified STL2 BMC firmware, version 11.1X, that routes both the power and fan fault LED signals to pin 8 on the STL2 server board, thus forming a single system fault LED. STL2 BMC firmware version 11.1X is included on the STL2 boxed board country kit CDROM and is also available for download from the web at <a href="http://support.intel.com/support/motherboards/server/stl2/">http://support.intel.com/support/motherboards/server/stl2/</a> .
Status	No Fix.

### 2. DOS load fails with Fujitsu IDE hard drive model MPE3084AE

Problem	DOS cannot be loaded to Fujitsu IDE hard drive model MPE3084AE. The system hangs during the installation.
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Implication	The Fujitsu IDE hard drive model cannot be utilized with the STL2 server board.
Workaround	No workaround exists for this issue.
Status	No fix.

### 3. SSI power connector lacks extended latch to accommodate ATX power cable

Problem	The STL2 24-pin SSI power connector does not have an extended latch to help secure ATX power cables. The 24-pin SSI power connector used on other Intel boards has an extended latch feature that secures 20-pin ATX power cables to the 24-pin SSI baseboard power connector.
Implication	Without the extended latch to secure the cable, the 20-pin ATX power supply cable may disconnect during shipping. This issue does not affect the STL2 server board when used in the SC5000 or SR2050 chassis. This issue will affect customers using a third-party chassis with 20-pin ATX power supply cables.
Workaround	Customers should be aware of this issue and should secure long power supply cables to reduce the risk of 20-pin power supply cables disconnecting during shipping.
Status	No Fix.

### 4. 1 GHz heat-sink clip is difficult to install on secondary socket from Molex

Problem	It is difficult to install the heat-sink clip included with 1 GHz boxed Intel® Pentium® III processors for the PGA370 socket on STL2 server boards built with a secondary CPU socket from the manufacturer, Molex, due to the very close proximity of the capacitor at location 9D8. This issue is not present on STL2 server boards built with a secondary CPU socket from the manufacturers AMP or Foxcon, because the tab to which the heat-sink clip attaches is slightly smaller than the tab on the Molex connectors.
Implication	it is difficult to install the heat-sink clip included with 1 GHz boxed Intel® Pentium® III processors for the PGA370 socket on STL2 server boards built with a secondary CPU socket from the manufacturer Molex.
Workaround	It is possible to install the heat-sink clip included with 1 GHz boxed Intel® Pentium® III processors for the PGA370 socket on STL2 server boards built with a secondary CPU socket from Molex. To make the installation as easy as possible, it is recommended that the processors and heat sinks be installed before the STL2 server board is installed into the chassis. When installing the

processors and heat sinks, the STL2 server board should be placed on a flat, firm, ESD-protected surface. Follow the installation procedures included with the 1 GHz boxed Intel® Pentium® III processors for the PGA370 socket when installing the heat-sink clip. It is necessary to apply force to the heat-sink clip tab until the clip latches into place.

Status No Fix

## 5. Primary and secondary processor VRM circuit support for 1.133GHz processors

Problem The STL2 Fab 3 server board primary and secondary voltage regulator module (VRM) circuits do not support 1.133 GHz Pentium® III processors.

Implication 1.133 GHz Pentium® III processors cannot be used with the STL2 Fab 3 server board.

Workaround No workaround exists for this issue.

Status No Fix.

## 6. Processor Errors during POST following quick power cycling

Problem Processor errors may appear during POST following quick system power cycling. If the STL2 server board is powered on and then powered off before the FRB-3 timer completes (about 10 seconds), the STL2 BIOS does not stop the FRB-3 timer. In addition, the BMC firmware does not stop the FRB-3 timer automatically, so a FRB-3 timeout occurs, disabling the bootstrap processor (BSP). This causes a processor error to appear during POST when the system is next powered on.

Implication Processor errors may appear during POST following quick system power cycling.

Workaround The processor error can be cleared through <F2> BIOS Setup. Select Main / Processor / Clear Processor Errors. Press F10 and then Enter to Save Changes and Exit. The processor error should not appear on the next boot.

Status Fixed. This erratum is fixed in BMC Firmware Release 1.17 and later.

## 7. SC5000 fault LED does not turn off after fan failure return to normal state

Problem When the STL2 server board is installed in the SC5000 chassis, a fan failure on either of the system fans connected to locations P27 or P29 on the STL2

server board will cause the SC5000 chassis front panel fault LED to blink. If the fan returns to its normal state, the SC5000 front panel LED does not stop blinking. It is necessary to power down the system in order for the front panel LED to return to the normal, unlit state.

Implication	The SC5000 chassis front panel LED will continue to blink after the fan state returns to normal until the system is powered down and rebooted.
Workaround	Powering down and rebooting the STL2 / SC5000 server system will de-assert the front panel fault LED if the fan failure has returned to its normal state.
Status	Fix. This issue has been fixed in STL2 FRU/SDR version 4.3.8 and later versions.

## 8. Description of fan failure event in the System Event Log (SEL)

Problem	<p>The STL2 server board logs fan failure messages in the System Event Log with the following notation:</p> <pre>Fan #XX Upper Non-critical - going high. Trigger Reading = 0xFF. Trigger Threshold = 0x45. Asserted Event.</pre> <p>The message text "Upper Non-critical - going high" refers to the system temperature going high, not the fan speed going high.</p>
Implication	The message text "Upper Non-critical - going high" should be interpreted by the user as referring to the system temperature going high, not the fan speed going high.
Workaround	No workaround exists for this issue.
Status	No Fix

## 9. 3-Mode floppy drives not supported

Problem	3-mode floppy drives are not supported by the STL2 BIOS Release 1.3 (Build 17) and earlier versions.
Implication	3-mode floppy drives can access only 1.44 MB floppy diskettes.
Workaround	No workaround exists for this issue.
Status	Fixed. Support for 3-mode floppy drives has been included in STL2 BIOS Release 1.5 (Build 19) and later versions.

## 10. Pressing the sleep button will not wake the server board from the S1 state

Problem	When an ACPI operating system, such as Microsoft* Windows* 2000 Advanced Server, is in use, and the system is in the S1 (processor sleep) state, pressing the sleep button will not change the S1 state to the S0 (normal running) state. The STL2 BIOS EPS states that the STL2 server board supports waking the system from the S1 state with the sleep button.
Implication	The STL2 server board cannot transition from the S1 to S0 ACPI states by pressing the system sleep button.
Workaround	This issue has been fixed in STL2 BIOS Release 1.6 (Build 20) and later versions.
Status	Fixed. This issue has been fixed in STL2 BIOS Release 1.6 (Build 20) and later versions.

## 11. RAID card software may show erroneous temperature sensor readings for the STL2 / SR2050 system hard disk drive SAF-TE enclosure

Problem	RAID card monitoring software may show erroneous temperature sensor readings for the STL2 / SR2050 system hard disk drive (HDD) SAF-TE enclosure. The root cause of this issue is that the STL2 server board does not have an IPMB bus to allow monitoring of the HDD SAF-TE card. Therefore, the RAID monitoring software is not able to read actual values from the HDD SAF-TE enclosure.
Implication	Monitoring software provided with RAID cards will not correctly monitor the temperature of the STL2 / SR2050 system HDD SAF-TE enclosure. The temperature sensor readings should be ignored.
Workaround	This issue has been fixed in SR2050 / SR2100 / STL2 HSC firmware, version 0.06 and later versions.
Status	Fixed. This issue has been fixed in SR2050 / SR2100 / STL2 HSC firmware, version 0.06 and later versions.

## 12. Powering on without memory installed causes processor POST error

Problem	If the STL2 server board is powered on without system memory installed, then powered off, system memory installed and powered on again, the following error will appear during POST:
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ERROR
0B5F: Forced to use Processor with error.
Press <F1> to resume, <F2> to Setup, <F12> to Network

```

Implication	If the STL2 server board is powered on without system memory installed, the next time the system is powered on, a processor POST error will appear.
Workaround	It is necessary to use BIOS <F2> setup and select the option to clear processor error to clear the error message.
Status	Fixed. This issue has been fixed in STL2 BIOS Release 1.5 (Build19) and later versions.

### 13. Sun\* Solaris\* 8 installation issues

Problem	Sun* Solaris* 8 cannot be installed on the STL2 server board with any BIOS version later than BIOS Release 1.1 (Build 15). The system reboots during the install and therefore the installation cannot be completed.
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One of the changes between BIOS Release 1.1 (Build 15) and BIOS Release 1.2 (Build 16) was the removal of one of the I/O interrupt entries from the MP table: the I/O interrupt entry for IRQ0, interrupt type 'INT'. This change was made because ServerWorkds\* OSB4 component does not deliver IRQ0 to the APIC on any INTIN# pin. Therefore, the MP table should not have an I/O interrupt type 'INT' entry for IRQ0. STL2 BIOS Release 1.1 (Build 15) contained an interrupt source override structure in the ACPI APIC table for IRQ0. This structure was removed because it described IRQ0 as being connected to INTIN 2.

However, this is not true as described. If there is no override structure, then the operating system can assume the IRQs follow a one-to-one mapping. This is allowed by the ACPI specification v1.0b. IRQ0 is not connected to INTIN0. The ACPI specification v1.0.b does not provide a way for the BIOS to tell the operating system that IRQ0 is not mapped.

Solaris 8 appears to make the assumption that IRQ0 is mapped to INTIN0. INTIN0 is really connected to the INTR (interrupt request) line. During the Solaris 8 install, the system reboots, apparently due to the invalid mapping. If the interrupt source override structure is present for IRQ0 to map to it in INTIN2, as in STL2 BIOS Release 1.1 (Build 15), Solaris 8 does not reboot, and completes the installation. Since INTIN2 is connected to SMI, every time an SMI occurs, the operating system thinks it has received a timer tick (IRQ0).

Implication	The installation of Sun Solaris 8 cannot be completed on an STL2 server board that is running any BIOS release greather than Release 1.1 (Build 15).
Workaround	Sun Solaris 8 will successfully install on the STL2 server board with BIOS Release 1.1 (Build 15).



Status No Fix. Intel made the described changes to the MP table in order to support the operating systems on the STL2 tested hardware and OS list.

#### **14. Microsoft Windows\* 2000 installation issue with USB enabled in BIOS Setup**

Problem Microsoft Windows\* 2000 cannot be installed on the STL2 server board with BIOS Release 1.3 (Build 17) and previous versions when the USB controller has been set to “Enabled” in <F2> BIOS Setup. The STL2 USB controller is set to “Disabled” by default.

Implication If the STL2 USB controller is set to “Enabled” in BIOS Setup, Windows 2000 will hang during installation.

Workaround Windows 2000 will install on the STL2 server board if the USB controller is set to “Disabled” in BIOS Setup.

Status Fixed. This issue has been fixed in STL2 BIOS Release 1.5 (Build 19) and later versions.

#### **15. Front Panel NIC LED exhibits activity when the system is powered off or in Sleep State**

Problem When the STL2 server board is powered off or is in a sleep state, the front panel NIC LED exhibits activity.

Implication When the STL2 server is installed in the SC5000, SR2050, or SR2100 chassis, the front panel NIC LED will exhibit activity when the system is powered off or is in the sleep state.

Workaround This is expected behavior.

Status No Fix.

#### **16. Certain PS/2 Keyboards are not detected by BIOS or cause no video conditions**

Problem PS/2 keyboards that utilize keyboard connector pins 2 or 6 may not be detected by the STL2 BIOS, or may cause a no video condition when connected to the STL2 server board. Keyboards which have been found to exhibit this issue are Samsung\* Electrics (SEM-A17K), Samsung\* Magic Keyboard (model not listed), Samsung\* (SEM-A17S), and Fujitsu\* (FKB8735-T201). These keyboards either are not compatible or they utilized keyboard connector pins 2 and 6.

Implication	The Intel STL2 server board either will display “Keyboard Error” during BIOS POST, or it will fail to provide a video display.
Workaround	No workaround exists for this issue.
Status	No Fix.

## 17. BMC Firmware Update Utility Anomalies

### Problem / Implications

Several anomalies exist with the SBT2 BMC Firmware Update Utility. These are:

- Problem: Displays the message “Display Firmware Management Information” upon booting.
- Implication: An inconvenience; no adverse implications.
- Problem: Command-line switches not implemented.
- Implication: No command-line interface available; menu-driven only.
- Problem: Utility does not reset after an update. Instead it powers down.
- Implication: Automation is difficult and requires power down following an update.  
Note: This will not be fixed, due to an architecture limitation.
- Problem: Utility cannot be used after loading himem.sys.
- Implication: Himem.sys allows other programs that use the upper memory, instead of conventional memory, such as network drivers.
- Problem: Utility must run from a floppy disk.
- Implication: Files cannot be loaded on hard disk drives, which is inconvenient.
- Problem: Utility does not display revision or version number.
- Implication: No adverse implications.
- Problem: Utility does not display company name or copyright information.
- Implication: No adverse implications.
- Problem: Utility does not display usage information with the ‘/?’ command-line switch.
- Implication: No adverse implications because the utility does not have command-line options.
- Problem: Key mappings could be altered after usage, but before reboot.
- Implication: An inconvenience. No adverse implications because a power down is required after an update.
- Problem: Utility requires a minimum of 377 KB of conventional memory to run.
- Implication: This could inhibit the use of network drives to load the BMC firmware.

Workaround Use BMCSDRUP.EXE Utility version 2.21.

Status: Fixed. The above problems are fixed in version 2.21, except for the noted power issue, as noted above.

## 18. STL2/SC5000 interaction issue with ICP Vortex\* RAID Controller

Problem When using an ICP Vortex RAID controller in a STL2/SC5000 system with Hot Swap Controller (HSC) firmware v. 0.02, an error message is encountered when selecting the option to configure the SC5000 hot swap backplane (HSBP) in the ICP Vortex RAID Controller's Advanced setup menu.

Implication This issue has no impact on system functionality. It is not actually possible for the ICP Vortex RAID Controller's Advanced Setup menu to configure the SC5000 HSBP, even if this error message was not encountered.

Workaround This issue has been fixed in a new release of the HSC Firmware .03.

Status Fixed. This is fixed in SC5000/STL2/SBT2 HSC Firmware version 0.03 and later versions.

## 19. TCO Packet Processing Issue on Intel® STL2 Server Boards

Problem 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 server board. 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.

Implication	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.
Workaround	By disabling the TCO feature, this 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 server board, disabling the TCO feature of the Intel 82559 NIC has no effect on the functionality of any STL2 server board software or utilities. It is necessary to load BMC Firmware 11.19 or 1.19 (depending on chassis) to correct this. The version can be found at <a href="http://support.intel.com/support/motherboards/server/stl2/">http://support.intel.com/support/motherboards/server/stl2/</a> .
Status	Fixed. This erratum is fixed by using BMC Firmware version 1.19 or 11.19 and later versions.

## 20. BIOS containing Microcode Update Fix for 933MHz B stepping Pentium® III Processor Erratum

Problem	When 933MHz B stepping Pentium® III processors are installed in the STL2 server board the products may be affected by the “High Temperature and Low Supply Voltage Operation May Result in Incorrect Processor Operation” processor erratum. This erratum is documented in the Intel® Pentium® III Processor Specification Update, order number 244453-028, as erratum #E76.
Implication	Please reference these Specification Update documents for further details about the erratum.
Workaround	In order to get around this, the STL2 server board must use BIOS Release 1.7, Build 21 or greater.
Status	Fixed. This erratum is fixed by using BIOS Release 1.7 Build 21 or greater.

## 21. Teac CD-ROMS not being recognized by the STL2 board

Problem	When certain versions of the slim line TEAC CD-ROMs are installed in the SR2XXX chassis in conjunction with the STL2 server board, the CD-ROMs are not visible in POST or able to be booted from. The problem is with the TEAC Firmware setting the drive to CABLE SELECT by default. The drive responds to the cable select signal the same way as the Samsung drive Intel SR2XXX ships with. The main difference is in the adapter board some CD-ROMs are using. They pass the cable select line through to the drive where the Samsung adapter board that Intel SR2xxx uses does not. This is placing the drive in SLAVE mode, and the drive will not work as a slave without a master.
Implication	System will not be able to use the CD-ROM for booting or accessing the files on any CD placed in the TEAC CD-ROM drive.

Workaround	There are at least 2 solutions. <ul style="list-style-type: none"><li>• 1. Use a TEAC CD-ROM drive model -B83 instead of -B93. The difference is in the way the drive firmware interprets the state of CSEL, the cable select signal.</li><li>• 2. Acquire a different adapter board that leaves CSEL open like the Samsung board that the Intel SR2XXX ships with.</li></ul>
Status	NoFix. This issue will not be fixed on the STL2 board.

## 22. Anomaly when upgrading STL2 BMC Firmware

Problem	When upgrading the STL2 BMC firmware, the user may encounter an occasional error as follows:  <pre>BaseBoard Management Controller Self test Result Failed Error:0BB0: SMBIOS - SROM Data read error Error:0B90: BMC Platform Information Area Corrupted</pre> This is an anomaly that Intel has discovered when upgrading the BMC firmware.
Implication	Although this may appear fatal, the problem can be worked around. Please see workaround for details.
Workaround	In order to get around this, the STL2 server board firmware must use upgraded twice in a row. If this does not work properly, the board must be returned via the standard RMA process.
Status	NoFix.

## 23. Windows\* 2000 Device manager may show 4 USB ports available for use by the user

Problem	After an installation of Windows* 2000 Advanced Server with Service Pack 1, the user may encounter the device manager claiming to have 4 USB ports available.
Implication	This is an issue with the ROSB4 Server Set LE III chipset. While 4 ports will display in the device manager, only 2 ports will be useable. This will not affect the functionality of the OS.
Workaround	This issue will be addressed in a future BIOS release for the STL2 board.
Status	Fix. This issue will be fixed in a future BIOS release for the STL2 board.

## 24. System BIOS running out of Option ROM space or not assigning Memory resources

Problem	Upon installing certain cards that require greater than 384MB of Option ROM space, the system POST screen will display a PCI Resource conflict, and will not recognize the suspect device.
Implication	When certain cards are placed in the PCI slots that require more than 384MB of option ROM space, the system will display
	<code>PCI RESOURCE CONFLICT - PCI in slot...,Bus: 00, Device:07, Function:00.</code>
	This will prevent the BIOS and operating system from recognizing the card.
Workaround	This issue will be addressed in a future BIOS release for the STL2 board.
Status	Fix. This issue will be fixed in a future BIOS release for the STL2 board.

## 25. Incorrect hard drive capacity may be displayed during POST

Problem	The STL2 onboard AIC7899 with Bios 2.57.S7 may show an incorrect capacity under [Options]-[SCSI Disk Utilities] when a large harddisk is connected.
Implication	This issue is merely a display aesthetical inconvenience. This issue has not affected the way any OS listed in the Tested Hardware & OS List sees hard disks.
Workaround	This issue will not be fixed in a future release of the STL2 BIOS.
Status	NoFix

## 26. On Screen Video Noise Present during heavy system loads

Problem	When the STL2 server board is under heavy system loadm mainly involving memory accesses, slight on screen video noise can be observed. The issue is independent of monitor resolution and frequency. The issue is also independent of quantities of CPUs installed, memory size and monitor type.
Implication	This issue has been seen, and investigated thoroughly. There is no adverse affect on either memory, disk or PCI subsystem. The following are the investigation conclusions: 1. Our scope sample rate was at 10GS/s (Provided sufficient resolution for several hundred MHz signals). 2. Our engineering team did not notice any cross talk appearing at the video connector or the video controller ends of the traces. 3. Our engineering team concluded that PCI problems would not lead to this type of noise on the video signal. However, our engineering team did check

several PCI data and control signals and found them to be clean.

4. Our engineering team checked RED, BLUE, and GREEN signals; they appear synchronous to the HSYNC.

5. Our engineering team checked the signal quality of HSYNC and did not notice any glitches, sag, duty variation, or other distortion.

6. Our engineering team checked the ground, 3.3V, and 5V power to the video controller and found them to be within the specified tolerances.

Workaround None.

Status NoFix

## 27. Redhat\* 7.0 does not install with 16 drives connected initially

Problem Redhat 7.0 will not install with 16 hard drives connected to the system initially. This is due to a kernel limitation on the boot floppy.

Implication This issue is merely an inconvenience due to the generic boot floppy (or CD) kernel limitation.

Workaround This issue can be worked around by removing any excess hard disk drives that are not needed immediately, install the OS, and then reattach the drives after the OS is finished installing (attach drives when the system is off if the drives are not hotswap capable).

Status NoFix

## 28. SN-124 CD-ROM not detected during POST

Problem During some boots, the Samsung\* SN-124 CD-ROM is not detected during POST.

Implication The CD-ROM will not be able accessible to the OS or the user if this happens.

Workaround This issue can be worked around by entering BIOS and changing the CMOS setting for Hard Disk Pre-Delay to ENABLED for 3 seconds.

Status NoFix

## 29. STL2 does not boot from IDE CompactFlash cards with certain BIOS revisions

Problem The STL2 server board will not boot from IDE CompactFlash cards with BIOS revisions 16 – 22.

Implication	The STL2 server board will not boot if the IDE CompactFlash is the only boot device attached. This is only used in highly specialized applications.
Workaround	This issue will be resolved in future releases of the STL2 BIOS.
Status	Fix

### 30. STL2 forced to use processor with error using low quality analog or digital KVM's

Problem	If the STL2 server board is powered on while not on the same channel of a low quality analog or digital KVM, the following error will appear during POST:  <pre>ERROR 0B5F: Forced to use Processor with error. Press &lt;F1&gt; to resume, &lt;F2&gt; to Setup, &lt;F12&gt; to Network</pre>
Implication	When connected to a low quality analog or digital KVM (due to implementation differences in KVM's and the STL2 interaction to them) the STL2 board does not detect a keyboard during POST, and causes the STL2 board to enter hold times that exceed board FRB times (10 minutes, to be precise). If the STL2 server board is allowed to enter the condition as described above, the error will continue to appear until the error is cleared. It is highly likely that the error will appear once again if the conditions do not change. The system will only see one processor at that point as well.
Workaround	This issue can be worked around by using KVM's that are good quality or not using KVM's at all. Intel uses APEX* Outlook EL-80DT in their validation labs.
Status	NoFix

### 31. Unixware\* 7.1.1 Resource conflict when installing a new HBA to the STL2 server board

Problem	When a new add-in Host Bust Adapter (HBA) is added to the STL2 server board running UnixWare 7.1.1, the system continuously attempts to rebuild the kernel and reboot. At each reboot, the system again tries to rebuild the kernel and reboot, putting the system into a kernel rebuild then reboot cycle.
Implication	Normal operation would be for the kernel to be rebuilt only once after the driver was installed, the to reboot the system. System continually reboots after a kernel build, preventing the OS from finishing its load.
Workaround	This issue appears to be related to the way that Unixware 7.1.1 assigns resources. The DCU shows two IDE devices, however there is only one on the server board, with an interrupt of 0. When an HBA is installed and the driver added, the resource manager rescans all devices to adjust and assign new



hardware resources if necessary. Even though the second IDE channel is not being given resources by BIOS, UnixWare sees the device and assumes that it needs to rebuild the kernel and reboot to free the required resources (Int 15). Once Unixware reboots, it still cannot assign the required resource and once again rebuilds the kernel and reboots. This cycle can be stopped by pressing the ESC key when Unixware prompts to rebuild the kernel (instead of Enter), allowing the system to continue booting. Once the system is up, enter the DCU, go to hardware devices, find the second IDE channel with an Int of 0, place the cursor on the Y in the left hand column, then press F2 to change this Y to N. Press F10 to exit the hardware manager, apply changes and exit, then reboot. This will prevent UnixWare from attempting to configure the second IDE channel on reboot and the system should boot and operate normally until the system configuration is changed again. If HBAs and drivers are changed in the future, you will probably have to repeat this procedure to prevent the kernel rebuild/reboot cycle from occurring again.

Status NoFix

### 32. Emulex\* LP800 BIOS does not initialize properly

Problem When a new Emulex LP800 add-in adapter is added to the STL2 server board, the BIOS on the LP800 may not always initialize properly.

Implication The user would not have access to the LP800 during any OS installations, or after the OS is installed, access to the devices on it.

Workaround This issue appears to be related to the way that the STL2 BIOS assigns resources. The workaround is to disable the onboard network component on the STL2 BIOS setup when using the Emulex LP800.

Status NoFix



## Documentation Changes

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### 1. Intel® STL2 Server Board Quick Start Guide processor speed jumper configuration

Problem	The Intel STL2 Server Board Quick Start Guide states in the Installation Procedures, Installing Processors section on page 14, “after you have installed the processor(s), you must configure the speed jumpers.” It is not necessary to configure the STL2 processor speed jumper block if production processors are being used. It is only necessary to configure the STL2 processor speed jumper block if pre-production processors are being used. If pre-production processors are used and jumper block 5E1 is not configured, the processor speed will reset to the factory default setting of 533 MHz.
Implication	It is not necessary to configure the STL2 server board processor speed jumper block 5E1 if production processors are being used.
Workaround	None.
Status	Fix. The next revision of the Intel STL2 Server Board Quick Start Guide will state that it is only necessary to configure the processor speed jumper block 5E1 if pre-production processors are being used.

### 2. Intel® STL2 Server Board Technical Product Specification absolute maximum temperature

Problem	The Intel STL2 Server Technical Product Specification v1.1 states in Absolute Maximum Ratings section on page 6-82, that the operating temperature range is from 0 deg C to +55 deg C. These numbers should read 0 deg C to +50 deg C.
Implication	If operating the STL2 board above the stated +50 deg C, the system could become unstable and exhibit erratic behavior.
Workaround	None.
Status	Fix. The next revision of the Intel STL2 Server Technical Product Specification will state the operating temperature range change to 0 deg C to +50 deg C.