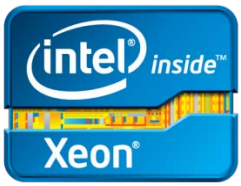
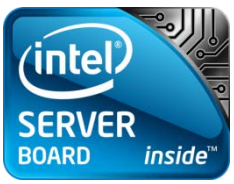
Monthly Specification Update

Intel® Server Board S2400SC Family, Intel® Server System P4000SC and R2000SC Family





April, 2013

Enterprise Platforms and Services Marketing

Revision History

Date	Modifications
May, 2012	Initial release.
June, 2012	Added erratum 18; Updated erratum 6, 10
July, 2012	Added erratum 19
August, 2012	No Change.
September, 2012	Updated erratum 4,7,8,9,12,13,14,15,16,18; Added erratum 20,21,22,23,24
October, 2012	Updated erratum 2, added erratum 25
November, 2012	Updated erratum 6, 17
December, 2012	Updated Product scope and erratum 5, 8, 24.
February, 2013	No updates.
April, 2013	Updated erratum 23, 25; Added erratum 28, 29

Disclaimers

This Monthly Specification Update of the 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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Contents

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Preface

This document is an update to the specifications contained in the *Intel® Server Board S2400SC Family and Intel ® Server System P4000SC Family 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.

1. Nomenclature

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.

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 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.

2. 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
S2400SC2	G18552-402	01.02.2005	1.022608	24	02.01.05.091
S2400SC2	G18552-403	01.03.0002	1.103560	1.05	02.01.05.107

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.	Fixed	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.	Fixed	HDD status LEDs do not function under specific configuration
5.	Fixed	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.	Fixed	System may halt under specific BIOS configurations
8.	Fix	Microsoft Windows 2003* x86 installation failure under Pass-through mode of SCU controller
9.	Fixed	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.	Fixed	Integrated BMC Web Console – Power Statistics page – Minimum wattage reads as zero
13.	Fixed	Integrated BMC Web Console – Power Control page – Perform Action button not functional.
14.	Fixed	IPMI Get Chassis Status command returns incorrect Chassis Identify State
15.	Fixed	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.	Fixed	BMC continuously sends HDD assert/de-assert event during HDD RAID rebuild under ESRT2 mode of the SCU controller
17.	Fixed	High CPU utilization may occur when installing or running Microsoft* Windows* Server 2008 R2 or Microsoft* Windows* 7 with default NIC driver
18.	Fixed	On-board VGA cannot be set to the highest resolution (1920x1080 and higher)
19.	Fixed	Hard drive located LED may not instantly respond to the locate command if backplane is connected through SAS expander to a RAID controller
20.	Fixed	Intel® LAN driver installation failure on Windows* 7
21.	Fixed	Intel® RAID C600 upgrade key replacement issue
22.	Fix	Hard drives connected through SAS expander can't be detected in legacy mode
23.	Fixed	Integrated BMC web console – sensor readings page – memory throttling sensor status will stay "Critical" once triggered

No.	Plans	Description of Errata
24.	Fixed	WOL (Wake on LAN) may not function under Red Hat* Linux 6.2 64bit OS
25.	Fixed	System only reports the first occurence of power redundancy loss
26.	Fix	BMC will generate event log until it full and send PEF continuely
27.	Fix	System BIOS may report POST error code 0x146 with the Intel® Xeon Phi™ Coprocessor installed
28	Fix	The Intel® Xeon Phi™ Coprocessor PCI Express* Card Status Sensor may show "Unknown"
29	Fix	The Intel® Xeon Phi™ Coprocessor PCI Express* Card sensors numbering may not be consistent with riser slot numbering

Table 2. Documentation Changes

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

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 on RSTe mode

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

Implication User may not 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 future driver or BIOS releases.

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:

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

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

3. Under RSTe RAID mode.

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

Status This issue is fixed in BIOS R01.04.1001 or later version.

Workaround None.

3. UEFI Operating System installation is not supported on 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 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 was fixed in RSTe driver 3.2.0.1134 and later version.

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 while no device is 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 was fixed in BIOS 01.03.0002 or later.

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 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 both enabled, and RSTe mode is selcted, system may halt during the system POST.

Implication User may see system hang with mentioned configuration.

Status This issue is fixed in Bios release R01.03.0002.

Workaround None.

8. Microsoft Windows 2003* x86 installation failure under Pass-through mode of SCU controller

Problem An RSTe driver issue exists where an installation error will occur when attempting to install Microsoft Windows Server 2003* x86 when the the onboard SCU ports are configured to support RSTe pass-through mode

Implication User may not able to install Microsoft Windows Server 2003* x86 with onboard SCU ports configured as RSTe pass-through mode

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

Workaround Install Microsoft Windows Server 2003* x64

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 ESRT2 mode while 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.

Status This issue is fixed in BIOS 1.3.0002 or later.

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 is fixed in BMC release 1.10.r3560 and later version

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 gets grayed out and cannot be pressed to request another action.

Implication	You cannot perform a power on of the system.
Status	This issue is fixed in BMC release 1.10.r3560 and later version
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 is fixed in BMC release 1.10.r3560 and later version
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 is fixed in OFU Version 11.0 Build 8 and later 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 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 is fixed in ESRT2 driver release 15.00.0528.2012.

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 is fixed in NIC driver 16.8 release and later version.

Workaround None.

18. 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 The issue is fixed with BMC version 01.06.4010.

Workaround None.

19. Hard drive locate LED may not instantly respond to the locate command if backplane is connected through SAS expander to a RAID controller

Problem If backplane is connected through SAS expander to a RAID controller, the hard drive locate LED may not instantly respond to the locate command from the RAID controller. The LED may blink after up to 2 minutes.

Implication The symptom doesn't happen if backplane is directly connected to the RAID controller. Root cause has been identified in the motherboard BMC.

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

Workaround None.

20. 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 is fixed in Intel® LAN driver version 17.1

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.

21. Intel® RAID C600 Upgrade Key replacement Issue

Problem With Manageability Engine (ME) Firmware 02.01.05.069, the Intel® Server Board S2600CP and Intel® Server System P4000CP 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.

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. Integrated BMC Web Console – Sensor Readings Page – Memory Throttling sensor status will stay "Critical" once triggered

Problem When Memory Throttling is triggered, the Memory "P1 MTT and/or P2 MTT" sensor status will stay at "Critical" status in the Integrated BMC Web Console even after throttling has stopped.

Implication You may observe Memory "P1 MTT and/or P2 MTT" status as "Critical" even when there is no throttling. No functional impact to the system.

Status This issue will be fixed in ME 03.00.02.203 and later release.

Workaround Need a AC cycle or reset ME through IPMI to reset the MTT sensor status.

24. WOL (Wake on LAN) may not function under Red Hat* Linux 6.2 64bit OS

Problem With Intel® LAN driver version 17.1, WOL (Wake on LAN) may not function under Red Hat* Linux 6.2 64bit OS.

Implication You may not be able to wake system through onboard NIC port.

Status This issue was fixed in LAN driver release 17.4 or later.

Workaround None.

25. System only reports the first occurrence of power redundancy loss

Problem System only reports the first occurance of power redundancy loss, further power redunduncy loss will not be reported unless an AC cycle is applied.

Implication Users can not see a power redundancy loss in System Event Log as below:

Power Unit, Pwr Unit Redund (#0x2)
Informational event: Pwr Unit Redund reports full redundancy has been lost.
Integrated BMC - LUN#0 (Channel#0)

Status This issue was fixed in BMC release 01.17.4151.

Workaround None.

26. BMC will generate flood event log and send PEF continuously

Problem 1. Use IPMI tool to set a PEF (6 commands)
ipmitool –H xxx.xxx.xxx.xxx –U xxx –P xxxxxx raw 0x04 0x12 0x01 0x01
ipmitool –H xxx.xxx.xxx.xxx –U xxx –P xxxxxx raw 0x04 0x12 0x02 0x01
ipmitool –H xxx.xxx.xxx.xxx –U xxx –P xxxxxx raw 0x04 0x12 0x9 0x14 0xa8 0x1f 0x0
ipmitool –H xxx.xxx.xxx.xxx –U xxx –P xxxxxx raw 0x04 0x12 0x6 0x14 0x80 0x1 0xa 0x10 0xff 0xff 0xff 0xff 0xff 0xff 0xff 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0
ipmitool –H xxx.xxx.xxx.xxx –U xxx –P xxxxxx raw 0x0c 0x01 0x1 0x12 0xf 0x80 0x5 0x7
ipmitool –H xxx.xxx.xxx.xxx –U xxx –P xxxxxx raw 0x0c 0x01 0x1 0x13 0xf 0x0 0x0 0xa 0x24 0x71 0x7b 0x0 0x0 0x0 0x0 0x0 0x0
2. Go to BMC web console and go to configurations=>alert, check all alert and must set destination IP to remote concole =>Save
3. Try to generate an event (unplug power), you can see there are a lot of event in event log and make event log full.
4. Even when restore the PSU, the SEL is continuing to grow w/o PSU redundancy regain.

Implication The flood even log will fulfill the SEL in several minutes

Status The issue may be fix in future BMC release

Workaround Restore the system and uncheck all alerts in BMC web console.

27. System BIOS may report POST error code 0x146 with the Intel® Xeon Phi™ Coprocessor installed

Problem System BIOS may report POST error code 0x146 “PCI out of resource error” when one or more Intel® Xeon Phi™ Coprocessors are installed with the BIOS default setting.

Implication The Intel® Xeon Phi™ Coprocessor might not be recognized using the default BIOS setting as it requires more PCI space..

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

Workaround Press F2 to enter BIOS Setup, change Advanced -> PCI Configuration -> Memory Mapped I/O Size to 256G or larger. The value also depends on your system PCI configuration

28. The Intel® Xeon Phi™ Coprocessor PCI Express* Card Status Sensor may show "Unknown"

Problem When only one Intel® Xeon Phi™ Coprocessor PCI Express* Card (MIC card) is installed in the server system, the card status sensor "MIC 1 Status" or "MIC 2 Status" may show "Unknown" in Intel® Integrated BMC Web Console.

Implication Users may not get the correct MIC status in Intel® Integrated BMC Web Console. There is no function impact to the server system. This issue doesn't happen when two Intel® Xeon Phi™ Coprocessor PCI Express* Cards are installed.

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

Workaround None.

29. The Intel® Xeon Phi™ Coprocessor PCI Express* Card sensors numbering may not be consistent with riser slot numbering

Problem The Intel® Xeon Phi™ Coprocessor PCI Express* Card (MIC card) sensors numbering may not be consistent with riser slot numbering on the server board. When a Intel® Xeon Phi™ Coprocessor PCI Express* Card is installed in the server system, in Intel® Integrated BMC Web Console, the card sensor may show "MIC 2 Status" and "MIC 2 Margin" if the card is installed on "RISER SLOT_1" and "MIC 1 Status" and "MIC 1 Margin" if the card is installed on "RISER SLOT_2".

Implication Users need to read MIC 2 sensors for a card installed on "RISER SLOT_1" and read MIC 1 sensors for a card installed on "RISER SLOT_2". There is no function impact to the server system.

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

Workaround None.

Documentation Changes

N/A