



Monthly Specification Update

Intel[®] Server Board Family S5000VCL
Intel[®] Server System Family SR1530CL

Intel Order Number D95627-002

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Enterprise Platforms and Services Marketing

Revision History

Date	Modifications
March 2007	Initial release.
April 2007	Errata #5 added – HDD power cable routing. Document change #1 added – System Quick Reference Label correction.
May 2007	Errata #6 added – RAID backup battery thermal issues. Document change #1 added – System Quick Start User's Guide correction. Document change #2 added – System User's Guide correction.
June 2007	No Changes
July 2007	No Changes
August 2007	No Changes
September 2007	Errata #7 added – When installing a Microsoft Windows* operating system without a service pack, the system will blue screen with BIOS 79 and 81.
October 2007	Added new product codes in Preface section.
December 2007	No Changes
January 2008	No Changes
February 2008	No Changes
March 2008	No Changes
April 2008	No Changes
May 2008	No Changes
October 2008	Added erratum 8.
December 2008	Updated erratum 7 and 8, and added erratum 9.
January 2009	Added erratum 10.
February 2009	Updated Erratum 9
May 2009	No Changes.
June 2009	No Changes
July 2009	Added erratum 11
August 2009	Added erratum 12
September 2009	Added erratum 13
November 2009	No Changes

Disclaimers

The Monthly Specification Update Server System may contain design defects or errors known as errata that may cause the product 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 and Corrections for the following Intel® Server Products:

- Intel® Server Board S5000VCL
- Intel® Server Board S5000VCLSAS
- Intel® Server Board BBS5000VCLR
- Intel® Server Board BBS5000VCLSASR
- Intel® Server System SR1530CL
- Intel® Server System SR1530CLR
- Intel® Server System SR1530HCL
- Intel® Server System SR1530HCLR
- Intel® Server System SR1530HCLS
- Intel® Server System SR1530HCLSR

For specification updates concerning the Intel® Xeon® Processor 5000 Sequence, refer to the *Dual-Core Intel® Xeon® Processor 5000 Sequence Specification Update* (Order Number 313065). Items contained in the *Dual-Core Intel® Xeon® Processor 5000 Sequence Specification Update* that either do not apply to the Monthly Specification Update or were worked around are noted in this document. Otherwise, you can assume 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 are 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. The next release of this document will incorporate these clarifications.
- **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 fix this erratum in the future.

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.	No Fix	Password on boot not supported.
2.	No Fix	SuSE* Linux Enterprise Server may not install successfully with Intel® Embedded Server RAID Technology enabled.
3.	No Fix	Red Hat* Enterprise Linux 4 and BIOS setup display a different L2 cache size for the Intel® Xeon® processor 5300 Series.
4.	No Fix	Intel recommends enterprise class hard drives for use with Intel® Server Systems.
5.	Fix	It is important to route the hard drive power cable though the cable clamp on the HDD carrier in the Intel® Server System SR1530CL.
6.	No Fix	Using a RAID backup battery is not supported in the Intel® Server Systems SR1530CL, SR1530HCL, and SR1530HCLS due to thermal concerns.
7.	Fixed	When installing a Microsoft Windows* operating system without a service pack, the system will blue screen with BIOS 79 and 81.
8.	Fixed	Platform Confidence Test (PCT) may fail with BIOS 89 and later version loaded.
9.	Fixed	BIOS 94 does not support mixed stepping E-0 and C-0 processors.
10.	No Fix	Users cannot boot S5000VCL using a "bootable" MSDOS based CD/DVD when RAID (or AHCI) is enabled via BIOS setup.
11.	Fix	System may not boot after multiple DC power cycles with BIOS revision R0098
12.	Fix	Windows* Server 2003 may hang when log in to Intel® Raid Web Console2 version 3.04-05 with ESRTII Raid enabled
13.	Fix	System would only boot to CD/DVD drive with BIOS revision R0098 when RMM2 installed

Table 2. Documentation Changes

No.	Plans	Document Name	Description of Documentation Change
1.	Fix	System Quick Reference Label (QRL)	The system Quick Reference Label (QRL) shows an incorrect default setting for the BIOS Bank Select jumper; the correct default setting is pins 2-3.
2.	Fix	Intel® Server System SR1530CL Quick Start User's Guide	The Quick Start User's Guide shows incorrect routing for the hard drive power cable. The correct cable routing is through the cable clamp located on top of the HDD carrier.
3.	Fix	Intel® Server System SR1530CL System User's Guide	The User's Guide shows incorrect routing for the hard drive power cable. The correct cable routing is through the cable clamp located on top of the HDD carrier.

The following sections provide in-depth descriptions of each erratum / documentation change indicated in Tables 1 and 2. The errata and documentation change numbers referenced in the following sections correspond to the numbers in the previous tables.

Errata

1. Password on boot not supported.

Problem	If an “admin” or “user” password is set in the BIOS setup, the user must enter the password before they can access the BIOS setup. There is no option to configure and require a password during POST before the server boots.
Implication	Users cannot create and require a password on boot.
Status	Intel does not intend to fix this erratum.
Workaround	None.

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

Problem	If SuSE* Linux Enterprise Server is being installed with Intel® Embedded Server RAID Technology enabled, the RAID array may not be detected after the driver is 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 results 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 <code>brokenmodules=ahci</code> ; this allows the installation to complete successfully.

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

Problem	In Red Hat* Enterprise Linux 4, the Intel® Xeon® processor 5300 Series L2 cache size displays as 4 MB; while in the BIOS setup, the cache size displays as 8 MB.
Implication	In BIOS setup, the system reports the total L2 cache size as 8 MB due to the 4 MB + 4 MB structure of the processor. The Intel® Xeon® processor 5300 Series is similar to a package of two sets, each with a 4 MB L2 cache size. In each set, the two cores share the 4 MB cache. Red Hat* Enterprise Linux 4 views the processor per logical CPU thread. Each logical thread (each set) has access to only 4 MB 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 the BIOS setup, and is not an incorrect display by the operating system.
Workaround	None.

4. 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, taken the drive off-line when 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 24 hours a day, seven days a week, and may fail prematurely when installed in a server. To attain the best performance and avoid drive failures, Intel recommends using enterprise class hard drives for server applications.
Status	No fix.

Workaround None.

5. It is important to route the hard drive power cable through the cable clamp on the HDD carrier in the Intel® Server System SR1530CL.

Problem	It is difficult to route some hard drive cables through the cable clamp on the HDD carrier, and therefore may be left out of the clamp and routed between the system blower and the HDD carrier.
Implication	If the hard drive power cable is routed between the system blower and the HDD carrier, the vibration from the system blower will transmit through the hard drive power cable to the hard disk drive; this can affect drive performance.
Status	Fixed.
Workaround	If the hard drive power cable is difficult to route through the cable clamp on the HDD carrier, remove the cable from the bulk clamp found on the bottom of the chassis before routing the power cable through the HDD cable clamp.

6. Using a RAID backup battery is not supported in the Intel® Server Systems SR1530CL, SR1530HCL, and SR1530HCLS due to thermal concerns.

Problem	When using a RAID backup battery in the Intel® Server Systems SR1530CL, SR1530HCL, and SR1530HCLS, the battery generates excessive system heat.
Implication	Using a RAID backup battery causes excessive system heat that the system blowers cannot adequately cool, and thermal issues may result.
Status	Will not fix.
Workaround	Using a RAID backup battery is not supported in these systems.

7. When installing a Microsoft Windows* operating system without a service pack, the system will blue screen with BIOS 79 and 81.

Problem If a user attempts to install a Microsoft Windows* operating system without an integrated service pack, the system 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 the integration of the Microsoft* Service Pack 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:

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

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

Status This erratum was fixed in BIOS R0084. Users must upgrade BIOS to R0084 or a later version then disable Deep C-state Support in the BIOS setup (Advanced BIOS menu -> Processor submenu) before installing or booting a Microsoft Windows* operating system without the required service pack.

Workaround Users must remain on BIOS 76, use a Microsoft Windows* operating system installation process that includes the service pack integrated into the installation, or install the Microsoft Windows* operating system and the service pack prior to updating to BIOS 79 or 81.

Note: The R2 release versions of Microsoft Windows* operating systems do not exhibit this issue. Using this version of a Microsoft Windows* operating system is also a valid workaround.

8. Platform Confidence Test (PCT) may fail with BIOS 89 and later version loaded

Problem Customer may experience the following problems when they run PCT on Intel® Server Board S5000VCL with BIOS89 and later version loaded. There are two types of test options when a customer runs a PCT test: Quick Test and Comprehensive Test. A customer may see the following during a PCT test:

Quick Test	***ERROR T.EXE Unknown error:MSDRAM64.EXE Standard Error Code = 01300005
Comprehensive Test	System hangs at Probing ICH

Status This erratum was fixed with BIOS R0094

Workaround This issue is caused by imcompatibility between the BIOS and PCT; it does not impact system stability or performance. Customer can ignore this issue or roll back to BIOS 85 to run the PCT.

9. BIOS 94 does not support mixed stepping E-0 and C-0 processors

Problem BIOS code specifically designed to allow support for mixed stepping processors was not included in BIOS R0094.

Implication The use of mixed stepping E-0 and C-0 processors and BIOS R0094 may cause erratic system behavior such as operating systems failing to load or install.

Status This erratum was fixed in BIOS R0096 and later version.

Workaround None

10. S5000VCL cannot boot from SATA CD/DVD ROM using a “bootable” Microsoft* DOS CD/DVD when RAID (or AHCI) is Enabled via the BIOS setup

Problem	Users cannot boot S5000VCL from SATA CD/DVD ROM using a “bootable” MSDOS based CD/DVD when RAID (or AHCI) is enabled via the BIOS Setup.
Implication	Users needing to boot to any MS-DOS based diagnostic, pre-install, or application CDs (for example, Bart’s PE), are limited to using only the “IDE” mode setting in the BIOS. Please note: Operating system installation CDs are not affected by this issue since they typically use “iso-linux”.
Status	This is a known limitation. Whenever the RAID (or AHCI) setting is selected, the Advanced Host Controller Interface Option ROM is loaded. Unfortunately, AHCI is not supported by the Microsoft* Disk Operating System (MS-DOS).
Workaround	None.

11. System May not Boot After Multiple DC power Cycles with BIOS Revision R0098

Problem	If console redirection and Legacy OS redirection are both enabled in BIOS setup, the system may hang early during POST after multiple DC power cycles.
Implication	Users may occasionally experience system hangs during POST, after multiple power cycles, if console redirection and legacy OS redirection have been configured as enabled in BIOS setup.
Status	This issue may be fixed in a future BIOS revision.
Workaround	A soft system reboot (<CTL> <ALT>) will result in a subsequent successful completion of POST.

12. Windows* Server 2003 may hang when logging in to Intel® Raid Web Console2 version 3.04-05 with ESRTII Raid enabled

Problem	<p>When using windows* server 2003 with onboard ESRTII raid enabled, user may experience system to hang when trying to log in to Intel® Raid Web Console2, BSOD (Blue Screen of Death) and either of the following messages are displayed:</p> <ul style="list-style-type: none"> - BAD_POOL_HEADER Error code: STOP 0x00000019 - IRQL_NOT_LESS_OR_EQUAL Error code: STOP 0x000000D1
Implication	<p>This issue is caused by a minor bug in Intel® Raid Web Console2 software code.</p>
Status	<p>This erratum may be fixed in a future Intel® Raid Web Console2 revision.</p>
Workaround	<p>Downgrade the Intel® Raid Web Console2 version to v2.92-01.</p>

**13. System would only boot to CD/DVD drive with BIOS Revision R0098
when RMM2 installed**

Problem	<p>If RMM2 is installed and CD/DVD drive is the first BIOS boot option, the system will not skip CD/DVD drive as expected when there is no bootable media in the drive.</p>
Implication	<p>Users would experience system (with RMM2 installed) boot failure when there is no bootable media in CD/DVD drive.</p>
Status	<p>This issue will be fixed in a future BIOS revision.</p>
Workaround	<p>No.</p>

Documentation Changes

- 1. The system Quick Reference Label (QRL) shows an incorrect default setting for the BIOS Bank Select jumper.**

Problem The illustration for the BIOS Bank Select jumper in the QRL shows the default jumper setting as 1-2; however, the factory default jumper setting is 2-3.

Status Will be fixed in future QRL update.

Workaround Refer to the Technical Product Specification document for the correct settings. The BIOS Bank Select jumper block (located at J3A2) is used to select which BIOS image the system will boot to. Pin 1 on the jumper is identified by ‘▼’. You should only move this jumper to force the BIOS to boot to the secondary bank, which may hold a different version of BIOS. The rolling BIOS feature of the server board will automatically alternate the boot BIOS to the secondary bank if the BIOS image in the primary bank is corrupted and cannot boot.

The correct setting should be:

Pins	What happens at system reset...
1-2	Force BIOS to bank 2
2-3	System is configured for normal operation (bank 1) (Default)

2. The Intel® Server System SR1530CL Quick Start User’s Guide shows incorrect cable routing for the hard drive power cable.

Problem The illustration in the *Intel® Server System SR1530CL Quick Start User’s Guide* for routing the hard drive power cable does not show it routed through the cable clip attached to the top of the HDD carrier.

Status Will be fixed in future update.

Workaround After the hard drive is installed, before plugging the connector into the hard drive, route the power cable through the cable clip located on top of the HDD carrier. Refer to the written instructions in the Quick Start User’s Guide.

3. The Intel® Server System SR1530CL User's Guide shows incorrect cable routing for the hard drive power cable.

Problem	The illustration in the <i>Intel® Server System SR1530CL User's Guide</i> for routing the hard drive power cable does not show it routed through the cable clip attached to the top of the HDD carrier.
Status	Will be fixed in future update.
Workaround	After the hard drive is installed, before plugging the connector into the hard drive, route the power cable through the cable clip located on top of the HDD carrier. Refer to the written instructions in the User's Guide.