Monthly Specification Update

Intel® Server Board S2400GP Family, Intel® Server System P4000GP Family

November, 2012

Enterprise Platforms and Services Marketing
Revision History

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<td>June, 2012</td>
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<td>July, 2012</td>
<td>Update item #17 and added items #18 - #23</td>
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<td>August, 2012</td>
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<td>September, 2012</td>
<td>Update item #4,7,8,9,12,13,14,15,16,22; added erratum 24,25</td>
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<tr>
<td>October, 2012</td>
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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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Preface

This document is an update to the specifications contained in the Intel® Server Board S2400GP Family and Intel® Server System P4000GP 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:

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<thead>
<tr>
<th>Product Code</th>
<th>Baseboard PBA Revision</th>
<th>BIOS Revision</th>
<th>BMC Revision</th>
<th>FRU/SDR Revision</th>
<th>ME Revision</th>
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<tr>
<td>S2400GP2</td>
<td>G31611-205</td>
<td>01.02.2002</td>
<td>1.002812</td>
<td>09</td>
<td>02.01.05.069</td>
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<tr>
<td>S2400GP4</td>
<td>G24197-205</td>
<td>01.02.2002</td>
<td>1.002812</td>
<td>09</td>
<td>02.01.05.069</td>
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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>
<thead>
<tr>
<th>No.</th>
<th>Plans</th>
<th>Description of Errata</th>
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<tbody>
<tr>
<td>1.</td>
<td>Fix</td>
<td>Linux Operating Systems are not supported on RSTe mode</td>
</tr>
<tr>
<td>2.</td>
<td>Fix</td>
<td>UEFI Windows Server 2008* R2 SP1 installation may fail under RSTe RAID mode</td>
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<tr>
<td>3.</td>
<td>Fix</td>
<td>UEFI Operating System installation is not supported on ESRT2 mode</td>
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<td>4.</td>
<td>Fixed</td>
<td>HDD status LEDs do not function under specific configuration</td>
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<td>5.</td>
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<td>RSTe GUI installation may fail if there are no devices attached to any onboard AHCI ports</td>
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<td>6.</td>
<td>Fixed</td>
<td>System continuously sends RAID volume rebuild event in RSTe mode of the SCU controller</td>
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<td>IPMI Get Chassis Status command returns incorrect Chassis Identify State</td>
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<td>Fixed</td>
<td>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</td>
</tr>
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<td>Fix</td>
<td>High CPU utilization may occur when installing or running Microsoft* Windows* Server 2008 R2 or Microsoft* Windows* 7 with default NIC driver</td>
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<tr>
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</tr>
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<tbody>
<tr>
<td>24.</td>
<td>Fix</td>
<td>Integrated BMC web console – sensor readings page – memory throttling sensor status will stay “Critical” once triggered</td>
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<td>25.</td>
<td>Fix</td>
<td>WOL (Wake on LAN) may not function under Red Hat* Linux 6.2 64bit OS</td>
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</table>

### Table 2. Documentation Changes

<table>
<thead>
<tr>
<th>No.</th>
<th>Plans</th>
<th>Document Name</th>
<th>Description of Documentation Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Update</td>
<td>S2400GP Quick Start User Guide</td>
<td>In the back, ATX I/O Shield in the Accessories and Order Codes table should be AXX2IOS for S2400GP2 and AXX4IOS for S2400GP4 instead of AXXTIO</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
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<tr>
<td>3.</td>
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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 may be fixed in a future BIOS release.

   **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 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 BMC 1.04.

**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 selected, 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  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 mentined BIOS configuration.

Status  This issue is fixed in RSTe driver release 3.0.0.3020-3 and later version.

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 capability 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.


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, FWPIAUUpdate 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 for Intel® Gigabit ET Dual Port Server Adapter E1G42ET and Intel® Gigabit ET Quad Port Server Adapter E1G44ET

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 for Intel® Gigabit ET Dual Port Server Adapter E1G42ET and Intel® Gigabit ET Quad Port Server Adapter E1G44ET.

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. Intel® RAID C600 Upgrade Key replacement Issue

Problem With Manageability Engine (ME) Firmware 02.01.05.069, the Intel® Server Board S2400GP and Intel® Server System P4000GP 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.

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

Problem The Intel® LAN driver version 16.8 and below may not be installed successfully on Windows* 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 available:
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.

20. **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.

21. **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.

22. **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 ME firmware 02.01.05.091.

Workaround
None

23. **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.

24. **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 may be fixed in a future ME release.

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

25. **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 may be fixed in a future LAN driver release.
Workaround  None.

Documentation Changes

N/A