

Intel® Server Board SE7500CW2 Troubleshooting Guide

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



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Revision History

Orig./Rev.	Description	Date
.90	First release	May 2002
1.0	Added Tips listed in TPS	May 20, 2002
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Intel® Server Board SE7500CW2 Troubleshooting

Welcome to the Server Board SE7500CW2. In the unlikely event you do encounter issues, this guide will help you troubleshoot & identify possible problem areas. If you are unable to resolve a problem using this guide, please follow these steps:

- 1) Visit <http://support.intel.com/motherboards/server/se7500cw2>, this will contain the latest information of known issues and their respective solutions. If still unable to resolve the issue, go to the next step
- 2) Send an e-mail to Intel Customer Support using this form http://support.intel.com/support/motherboards/server/server_form.htm
- 3) Contact Intel Customer Support on the list of numbers listed here "http://www.intel.com/support/9089.htm"

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 document.

<http://support.intel.com/support/motherboards/server/SE7500CW2>.

Boot Issues

1) My server will not power on.

Check for the following possibilities:

- The SE7500CW2 server board requires an ATX +12V power supply. A momentary switch should be used for the power on/off switch and the sleep/resume switch. The power supply chosen must meet the ATX 2.01 or later specification. Does your power supply meet these criteria?
- Have you securely plugged the server AC power cord into the power supply?
- Have you plugged the server into a “powered on” power strip?
- Some ATX power supplies have a power switch on the back of the power supply next to the fan, is it switched on?
- Is the power supply set correctly to 110V or 235V depending on your power output?
- Is the front panel power switch cable properly connected to the front panel header pins on the server board?
- Remove and reseal the memory modules. Try using memory modules from a known working server system.
- 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 it (them).
- Check to make sure chassis stand-offs are only located below mounting holes. Misplaced stand-offs can contact pins on the back of the board and cause a short which could cause the system to not power on. Please consult the *Intel Server Board SE7500CW2 Product Guide* that shipped on the SE7500CW2 Resource CD with your board for details on correct stand-off placement.

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 customer support issue report form (at the end of this document) 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 site for an updated memory list:
<http://support.intel.com/support/motherboards/server/SE7500CW2>.
- What processors is the server using? Is (are) it (they) on the tested list? Visit the Intel support site for information on the supported processors.
<http://support.intel.com/support/motherboards/server/se7500cw2>
- 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.

- If the server will still not boot, please fill in the issue report form at the end of this document & contact your Intel customer support representative.

2) My hard disk drive (HDD) lights went on, I heard the drives spin up, and my floppy drive light turned on, but I'm not seeing video.

Check the following:

- Make sure the monitor is turned on and the video cable is plugged in completely.
- Remove all add-in cards and retry booting with just the on-board components. If successful, try adding the add-in cards back into the system one at a time with a reboot in between to try to pinpoint a suspect card.
- Remove and reseat memory modules. Try using memory from a known working system.
- Remove and reseat processor.
- If you are using a switch box to share a monitor between multiple servers, ensure switching to the proper server.

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.

- What memory is the system using? Is it on the tested memory list? Visit the Intel support site for an updated memory list:
<http://support.intel.com/support/motherboards/server/SE7500CW2>.
- What processors is the server using? Is it on the tested list? Visit the Intel support site for information on the supported processors.
<http://support.intel.com/support/motherboards/server/se7500cw2>
- What chassis and power supply is the system using?
- If the chassis has front panel lights, are any front panel lights on?
- Is the power supply fan spinning?
- Does the system beep? See Issue 2.
- Please note any sounds emanating from the server system.
- If you are using a third party video adapter, please have manufacturer and model number ready.
- If the server will still not boot, please fill in the issue report form at the end of this document & contact your Intel customer support representative.

3) I am installing adapters in my powered-down system, and my system boots up when I install a PCI adapter.

Server management features require full time "standby" power. This means that power is still "on" to parts of the system even if you have turned the system "off" via the power switch on the front panel.

Additionally, signals in the PCI connectors tell the system to boot (normally used by server management adapters/NICs). Plugging in the adapter with the AC power cord still connected can

cause false signals to be transmitted commanding the system to boot. Before removing the cover to your chassis, you should always

- Turn off the server via the power switch on the front panel.
- Unplug the AC cord from the server.

4) 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. Note you only need to load the option ROM for a SCSI card if you intend to boot to any of the devices attached to that card. As long as the hard drives are seen by your operating system, you can still access them and use them for storage.
- Verify that pin 1 on the data cable connects to pin 1 on the device. In most cases, if you orient the data cable so that the colored stripe on the cable is pointing towards the power connector on the device, you will have proper orientation.
- 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.
- Check for proper termination on the SCSI bus.
- If using an IDE drive, verify that the drive setting is set correctly (Master or Slave)

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)

Note: only the last device on the SCSI channel requires termination. All LVD devices require "active" vs. "passive" terminators.

- 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? Visit the Intel support site for an updated memory list:

<http://support.intel.com/support/motherboards/server/SE7500CW2>

Other Questions

General Questions

1) Is it possible to enable hyper-threading under Red Hat Linux 7.2 on the SE7500CW2 server board?

In order to enable hyper-threading using Intel® Xeon™ processors under Red Hat Linux 7.2 it is necessary to download and recompile the 7.2 base kernel with the “Hyper-Threading” patch found at <http://www.redhat.com/>. Look for advisory number RHSA-2002:028-13 for all details and the downloadable patch. Keep in mind, once you recompile your kernel with this patch, some of your drivers may not work any longer. Intel only provides drivers for the base Red Hat 7.2 kernel.

Native support for hyper-threading is available in Red Hat Linux 7.3 and the SE7500CW2 server board supports this operating system. For this reason, Intel recommends using Red Hat Linux 7.3 instead of 7.2.

2) What order must I populate processor sockets?

Processors must be populated in the sequential order; that is, processor Socket #1 must be populated before processor Socket #2. Please refer to the configuration label, product documentation or board silkscreen for assistance identifying the correct processor socket.

3) How do I disable Hyper-Threading Technology?

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

4) Do I need a processor terminator for Intel® Xeon™ processors on SE7500CW2?

You do not need to populate a terminator in an unused processor socket

5) How do I ensure redundancy across Promise ATA 100 RAID controllers?

When creating a RAID array using the Promise ATA 100 RAID controller, keep in mind redundancy can only be obtained when your drives are spread across the two channels. You cannot obtain redundancy if you have a Master / Slave configuration on a single channel. In order for a redundant array to be valid, a Master / Master configuration should be used or a Master w/ Slave & Master w/ Slave configuration. If you have a Master / Slave on a single channel and the master drive goes off-line, your slave drive will also go off-line. Data will not be lost, but your RAID array will be unavailable and this could cause unwanted downtime on your server.

6) How do I get Microsoft* Windows NT 4.0 to install?

System Requirements

- SE7500CW2 Baseboard PBA number A87967-501 or later
- SE7500CW2 BIOS version 1.12 or later
- SE7500CW2 System Resource CD release A86335-004 or later
- Promise FastTrack100™ Controller driver version 2.00.0140.12 or later
- Blank or formatted IDE hard drive(s) attached to the RAID IDE connector(s)

Prerequisite

- If you are installing your OS to the RAID array, you must configure your RAID array on the Promise controller first.

Windows* NT 4.0 Server and Service Pack 6a Installation process

1. Press <F2> during POST to enter BIOS setup
2. Under the “Advanced menu,” configure the following settings:
 - a. Installed O/S: [NT4]
 - b. NT4 Installation Workaround [Enabled]
3. Press <F10> to save and exit BIOS setup
4. Insert the “Windows* NT 4.0 Server” CD into the CD-ROM drive
5. Press <F6> when the following message is displayed, “Setup is inspecting your computer’s hardware configuration ...”
6. Insert the “Promise FastTrack100™ Controller” diskette into the floppy drive then press <S>
7. Select “Other” then press <ENTER>
8. Press <ENTER> again to continue with the installation
9. Select “WinNT Promise FastTrak100™ Controller” then press <ENTER>

10. Press <ENTER> again to continue with the installation and follow the on-screen instructions
11. When prompted, remove the “Windows* NT 4.0 Server ” CD and “Promise FastTrack100™ Controller” diskette from the system

Note: The system will reboot twice before resuming the Windows* NT 4.0 Server installation process.

12. When prompted, insert the “Windows* NT 4.0 Server” CD into the CD-ROM drive
13. Press <ENTER> to continue with the installation and follow the on-screen instructions
14. For the networking configuration, select “Do not connect this computer to a network at this time”
15. When prompted, remove the “Windows* NT 4.0 Server” CD from the CD-ROM drive
16. Press <F2> during POST to enter BIOS setup
17. Under the Advanced menu, configure the following setting:

- a. NT4 Installation Workaround [Disabled]

18. Press <F10> to save and exit BIOS setup
19. Install “Windows* NT 4.0 Server Service Pack 6a” to update and patch the operating system

Note: The machine may hang just prior to performing a reboot. To work around this, just simply power the machine off and restart it. The system should come back up and the installation should resume as expected.

ATI Rage XL Video Driver Installation

1. Hold down the <Shift> key to disable the Autorun feature temporarily and insert the “SE7500CW2 System Resource CD” into the CD-ROM drive
2. Copy the “Drivers” directory from the “SE7500CW2 System Resource CD” to your local hard drive C:\
3. Click Start → Run and type in the path to the drivers directory you copied from the resource CD. Add “\Video\WinNT\Setup.exe” to the end of the path and follow the on-screen instructions
4. After the installation is complete, remove the “SE7500CW2 System Resource CD” from the CD-ROM drive and reboot the system

Onboard Network Interface Card (Intel 82550PM NIC) Driver Installation

1. Hold down the Shift key to disable the Autorun feature temporarily and insert the "Windows* NT 4.0 Server Server" CD into the CD-ROM drive
2. Click <Start> → <Settings> → <Control Panel>
3. Double-click the <Network> icon
4. Click <Yes> to install Windows NT Networking components
5. Check the "Wired to the network" box then click <Next>
6. Click "Select from list ..."
7. Click "Have Disk ..."
8. Type in path to the Drivers directory you copied to your hard drive from the CD and then add "\Nic1\WinNT" then click <OK>
9. Select "Intel(R) PRO/100 Family Adapter" then click <OK>
10. Click <Next> to continue with the installation and follow the on-screen instructions
11. When prompted for NT files, type in the following path "D:\i386" then click OK
12. After the installation is complete, remove the "Windows* NT 4.0 Server" CD from the CD-ROM drive and reboot the system

7) How can I enable Direct Memory Access (DMA) under Red Hat Linux 7.2 or 7.3?

There may be confusion as to why DMA doesn't automatically work with Red Hat 7.2/7.3 as shipped. This is not a limitation of the SE7500CW2 baseboard or a hardware error. This issue is yet to be root caused.

During the compile as mentioned below you will need to be careful in correctly identifying the correct IDE driver. If you are using the IDE bus only for a CD-ROM performance likely is not an issue and the previous sentence can be ignored. If using ATA RAID it will be necessary to compile with separate source code or the system will not boot.

In order to update the kernel correctly use the 2.4.19 found at (typically kernel 2.4.18-3smp installs with Red Hat Linux 7.3):

<http://www.kernel.org/pub/linux/kernel/v2.4/linux-2.4.19.tar.gz>

and apply patch patch-2.4.19-ac4 found at

<http://www.kernel.org/pub/linux/kernel/people/alan/linux-2.4/2.4.19/patch-2.4.19-ac4.gz>

with following steps,

- copy linux-2.4.19.tar.gz to /usr/src/
- run 'tar -xzf linux-2.4.19' to extract the kernel source
- copy patch file to new kernel source directory /usr/src/linux-2.4.19
- cd /usr/src/linux-2.4.19
- gzip -dc patch-2.4.19-ac4.gz | patch -p1
- When booting the new compiled kernel run 'hdparm -d1 /dev/hda' and then the DMA will be enabled.

Note: The previous steps are similar to the normal linux kernel compiling procedure.

8) How do I get NetWare 6.0 to successfully install?

To successfully install Netware 6.0 SP1, the “Legacy USB support” option in BIOS (Advanced sub-menu) setup needs to be set to “Disabled”. If this is not set to “Disabled”, then a hang at the “initializing keyboard” screen will occur during the installation of the operating system. Also, a system hang may occur if a user goes into BIOS SETUP and enables the “Legacy USB support” after the operating system is installed.

Memory Questions

1) What memory configurations are supported on the SE7500CW2?

Server Board SE7500CW2 has slots for four 184-pin registered DDR-200/266 ECC SDRAM. The SE7500CW2 server board can support a minimum system memory configuration of 256MB (two sticks of 128MB) and a maximum system memory configuration of 4GB. Server Board SE7500CW2 supports SDRAM sizes of 128MB, 256MB, 512MB, and 1GB single or double-sided. Memory sticks must be identical and populated in pairs. Pairs are side-by-side starting with DIMM pair 1A and 1B that are the furthest from MCH (closest to edge of board).

The SE7500CW2 has been designed to support 2GB memory modules allowing for a maximum main memory size of 8GB, however validation has not yet completed on these modules. Please refer to the SE7500CW2 support website at <http://support.intel.com/support/motherboards/server/se7500cw2> for updates to this feature and for the latest revision of the tested memory list.

2) What kind of problems might occur in an SDRAM-based system that uses non-compliant DIMMs?

The most extreme example is memory failure, when the system hangs while booting. This can happen when the system is unable to communicate properly with the memory. In less extreme cases, the memory may generate intermittent errors or fail during stress. Always use memory from the Intel® Server Board SE7500CW2 Tested Memory List for maximum

reliability: <http://support.intel.com/support/motherboards/server/SE7500CW2>

Jumpers and BIOS Setup Options

1) How should the jumpers be set on Intel Server Board SE7500CW2?

For normal operation, the jumpers are set correctly from the factory. Refer to the Technical Product Specification for more information on configuration jumper settings.

Input/Output

1) Does the Intel® Server Board SE7500CW2 support Ultra ATA/33/66/100 hard drives?

Yes. One of the features of the Intel Server Board SE7500CW2 is its ability to support all Ultra ATA transfer rates (i.e., 33MB/sec, 66MB/sec, and 100 MB/sec). To take advantage of the increased bandwidth available on the IDE channels, a hard drive that implements higher spindle speeds and a large onboard buffer size may be required.

2) What IDE cable should I use to support both Ultra ATA/100 and previous IDE transfer protocols.

A 40-pin, 80-conductor cable can be used with Server Board SE7500CW2 and is fully backward compatible with all IDE transfer protocols. It will also support Ultra ATA/100 if used with one or two Ultra ATA/100 drives attached.

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

Intel® Server Board SE7500CW2 Issue Report Form

Please Complete All That Apply

Company Name: _____	Date Submitted: _____
Contact: _____	Email Address: _____
Telephone #: _____	Priority: _____

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

Chassis

<input type="checkbox"/> Intel® Server Chassis SC5200 Base
<input type="checkbox"/> Other: (Please Specify)
Manufacturer: _____
Part Number: _____
Power Supply Mfr: _____
Power Supply Part Number: _____
Type of Chassis Fans: _____
Quantity of Chassis Fans: _____
Fan Manufacturer: _____
Fan Part Numbers: _____

Problem Description

Complete details of the problem setup, problem description, error messages, recreation steps, troubleshooting steps completed, etc.

System Configuration Information

Hardware

Main Board Part Number (PBA#/AA#):	_____
System BIOS Version:	_____
SCSI Backplane (PBA#):	_____
Processors Installed (Quantity):	_____
Processor Speed (frequency):	_____
Processor ID (CPUID#)	_____
Processor Specification (S-Spec)	_____
Memory Modules (total number of DIMMs):	_____
Size per DIMM (please indicate MB or GB):	_____
RAM Manufacturer and part number:	_____
Is this RAM on the tested memory list?	_____
If less than 6 DIMMs are installed, which slot numbers are being utilized?	_____

Operating System

Operating System: (name & version)
Language:

Service or Support Pack: Kernel Version (if using Unix/Linux)
--

Utilities

Intel LanDesk® Client Manager version: _____ SC5200 Base Hot-Swap Backplane Firmware _____

PCI Adapters

PCI Slot	Manufacturer/Model number:	Driver version:	Is this adapter on the tested hardware list?
1			
2			
3			
4			
5			
6			

Onboard Devices

Device	In Use
Video	<input type="checkbox"/>
10/100 NIC	<input type="checkbox"/>
10/100/1000 NIC	<input type="checkbox"/>
Adaptec AIC-7899W SCSI (channel 1)	<input type="checkbox"/>
Adaptec AIC-7899W SCSI (channel 2)	<input type="checkbox"/>

Peripherals:

Manufacturer/Model number	Quantity	Comments:
Hard Drives		SCSI or ATA?
Tape Drives		Internal or external?
CDROM		Internal or USB?
CDRW		Internal or USB?
DVDROM		Internal or USB?
Keyboard		USB or PS/2?
Mouse		USB or PS/2?
Other:		