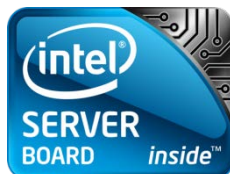# Monthly Specification Update

Intel® Server Board S2600CP Family

Intel® Server Board S2600CO Family

Intel® Server System P4000CP Family

Revision History

Date	Modifications
March, 2012	Initial release.
April, 2012	Added item #15, #16, #17
May, 2012	Added item #18, #19, #20, #21
July, 2012	Added item #22, #23, #24 and updated item #10, #19, #21
August, 2012	Added item #25, #26 and updated item #7, #9, #15
September, 2012	No update
October, 2012	Added item #27 and updated item #2, #19
November, 2012	No update
December, 2012	No update
January, 2013	Added item #28, #29. Updated item #4, #5, #12, #13, #14, #16, #17, #19, #24

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.

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, lifesaving, 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 Board S2600CP Family and Intel ® Server System P4000CP 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
S2600CP2 S2600CP2J S2600CP4	-50x	01.01.0001 01.01.1002	1.00	1.00	02.01.05.069
S2600CP2 S2600CP2J S2600CP4	-50x	01.02.0003	1.04	1.04	02.01.05.069
S2600CP2 S2600CP2J S2600CP4	-50x	01.03.0002	1.10	1.07	02.01.05.107
S2600CP2 S2600CP2J S2600CP4	-50x	01.06.0001	1.16	1.08	02.01.05.107

Product Code	Baseboard PBA Revision	BIOS Revision	BMC Revision	FRU/SDR Revision	ME Revision
DBS2600COE	G29920-204	01.01.1002	1.00	1.03	02.01.05.069
BBS2600CO4	G35870-203	01.01.1002	1.00	1.03	02.01.05.069
BBS2600COE	G29920-204	01.01.1002	1.00	1.03	02.01.05.069
DBS2600COEIOC	G29920-204	01.01.1002	1.00	1.03	02.01.05.069

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	Intel® RAID C600 Upgrade Key replacement Issue
19.	Fixed	ESRT2 RAID is not supported on Intel® Server Board S2600CP2/S2600CP2J
20.	Fixed	System may detect unrecognized sensors
21.	Fixed	Intel® LAN driver installation failure on Windows* 7
22.	Fix	Hard drives connected through SAS expander can't be detected in legacy mode
23.	Fixed	System will boot from on-board video although install add-in video card
24.	Fixed	On-board VGA cannot be set to the highest resolution (1920x1080 and higher)

No.	Plans	Description of Errata
25.	Fix	Integrated BMC Web Console – Sensor Readings Page – Memory Throttling sensor status will stay "Critical" once triggered
26.	Fix	WOL (Wake on LAN) may not function under Red Hat* Linux 6.2 64bit OS
27.	Fix	System only reports the first occurance of power redundancy loss
28.	Fix	BMC will generate event log until it full and send PEF continuely
29.	Fix	System BIOS may report POST error code 0x146 with the Intel® Xeon Phi™ Coprocessor installed

Table 2. Documentation Changes

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

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 is 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 is fixed in BIOS 01.03.0002 or later version.

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.

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   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 may be fixed in a future RSTe driver release.

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 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. User should use SATA drives only if no RAID key installed.

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

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 and later version.

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 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 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 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.

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 and later version

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 is fixed in NIC driver 16.8 and later version.

Workaround   None.

18. 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.

19.   ESRT2 RAID is not supported on Intel® Server Board S2600CP2/S2600CP2J

Problem   The Intel® Embedded Server RAID Technology 2 (ESRT2) is not supported on the Intel® Server Board S2600CP2 and Intel® Server Board S2600CP2J. With the current ESRT2 drivers that are available now, these server boards cannot detect storage devices during the Operating System (OS) installation process for all Operating Systems.

Implication   The OS installation process will fail under ESRT2 mode on Intel® Server Board S2600CP2 and Intel® Server Board S2600CP2J. The Intel® Server Board S2600CP4 board is not impacted by this issue.

Status   The issue is fixed with ESRT2 driver 15.00.0927.2012.

Workaround   None.

20.   System may detect unrecognized sensors

Problem   Prior to updating the sytem with the FRU/SDR package, the system may detect unrecognized sensors.

Implication   The system may have additional System Event Log (SEL) for the unrecoginzed sensors being detected, system status LED may turn amber and system FAN may boost.

Status   The issue may be fixed in a future firmware release.

Workaround   Update the system with FRU/SDR package

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 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.

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.

25. 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.

26. 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.

27. System only reports the first occurance 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 may be fixed in a future BMC release.

Workaround   None.

28.   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.

29.   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.

Documentation Changes

N/A