Intel® Server Board SE7501BR2 Troubleshooting Guide

A Guide for Technically Qualified Assemblers of Intel® Identified Subassemblies/Products

Revision 1.0
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Revision History		
Date	**Rev**	**Modifications**

SE7501BR2 Troubleshooting Guide

This guide is designed to help troubleshoot and identify possible problem areas encountered in configuring or maintaining a SE7501BR2 server board. This guide is to be used in conjunction with other information published for the SE7501BR2 on Intel public websites.

What is available for helping troubleshoot?

As part of Intel's commitment to provide outstanding technical support we have included several documents, drivers, and diagnostic tools as part of the purchase of the SE7501BR2 server board. These references and tools are combined with the most current information published to Intel's public support site to help minimize downtime if issues occur. Below is a summary of references and tools provided and where they are located.

Tested Hardware and OS list:

Is located on the web at: http://support.intel.com/support/motherboards/server/SE7501BR2/compat.htm. This list contains a comprehensive list of Operating systems and Hardware components tested by Intel with the SE7501BR2 server board. This list does not contain memory, processors, or non-Intel chassis. It does contain the following:

- PCI Cards (Example: RAID controllers, Network interface cards, SCSI controllers)
- USB Devices
- CD, DVD, Floppy Drives
- Removable devices
- Hard Drives
- Keyboard/Video/Mouse Switch Boxes

This list is updated periodically please check the web for any changes.

Supported Processors:

Intel tests and publishes all processors that can be installed on the SE7501BR2. This list is located on the web at : http://support.intel.com/support/motherboards/server/se7501br2/supp_proc.htm . This list is updated typically when processor speeds are increased, a new generation of processors becomes available, or the stepping of the processor changes. If a processor is not on this list it is not supported on the SE7501BR2 server board.

Supported Memory:

Intel® tests and publishes all memory that have been tested on the SE7501BR2. This list is located on the web at : http://support.intel.com/support/motherboards/server/se7501br2/tested_mem.htm . This list is updated periodically with updates.

Product Documentation:

The SE7501BR2 features are described in many documents. Below is a list summarizing the key documents, locations and information contained within each:

- The SE7501BR2 Product Guide is shipped with the product on the resource CD. It is also posted on the web at http://support.intel.com/support/motherboards/server/se7501br2/prod_guide.htm . Translations may be available on the web as well. The Product guide is a reference, which describes the key feature of the serverboard and its components.

- The SE7501BR2 Technical Product Specification is posted on the web at: http://support.intel.com/support/motherboards/server/SE7501BR2/spec.htm . This manual contains very detailed technical information about the features of the SE7501BR2. Updates to this document are posted on a regular basis documenting the latest changes to the features.

Spares, Parts and Configuration Guide

This is a reference guide to assist customers in ordering the necessary components to configure the SE7501BR2 board and SC5200 Chassis Knock-Down-Kit products, the document includes part numbers and order codes and spares available for integration.

The document is available at
http://support.intel.com/support/motherboards/server/se7501br2/sp_config.htm

Platform Confidence Test:

The SE7501BR2 resource CD contains the Platform Confidence Test utility. This test utility can run diagnostics on your configuration and provide valuable information and troubleshooting information. The resource CD also contains a document describing the details of the test utility and how to use them.

LED information

The SE7501BR2 server board includes a number of LEDs that can aid in troubleshooting your system. A Table of these LEDs with a description of their use is listed here for your convenience.

LED Name	Function	Location	Color	Status
ID	Aid in server identification from the back panel	Front Panel and board rear left corner (DS1A1)	Blue	On=ID
System fault	Visible fault warning	Front panel and board rear left corner (DS1A2)	Green or Amber	On = No Fault Green Blink = degraded Amber = critical error or non-recoverable Amber blink = non-critical
IDE activity	Front panel and	Front panel and board left side (J1A14)	Green	Blinking = Activity

Beep Codes

Sometimes when a system is powered on 'beeps' are heard. These beeps are "beep codes." They can identify system events but are sometimes associated with a PCI Card (Example Some Intel® RAID cards have beep codes). Before checking for a system beep code error make sure that it is not a PCI card beep code. Beep codes occur during the boot sequence.

These beep codes are generated by the BMC. The BMC generates beep codes upon detection of the failure conditions listed in the following table. Each digit in the code is represented by a sequence of beeps whose count is equal to the digit. These are the most common beep codes.

BMC Beep Codes

Code	Reason for Beep
1	Front panel CMOS clear initiated
1-5-1-1	FRB failure (processor failure)
1-5-2-1	No processors installed or processor socket 1 is empty.
1-5-2-3	Processor configuration error (e.g., mismatched VIDs, Processor slot 1 is empty)
1-5-2-4	Front-side bus select configuration error (e.g., mismatched BSELs)
1-5-4-2	Power fault: DC power unexpectedly lost (e.g. power good from the power supply was deasserted)
1-5-4-3	Chipset control failure
1-5-4-4	Power control failure (e.g., power good from the power supply did not respond to power request)

In the case of a Bootblock update, where video is not available for text messages to be displayed, speaker beeps are necessary to inform the user of any errors. For beep codes associated with a Bootblock update refer to the SE7501BR2 Technical Product Specification on the web at http://support.intel.com/support/motherboards/server/SE7501BR2/spec.htm and refer to section 9.11.2.1 and 9.11.2.

Additional (Q & A) Questions & Answers

Processor Q & A

Does it matter which Processor is populated first?
Yes, processor 1 is the processor closest to the outside edge of the board and is labeled “CPU1”. Processor 2 is the processor closer to the center of the board and is labeled “CPU2”. This product will not boot if only one processor is installed and it is in the wrong socket. When two processors are installed, the SE7501BR2 server board is designed in such a way that it can boot from either processor using a technique called Fault Resilient Booting or FRB. If the primary processor fails to respond in a designated amount of time during POST, the secondary processor is used to complete the boot-up sequence. In the event of a single processor configuration, the board will halt during the boot process and display a message for the user that it is forcing itself to boot from a potentially bad processor and will continue once the user has acknowledged the message.

The system bus is automatically terminated; an empty “CPU2” socket does not require a terminator. For more detail on FRB, refer to the *SE7501BR2 Technical Product Specification* located on the Intel Support Website.

How do I disable hyper-threading?

Hyper-threading can be disabled in BIOS setup, under the “Advanced” menu. This will cause performance degradation on some applications.

Single Processor Configuration

All 8 CPU standoffs on the chassis base plate are required to be installed when the board is being integrated in a chassis. These standoff are required to be fastened once the board is installed to withstand shock and vibration, even if the system is being configured in a uni processor configuration when no processor is installed in CPU2. Refer to SC5200 Standoffs and Bumper Location section on this document.

Processor Wind Tunnel Airflow Direction

When configuring the board in a dual processor configuration, both PWT/fans are required to be installed with the same orientation. Proper installation requires that both fans push air through the PWT. Refer to the Quick Start User’s Guide for further details.

Memory Q & A

System Memory Installation

The SE7501BR2 supports registered DDR266 SDRAM memory only. DIMMs must be installed in pairs and must be populated by bank starting with BANK1 (DIMM1A and DIMM1B contiguous sockets). Although the board allows the user to mix various sizes of DIMMs between banks, DIMMs must be identical within the banks. Memory BANK1 is the DIMM pair located closest to the edge of board; refer to the board drawing on the Quick Start User Guide.

On Board Component Q&A

NIC 10/100 and 10/100/1000 RJ45 Location in I/O Area

The board provides two RJ45 connectors for the on-board Network Interface Controllers. If looking at the back of the board, the Gigabit RJ45 port is on the left (NIC2), the 10/100 RJ45 port is the connector on the right (NIC1). NIC1 is the designated Server Management NIC.

How do I disable the integrated components?

Onboard controllers can be disabled through the server board BIOS setup. To enter BIOS setup, press F2 when prompted during the boot up process.

System Fan Connections

The SE7501BR2 board ships with six (6) System Fan Headers. Sys Fan 1, Sys Fan 2, Sys Fan 3, and Sys Fan 4 are used when integrating in the SC5200 Base Chassis. Sys Fan 5 will be used for the additional System Fan from the SC5200 650W Hot-Swap Redundant Power (HSRP). Sys Fan 6 will be available for reference chassis. The following describes how the fans should be connected on the board when integrated into the SC5200 450W Base Chassis.

REAR CHASSIS FANS		FRONT EPAK FANS	
Reference Designator	Silkscreen	Reference Designator	Silkscreen
J7B12	Sys Fan1	J1K14	Sys Fan3
J7B11	Sys Fan2	J2K5	Sys Fan4

Devices Not Recognized Under Device Manager in Windows* 2000

After installing Microsoft* Windows 2000 Advanced Server, Device Manager displays unrecognized devices. This is due to the OS not having all drivers for the Intel® E7501 chipset, on-board NICs and SCSI Hot Swap Back Plane. Installing the Intel Chipset Utility (INF files), NIC Drivers and HSBP Drivers posted http://support.intel.com allows the OS to properly recognize these devices.

When this occurs checklists

My system appears to power on, however there is no video.

Check the following:

- This product allows for use of two processors, if only one processor is used, it must be located in the “CPU 1” socket. Processor termination is automatic so a terminator is not required in the empty socket. The system will not boot if only one processor is used and it is installed in the “CPU2” socket.
- Make sure the monitor is turned on and the video cable is plugged in completely. If you are using a switch box to share a monitor between multiple servers, ensure switching to the proper server.
- Remove all add-in cards and retry booting with just the on-board components. If successful, try adding the add-in boards in one at a time with a reboot in between to try to pinpoint a suspect card.
- Remove and reseat memory modules and processors. Try using memory and processors from a known working system.
- Video can be disabled on the SE7501BR2 via BIOS setup or via and add-in video board. If you are using an add-in video card, make sure your monitor is plugged into the add-in video card. If you suspect that your video controller may be disabled via BIOS setup, you can attach to the system via server management, either through the serial port or the LAN connector and redirect the BIOS setup screen to your remote console to check. For details on how to do this, refer to the *Intel Server Management User’s Guide* included on the resource CD that came with your board or visit the Intel Support website to obtain a copy of the document.
- If you are using a non-Intel chassis, ensure that stand-offs are only located below the grounded mounting holes. Stand-offs in other locations may contact the back of the board and short out certain features, including video, causing it to operate improperly or unreliably. Please consult the *Intel Server Board SE7501BR2 Product Guide* that shipped on the SE7501BR2 Resource CD with your board for details on correct standoff placements.

If you are unable to get a video image, please fill out the included customer support issue report form and call your customer support representative. Please note the answers to the following questions below.

Other things to try

Check on the following:

- Update the firmware files to the latest version. The files used depend on the type of chassis being used but should include BIOS, BMC, FRUSDR, HSC. Clear the CMOS upon completion. This can be accomplished by moving the clear CMOS jumper or by holding down the reset button for 4 seconds and at the end of 4 seconds while holding down the reset button press the power button then release both at the same time. Update files can be downloaded from the SE7501BR2 support web site (provided a direct link to the support site).
- Download and apply the latest drives used in your installation. These drivers may include video, network adapter, SCSI, , and chipset.

Intel Server Issue Report Form

Date Submitted: _____
Company Name: _____
Contact Name: _____ Email Address _____
Intel Server Product: SE7501BR2
Priority: _____(Critical, Hot, High, Low)

Problem Description:

_____
_____
_____

Hardware Information

* **Baseboard Revision - PBA#** _____
* **Processor 1 Speed/Stepping** _____
* **Processor 2 Speed/Stepping** _____
* **Chassis Used (Vendor/Model)** _____

* **System BIOS Version :** _____
* **BMC Firmware Version :** _____
* **FRUSDR Version :** _____
*** HSC Firmware Version :** _____

DIMM configuration

DIMM1A _____MB
Vendor & PN _____
DIMM1B _____MB
Vendor & PN _____
DIMM2A _____MB
Vendor & PN _____
DIMM2B _____MB
Vendor & PN _____

O/S Information
***Operating System** _____
***O/S Version** _____
***Service Pack #** _____

Check each box below that is used in the failing configuration, and provide the requested information

	Card Description	Driver Rev.	IRQ #	I/O Base Addr.	FW Rev#
*** P64 Segment C (PCI-X 64/100)**					
PCI Slot 1 ❒	_____	_____	_____	_____	_____
PCI Slot 2 ❒	_____	_____	_____	_____	_____
*** P64 Segment B (PCI-X 64/100)**					
PCI Slot 3 ❒	_____	_____	_____	_____	_____
PCI Slot 4 ❒	_____	_____	_____	_____	_____
*** P32 Segment A (PCI 32/33)**					
PCI Slot 5 ❒	_____	_____	_____	_____	_____
PCI Slot 6 ❒	_____	_____	_____	_____	_____