



Intel® Server Board SE7500WV2 Troubleshooting Guide

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

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May 27, 2002***

Revision History		
Date	Rev	Modifications
May 2002	.5	Initial Release Draft
May 21, 2002	.8	Processor Hyper-threading Q&A
May 27, 2002	1.0	General content improvements

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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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SE7500WV2 Troubleshooting

Welcome to the SE7500WV2 server platform. 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/se7500wv2>, 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/SE7500WV2>.

The SE7500WV2 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
Memory fault 1 – 6	Identify failing memory module	DIMM end front of board (DS5F1)	Amber	On = Fault

POST code 1 – 4 (LSB, bit1, bit2, MSB)	Display boot 80 POST code	Left rear of board (DS2A1 – DS3A3)	Each LED can be Off, Green, Amber, Red	Refer to Product Guide for POST code matrix
Fan Pack Fault	Warn on fan failure	Front center board (DS3J1)	Amber	On = Fault
CPU 1 & 2 Fan Fault	Identify fan failure	Front center board (DS5J1 & DS7J1)	Amber	On = Fault
CPU 1 & 2 Fault	Identify processor failure	1" Back of processor socket	Amber	On = Fault
5v Standby	Identify 5v standby power on state	Front left board (DS1J1)	Amber	On = 5v standby power on
Power LED	Identify the power state of the system	Front Panel	Green	Off = Power is off (off or S5) On = Power on or S0) Slow Blink = Low power state (S1 – S3)

1) My server will not power on

Check for the following possibilities:

- The SE7500WV2 server board requires an SSI +12V power compliant power supply. A momentary switch should be used for the power on/off switch and the sleep/resume switch. Failure to provide the correct power supply or sufficient output from the power supply may result in a failure of the system to power on.
- Check for proper power cord connection. Some chassis allow the use of two power cords and the system will not power on when one cord is used and it is plugged into the wrong connector. For example, the Intel SR2300 chassis with the 500-Watt redundant power option has two power cord connectors on the back of the power supply. There is one power cord for each Hot Swap power module, however, the system ships with only one power module installed which allows the use of only one power cord. If the power cord is plugged into the power connector corresponding to the unused power module location, the system will not power on.
- Refer to the LED table above and determine if LEDs give an indication of the failure.
- 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. If your server is plugged in, this LED should be green.
- If you are using the SR1300 or SR2300 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 or J1G4.

- If you are using the SR1300 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. Check that your processor is on the tested list. Visit the [support site](#) for an updated list.
- Remove and reseal the memory modules. Ensure you have properly populated the memory modules. With the SE7500WV2 board, memory is populated in pairs. Refer to the silk screen on the baseboard or the documentation that accompanied your board for proper placement. 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 issue 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 (Product Board Assembly) number on the board. The PBA is found on a white sticker next to the low profile PCI riser slot. It is in the format 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.

Beeps	Reason
1	One short beep before boot (this is normal, not an error)
1-2	Search for option ROMs. One long, two short beeps on checksum failure
1-2-2-3	BIOS ROM checksum
1-3-1-1	Test DRAM refresh

Beeps	Reason
1-3-1-3	Test 8742 Keyboard Controller
1-3-3-1	Auto size DRAM, system BIOS stops execution here if the BIOS does not detect any usable memory DIMMs
1-3-4-1	Base RAM failure; BIOS stops execution here if entire memory is bad
2-1-2-3	Check ROM copyright notice
2-2-3-1	Test for unexpected interrupts
1-5-1-1	FRB failure (processor failure)
1-5-2-2	No processors installed
1-5-4-2	Power fault
1-5-4-4	Power control failure

A complete list of beep codes are listed in the *SE7500WV2 Technical Product Specification* located on the Intel Support website.

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

Check the following:

- Check the Postcode LEDs and reference the code, a code reference table is included with the SE7500WV2 product guide available on the Resource CD that shipped with the server board, and in the Technical Product Specification that is available on the web site listed above. This can give you an idea of which system is causing the problem.
- 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.
- 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 which requires moving a jumper at location J1D4 on the server board. This mode is used to reflash the BIOS in the event it gets corrupted. To enter this mode, the RCVR BOOT jumper must be set on pins 1-2. For normal operation, this jumper must be set on pins 2-3.
- 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 SE7500WV2 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. Please consult the *Intel Server Board SE7500WV2 Product Guide* that shipped on the SE7500WV2 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.

- 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? Is it the latest? Please check the [support site](#) for an updated version.
- 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 format 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 SE7500WV2 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 SE7500WV2 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? Please check the [support site](#) for an updated 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 SE7500WV2 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 SR1300 or SR2300 server chassis which have a backplane, the device IDs are automatically set by the backplane.
- Check for proper termination on the SCSI bus.
- If you are using the SE7500WV2 IDE SKU, ensure that the drive settings (Master or Slave) are set properly.

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?
- How many IDE drives are being used? (Manufacturer and type e.g. ATA100, ATA66)
- What memory is the system using? Is it on the tested memory list? Please check the [support site](#) for an updated memory list.

6) My system has an issue not addressed above.

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 [SE7500WV2 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, ATA RAID, and chipset.
- Check the following:
 - Proper processor installation, single processor installation must be in CPU socket 1, processors must be of the same speed and voltage (and within one stepping) for dual processor configurations. Do not attempt to over clock the processors or other components on this system. Over clocking is generally not possible and may damage components and void the warranty of your server board and your boxed or tray processor.
 - Memory must be properly seated and from the tested memory list.
 - If installed in a third party chassis, calculate a power budget to insure sufficient power is supplied. Power budget information is included in the SE7500WV2 product guide that ships with the board, and is also available on the support website listed above.
 - Verify that all chassis, power supply, and processor fans are properly installed and functioning. If installed in a third party chassis, verify that sufficient cooling is available. Approved heat sinks must be properly installed on the processors, do not attempt to run the processors without a heat sink for even a few moments. Refer to the processor documentation for proper installation procedures. Thermal monitoring can be conducted using Intel® Server Management that is provided with this product. Refer to the Server Management Installation Guide that is provided on the Server Management CD or on the [support website](#).
 - If the system is running slow or you receive a processor error message, enter BIOS setup and enable processor retest. This test will be run only on the next reboot and will retest the processors and bring them back on line if marked failed.
 - When using multiple PCI adapter cards in a PCI riser with more than one slot; populate the slots from the bottom up.

Additional Questions & Answers

These questions are intended to give the reader a general overview of unique features of the Intel Server Board SE7500WV2. For additional information, the product documentation should be consulted. Recommended documentation includes:

Intel Server Board SE7500WV2 Technical Product Specification

Intel Server Chassis SR1300 Technical Product Specification

Intel Server Chassis SR2300 Technical Product Specification

Intel Server Board SE7500WV2 Product Guide

Intel Server Chassis SR1300 Product Guide

Intel Server Chassis SR2300 Product Guide

All documentation is available on the Intel support website at <http://support.intel.com/support/motherboards/server/se7500wv2>

The product guides are also available on the Resource CD that ships with each SE7500WV2 board in the box kit.

General Board and Feature Set Questions

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

The SE7500WV2 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 *SE7500WV2 Technical Product Specification* or *SE7500WV2 Product Guide* for further details on the serial port implementation and usage model.

2) What is the difference between the SCSI version of the server board and the ATA version?

There are two versions of the Intel Server Board SE7500WV2, 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.

4) 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.

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

There are three headers on the main jumper block on the SE7500WV2 server board at location J1D4. Jumpers are available for the following functions:

Recovery Boot

Password Clear

CMOS Clear

An additional jumper is available at J4B2 for BMC Write Protect (WP)

For normal operation, these jumpers should be left in their default position as shipped from the factory. Additionally, there is one additional jumper header located at J5A2 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 jumper needs to be reconfigured. For details on this, refer to the *SE7500WV2 Product Guide* on the CD or is available on the [support web site](#).

Processor Questions

1) What processors are supported on the Intel Server Board SE7500WV2?

The SE7500WV2 server board supports the Intel® Xeon™ processor with 512K cache. For a complete list of supported processors, visit the [Intel Support website](#).

2) What heatsink should I use?

The boxed processor is available in two basic package configurations. It is available packaged for 1U chassis implementation and is bundled with a low profile 1U copper heatsink. It is also available package for 2U / Pedestal chassis implementation, this package is bundled with a full height heat sink, processor wind tunnel, and fan. You must select the proper package of the processor for your chassis type and configuration. For integration into the SR1300, the 1U version of the packaged processor must be used. For the SR2300 chassis, the 2U / Pedestal version of the processor package must be used. Do not attempt to use the 1U version of the packaged processor with the SR2300 as this chassis is designed to provide proper airflow through a plastic shroud and through the fins of the full height heatsink. Third party 1U and 2U chassis should be configured using the processor that is packaged for that density. Refer to the chassis manufacturer's documentation for proper installation information.

3) **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 SE7500WV2 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 *SE7500WV2 Technical Product Specification* located on the [Intel Support Website](#).

4) **I can't get hyper-threading to work on Red Hat Linux 7.2 Base Kernel with Intel® Xeon™ Processors when Hyper-threading is enabled in the BIOS Advanced menu.**

In order to make Xeon® processor “hyper-threading” functional it is necessary to download and recompile the 7.2 base kernel with the “hyper-threading” patch found at <http://www.redhat.com/support/errata/RHSA-2002-028.html>. Support for Red Hat Linux 7.3 that includes hyper-threading support will occur in a post launch ECO.

5) **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.

Memory Questions

1) **What memory configurations are supported on the Intel® Server Board SE7500WV2?**

Server Board SE7500WV2 has slots for six Double Data Rate (DDR) DIMMs and can support a minimum system memory configuration of 256MB and a maximum system memory configuration of 12GB. The SE7500WV2 supports DIMM sizes of 128MB, 256MB, 512MB, 1GB, and 2GB. DDR-200 or DDR-266 memory can be used, but speed is locked at 200MHz.

Memory must be populated in pairs due to dual channel and 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 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 SE7500WV2 support website at <http://support.intel.com/support/motherboards/server/SE7500WV2>.

*Processor #1 _____ / _____ / _____ / _____ / _____ S-Spec# Speed Stepping Cache size CPUID#

*Processor #2 _____ / _____ / _____ / _____ / _____ 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):**

***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):**

O/S Information

*Operating System _____

*O/S Version _____

*MP Specification _____

*Operating System Language Version _____

*Service Pack # _____

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

	<u>IN USE</u>				
*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)