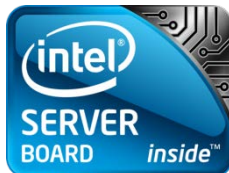




Monthly Specification Update

Intel® Server Board S1400SP Family

Intel® Server System R1000SP Family



December, 2012

Enterprise Platforms and Services Marketing

Revision History

| Date | Modifications |
|----------------|--|
| October, 2012 | Initial release. |
| November, 2012 | Update Errata #2,#7,#8,#9,#10,#11,#13 and #14. Add one Errata #20. |
| December, 2012 | Update Errata #5,#17,#19 |

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 S1400SP 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 |
|--------------|------------------------|---------------|--------------|------------------|--------------|
| S1400SP2 | G60349-204 | 01.06.0001 | 1.16.4010 | 0.01 | 02.01.05.107 |
| S1400SP4 | G30309-203 | 01.06.0001 | 1.16.4010 | 0.01 | 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 Microsoft 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 | System may halt under specific BIOS configurations. |
| 7. | Fixed | Microsoft Windows 2003* x86 installation failure under Pass-through mode of SCU controller. |
| 8. | Fixed | System may halt under unsupported configuration in ESRT2 mode. |
| 9. | Fixed | Integrated BMC Web Console – Power Statistics page – Minimum wattage reads as zero. |
| 10. | Fixed | Integrated BMC Web Console – Power Control page – Perform Action button not functional. |
| 11. | Fixed | IPMI Get Chassis Status command returns incorrect Chassis Identify State. |
| 12. | Fixed | The BIOS and ME Firmware can't be updated successfully using Intel® One Boot Flash Update Utility (OFU) under SuSE* Linux Enterprise Server 11 (64-bit) with SP2. |
| 13. | Fixed | BMC continuously sends HDD assert/de-assert event during HDD RAID rebuild under ESRT2 mode of the SCU controller. |
| 14. | Fixed | 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. |
| 15. | Fixed | Intel® LAN driver installation failure on Microsoft Windows* 7. |
| 16. | Fix | Hard drives connected through SAS expander can't be detected in legacy mode. |
| 17. | Fixed | On-board VGA cannot be set to the highest resolution (1920x1080 and higher). |
| 18. | Fix | Integrated BMC Web Console – Sensor Readings Page – Memory Throttling sensor status will stay "Critical" once triggered. |
| 19. | Fixed | WOL (Wake on LAN) may not function under Red Hat* Linux 6.2 64-bit OS. |
| 20. | Fix | System only reports the first occurrence of power redundancy loss |

Table 2. Documentation Changes

| No. | Plans | Document Name | Description of Documentation Change |
|-----|-------|--|---|
| 1. | Fix | <i>Intel® Server System R1000SP Product Family Quick Installation User's Guide</i> | One memory population rule is missing in the "Thermal Operation and Configuration Requirements" section of the <i>Quick Installation User's Guide</i> , |

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

| | |
|-------------|---|
| Problem | System may encounter blue screen when installing Microsoft Windows Sever 2008* R2 SP1 under UEFI with below configurations: <ol style="list-style-type: none">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 Microsoft 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 Microsoft 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 Microsoft 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 release R1.03.0002. |
| 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. 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 |

7. 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 |

8. 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 |

9. 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 minimum 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 |

10. 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. |

11. 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 |

12. The BIOS and ME Firmware can't be updated successfully using 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. |
| Workaround | Update System Firmware Update Package (SFUP) from EFI environment using iFlash32, FWPIAUpdate and FRUSDR Utility. |

13. 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 |

14. 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 is fixed in NIC driver 16.8 release and later version. |
| Workaround | None |

15. Intel® LAN driver installation failure on Microsoft Windows* 7

| | |
|-------------|--|
| Problem | The Intel® LAN driver version 16.8 and below may not be installed successfully on Microsoft Windows 7* with the .bat installation scripts in the driver package. |
| Implication | The LAN driver cannot 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: <ol style="list-style-type: none">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. |

16. 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 cannot 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 |

17. 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 was fixed in BMC release 1.16.4010. |
| Workaround | None |

18. 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. |

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

| | |
|-------------|---|
| Problem | With Intel® LAN driver version 17.1, WOL (Wake on LAN) may not function under Red Hat* Linux 6.2 64-bit OS. |
| Implication | You may not be able to wake system through onboard NIC port. |
| Status | This issue will be fixed in Intel® LAN driver version 17.4 and later release. |
| Workaround | None |

20. System only reports the first occurrence of power redundancy lost events

| | |
|-------------|--|
| Problem | The integrated platform management subsystem will only report the first occurrence of a power redundancy lost event. Any additional power redundancy lost events that may occur after the initial event, will not be reported unless an AC cycle of the server is performed. |
| Implication | <p>With the first power redundancy lost event detected, the system status LED will change the state to flashing Green and the system event log will display the event as shown below.</p> <p>Power Unit, Pwr Unit Redund (#0x2) Informational event: Pwr Unit Redund reports full redundancy has been lost. Integrated BMC - LUN#0 (Channel#0)</p> <p>After hot swapping the faulty power supply, which would change the state of the system back to normal (system status LED goes back to solid Green), the system will NOT report any further power redundancy lost events, until an AC cycle of the server is performed.</p> |
| Status | This issue will be fixed in a future BMC release. |

Documentation Changes

1. One memory population rule is missing in the “Thermal Operation and Configuration Requirements” section of the *Quick Installation User’s Guide*

| | |
|------------|--|
| Problem | In the “Thermal Operation and Configuration Requirements” section of the <i>Quick Installation User’s Guide</i> (G64256), there is one memory population rule missing, which is “Please note that all the memory slots must be populated at all times using either a DIMM or supplied DIMM Blank.” |
| Status | This will be fixed in a future <i>Quick Installation User’s Guide</i> release. |
| Workaround | When you install DIMMs in Intel® Server System R1000SP, please note that all the memory slots must be populated at all times using either a DIMM or supplied DIMM Blank. |