Intel® Server Board S5000PAL
Intel® Server Board S5000XAL
Intel® Server System SR1500AL
Intel® Server System SR1550AL
Intel® Server System SR2500AL

Intel Order Number D65289-017

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Enterprise Platforms and Services Marketing

Revision History

Date	Modifications
Jun. 2006	Initial release.
Aug. 2006	Updated errata #6, 8, 16, 18, 19, 21, 22, 23, 24, 25, 26, and 27. Erratum #28 has been added
Nov. 2006	Errata #30, 31, 32, 33, 34 have been added; Documentation change 3, 4 have been added.
Feb. 2007	Errata # 35, 36, 37 have been added; Updated Erratum # 25, 33.
Mar. 2007	Errata # 38, 39, 40 have been added.
Apr. 2007	Errata #41 and 42 have been added.
Jun. 2007	Errata # 42, 43, 44, 45, 46, 47, 48, 49 have been added.
Jul. 2007	Updated errata #36 and #42. Erratum # 50 has been added.
Aug. 2007	Updated erratum #47.
Sept. 2007	Errata #51, 52 and 53 have been added.
Oct. 2007	Updated errata # 42; Errata # 54 has been added.

Disclaimers

The Intel Products Specified may contain design defects or errors known as errata that may cause the products to deviate from the published specifications. Current characterized errata are documented in this Specification Update.

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Preface

This document communicates product Errata and Documentation Changes & Corrections for the following Intel Server Products:

- Intel® Server Board S5000PAL
- Intel® Server Board S5000XAL
- Intel® Server Chassis SR1500
- Intel® Server System SR1500AL
- Intel® Server Chassis SR1550
- Intel® Server System SR1550AL
- Intel® Server Chassis SR2500
- Intel® Server System SR2500AL

Refer to the *Dual-Core Intel® Xeon® Processor 5000 Sequence Specification Update* (Order Number 313065) for specification updates concerning the Dual-Core Intel® Xeon® Processor 5000 Series processors. Items contained in the *Dual-Core Intel® Xeon® Processor 5000 Sequence Specification Update* that either do not apply to the products in this document 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.

The following defines items communicated in this document.

Specification Changes are modifications to the current published specifications for a given product. These include typos, errors, or omissions. Specified changes will be incorporated in the next release of the document.

Specification Clarifications describe a supported feature or function in greater detail or further highlight their impact to a complex design requirement. These clarifications will be incorporated in the next release of the document.

Errata are design defects or deviations from current published specifications for a given product. Published errata may or may not be corrected.

- 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.

Summary Tables of Changes

The following tables provide an overview of known errata and known document changes that apply to the specified Intel Server Products. The tables use the following notations:

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

Fix　　　　Intel intends to correct this erratum.

Fixed　　　This erratum has been corrected.

No Fix　　There are no plans to correct this erratum.

Shaded　　This item is new or has been modified from the previous specification update.

Table 1. Errata Summary

No.	Plans	Description of Errata
1.	Doc	IPMI over serial direct connect not supported.
2.	Fix	Serial over LAN and IPMI over LAN connections may terminate unexpectedly under certain conditions.
3.	Fix	Intermittent beep code 1-5-2-1 when booting with two processors.
4.	Doc	Power supply population errors may not appear in the SEL.
5.	Fix	Fan 5 may report a reading of 0 RPM after the BMC is updated.
6.	Fixed	The BMC may not respond to the IPMI command, *Send Message* sent via LAN.
7.	Fix	Fans may take a long time to slow down after fan boosting.
8.	Fixed	System requires ~35 seconds after AC power applied before the power button responds.
9.	Fix	SEL events for HSC may appear after a DC cycle.
10.	Fix	Fans may run faster than expected after exiting BIOS setup.
11.	Fix	System fault LED may report incorrect status for some events.
12.	Fix	Fan removal does not generate a SEL event.
13.	Fix	Power supply redundancy state is misleading when only one power supply is installed.
14.	Fix	HSC and LCP updates may take a long time.
15.	Fixed	Console Redirection Baud Rate Setting auto changing to 19.2K with Serial Over LAN (SOL) active.
16.	Fixed	Serial Over LAN (SOL) unable to redirect DOS output.
17.	No Fix	Password on boot not supported.
18.	Fixed	Intel® Embedded Server RAID Technology II option is not enabled in initial BIOS release.
19.	Fixed	HSC and BMC versions intermittently not seen in BIOS setup.
20.	Fixed	Intel® Server Boards S5000PAL/S5000XAL and Intel® Server System SR1500AL show a "Changes in Hardware or Drivers Detected" error message during WHQL ACPI stress testing.
21.	Fixed	POST LEDs don't turn off after operating system loads.
22.	Fixed	Checkup7.exe (microcode update utility) is not storing microcode in BIOS.
23.	Fixed	Intel® RAID Controller SRCSAS144E causes systems to reset multiple times before completing POST.

24.	Fixed	Change Logo Utility does not save modified BIOS capsule files with correct extension.
25.	Fixed	PS2 keyboards and mice may stop functioning after Red Hat* Enterprise Linux is installed.
26.	Fixed	Failures seen installing to a SATA drive when SATA is set to "Legacy" in BIOS setup.
27.	Fixed	System hangs after disabling onboard video in BIOS setup.
28.	Fixed	The SMBIOS entry point may not be visible under certain hardware configurations.
29.	Fixed	Intel® Embedded Server RAID Technology II and IO module IRQ routing conflict.
30.	No Fix	SuSE* Linux Enterprise Server may not install successfully with Intel® Embedded Server RAID Technology II enabled.
31.	No Fix	Red Hat* Enterprise Linux 4 and BIOS setup display a different L2 cache size for the Quad-Core Intel® Xeon® processor 5300 Series.
32.	Fixed	Change Logo Utility causes BIOS corruption.
33.	Fixed	Microsoft Windows* System Event Viewer may record ID 11 Error Event.
34.	Fixed	POST screen may generate "NMI has been received - System Halted" message after the system reboots.
35.	Fix	Intel® RAID Web Console 2 utility displays "Unexpected Sensor" warning message in Microsoft Windows* operating system.
36.	Fixed	Random drives may go offline when a sixth drive is installed and Intel® Embedded Server RAID Technology II is enabled in the Intel® Server System SR2500ALBRP.
37.	No Fix	Intel recommends enterprise class hard drives for use with Intel® Server Systems.
38.	Fix	Dual Gigabit Expansion Module may not properly reset.
39.	Fixed	SAS drive in a ROMB RAID 5 may drop offline during a reboot in the Intel® Server System SR2500PALLX.
40.	Fix	Intel® Server System SR2500ALLX 6th hard drive filler panel is difficult to remove.
41.	No fix	SUSE* Linux Enterprise Server unable to boot after basic installation
42.	Fix	Drives may not be detected or may go offline in the Intel® Server System SR2500ALBRP when operating at SATA 300 MB/s data rate.
43.	No Fix	New versions of BMC firmware with previous versions of BIOS cause system POST failure.
44.	Fixed	Intel® Server System SR2500ALLX may operate louder than expected.
45.	No Fix	Red Hat* Enterprise Linux may report the wrong processor speed.
46.	Fix	The SuSE* Linux Enterprise Server 10 driver for SAS HW RAID causes unwanted error logs during installation.
47.	Fix	IERR or thermal trip event reported in System Event Log (SEL) after system power on.
48.	No Fix	USB device induces – "The following boot-start or system-start driver(s) failed to load: i8042prt" error message in Windows* operating systems.
49.	No Fix	Microsoft* Windows, RAID Web Console 2 report an error when ASR2500SATAPE kit used.
50.	No Fix	System May Log IERRs When Running Red Hat* Enterprise Linux 4, Update 4 on S500PAL with Video Driver (ati_drv.o 6.5.6)
51.	Fix	Microsoft* Windows* Operating Systems without Service Pack will exhibit blue screen with BIOS 79 and 81.
52.	Fix	Sluggish system performance may be experienced with BMC60.
53.	No Fix	Firmware Downgrade of Integrated RAID (ROMB), Embedded Server RAID Technology II (ESRT2) or SAS might cause system break
54.	Fix	In SR2500ALLX or SR1550ALSAS, Flashing of SAS Firmware 1.22 and SAS BIOS 06.16.00 Makes Hard Drive #1 (upper left drive tray) Undetected During SAS Controller Scanning.

Table 2. Documentation Changes

No.	Plans	Document Name	Description of Documentation Change
1.	Fixed	Intel® Server Board S5000PAL/S5000XAL Technical Product Specification rev. 1.1	The SMBUS block diagram (Figure #16) as provided in Rev 1.1 of the Intel® Server Board S5000PAL/S5000XAL TPS requires changes to accurately reflect production hardware design.
2.	Fixed	Intel® Server Board S5000PAL/S5000XAL Technical Product Specification rev. 1.1	The power block diagram (Figure #25) as provided in Rev 1.1 of the Intel® Server Board S5000PAL/S5000XAL TPS does not reflect final production level baseboard design.
3.	Fix	Intel® Server System SR2500AL Technical Product Specification rev. 1.0	SAS/SAS RAID mid-plane board (Figure #22) as provided in Rev.1.0 of the Intel® Server System SR2500AL TPS should swap the descriptions of items A and K.
4.	Fix	Intel® Server Board S5000PAL Quick Reference Label	The front panel pin-out on the Intel® Server Board S5000PAL Quick Reference Label is incorrect.

The following sections provide in-depth descriptions of each erratum / documentation change indicated in the tables above. The errata and documentation change numbers referenced in the following sections correspond to the numbers in the tables above.

Errata

1. IPMI over serial direct connect not supported.

Problem　　　　Dual-Core Intel® Xeon® processor 5000 sequence - based server boards list support for IPMI access via serial direct connect. Serial access to the BMC is not supported at this time.

Implication　　　Users should use the IPMI over LAN interface to connect to the BMC. Note: this only affects serial and terminal mode access to the BMC; this does not affect BIOS console redirection via serial, and OS redirection via serial.

Status　　　　　This erratum may be fixed in a future firmware revision and hardware revision.

Workaround　　None.

2. Serial over LAN and IPMI over LAN connections may terminate unexpectedly under certain conditions.

Problem　　　　During an active serial over LAN connection, or during an active IPMI over LAN connection to the BMC, intermittently the connection may be lost during a DC cycle or reset.

Implication　　　The user's connection may be lost and the user will have to reconnect the session.

Status　　　　　This erratum may be fixed in a future firmware revision.

Workaround　　None.

3. Intermittent beep code 1-5-2-1 when booting with two processors.

Problem　　　　During POST, the system may pause at POST code 0x13 (SMM Initialization) if two processors are installed. This may result in a 1-5-2-1 beep code and a processor event in the System Event Log (SEL).

Implication　　　The system may log erroneous errors in the SEL or via beep code, and under some conditions the system may halt at 0x13 and require an AC cycle.

Status　　　　　This erratum is fixed in BMC release 47 and later releases.

Workaround　　If an error is encountered, AC cycle the system and the system should run normally.

4. Power supply population errors may not appear in the SEL.

Problem   The BMC will not give any indication if a single power supply is improperly installed in a redundant chassis.

Implication   Some chassis require power supplies to be installed in specific slots if a single power supply is installed.

Status   This erratum may be fixed in a future firmware revision.

Workaround   None.

5. Fan 5 may report a reading of 0 RPM after the BMC is updated.

Problem   After a BMC update, fan 5 may not return an accurate reading until AC power is cycled.

Implication   Intel® System Management Software and other software may display a reading of 0 RPM for this sensor. The BMC may respond as though this fan has failed and fan redundancy is lost. This will cause the system fault LED and fan status LED to indicate a failure for this sensor, and the fans will run in a high speed 'boost' state.

Status   This erratum may be fixed in a future firmware revision.

Workaround   AC cycle the system again and the system should run normally.

6. The BMC may not respond to the IPMI command, *Send Message* sent via LAN.

Problem   The BMC may not respond correctly to a *Send Message* command from the LAN channel to the IPMB channel. This issue only affects an IPMI 2.0 based RMCP+ session, not an IPMI 1.5 based RMCP session.

Implication   Remote IPMI over LAN software cannot forward commands to the IPMB bus.

Status   This erratum is fixed in BMC release 50 and later releases.

Workaround   Software developers should use IPMI 1.5 based sessions to bridge commands to the IPMB channel.

7. Fans may take a long time to slow down after fan boosting.

Problem   System fans that 'boost' due to an increased processor temperature may not return to normal speed immediately after the processor temperature returns to normal.

Implication   If the system fans 'boost' due to a high processor temperature, the BMC will not restore the fans to a normal speed until a similar amount of time that they spent in a 'boosted' state passes. For example, if a high processor temperature caused the fans to boost for five minutes, the fans would not return to normal until five minutes after the processor temperature returned to normal.

Status   This erratum may be fixed in a future firmware revision.

Workaround   The fans will return to normal speed over time.

8. System requires ~35 seconds after AC power applied before the power button responds.

Problem   The BMC requires approximately 35 seconds to fully initialize the system after an AC cycle before the system can be powered on.

Implication   After an AC cycle, a user will have to wait ~35 seconds before the power button will respond. The BMC will cause the front panel LED to blink in an alternating amber/green pattern while the BMC initialization is in progress. Users should wait until the LED stops blinking in this pattern before pressing the power button.

Status   This erratum is fixed in BMC release 50 and later releases.

Workaround   None.

9. SEL events for HSC may appear after a DC cycle.

Problem   The HSC may log critical and non-critical temperature events in the SEL after a DC cycle.

Implication   The SEL events are 'deassertion' events, which are not an indication of a problem with the system. Users can ignore these events as they are not errors or an indication of a problem in the system.

Status   This erratum will be fixed in a future HSC firmware revision.

Workaround   None.

10.   Fans may run faster than expected after exiting BIOS setup.

Problem   Some system fans may run faster after exiting BIOS setup using the 'save and exit' option.

Implication   The system may generate more fan noise than normal.

Status   This erratum may be fixed in a future firmware revision.

Workaround   The system must be AC cycled, or allowed to boot to the OS and then reset, to restore fans to their normal speeds.

11.   System fault LED may report incorrect status for some events.

Problem   The system fault LED may report incorrect status for some events. The proper LED state is described in the server board TPS, but some events may not reflect the states described in the TPS.

Implication   The user may receive an incorrect indication via the system fault LED. The user should verify the system state by looking at the SEL. No event is reported with a less severe status than expected, but events may appear with a higher severity status.

Status   This erratum will be fixed in a future firmware version.

Workaround   None.

12.   Fan removal does not generate a SEL event.

Problem   Fan removal does not trigger a fan failure event.

Implication   Simulating a fan failure by fan removal will not work.

Status   This erratum may be fixed in a future firmware revision.

Workaround   None.

13.   Power supply redundancy state is misleading when only one power supply is installed.

Problem   If a single power supply is installed in a chassis that supports redundant power supplies, the BMC will indicate the power supply redundancy state as 'redundant'.

Implication   In a single power supply configuration, the redundancy sensor should be ignored. Redundant chassis with fully redundant power supplies will accurately reflect the redundancy status.

Status   This erratum may be fixed in a future firmware revision.

Workaround   None.

14.   HSC and LCP updates may take a long time.

Problem   The Hot Swap Controller (HSC) and Local Control Panel (LCP) updates may take a long time. The time to complete each update may exceed 30 minutes.

Implication   Updating HSC and LCP may take a long time.

Status   This erratum may be fixed in a future firmware revision.

Workaround   None.

15.   Console Redirection Baud Rate Setting auto changing to 19.2K with Serial Over LAN (SOL) active.

Problem   If configuring a SOL connection, the only baud rate allowed is 19.2K. If any other baud rate is chosen the system will always revert back to 19.2K after the DC cycle.

Implication   Users who require a different baud rate for their application will not be able to configure this.

Status   This erratum is fixed in BIOS release R0045 and later releases.

Workaround   None.

16.   Serial Over LAN (SOL) unable to redirect DOS output.

Problem   No SOL output is seen when booted to DOS. SOL will only redirect F2 Setup and POST output.

Implication   Users who require SOL to redirect DOS output will not be able to use this feature.

Status   This erratum is fixed in BIOS release R0054 and later releases.

Workaround   None.

17.   Password on boot not supported.

Problem   If an 'admin' or 'user' password is set in BIOS setup, this will be required before the user can enter into BIOS Setup. There is no option to configure a password during POST before the server will boot.

Implication   Users will not be able to create and require a password on boot.

Status   Intel does not intend to fix this erratum.

Workaround   None.

18.   Intel® Embedded Server RAID Technology II option is not enabled in initial BIOS release.

Problem   The Intel® Embedded Server RAID Technology II feature that has been available in pre-production BIOS releases will not be available in the initial production BIOS release. The option ROM that allows configuration of the Intel® Embedded Server RAID Technology II was deemed not ready for production by Intel at this time.

Implication   Users who require or were planning to use this feature in their production environments will need to wait for a post-launch BIOS release which will have this feature enabled.

Status   This erratum is fixed in BIOS release R0057 and later releases.

Workaround   Several hardware RAID options are readily available and supported by Intel® Server Boards. Consult the product Tested Hardware and Operating System list for a variety of hardware options. No workarounds for the Intel® Embedded Server RAID Technology II are available.

19.   HSC and BMC versions intermittently not seen in BIOS setup.

Problem   BMC and HSC revision information is intermittently missing from BIOS setup.

Implication   HSC and BMC information is not easily found.

Status   This erratum is fixed in BIOS release R0057 and later releases.

Workaround   Users will need to use the DOS utility, 'fwpiaupd.exe' to probe and get the backplane HSC information. Boot to DOS and using the fwpiaupd.exe utility which is used to flash the BMC and HSC code onto the server system, enter the following command: "*fwpiaupd –i –address={c0, c2}*"   where c0= primary backplane address and c2= secondary backplane address. This will provide you with the operational code revision for the HSC on each backplane.

                To retrieve the BMC version information, use the same 'fwpiaupdt.exe' utility with the following command: "*fwpiaupdt –i –address=20*".

20.   Intel® Server Boards S5000PAL/S5000XAL and Intel® Server System SR1500AL show a "Changes in Hardware or Drivers Detected" error message during WHQL ACPI stress testing.

Problem   While running HCT 12.1 ACPI stress device I/O or any HCT test that needs to reboot, the system will show the following error message: "Changes in Hardware or Drivers Detected".

Implication   This message may prevent users from receiving Microsoft WHQL certification.

Status   This erratum is fixed in BIOS release R0045 and later releases.

Workaround   If system is shut down and restarted, rather than rebooted, between tests, the error does not appear.

21.   POST LEDs don't turn off after operating system loads.

Problem   The POST Code LEDs at the rear of the system do not turn off once POST completes and the operating system loads. The POST code LEDs will show [Green Red Green Red] at the rear of the system.

Implication   User may believe that since there are LEDs lit on the baseboard that an error has occurred.

Status   This erratum is fixed in BIOS release R0057 and later releases.

Workaround   None.

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22.   Checkup7.exe (microcode update utility) is not storing microcode in BIOS.

Problem   The Checkup7.exe utility which is used to update the processor microcode in BIOS is not working properly. The utility says it completes the flash update successfully, however upon the next reboot the microcode is not actually present in the BIOS.

Implication   Users will not be able to update their BIOS with a new processor microcode.

Status   This erratum is fixed in BIOS release R0057 and later releases.

Workaround   Users will need to update to the latest BIOS revision which will include the latest processor microcode releases. They will not be able to use this utility to add a microcode patch to the existing BIOS.

23.   Intel® RAID Controller SRCSAS144E causes systems to reset multiple times before completing POST.

Problem   With the Intel® RAID Controller SRCSAS144E installed in the system, the system may become caught in a reset loop during POST. The system resets itself 4 to 5 times before completing POST. This is seen early in POST within the first seconds of power on and before video initialization. POST code LEDs show 0x21 "Chipset" Initializing a chipset component.

Implication   POST will take approximately 15-20 seconds longer to complete.

Status   This erratum is fixed in BIOS release R0057 and later releases.

Workaround   Moving the RAID controller into a different slot will sometimes resolve this issue. Populating the card in a slower bus (x4 or x8) seems to make this issue appear less frequently.

24.   Change Logo Utility does not save modified BIOS capsule files with correct extension.

Problem   When using the Change Logo Utility to modify a BIOS capsule file and replace the Intel Splash Screen logo with a new one, it fails to save the new capsule file with a .cap extension. The file that is produced has an .fd extension. The file is the correct capsule file, but it has the wrong extension.

Implication   Users may be confused and believe the utility is not saving the file in the correct format.

Status   This erratum is fixed in version 4.16 of the utility.

Workaround   When saving the file, on the "Save As" dialogue box, choose Capsule File (*.cap) in the 'Save as Type' drop down box. Then in the File Name box, type the name of the file with the .cap extension. It is important that you include the '.cap' extension in the file name; otherwise the Change Logo Utility will save the file with the incorrect extension.

If you forget to include the '.cap' in the file name, but you have chosen 'Capsule File (*.cap)' in the 'Save as Type' drop down box, you can simply rename the file from an .fd extension to a .cap extension and this will work as well.

25.   PS2 keyboards and mice may stop functioning after Red Hat* Enterprise Linux is installed.

Problem   After installing Red Hat* Enterprise Linux on a system with BIOS release R0045, the PS2 keyboard and mouse stop working, however USB keyboards and mice will work fine.

Implication   Users will be unable to use the Linux operating system if a PS2 keyboard and mouse are installed.

Status   This erratum is fixed in BIOS release R0054 and later releases.

Workaround   If the user goes into BIOS setup and disables port 60/64 emulation, PS2 keyboards and mice will continue to work. The user should enable port 60/64 emulation if USB keyboards and mice are used.

26.   Failures seen installing to a SATA drive when SATA is set to "Legacy" in BIOS setup.

Problem   If a user has SATA set to "Legacy" in BIOS setup and tries to install an operating system the installation may fail.

Implication   Users who require SATA to be configured in legacy mode may not be able to get their operating system to install properly.

Status   This erratum is fixed in BIOS release R0057 and later releases.

Workaround   Leave SATA in enhanced mode if possible. There is no workaround for the legacy mode issue.

27.   System hangs after disabling onboard video in BIOS setup.

Problem   After disabling onboard video in BIOS setup, the system will hang during POST.

Implication   Users will not be able to disable onboard video via BIOS setup.

Status   This erratum is fixed in BIOS release R0057 and later releases.

Workaround   Adding in a video controller will automatically disable the onboard video. It is not necessary to manually disable the video controller via BIOS setup. There is no workaround for configurations which do not include video controller support.

28.   The SMBIOS entry point may not be visible under certain hardware configurations.

Problem   The server BIOS maintains an area in memory to act as an entry point to locate the SMBIOS area. This entry point includes the anchor string "_SM_", memory pointers and information about the SMBIOS area as required by the SMBIOS specification. This information is dynamically created by the BIOS during POST and is placed in a required memory range between 000F0000h-000FFFFFh. Hardware configurations which require large amounts of memory at POST (option ROM space or I/O configuration space) could fill up this memory range and the SMBIOS entry point cannot be created correctly.

Implication   This problem manifests as an inability for software to locate the SMBIOS records. This can affect management software, and also some Intel provided update utilities, including: BIOS update utilities and FRUSDR update utilities. An error may also appear in the BIOS error manager. Intel update utilities will generate an error and abort before performing an update.

Status   This erratum is fixed in BIOS release R0060 and later releases.

Workaround   If a specific hardware configuration experiences this issue, remove the add-in PCI and PCIe* cards to reduce the amount of add-in card resource space used. Perform the system update (BIOS, FRUSDR) and replace the add-in cards when updates are completed.

29.   Intel® Embedded Server RAID Technology II and IO module IRQ routing conflict.

Problem   If the Intel® Embedded Server RAID Technology II is enabled in BIOS while an IO module is installed, the system will hang at the RAID Option ROM on the next reboot due to the RAID device's IRQ not being serviced properly.

Implication   The Intel® Embedded Server RAID Technology II option in BIOS cannot be
                 used while an IO module is installed in the system.

Status   This erratum is fixed since BIOS release R0061 and later releases.

Workaround   None.

30.   SuSE* Linux Enterprise Server may not install successfully with Intel® Embedded Server RAID Technology II enabled.

Problem   If SuSE* Linux Enterprise Server is being installed with Intel® Embedded
                 Server RAID Technology II enabled, the RAID array may not be detected after
                 the driver has been loaded, which results in an installation failure.

Implication   The AHCI.o module inside the operating system is loaded prior to the third
                 party driver, and therefore may take control of the RAID controller. This will
                 result in an installation failure.

Status   Users cannot load a third party RAID driver and the AHCI driver simultaneously
                 in SuSE* Linux Enterprise Server; doing so may cause installation failures.

Workaround   The "brokenmodule-ahci" command can prevent AHCI from loading during
                 installation. At the very first install screen, press F6 to load a driver. In the text
                 tab, type `brokenmodules=ahci`; this will allow the installation to complete
                 successfully.

31.   Red Hat* Enterprise Linux 4 and BIOS setup display a different L2 cache size for the Quad-Core Intel® Xeon® processor 5300 Series.

Problem   In Red Hat* Enterprise Linux 4, the Quad-Core Intel® Xeon® processor 5300
                 Series L2 cache size is displayed as 4MB, while in BIOS setup the cache size
                 is displayed as 8MB.

Implication   In BIOS setup, the system reports the total L2 cache size as 8MB due to the
                 4MB + 4MB structure of the processor. The Quad-Core Intel® Xeon® processor
                 5300 Series is similar to a package of two sets, each with a 4MB L2 cache size.
                 In each set, the two cores share the 4MB cache. Red Hat* Enterprise Linux 4
                 views the processor per logical CPU thread. Each logical thread (each set) has
                 access to only 4MB cache, and Red Hat* Enterprise Linux 4 reports it as such.

Status   The different L2 cache size display is due to the different cache size reporting
                 mechanisms of Red Hat* Enterprise Linux 4 and BIOS setup, and is not an
                 incorrect display by the operating system.

Workaround   None.

32.   Change Logo Utility causes BIOS corruption.

Problem   Any board flashed with a version of BIOS release R0064 edited with the
                     Change Logo Utility will no longer boot.   The board will hang with "Off – Off –
                     Red – Green" shown on the Post Code LEDs at the rear of the board.

Implication   The Change Logo Utility cannot be used with BIOS release R0064.

Status   This erratum is fixed in BIOS release R0066 and later releases.

Workaround   None.

33.   Microsoft Windows* System Event Viewer may record ID 11 Error Event.

Problem   In the Microsoft Windows* operating system, the Event Viewer's System log
                     may record an Error Event; the source is lsi_sas and the event ID is 11.

Implication   The problem may occur because the controller is sending an unsupported
                     command to the enclosure management device. This error doesn't affect
                     functionality and the error can be ignored.

Status   This erratum has been fixed in Intel® Embedded Server RAID Technology II
                     firmware and/or drivers later than the following revisions: SAS firmware
                     revision -- v.01.16.00.00; MPT OpROM revision -- v.6.10.00; SAS ESRT2
                     OpROM v. A.01.10241435I.

Workaround   None.

34.   POST screen may generate "NMI has been received - System Halted" message after the system reboots.

Problem   POST screen may generate "NMI has been received - System Halted"
                     message after the system reboots.

Implication   Along with this error, sometimes "Bus Uncorrectable Error" might also be
                     recorded to System Event Log (SEL).

Status   This erratum is fixed in BIOS release R0066 and later releases.

Workaround   Reboot the system again.

35.   Intel® RAID Web Console 2 utility displays "Unexpected Sensor" warning message in Microsoft Windows* operating system.

Problem   The "unexpected sensor" warning message may be displayed in the Intel® RAID Web Console 2 utility, however there seems to be no functional issues with system.

Implication   This warning message is only seen in Microsoft Windows* operating systems. Previous RAID firmware versions (before v.89) were not able to support any communication to the Storage Enclosure Processor (SEP) on backplanes. The firmware was modified to support SEP devices, but the backplanes used in the Intel® Server Chassis SR1500, Intel® Server Chassis SR1550, and Intel® Server Chassis SR2500 do not respond as expected to the inquiry command, so the error is generated and captured in the log. This is a harmless message and will not cause any problems with the RAID array or the drives.

Status   This warning message may be removed from the Intel® RAID Web Console 2's error reporting mechanism in a future RAID firmware release.

Workaround   None.

36.   Random drives may go offline when a sixth drive is installed and Intel® Embedded Server RAID Technology II is enabled in the Intel® Server System SR2500ALBRP.

Problem   When a sixth drive is installed and Intel® Embedded Server RAID Technology II is enabled in the Intel® Server System SR2500ALBRP, random drives may go offline. This may result in boot failure of the Intel® Embedded Server RAID Technology II or the operating system.

Implication   This may result in boot failure of the Intel® Embedded Server RAID Technology II or the operating system.

Status   Fixed. This has been identified as a documentation issue. The sixth drive backplane insert needs to be cabled directly to the baseboard. Use the cabling method documented at: http://support.intel.com/support/motherboards/server/sb/CS-025698.htm

Workaround   Not Applicable.

37.   Intel recommends enterprise class hard drives for use with Intel® Server Systems.

Problem   Some desktop class hard disk drives have shown performance loss, and in some cases take the drive off-line when they are running in an enterprise environment.

Implication   Desktop drives often lack workload management to lower thermal stresses and have a lower tolerance for the normal rotational vibration found in a server environment. They are not designed to run twenty four hours a day, seven days a week, and may fail prematurely when installed in a server. To attain best performance and avoid drive failures, Intel recommends using enterprise class hard drives for server applications.

Status   No fix.

Workaround   None.

38.   Dual Gigabit Expansion Module may not properly reset.

Problem   In certain conditions it is possible that the Dual Gigabit Expansion Module may not properly reset after a system reset.

Implication   If the expansion module does not properly reset, the module could lose network connectivity and the operating system will not be able to see the Gigabit ports. This has only been seen on the Intel® Server System SR1550AL.

Status   Will fix in a future revision of the Dual Gigabit Expansion Module.

Workaround   If the module is not reset it can be forced to reset by removing and replacing AC power to the system.

39.   SAS drive in a ROMB RAID 5 may drop offline during a reboot in the Intel® Server System SR2500PALLX.

Problem   When 5 or 6 drives are inserted and SAS ROMB RAID 5 is configured, drives may drop offline during a system reboot in the Intel® Server System SR2500PALLX.

Implication   This only happens with specific drives. After the drive's firmware has been updated to the latest version, the issue should disappear.

Status   Fixed by updating SAS drive firmware.

Workaround   None.

40.   Intel® Server System SR2500ALLX 6th hard drive filler panel is difficult to remove.

Problem   It may be difficult to remove the Intel® Server System SR2500ALLX 6th hard drive filler panel.

Implication   Certain systems may exhibit this issue. Root cause has been found with the manufacturing tooling. Modification of the tooling will be implemented to resolve this issue.   Prior to the tooling modification, new systems will go through screening and/or rework as necessary to correct this issue.

Status   Will be fixed by a future change to the system tooling.

Workaround   None.

41.   SuSE* Linux Enterprise Server unable to boot after basic installation

Problem   During SuSE* Linux Enterprise Server installation, if a USB floppy drive is used to load the mass storage driver, SuSE* Linux Enterprise Server may not able to boot after basic installation.

The following message may appear:

```
resume device /dev/sdb1 not found (ignoring)

waiting for device /dev/sdb2 to
appear..............................not found -- exiting
to /bin/sh

$
```

Implication   During installation, the USB floppy device is recognized as sda, and the mass storage is recognized as sdb. After reboot, the mass storage is now recognized as sda, but SuSE* Linux Enterprise Server still tries to load system files from sdb. To resolve this issue, the grub menu list file and the fstab file need to be modified.

Status   No Fix.

Workaround   http://support.intel.com/support/motherboards/server/sb/CS-025446.htm describes this issue and its workaround.

42.   Drives may not be detected or may go offline in the Intel® Server System SR2500ALBRP when operating at SATA 300 MB/s data rate.

Problem   In the Intel® Server System SR2500ALBRP with a passive mid-plane, hard drives may not maintain stable operation at 300 MB/s data rate. The problem is known to exist when using the onboard ESB2 controller with any 300 MB/s capable drive. The active mid plane is not affected.

Implication   The drives may not be detected during boot or may go offline during an operating system installation or stress load.

Status   The erratum will be fixed with new revision of the passive mid-plane that will improve SATA signal margins. The new revision of the passive mid-plane will become available in Q1'2008 timeframe.

Workaround   Force hard drives to operate at 150 MB/s data rate. The SATA data rate change does not have a significant impact on hard drive performance as the data rate of 150 MB/s is still substantially higher than sustained drive media throughput (~50-100 MB/s depending on drive model). The active mid plane is not affected.

                 On most drives, the SATA data rate can be forced to 150 MB/s by installing a jumper on the drive. If jumpering the HDD is not an option, contact your HDD supplier for alternate options.

43.   New versions of BMC firmware with previous versions of BIOS cause system POST failure.

Problem   In systems that are updated with new versions of BMC firmware only, there is a high failure rate that they can no longer POST successfully.

Implication   Any BIOS/BMC/FRU update should adhere to the "SYSTEM FIRMWARE REQUIREMENTS" in the release notes, where the minimum required versions have been listed. If the release notes recommendations are not followed, there may be unexpected errors.

Status   If the system is going to be updated by system firmware, always follow SFUP (System Firmware Update Package) to update the BIOS and BMC together. Always update the FRU after the hardware configuration has changed (including changing the power supply, processor, and system fans).

Workaround   No.

44.   Intel® Server System SR2500ALLX may operate louder than expected.

Problem   The Intel® Server System SR2500ALLX may operate louder than expected.

Implication   The abnormal noise is caused by unbalanced system fans #5 and #6 – the two 60mm system fans. Using a FRUSDR which is older than v41 also contributes to the faster fan speed and noise.

Status   FRUSDR v41 and later set the maximum fan speed to be 75% of original maximum value. This change lowers the fan noise, and does not break the thermal condition design specification.

Workaround   None.

45.   Red Hat* Enterprise Linux may report the wrong processor speed.

Problem   In Red Hat* Enterprise Linux, the operating system may report the wrong processor speed. Example: processor is 3.0GHz, the operating system shows it as 3300MHz.

Implication   This symptom is operating system related. Although it doesn't reflect the processor speed correctly, this is only a report; it is harmless to the system, and it can be ignored.

Status   Ignore the processor speed in Red Hat* Enterprise Linux.

Workaround   None.

46.   The SuSE* Linux Enterprise Server 10 driver for SAS HW RAID causes unwanted error logs during installation.

Problem   The SuSE* Linux Enterprise Server 10 driver for SAS HW RAID causes unwanted error logs during installation.

Implication   The error logs are repeatedly displayed on screen if Alt+F4 is pressed during installation. They can also be displayed by typing the dmesg command after the operating system has been installed successfully. These are harmless errors and it can be ignored.

Status   The driver version equal to, or later than 00.00.03.09 will remove these error logs during installation.

Workaround   None.

47. IERR or thermal trip event reported in System Event Log (SEL) after system power on.

Problem   An IERR or thermal trip event may be reported in the System Event Log (SEL) after the system is powered on. The system status LED on front panel will also go amber, but the system seems to run normally.

Implication   This is due to internal communication error induced by the chip GTL2007 on the motherboard. GTL2007 has an interaction issue with the BMC, and startup times with processor at power on can cause false CPU IERRs; the false error can be ignored.

Status   A hardware change to GTL2107 will be implemented on future board revisions to fix this issue. See PCN107725-01 for additional details.

Workaround   Processor Retest can make system status LED go back to a normal state.

48. USB device induces – "The following boot-start or system-start driver(s) failed to load: i8042prt" error message in Windows* operating systems.

Problem   With only a USB keyboard and mouse, and no PS/2 devices connected, sometimes a popup dialog box may display "At least one service or driver failed during system startup. Use Event Viewer to examine the event log for details", and the error message "The following boot-start or system-start driver(s) failed to load: i8042prt" may be recorded in Windows* event log.

Implication   This is a harmless warning message, which may happen only if a USB keyboard and mouse are used, and no PS/2 devices are connected.

Status   This is a harmless error message in Windows* operating systems and can be ignored.

Workaround   Use PS/2 keyboard and mouse.

49. Microsoft* Windows, RAID Web Console 2 report an error when ASR2500SATAPE kit used.

Problem   In the SR2500 with the ASR2500SATAPE SAS/SATA tape drive mounting kit, once logged in to Microsoft* Windows a pop-up message will appear noting "Controller ID 0 PHY is bad on enclosure". The same message will be seen when viewing the RAID log through RAID Web Console 2. This is a false error, and there is no impact to performance. The error message does not appear when booting off the Intel Deployment Assistant CD and running the RAID Console from there.

Implication   Users will need to acknowledge this pop-up window after logging on.

Status   No Fix.

Workaround   Powering the tape drive via an external source, rather than the ASR2500SATAPE kit, will prevent the message from appearing.

50. System May Log IERRs When Running Red Hat* Enterprise Linux 4, Update 4 on S500PAL with Video Driver (ati_drv.o 6.5.6)

Problem   When running Red Hat Enterprise Linux 4.0, Update 4 on the S5000PAL with video driver (ati_drv.o 6.5.6), an IERR event may be reported in the System Event Log (SEL). Keyboard and mouse may also not respond until an AC cycle is applied to reboot the system.

Implication   Stressing the video controller on the S5000PAL running RHEL3U8, RHEL4U4 and RHEL4U5 can induce timeout errors caused by the default video driver (ati_drv.o 6.5.6). This error triggers IERRs, and then causes the system to not respond. Register dumps can be obtained if the system is instrumented for NMI.

Status   This erratum is fixed in Red Hat* Enterprise Linux 5 and later releases.

Workaround   Users can load the VESA video driver rather than the ati_drv.o 6.5.6 video driver to prevent IERRs and system not responding.

51. Microsoft* Windows* Operating Systems without Service Pack will exhibit blue screen with BIOS 79 and 81.

Problem   If a user attempts to install Microsoft Windows without an integrated service pack, it will blue screen during the installation process if BIOS 79 or BIOS 81 is on the Intel Server Board. Conversely, if a user upgrades the system BIOS to BIOS 79 or 81 *prior* to installing the appropriate service pack, the system will blue screen. Starting in BIOS 79, support for enhanced sleep states was added. This addition to the BIOS requires that the Microsoft Service Pack be integrated into the operating system installation process to understand the extended sleep state support.

                 The following is a list of Microsoft Operating Systems and required service packs:

                       Windows 2003 32-bit and 64-bit requires Service Pack 1
                       Windows 2003 SBS requires Service Pack 1
                       Windows XP 32-bit and 64-bit requires Service Pack 2

Implication   Users cannot install Microsoft Windows or upgrade the system BIOS to BIOS 79 or BIOS 81 without a service pack integrated into the installation process.

Status   This erratum may be fixed in a future firmware revision.

Workaround   Users need to remain on BIOS 76, use a Windows installation process that
                includes the service pack integrated into the installation, or install Windows and
                service pack prior to updating to BIOS 79 or 81. Additionally, the R2 release
                versions of Windows do not exhibit this issue. Use of this version of Windows,
                if possible, is also another valid workaround.

52.   Sluggish system performance may be experienced with BMC60

Problem   An issue with BMC 60 is causing incorrect interpretation of the user selected
                BIOS Setup Open Loop Thermal Throttling (OLTT) options. Advanced BIOS
                Setup contains OLTT selections for Performance Mode and Acoustic
                mode. BMC 60 is recognizing a Performance Mode selection in BIOS setup as
                Acoustic mode request. Acoustic mode selection in BIOS setup is being
                disregarded and fail safe defaults for Fan Profiles are enforced. This
                misinterpretation can manifest the BIOS/BMC interaction causing a throttling
                condition slowing down the system performance significantly.

Implication   Systems set to Performance mode are incorrectly being configured in
                Acoustics mode which could make the system more susceptible to overheating,
                especially in 1U chassis or performance degradation due to memory throttling
                rather than fan boosts being used to cool the memory. Systems being
                configured to Acoustics mode in the BIOS are actually being set up in fail safe
                state.

Status   This erratum will be fixed in a future firmware revision.

Workaround   None.

53.   Firmware Downgrade of Integrated RAID (ROMB), Embedded Server RAID Technology II (ESRT2) or SAS might cause system break

Problem   Downgrading firmwares of Integrated RAID (ROMB), Embedded Server RAID
                Technology II (ESRT2) or SAS from original version to older versions might cause
                unexpected issues, like controller broken, controller invisible during system POST. The
                failure could be a permanent damage that cannot be recovered.

Implication   Any downgrade actions of firmware could result in system broken and we do
                not officially support firmware downgrade for any of above situations.

Status   No Fix. This is not an issue. Do not downgrade firmwares in Integrated RAID (ROMB),
                Embedded Server RAID Technology II (ESRT2) or SAS.

Workaround   None.

54.   In SR2500ALLX or SR1550ALSAS, Flashing of SAS Firmware 1.22 and SAS BIOS 06.16.00 Makes Hard Drive #1 (upper left drive tray) Undetected During SAS Controller Scanning.

Problem   In SR2500ALLX or SR1550ALSAS, flashing of SAS Firmware 1.22 and SAS BIOS 06.16.00 makes Hard Drive #1 Undetected During SAS Controller Scanning..

Implication   In either SAS Only Mode or SAS Software RAID, hard drive #1 might be undetected.

Status   Will be fixed in a future SAS Firmware and SAS BIOS release.

Workaround   Choose update package of SAS Firmware 1.20 and SAS BIOS 06.14.00. Enter EFI interface, go to the firmware directory and run almp_upd.nsh to flash it.
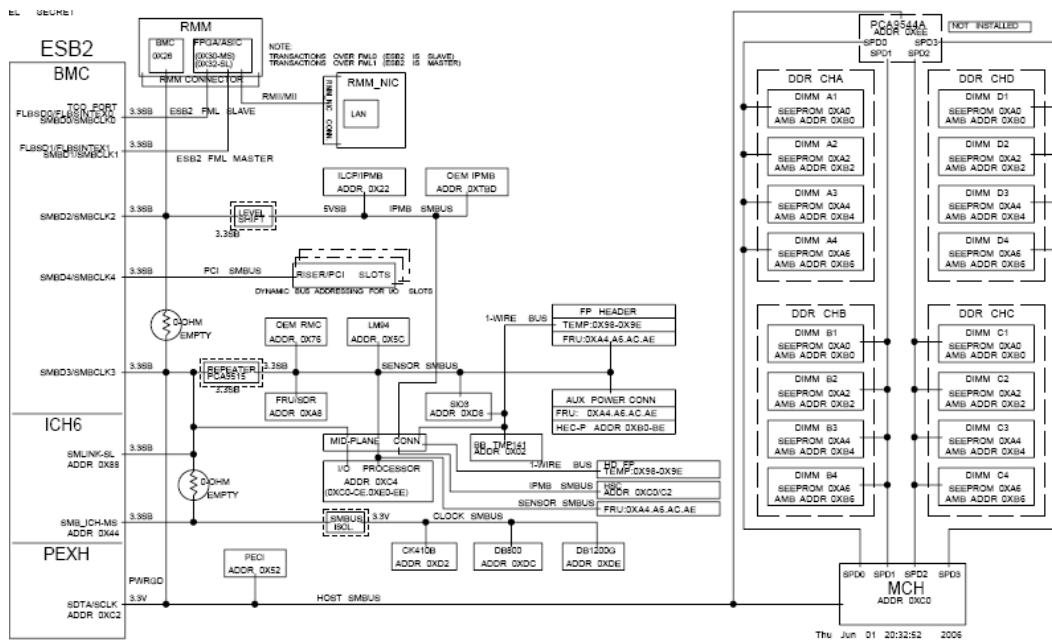
Documentation Changes

1. The SMBUS block diagram (Figure #16) as provided in Rev 1.1 of the Intel® Server Board S5000PAL/S5000XAL TPS requires changes to accurately reflect production hardware design.

Problem:　　　　The current diagram doesn't reflect the following board design changes made to the final production level baseboard.
- o Add PECI controller
- o Remove separate HSC connector
- o Correct Midplane -> FP Smbus connections and 1-wire temp sensor
- o Correct Smbus and 1-wire temp sensor connections to FP connector.
- o Correct FBDIMM labeling

The correct diagram is shown below.

Implication:　　　Inaccurate understanding of actual baseboard design with respect to specified diagram.

Work Around:　　None.

Status:　　　　Corrections incorporated into version 1.2 of the Intel® Server Board S5000PAL Technical Product Specification.

2.   The power block diagram (Figure #25) as provided in Rev 1.1 of the Intel® Server Board S5000PAL/S5000XAL TPS does not reflect final production level baseboard design.

Problem: Current diagram does not reflect changes incorporated into the final production level baseboard:

- o MCH/FBDIMM 1.5 Vreg moved from 12V rail to 5V rail.
- o Video Memory Vreg corrected to only one 2.5V reg. instead of two.
- o "ATI" label for Video components changed to generic "Video"

The following is the corrected diagram

Implication: Inaccurate understanding of actual baseboard design with respect to specified diagram.

Work Around: None.

Status: Corrections incorporated into version 1.2 of the Intel® Server Board S5000PAL Technical Product Specification.

3. SAS/SAS RAID mid-plane board (Figure #22) as provided in Rev.1.0 of the Intel® Server System SR2500AL TPS should swap the descriptions of items A and K.

Problem: The current diagram has the descriptions of item A and K swapped:
- Item A should be the battery connector; it is incorrectly described as the RAID activation key connector.
- Item K should be the RAID activation key connector; it is incorrectly described as the battery connector.

The corrected diagram is shown below.

System Board Interconnects   Intel® Server System SR2500AL

The chassis also supports an active SAS / SAS RAID mid-plane. This system board incorporates an LSI* LSISAS1068 SAS controller onto the board. See Chapter 5 for details describing SAS / SAS RAID support. The following diagram shows the location for each connector found on this board.
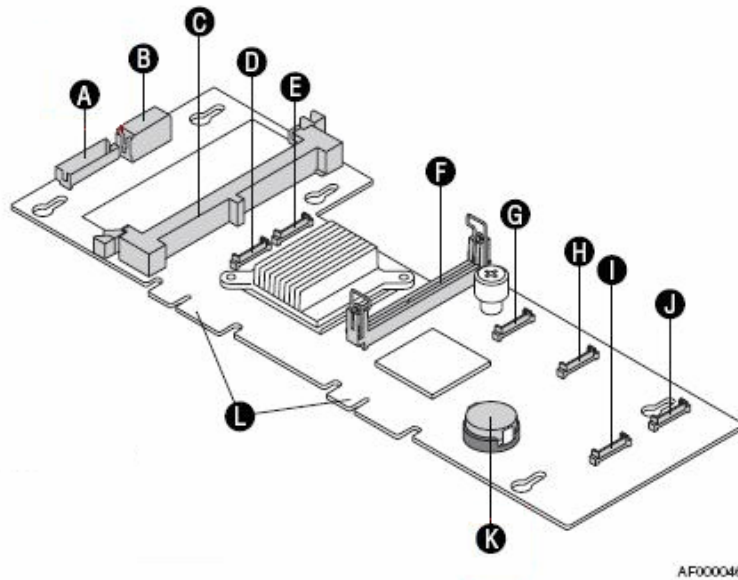

AF000046

Figure 22. SAS/SAS RAID Mid-plane Board

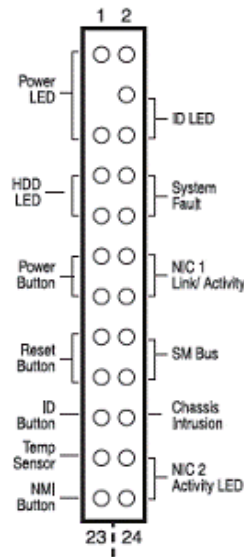| A	Battery	G	Fan 4 Connector
B	Power Connector	H	Fan 3 Connector
C	Mini-DIMM Connector	I	Fan 1 Connector
D	Fan 6 Connector	J	Fan 2 Connector
E	Fan 5 Connector	K	RAID Activation Key
F	Bridge Board Connector	L	Backplane Connector

Implication: This is a typo.

Work Around: None.

Status: Corrections will be incorporated into next version of the Intel® Server System
SR2500AL Technical Product Specification.

4.   Front panel pin-out on the Intel® Server Board S5000PAL Quick Reference Label is incorrect.

Problem: The current diagram incorrectly lists a 'cooling status' pin, does not have the
temperature sensor listed, and shows incorrect locations for the ID LED.
The corrected diagram is shown below.

Implication: This is a typo.

Work Around: None.

Status: Corrections will be incorporated into the next version of the label.