



# **Intel® Server Board SCB2 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
October 2001	1	Initial Release Draft

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Contact your local Intel sales office or your distributor to obtain the latest specifications before placing your product order.

Copies of documents which have an ordering number and are referenced in this document, or other Intel literature, may be obtained from:

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P.O. Box 5937  
Denver, CO 80217-9808

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# Troubleshooting

In the unlikely event you encounter issues using your server, this guide will help you troubleshoot & identify possible problem areas. If you are unable to resolve a problem using this guide, please call our help desk. This guide will help you collect the data we will need to help you through your issues. Each issue includes suggestions that may help you, and a list of information we will need to assist you should you need to call. Please visit the Intel Support website for updated versions of this and all documentation and for the latest software and driver updates.

<http://support.intel.com/support/motherboard/server/SCB2>

## 1) My server will not power on

Check for the following possibilities:

- Does your server board have power? Open the chassis lid and check the 5V Standby LED on the baseboard to see if it is illuminated (check the *SCB2 Technical Product Specification* for location information. The TPS is located on the Intel Support website). If your server is plugged in, this LED should be green.
- If you are using the SR1200 or SR2200 chassis, is the flex circuit cable, labeled Floppy/FP/IDE, properly seated on the baseboard and backplane? If you are using a non-Intel chassis, ensure the front panel pins are properly placed on the front panel header located at J1G1.
- If you are using the SR1200 chassis, ensure the power supply is fully seated in the power distribution board connector.
- Some ATX power supplies have a power switch on the back of the power supply next to the fan, is it switched on?
- Remove all add-in cards and see if the server boots using just the on-board components. If successful, add the cards back in one at a time with a reboot in between to see if you can pinpoint a suspect card.
- Remove the processor(s) and reseal.
- Remove and reseal the memory modules. Ensure you have properly populated the memory modules. With the SCB2 board, memory is populated in pairs. Refer to the silk screen on the baseboard or the documentation that accompanied your board for proper placement. Note: memory pairs are not side by side. Try using memory modules from a known working server system and always use memory that is on the tested memory list. The tested memory list is located on the Intel Support website.

Though it is unlikely that a server will not boot, there are many reasons why it may not boot. If you are unable to resolve this issue, please fill out the included customer support form at the end of this document and call your customer support representative. Please make sure you have the following pieces of information when you call or send in your report form:

- What memory is the server using? Is it on the tested memory list? Visit the Intel Support website for an updated memory list.
- What version of BIOS, firmware and FRU/SDRs does your board have?

- What is the PBA number on the board. The PBA is found on a white sticker next to the low profile PCI riser slot. It is in the form of PBA XXXXXX-XXX.
- What chassis and power supply is the server using?
- If you are using a chassis with front panel lights, are there any front panel lights on?
- Is the power supply fan spinning?
- Does the system beep? See Issue 2.
- Please note what is displayed on the monitor or any sounds emanating from the server system.

## 2) Upon booting, my server starts beeping.

Most likely, these beeps are “beep codes.” They identify system events during POST in case video fails to display. A complete list of beep codes are listed in the *SCB2 Technical Product Specification* located on the Intel Support website.

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

Check the following:

- Are there any beeps coming from the board and is the floppy drive being accessed? If so, your system may have been put in the BIOS recovery mode. This mode is used to reflash the BIOS in the event it gets corrupted. To enter this mode, the RCVRY BOOT jumper located at J1F1 (along the edge of the board, next to the SSI front panel header) must be set on pins 2-3. For normal operation, this jumper must be set on pins 1-2 (looking at the board so that this jumper block is at the top, normal operation is with the jumper on the right two pins).
- 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 reseal memory modules and processors. Try using memory and processors from a known working system.
- Video can be disabled on the SCB2 via BIOS setup or via an 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.

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

- What memory is the server using? Is it on the tested memory list? Visit the Intel Support website for an updated memory list.
- What version of BIOS, firmware and FRU/SDRs does your board have?
- What is the PBA number on the board. The PBA is found on a white sticker next to the low profile PCI riser slot. It is in the form of PBA XXXXXX-XXX.
- What chassis and power supply is the server using?
- If you are using a chassis with front panel lights, are there any front panel lights on?
- Is the power supply fan spinning?
- Does the system beep? See Issue 2.
- Please note what is displayed on the monitor or any sounds emanating from the server system.

#### **4) My system starts booting automatically when I plug it in.**

The SCB2 server board saves the last known power state in the event of a power failure. If you remove power before powering down the system via the power switch on the front panel, your system may automatically attempt to come back to the “on” state it was in once you restore power.

You can configure how you’d like your SCB2 server system to react when power is restored in the BIOS set-up. You can have the server remain off or return to the last known power state.

- Please keep in mind that unplugging the system or flipping a switch on the power strip both remove power.
- Follow the correct removal sequence: Press the front panel button before removing the power cord.

Allowing your system to fully power up and then power down the system using the front panel power switch should correct this problem. If it does not, fill out the attached issue report form and call your customer support representative. Please have the following information available:

- What BIOS do you have loaded on the system? (The latest tested BIOS is posted to the Intel Support website)
- What is the PBA number of the server board? (The PBA number is located on a white label next to the low profile PCI riser card connector and is printed in the following format: PBA xxxxxx-xxx)
- What memory is the server using? Is it on the tested memory list?
- What chassis and power supply is the system using?

## 5) Some of my hard drives show up during POST and some don't.

Check on the following:

- Are you using third party SCSI adapters? System memory limitations limit the number & size of option ROMs in the system. If you place too many adapters or adapters that take up too much space in memory, they may not install and show the hard drives connected to them. For a list of tested peripherals with the SCB2 board, download the *Tested Operating System and Adapter List* from the Intel support website.
- If the Option ROM scan for your card or the onboard SCSI device has been disabled, no drives connected to that device will show up during POST.
- Verify that the device power cable is firmly connected.
- Check your SCSI ID numbers. SCSI devices must have their own unique ID on the SCSI bus. This number must be set with jumpers on the device. ID number should be set starting at 0 and must be set lower than 8 if booting from the drive. If you are using the SR1200 or SR2200 server chassis which have a backplane, the device IDs are automatically set by the backplane.
- Check for proper termination on the SCSI bus.

If your hard drives still do not show, please fill out the included issue report form and call your customer support representative. Please pay special attention to the following information:

- What add-in adapters do you have in your system (manufacturer and model number)?
- What types of hard drives are in the system (manufacturer and model number)?
- What kind of terminator do you have at the end of the cable? (Manufacturer and type e.g. Ultra 160)
- What are the SCSI IDs of the devices on your SCSI bus?
- How many SCSI channels are you using?
- What memory is the system using? Is it on the tested memory list?

# Additional Questions & Answers

These questions are intended to give the reader a general overview of unique features of the Intel Server Board SCB2. For additional information, the product documentation should be consulted. Recommended documentation includes:

*Intel Server Board SCB2 Technical Product Specification*

*Intel Server Chassis SR1200 Technical Product Specification*

*Intel Server Chassis SR2200 Technical Product Specification*

*Intel Server Board SCB2 Product Guide*

*Intel Server Chassis SR1200 Product Guide*

*Intel Server Chassis SR2200 Product Guide*

All documentation is available on the Intel support website at <http://support.intel.com/support/motherboards/server>

The product guides are also available on the Resource CD that ships with each SCB2 board in the box kit.

## General Board and Feature Set Questions

### 1) **Why is the serial port implemented through and RJ-45 connector?**

The SCB2 server board is designed specifically for the High Density Rack Mount (HDRM) environment. Therefore, several HDRM features, such as a high density serial port have been implemented. The intention for the rear RJ-45 serial port is for serial concentrator applications. Several serial concentrators on the market are accessed through an RJ-45 serial port. In order to accommodate both serial concentrator communication standards and standard modem/UPS type communication standards, there are a set of jumpers located directly behind the RJ-45 serial connector on the baseboard. These jumpers can be used to route the DSR signal to pin 7 on the connector for serial concentrator type implementations or have the DCD signal routed to that pin for modem/UPS type implementations. Please consult the *SCB2 Technical Product Specification* or *SCB2 Product Guide* for further details on the serial port implementation and usage model.

### **What is the difference between the SCSI version of the base board and the ATA version?**

There are two versions of the Intel Server Board SCB2, a SCSI version and an ATA version. The SCSI version is designed for high performance applications requiring SCSI throughput. The SCSI baseboard is designed using the Adaptec\* 7899W SCSI controller providing two channels of Ultra 160 SCSI performance. Channel A is routed through a high density SCSI connector out the rear of the chassis and Channel B is implemented using a standard 68-pin connector for internal

requirements.

The ATA version of the baseboard is intended for cost effective, yet still highly available implementations. This board features two channels of ATA-100 IDE controlled by the Promise Technologies\* PDC20267 IDE RAID controller. This controller can be used to set up RAID levels 0, 1 and 0+1 using IDE drives.

**2) 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.

**3) What jumpers are available and how should they be set?**

There are four headers on the main jumper block on the SCB2 server board between locations J1E1 and J1F1. Jumpers are available for the following functions:

Recovery Boot

Password Clear

CMOS Clear

BMC Write Protect (WP)

For normal operation, these jumpers should be left in their default position as shipped from the factory. Additionally, there are two additional jumper headers located directly behind the RJ-45 Serial connector to configure this device depending on the type of peripheral connected to it. By default, the DSR signal is asserted on Pin 7 of this connector. To assert the DCD signal on this pin, the jumpers need to be reconfigured. For details on this, refer to the *SCB2 Product Guide* on the CD that shipped with your board or to the *SCB2 Technical Product Specification* located on the Intel Support Website.

## Processor Questions

**1) What processors are supported on the Intel Server Board SCB2?**

The SCB2 server board supports the Intel® Pentium® III processor for servers with 512K cache starting at 1GHz and higher. These processors can only be in the FC-PGA2 package. For a complete list of supported processors, visit the Intel Support website.

**2) What heatsink should I use?**

The boxed processor comes with the appropriate heatsink for integration into the Intel Server Chassis SR1200 and SR2200. For integration into the SR1200, the heatsink minus the fan should be used. For the SR2200 chassis, the fan on the heatsink must be used.

**3) Does it matter which Processor is populated first?**

Not necessarily. Processor 1 is the processor closest to the inside of the board and processor 2 is the processor closer to the corner of the board. The Intel SCB2 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.

So, for normal operation, it is best if processor 1 is populated first and then processor 2, however in the event of a mistake or a failed processor, the Intel SCB2 is able to compensate. Also, remember that in a single processor configuration, a terminator is necessary in the secondary socket. For more detail on FRB, refer to the *SCB2 Technical Product Specification* located on the Intel Support Website.

## Memory Questions

### **What memory configurations are supported on the Intel® Server Board SCB2?**

Server Board SCB2 has slots for six 168-pin DIMMs and can support a minimum system memory configuration of 128MB and a maximum system memory configuration of 6GB of PC-133 Registered SDRAM. Server Board SCB2 supports DIMM sizes of 64MB, 128MB, 256MB, 512MB and 1GB.

Memory must be populated in pairs due to the two-way interleaving supported by the chipset. DIMM population order is designated on the board silkscreen and in the documentation that accompanies the product. DIMM pairs are not populated side by side, refer to the silkscreen or the documentation for proper population rules.

Always use tested memory with Intel Server Board products. For a list of tested memory, visit the SCB2 support website at <http://support.intel.com/support/motherboards/server/scb2>.

# Intel Server Issue Report Form

Please Complete All That Apply

If you must contact customer support, please fill out the following support form and have it ready.

Company Name: \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Contact: \_\_\_\_\_

Email Address: \_\_\_\_\_

Telephone #: \_\_\_\_\_

Priority: \_\_\_\_\_

(1-Hot, 2-Critical, 3-High, 4-Low)

## Intel Baseboard Product:

STL2	SBT2	SCB2	SAI2	SJP2	SDS2
SCB2	SKA4	SRPL8	SRPM8	OPRF100	S815EBM1
Other (specify) _____					

## Chassis:

SC7000	SR4000	SC5000	SC5100	SC5150
SR1200	SR2000	SR2050	SR2100	SR2200

Other (specify chassis manufacturer & part number, power supply manufacturer & part number, type & amount of chassis fans used, fan manufacturers & part numbers)

\_\_\_\_\_

**Problem Description** (complete details of the problem setup, problem description, error messages, recreation steps, troubleshooting steps completed, etc.)

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Server System Configuration Information (\* indicates required information)

## Hardware Information

* Main Board Part Number (PBA#/AA#) _____	* System BIOS Version _____
* CPU Board Part Number (PBA#/AA#) _____	* I/O Board Part Number (PBA#/AA#) _____
* Front Panel Board PNumber (PBA#/AA#) _____	* Midplane Board Part Number (PBA#/AA#) _____
* Mezzanine Board PNumber (PBA#/AA#) _____	* I/O Riser Board Part Number (PBA#/AA#) _____
* System BMC Firmware Version _____	* SCSI Backplane PBA#/HSC Firmware Version _____
* System FPC Firmware Version _____	* SMIC Firmware Version _____
* Power Share/Dist. Board PBA# _____	* Chipset Stepping _____
* Processor #1 _____ / _____ / _____ / _____ / _____	* Processor #2 _____ / _____ / _____ / _____ / _____
S-Spec# Speed Stepping Cache size CPUID#	S-Spec# Speed Stepping Cache size CPUID#

\*Processor #3 \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 S-Spec# Speed Stepping Cache size CPUID#

\*Processor #4 \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 S-Spec# Speed Stepping Cache size CPUID#

\*Processor #5 \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 S-Spec# Speed Stepping Cache size CPUID#

\*Processor #6 \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 S-Spec# Speed Stepping Cache size CPUID#

\*Processor #7 \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 S-Spec# Speed Stepping Cache size CPUID#

\*Processor #8 \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 S-Spec# Speed Stepping Cache size CPUID#

**\*Memory module configuration  
 (On board or in Card 1)**

J1 \_\_\_\_\_ MB (MODULE#1)  
 J2 \_\_\_\_\_ MB (MODULE#2)  
 J3 \_\_\_\_\_ MB (MODULE#3)  
 J4 \_\_\_\_\_ MB (MODULE#4)  
 J5 \_\_\_\_\_ MB (MODULE#5)  
 J6 \_\_\_\_\_ MB (MODULE#6)  
 J7 \_\_\_\_\_ MB (MODULE#7)  
 J8 \_\_\_\_\_ MB (MODULE#8)  
 J9 \_\_\_\_\_ MB (MODULE#9)  
 J10 \_\_\_\_\_ MB (MODULE#10)  
 J11 \_\_\_\_\_ MB (MODULE#11)  
 J12 \_\_\_\_\_ MB (MODULE#12)  
 J13 \_\_\_\_\_ MB (MODULE#13)  
 J14 \_\_\_\_\_ MB (MODULE#14)  
 J15 \_\_\_\_\_ MB (MODULE#15)  
 J16 \_\_\_\_\_ MB (MODULE#16)

**\* Module Type (module vendor/vendor part numbers/ Intel part numbers):**

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**\*Memory module configuration  
 (In Card 2)**

J1 \_\_\_\_\_ MB (MODULE#1)  
 J2 \_\_\_\_\_ MB (MODULE#2)  
 J3 \_\_\_\_\_ MB (MODULE#3)  
 J4 \_\_\_\_\_ MB (MODULE#4)  
 J5 \_\_\_\_\_ MB (MODULE#5)  
 J6 \_\_\_\_\_ MB (MODULE#6)  
 J7 \_\_\_\_\_ MB (MODULE#7)  
 J8 \_\_\_\_\_ MB (MODULE#8)  
 J9 \_\_\_\_\_ MB (MODULE#9)  
 J10 \_\_\_\_\_ MB (MODULE#10)  
 J11 \_\_\_\_\_ MB (MODULE#11)  
 J12 \_\_\_\_\_ MB (MODULE#12)  
 J13 \_\_\_\_\_ MB (MODULE#13)  
 J14 \_\_\_\_\_ MB (MODULE#14)  
 J15 \_\_\_\_\_ MB (MODULE#15)  
 J16 \_\_\_\_\_ MB (MODULE#16)

**\* Module Type (module vendor/vendor part numbers/ Intel part numbers):**

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## O/S Information

\*Operating System \_\_\_\_\_ \*Operating System Language Version \_\_\_\_\_  
 \*O/S Version \_\_\_\_\_ \*Service Pack # \_\_\_\_\_  
 \*MP Specification \_\_\_\_\_

## Utilities Information

\*ISC Version \_\_\_\_\_ \*SSU Version \_\_\_\_\_  
 \*EMP / DPC Console Version \_\_\_\_\_ \*FRU/SDR Loader Version \_\_\_\_\_  
 \*Diagnostics Version (Testview, PCDiag, etc.) \_\_\_\_\_ Other \_\_\_\_\_

## AGP/PCI/ISA Configuration

### ALLOCATED RESOURCES PLUG IN DEVICES

Card Type	Slot#	Card Description	Driver Rev.	IRQ #	I/O Base Addr.	FW Rev#
AGP	AGP	_____	_____	_____	_____	_____
PCI	Slot1	_____	_____	_____	_____	_____
PCI	Slot2	_____	_____	_____	_____	_____
PCI	Slot3	_____	_____	_____	_____	_____
PCI	Slot4	_____	_____	_____	_____	_____
PCI	Slot5	_____	_____	_____	_____	_____
PCI	Slot6	_____	_____	_____	_____	_____
PCI	Slot7	_____	_____	_____	_____	_____
PCI	Slot8	_____	_____	_____	_____	_____
PCI	Slot9	_____	_____	_____	_____	_____
PCI	Slot10	_____	_____	_____	_____	_____
ISA	ISA 2	_____	_____	_____	_____	_____
ISA	ISA 1	_____	_____	_____	_____	_____

### ONBOARD DEVICE

#### IN USE

*On-Board Video	<input type="checkbox"/>	_____	_____	_____
*On-Board NIC1	<input type="checkbox"/>	_____	_____	_____
*On-Board NIC2	<input type="checkbox"/>	_____	_____	_____
*On-Board SCSI-1	<input type="checkbox"/>	_____	_____	_____
*On-Board SCSI-2	<input type="checkbox"/>	_____	_____	_____

RAID  RAID Level: \_\_\_\_\_(0-5) Caching Method: \_\_\_\_\_ (RB/WT) # of Drives Used: \_\_\_\_\_

IDE Drive Type(s): \_\_\_\_\_ (Make/Model)

SCSI Drive Type(s): \_\_\_\_\_ (Make/Model)

Other Device Type(s){CD-ROM, Tape Drive, etc.}: \_\_\_\_\_ (Make/Model)