



Inside the ProServ 3000

Frequently Asked Questions

This chapter contains the questions our customers ask us most often. For convenience, the questions appear grouped by ProServ model number (900, 1200, 1500, 3000, and 5000)

ProServ 900

The server board fails to boot. What could be wrong?

Here are some things to check if your ProServ 900 board fails to boot:

- Ensure the memory is firmly seated
- Ensure the processor is firmly seated in Slot 1
- Make sure your power supply provides 0.8A (800mA) of +5v standby current. If it does not, disable Wake-On-LAN via the jumper on the motherboard

Why is the integrated LAN controller not recognized?

Be sure that the system BIOS Plug-n-Play OS option is disabled. Microsoft Windows NT 4.0 does not support PnP.

Why is my system reporting the wrong processor speed?

Use the following procedure to ensure that your system is set to correctly recognize your CPU's speed:

1. Enter BIOS Setup by pressing [F2] as the system boots.
2. From the Main Menu, select CPU Speed Setting and press [ENTER].
3. Select the correct speed of the Pentium® II processor in your system.
4. Save your changes and exit BIOS Setup.

WARNING **!**

NEVER SELECT A PROCESSOR SPEED FASTER THAN THE CPU'S RATED SPEED. THIS PRACTICE, KNOWN AS 'OVERCLOCKING', CAN DESTROY YOUR CPU, REDUCE SYSTEM LIFE, LOCK YOUR SYSTEM, CAUSE BOOT FAILURES, DISK READ ERRORS, AND/OR DATA LOSS.

What peripherals are integrated on the T440BX server board?

The T440BX board has the following integrated components:

- **SCSI:** Symbios* Logic SYM53C875 Single Ultra Wide SCSI Controller with one wide channel
- **LAN:** Intel EtherExpress™ PRO/100+ (10/100MB) LAN controller with RJ-45 connector (model number 82558)
- **Graphics:** Cirrus Logic* GD5480 PCI graphics controller with 2 MB of 10ns SGRAM and one standard 15-pin VGA connector

ProServ 1200 and 1500

What does "Error: 810E, CPU 0 Failed FRB level 3 timer failed" mean?

This error is detected during POST, and is the result of improperly shutting down the system. You must perform a processor reset to recover from this error:

1. Reboot the system.
2. During POST, press [F2] to run BIOS Setup.
3. Select `Server Menu>Processor Retest>YES`.
4. Save and exit BIOS Setup.
5. Reboot the system.

NOTE

Selecting Yes tells BIOS to clear the historical processor status log and retest all processors on the next boot.

processor to my system?

You may upgrade a single processor configuration to a dual processor system at any time provided that the speed, voltage, and stepping of the second processor match those of the first processor. The board is equipped with two on-board voltage regulator modules (VRM); no additional hardware is required.

What is Fault Resilient Booting?

Fault Resilient Booting (FRB) is a server management feature of the N440BX server baseboard. If two processors are installed and the processor designated as the bootstrap processor (BSP) fails to complete the boot process, FRB attempts to boot the system using the alternate processor. If the alternate processor is functional, the system will boot. This feature ensures that a dual-processor server system comes back online in the event a single processor fails.

The default position for the FRB jumper is 1-2, which enables FRB. Position 2-3 disables FRB. It is not recommended to disable FRB since doing so does not affect normal system performance in any way.

Does my system support Ultra DMA?

The N440BX server board supports the UltraDMA hard drive protocol, however Intel recommends using SCSI hard drives for server systems rather than IDE drives.

RAID Solutions

The N440BX has three dedicated PCI slots, one ISA slot, and one shared PCI/ISA slot available for add-in RAID controller cards. Additionally, some operating systems will allow a software RAID to be implemented in conjunction with either the on board SCSI host adapter or IDE controllers.

One low-cost RAID solution uses an AMI MegaRAID* Express 762 add-in PCI RAID controller card. It includes an Intel i960® microprocessor, is compatible with the Symbios 53C876 SCSI controller, and uses the N440BX server board's PCI bus and SCSI channels.

The AMI MegaRAID Express 762 card must be installed in PCI Slot 3, which is the I2/O (Intelligent Input/Output) enabled PCI Slot. When implementing a different hardware RAID solution, PCI Slot 3 should be avoided because the Symbios SCSI controller shares the PCI interrupt with PCI Slot 3.

Having integrated SCSI, NIC, and Video controllers is nice, but if one fails I have to replace the entire board. Does this happen very often?

Add-in card connectors typically have the highest failure rate. Thus, integrating the PCI controllers on the motherboard greatly reduces the failure rate. Actual demonstrated MTBF data is not yet available for the ProServ line, however MTBF projections for integrated components exceed 100,000 hours, or 11 years.

Are all the PCI slots capable of bus-mastering?

Yes, all 4 PCI slots are capable of accepting a bus-mastering device. Additionally, three of the four integrated PCI devices Symbios* SCSI, EtherExpress™ Pro 100+ NIC, and PIIX4 (PCI, ISA, IDE accelerator) are bus-mastering. The Cirrus* PCI video controller is non-bus mastering.

ProServ 3000

How does the ProServ 3000 differ from other Intel server platforms?

The ProServ 3000 mid-range server uses the latest Intel Pentium® II Xeon™ processor and the 450NX PCIset, enabling the highest performance in a mid-range system. It provides a form factor that can be configured as either a 19" rack or pedestal simply by changing system covers. The ProServ 3000 breaks new ground by providing expansion of up to four Intel Pentium II Xeon™ processors and 4GB of EDO ECC memory in a mid-range server system. The ProServ 3000 is fully redundant (fans & power) as well as having hot swappable power and storage capabilities.

What processor speeds are available in the ProServ 3000 server?

The ProServ 3000 can meet a wide range of needs, with processing speeds starting at 400 MHz and cache sizes ranging from 512 KB to 2 MB. The ProServ 3000 will support future Pentium II Xeon processor speeds and does currently support the 450 MHz Pentium II Xeon processors.

Are the ProServ 3000 power supplies hot swappable?

The ProServ 3000 can have up to three power supplies, all of which are hot swappable.

Does the ProServ 3000 support hot-swappable hard drives?

The ProServ 3000 can support up to six 1" hot-swappable hard drives.

What security and reliability monitoring does the ProServ 3000 provide?

The ProServ 3000 has chassis intrusion detection, monitoring of fan, power supply and temperature, predictive failure detection, and an OS watchdog. In-band monitoring is included with the Intel Server Control software that ships with the system. Rudimentary out-of-band monitoring capability is available through the innovative Emergency Management Port (EMP) built into the ProServ 3000.

What is an Emergency Management Port (EMP)?

The Emergency Management Port (EMP) is the hardware end of the EMP console utility that ships with the product. It is an extension of Server Management that allows remote power up, power down, reboot, access to event logs, and diagnostic information via a serial-to-serial connection or with an external modem connected to the COM2 port. Please note, neither a modem nor serial cable is provided with the product.

What features make the ProServ 3000 more manageable than a desktop baseboard in a large chassis?

Manageability features are built in at all levels of integration: at the processor, chassis, and at the sub-system level. In addition to the built in processor self test, the system monitors and logs critical subsystems such as memory and power conversion on the baseboard, and chassis power, temperature and drive array health. A comprehensive management and diagnostic bus networks all these features, which are controlled by management micro controllers. Remote management software and hardware (EMP - Emergency Management Port) allow the system to be monitored, diagnosed, and controlled from a phone line even if the system is down or not functioning fully. In addition, the ProServ 3000 has the capability to power down the electronics bay separately from the hard drive bay.

Does server management hardware or software ship with the ProServ 3000?

Intel Server Control software ships with the platform. This software provides the ability to monitor such things as voltage, temperature, chassis intrusion, and ECC memory errors from a console attached to the network (in-band). EMP provides the ability to monitor the system from a console not connected to the network (out-of-band).

What is PFC? Will it be implemented with the ProServ 3000 power supplies?

PFC stands for Power Factor Correction and is implemented with the ProServ 3000's power supplies. Power factor measures how effectively electrical power is being used. A high power factor means that electrical power is being utilized effectively, while a low power factor indicates poor utilization. The simplest way to improve power factor is to add power factor correction capacitors to the power system. Power capacitors act as reactive current generators. By providing the reactive

current, they reduce the total amount of current your system must draw. PFC is required in most European countries.

Does the ProServ 3000 server platform support both EDO and SDRAM memory? How about Fast Page memory?

The ProServ 3000 supports EDO memory with ECC only. The memory must be 50ns or 60ns. This is because the 450NX PCIset (chipset) used on the ProServ 3000 only supports EDO memory.

What memory population does the ProServ 3000 platform ship with?

Intel provides the add-in memory module unpopulated. The system integrator must provide memory. A minimum of 128MB (four 32MB DIMMS) must be used.

Does the memory need to be populated in a certain order?

Since the ProServ 3000 uses a four-way interleaving scheme for memory configuration, a complete bank comprised of four DIMM sockets must be filled for proper system operation. The memory expansion card that ships with the platform has each bank labeled. Bank A must be populated first followed by Banks B, C and D.

Can I mix different speed DIMMs?

Different speed DIMMS can not be mixed within a memory bank. Different speed DIMMS can be mixed between banks. For example Bank A could all be 50ns and Bank B could all be 60ns. Memory timing will be programmed for the slowest speed DIMMs found.

Can I mix different size DIMMs?

Different size DIMMS can not be mixed within a memory bank. Different size DIMMS can be mixed between banks. For example Bank A could all be 32MB DIMMS and Bank B could all be 64MB DIMMS.

ProServ 5000

To Be Developed

