Monthly Specification Update

Intel® Server System P4000IP/R2000IP Family, Intel® Workstation System P4000CR Family

July, 2012

Enterprise Platforms and Services Marketing

Revision History

Date	Modifications
April, 2012	Initial release.
July, 2012	Add errata 20,21,22,23,24 and update errata 6 and 8

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.

Information in this document is provided in connection with Intel products. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Intel®'s Terms and Conditions of Sale for such products, Intel® assumes no liability whatsoever, and Intel® disclaims any express or implied warranty, relating to sale and/or use of Intel® products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright or other intellectual property right. Intel® products are not intended for use in medical, life saving, or life sustaining applications. Intel may make changes to specifications and product descriptions at any time, without notice.

Contact your local Intel® sales office or your distributor to obtain the latest specifications and before placing your product order.

Intel, Itanium, Pentium, and Xeon are trademarks or registered trademarks of Intel Corporation.

*Other brands and names may be claimed as the property of others.

Contents

<This page is intentionally left blank.>

Preface

This document is an update to the specifications contained in the *Intel® Server/Workstation Board S2600IP/W2600CR and Intel ® Server/Workstation System P4000IP/CR, R2000IP Technical Product Specification*. 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.

Nomenclature

1. **Specification Changes** are modifications to the current published specifications for Intel® server boards. These changes will be incorporated in the next release of the specifications.
2. **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.
3. **Documentation Changes** include typos, errors, or omissions from the current published specifications. These changes will be incorporated in the next release of the specifications.
4. **Errata** are design defects or errors. Errata may cause the server board 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

The following specific boards, BIOS and components are covered by this update:

Product Code	Baseboard PBA Revision	BIOS Revision	BMC Revision	FRU/SDR Revision	ME Revision
P4000IPL	G59237-301	01.01.1002	1.00	1.03	02.01.05.069
P4000CRL	G59236-301	01.01.1002	1.00	1.03	02.01.05.069
P4000IP	G20993-303	01.02.0005	1.00	1.03	02.01.05.091
P4000CR	G21602-302	01.02.0005	1.00	1.03	02.01.05.091
R2000IP	G20993-303	01.02.0005	1.00	1.03	02.01.05.091

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.

No Fix: 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.	Fix	Linux Operating Systems are not supported on RSTe mode
2.	Fix	UEFI Windows Server 2008* R2 SP1 installation on SCU ports may fail under RSTe RAID mode
3.	Fix	UEFI Operating System installation is not supported on ESRT2 mode
4.	Fix	HDD status LEDs do not function under specific configuration
5.	Fix	RSTe GUI installation may fail if there are no devices attached to any onboard AHCI ports
6.	Fixed	BMC continuously sends RAID volume rebuild event in RSTe mode of the SCU controller
7.	Fix	System may halt under specific BIOS configurations
8.	Fixed	Microsoft Windows 2003* x86 installation failure under Pass-through mode of SCU controller
9.	Fix	System may halt under unsupported configuration in ESRT2 mode
10.	Fixed	Extra events may be seen in the System Event Log (SEL) during system global reset
11.	Fixed	System may continuously report a faulty or assert/deassert log when having blank HDD carriers or un-configured HDDs
12.	Fix	Integrated BMC Web Console – Power Statistics page – Minimum wattage reads as zero
13.	Fix	Integrated BMC Web Console – Power Control page – Perform Action button not functional.
14.	Fix	IPMI Get Chassis Status command returns incorrect Chassis Identify State
15.	Fix	The BIOS and ME Firmware can't be updated successfully via Intel® One Boot Flash Update Utility(OFU) under SuSE Linux Enterprise Server 11* (64-bit) with SP2
16.	Fix	BMC continuously sends HDD assert/de-assert event during HDD RAID rebuild under ESRT2 mode of the SCU controller
17.	Fix	High CPU utilization may occur when installing or running Microsoft Windows Server 2008* R2 or Microsoft Windows 7* with default NIC driver
18.	Fixed	Bios/ME cannot update using OFU utility after S3 resume on P4000CR System
19.	Fixed	System cannot go to S3 status in UEFI OS on P4000CR System
20.	Fixed	Intel® RAID C600 Upgrade Key replacement Issue
21	Fix	Intel® LAN driver installation failure on Windows* 7
22	Fix	Hard drives connected through SAS expander can’t be detected in legacy mode

No.	Plans	Description of Errata
23	Fixed	System will boot from on-board video although install add-in video card
24	Fix	On-board VGA cannot be set to the highest resolution (1920x1080 and higher).

Table 2. Documentation Changes

No.	Plans	Document Name	Description of Documentation Change
1.			
2.			
3.			
4.			

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. Linux Operating Systems are not supported using the RSTe mode

Problem Intel® RSTe mode is not supported on Red Hat* Linux and SUSE* Linux.

Implication User may not be able to install Red Hat* Linux and SUSE* Linux on Intel® C600 Series Chipset based Server Boards under Intel® RSTe mode.

Status This issue may be fixed in a future driver or BIOS release.

Workaround None.

2. UEFI Windows Server 2008* R2 SP1 installation on SCU ports may fail under RSTe RAID mode

Problem System may encounter blue screen when installing Windows Sever 2008* R2 SP1 under UEFI with below configurations:

i. Intel® C600 RAID Upgrade Key is installed and SAS HDDs are used on SCU ports.

ii. BIOS options “EFI Optimized Boot” and “Use Legacy Video for EFI OS” are enabled.

iii. RSTe RAID mode is used.

Implication User may not be able to install UEFI Windows Server 2008* R2 SP1 on Intel® C600 Series Chipset based Server Boards with the above mentioned configuration.

Status This issue may be fixed in a future BIOS release.

Workaround None.

3. UEFI Operating System installation is not supported using the ESRT2 mode

Problem UEFI OS installation of Windows*, Red Hat* Linux or SUSE* Linux may fail on AHCI or SCU controller when “EFI Optimized Boot” and “Use Legacy Video for EFI OS” are both enabled.

Implication User may not be able to install UEFI OS under the ESRT2 mode on Intel® C600 Series Chipset based Server Boards

Status This issue may be fixed in a future BIOS revision.

Workaround None.

4. HDD status LEDs do not function under specific configuration

Problem If drives are connected through expander to SCU ports and configured under RSTe mode, the HDD status LEDs may not function properly.

Implication HDD status LED may not show the HDD locate, HDD fault or RAID rebuild message.

Status This issue may be fixed in a future RAID driver.

Workaround None.

5. RSTe GUI installation may fail if there are no devices attached to any onboard AHCI ports

Problem When Microsoft Windows 2008* R2 is installed on SCU ports, the installation of RSTe drivers and the Graphic User Interface (GUI) in Windows 2008* R2 will fail, if the AHCI controller is enabled, and no devices are attached to the AHCI SATA ports.

Implication User may not be able to install RSTe GUI under mentioned configuration when the AHCI controller is enabled and no devices are attached to the AHCI SATA ports.

Status This issue may be fixed in a future RAID driver.

Workaround The workaround is to either plug a SATA device into one of the AHCI SATA ports or disable the onboard AHCI controller in BIOS

6. BMC continuously sends RAID volume rebuild event in RSTe mode of the SCU controller

Problem When RSTe RAID is in degraded mode and a drive is inserted to start the RAID rebuild, System Event Log (SEL) records drive plug and rebuild events and then continuously sends a rebuild event message.

Implication User may see the SEL flooded with RAID volume rebuild event entries.

Status This issue was fixed in the latest RSTe driver ver 3.0.0.3020 upd 2012.02.03.

Workaround None.

7. System may halt under specific BIOS configurations

Problem Once BIOS options “EFI Optimized Boot” and “Memory Mapped I/O Above 4GB” are enabled, and RSTe mode is selected, system may halt during POST.

Implication User may see system hang with the above mentioned configuration.

Status This issue may be fixed in a future RSTe UEFI driver release.

Workaround None.

8. Microsoft Windows 2003* x86 installation failure occurs using the “Pass-Through” mode of the SCU controller

Problem Microsoft Windows Server 2003* x86 installations on SCU RSTe “pass-through” mode fail.

Implication User may not able to install Microsoft Windows Server 2003* x86 on the above mentioned BIOS configuration.

Status This issue was fixed in the latest RSTe driver ver 3.0.0.3020 upd 2012.02.03

Workaround None.

9. System may halt under unsupported configuration in ESRT2 mode

Problem If no Intel ® C600 RAID upgrade key (any of RKSAS4, RKSAS4R5, RKSAS8, RKSAS8R5) is installed to enable SAS support capablity under the ESRT2 mode and SAS drivers are used, the system may halt at the boot stage.

Implication User may see a system halt with no RAID keys installed with SAS drivers used and ESRT2 enabled. User should use SATA drives only if no RAID key installed.

Status This issue may be fixed in a future BIOS release.

Workaround None.

10. Extra events may be seen in the System Event Log (SEL) during system global reset

Problem The BMC may sporadically log extra reset event during a system DC reset (global reset). These events may appear as there is an extra reset during BIOS POST.

The following SEL entries indicate two resets in a POST process:

Informational event: Pwr Unit Status reports the power unit is powered off or being powered down.

Informational event: Pwr Unit Status reports the power unit is powered off or being powered down.

Implication The SEL log may indicate that system has an occasional reset in a normal POST during DC cycle test (global reset).

Status This issue was fixed in BMC 1.04.

Workaround None.

11. System may continuously report a faulty or assert/deassert log when having blank HDD carriers or un-configured HDDs

Problem With ESRT2 SATA RAID 5 config with 3 HDDs, put the 4th HDD in drive carrier and set it to either unconfigured or global hot spare. System event log may be flooded with HDD faulty entries.

With ESRT2 SAS RAID 1 with 2 HDDs, put 3rd HDD and set to unconfigured or global hot spare. System event log may be flooded flood with HDD faulty entries.

Implication User may see the SEL flooded with HDD faulty entries when either of the two scenarios above are used.

Status This issue was fixed in BMC 1.04**.**

Workaround None.

12. Integrated BMC Web Console – Power Statistics page – Minimum wattage reads as zero

Problem On some systems the Integrated BMC Web Console Power Statistic page may display the Minimun wattage as zero (0W) after the system has been powered. This reading will stay at zero until the next power cycle of the system.

Implication This is an incorrect reading only and does not affect operation.

Status This issue may be fixed in a future BMC release.

Workaround None.

13. Integrated BMC Web Console – Power Control page – Perform Action button not functional

Problem After performing a Graceful shutdown from the Integrated BMC Web Console Power Control page the Perform Action button is greyed out and cannot be pressed to request another action.

Implication You cannot perform a power on of the system.

Status This issue may be fixed in a future BMC release.

Workaround Select another page in the Integrated BMC Web Console and then return to the Power Control Page. The Perform Action button will then be available.

14. IPMI Get Chassis Status command returns incorrect Chassis Identify State

Problem When a Get Chassis Status command is issued, after the Chassis Identify LED has been forced on, the status of off (00b) is returned for Chassis Identify State (response data byte 4 – bits [5:4]).

Implication Unable to correctly read when the Chassis Identify LED is on.

Status This issue may be fixed in a future BMC release.

Workaround None.

15. The BIOS and ME Firmware can't be updated successfully via Intel® One Boot Flash Update Utility(OFU) under SuSE Linux Enterprise Server 11* (64-bit) with SP2

Problem OFU will fail to update BIOS & ME under SuSE Linux Enterprise Server 11* (64-bit) with SP2 Operating System.

Implication If the system is running SuSE Linux Enterprise Server 11* (64-bit) with SP2 Operating System, using OFU to update System Firmware Update Package(SFUP) will fail.

Status This issue may be fixed in a future OFU version.

Workaround Update System Firmware Update Package(SFUP) from EFI environment using iFlash32, FWPIAUpdate and FRUSDR Utility.

16. BMC continuously sends HDD assert/de-assert event during HDD RAID rebuild under the ESRT2 mode of the SCU controller

Problem HDD fault will keep asserting and de-asserting frequent during RAID rebuild under ESRT2.

Implication During HDD ESRT2 RAID rebuild, there's flood HDD fault assert/deassert(SAS RAID) or Rebuild/remap (SATA RAID) logs into SEL.

Status This issue may be fixed in a future BIOS release.

Workaround None.

17. High CPU utilization may occur when installing or running Microsoft Windows Server 2008* R2 or Microsoft Windows 7* with default NIC driver

Problem There has been high CPU load observed when installing or running Microsoft Windows Server 2008* R2 or Microsoft Windows 7* with default NIC (Network Interface Card) driver.

Implication When the ports are not electrically "linked" and the embedded driver is loaded the DPC rate steadily increases until the system slows to the point where it is essentially unusable.

Status This issue may be fixed in a future driver release.

Workaround None.

18. Bios/ME cannot update using OFU utility after S3 resume on P4000CR System

Problem BIOS/ME update under OS will fail after S3 resume.

Implication Can not update Bios and ME with OFU utility.

Status This issue was fixed in Bios 01020004. .

Workaround None.

19. System cannot go to S3 status in UEFI OS on P4000CR System

Problem System Cannot goto S3 status in UEFI native OS.

Implication System will lose S3 function if use UEFI native OS.

Status This issue was fixed in Bios 01020004.

Workaround None.

20. Intel® RAID C600 Upgrade Key replacement Issue

Problem With Manageability Engine (ME) Firmware 02.01.05.069, the server may detect the incorrect Storage Control Unit (SCU) Redundant Array of Inexpensive/Independent Disks (RAID) information after installing or replacing the RAID upgrade key. The board or system may still show the previous RAID information even if you replace the key with a new one.

Implication With the ME firmware 02.01.05.069, the system may not detect the new RAID activation key during the first time AC power on.

Status The issue is fixed with ME firmware 02.01.05.091.

Workaround Do a second AC power cycle to the system after the RAID upgrade key has been installed or replaced to ensure the correct type of key is identified.

21. Intel® LAN driver installation failure on Windows* 7

Problem The Intel® LAN driver version 16.8 and below may not be installed sucessfully on Windowns* 7 with the .bat installation scripts in the driver package.

Implication The LAN driver can not be installed by the .bat installation scripts in the driver package.

Status The issue may be fixed in a future Intel® LAN driver

Workaround Two workarounds are availalbe:

1. The LAN driver can be manually installed.
2. User can lower the “User Account Control” to “Never Notify”, then the driver can be installed with the .bat installation scripts.

22. Hard drives connected through SAS expander can’t be detected in legacy mode

Problem If hard drives are connected through expander to SCU ports and configured under RSTe mode, the hard drives can’t be detected by system in legacy mode (default BIOS setting).

Implication Users can’t use the hard drives connected through expander as boot device to install OS. But users can install OS to other hard drives which are not connected through expander and load RSTe driver to make the hard drives connected through expander visible to OS. Or users can change Boot Options -> EFI Optimized Boot to “Enabled” in BIOS Setup so that hard drives connected through expander can be detected by the system.

Status This issue may be fixed in a future BIOS release.

Workaround None.

23. System will boot from on-board video although install add-in video card

Problem When try to boot from add-in video card, system can not boot up.

Implication Bios video output policy by default was booting from onboard video although install the add-in video card.

Status This issue was fixed in Bios 01.02.0009 and changed video output to installed add-in video card by default.

Workaround Need to install internal video cable to boot up system first then disable on-board video option in Bios.

24. On-board VGA cannot be set to the highest resolution (1920x1080 and higher).

Problem The Graphics ID register in the on-board video controller is getting set incorrectly.

Implication The video cannot be set to the highest resolutions listed here:

[1920x1080,High 256 Color, 60 Hertz]
[1920x1200,High 256 Color, 60 Hertz]
[1920x1080,High Color(16bit), 60 Hertz]
[1920x1200,High Color(16bit), 60 Hertz]

Status This issue may be fixed in a future BMC release.

Workaround None.

Documentation Changes

None.