

*A guide for technically qualified persons*

# Intel® Server Board STL2

## Quick Start Guide

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이 설명서의 번역본은 다음 주소에서 얻을 수 있습니다.

您可在下列網址上查閱到本指南的譯文：

**<http://support.intel.com/support/motherboards/server/STL2/manual.htm>**

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Order Number: A28574-001

## Before You Begin

### Emissions Disclaimer

To ensure EMC compliance with your local regional rules and regulations, the final configuration of your end system product may require additional EMC compliance testing. For more information please contact your local Intel Representative.

See the *Intel® Server Board STL2 Product Guide* for product Safety and EMC regulatory compliance information. This is an FCC Class A device. Integration of it into a Class B chassis does not result in a Class B device.

### Safety Cautions



#### CAUTIONS

*Pressing the power button does not turn off power to this board. Disconnect the server board from its power source and from any telecommunications links, networks, or modems before doing any of the procedures described in this guide. Failure to do this can result in personal injury or equipment damage. Some circuitry on the server board may continue to operate even though front panel power button is off.*

*Read and adhere to all warnings, cautions, and notices in this guide and the documentation supplied with the chassis, power supply, and accessory modules. If the instructions for the chassis and power supply are inconsistent with these instructions or the instructions for accessory modules, contact the supplier to find out how you can ensure that your computer meets safety and regulatory requirements.*

*Electrostatic discharge (ESD) can damage server board components. Do the described procedures only at an ESD workstation. If no such station is available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the computer chassis.*

## Items Provided on the Bootable CD-ROM

*Intel Server Board STL2 Product Guide*

*Intel® SC5000 Server Chassis Subassembly Product Guide*

Software drivers and utilities

To view the product guides, boot to Windows<sup>†</sup> 95/Windows NT<sup>†</sup> / Windows 98 / Windows 2000 and use Adobe<sup>†</sup> Acrobat<sup>†</sup>.

## Safety and Regulatory Compliance

See the *Intel Server Board STL2 Product Guide* for product Safety and EMC regulatory compliance information.

**Intended uses:** This product was evaluated for use in servers that will be installed in offices, computer rooms, and similar locations. Other uses require further evaluation.

**EMC testing:** Before computer integration, make sure that the chassis, power supply, and other modules have passed EMC testing using a server board with a microprocessor from the same family (or higher) and operating at the same (or higher) speed as the microprocessor used on this server board.

**Server board diagram label provided:** Place the label inside the chassis in an easy-to-see location, preferably oriented similarly to the server board.

**I/O panel label provided:** Place the label on the I/O shield. The cut outs are for the top serial port and the parallel port.

## Minimum Hardware Requirements

To avoid integration difficulties and possible board damage, your system must meet the following minimum requirements. For a list of qualified memory and chassis components see

<http://support.intel.com/support/motherboards/server/STL2/compat.htm>

### Processor

Minimum of one Intel® Pentium® III processor and a processor terminator.

### Memory

Minimum of 64 MB of 133 MHz, 3.3 V, ECC, PC/133 compliant registered SDRAM on 168 pin gold DIMMs.

### Power Supply

Minimum of 300 W with 0.8 A +5 V standby current (in order to support Wake On LAN<sup>†</sup> (WOL)). You must provide standby current, or the board will not boot.

## Installation Notes

### Installation Process Quick Reference

<b>Step</b>	<b>Where the information is located</b>
Install the primary processor	This guide
Install the processor terminator (or second processor)	This guide
Install the VRM	This guide
Install memory	This guide
Remove the access cover	Chassis manual
Install the I/O shield	This guide
Rearrange the standoffs	This guide
Install the server board bumpers	This guide
Install the server board	This guide
Connect cables to the server board	This guide and the chassis manual
Finish setting up your chassis	Chassis manual

## **Common Problems**

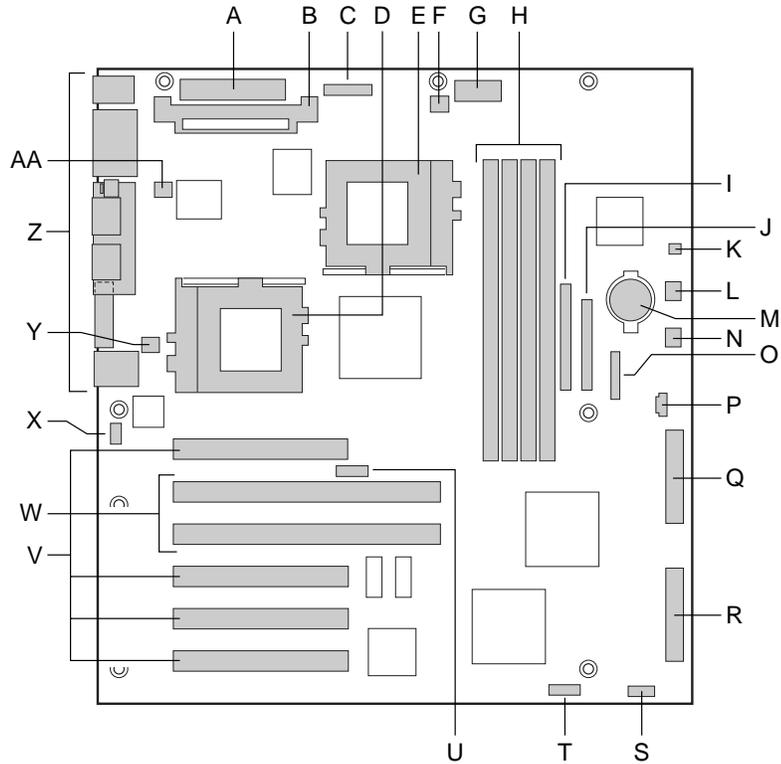
### **The system does not boot or show video at power on.**

- If configuring with only one processor verify that the processor is in the Primary Processor socket and the terminator is in the Secondary Processor socket. (See the server board components diagram on page 6).
- Beep code 1-3-3-1 means you have unrecognized or bad memory. Remove DIMMs one at a time to isolate which one is causing problems.
- Your power supply must provide 0.8 A of +5 V Standby current to support WOL. If the standby current is not present, your board will not boot.

### **The system sometimes works, but is exhibiting erratic behavior.**

- This is typically the result of using a under-powered power supply. Make sure it's at least a 300 W power supply.

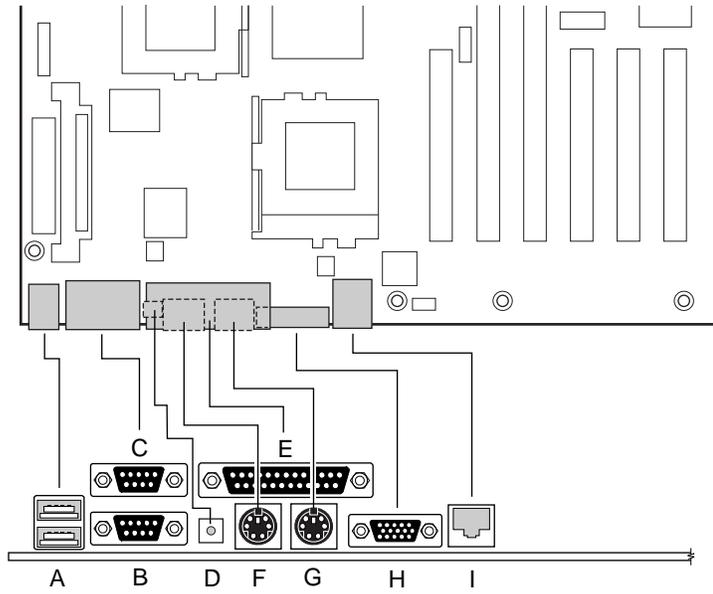
## Server Board Components



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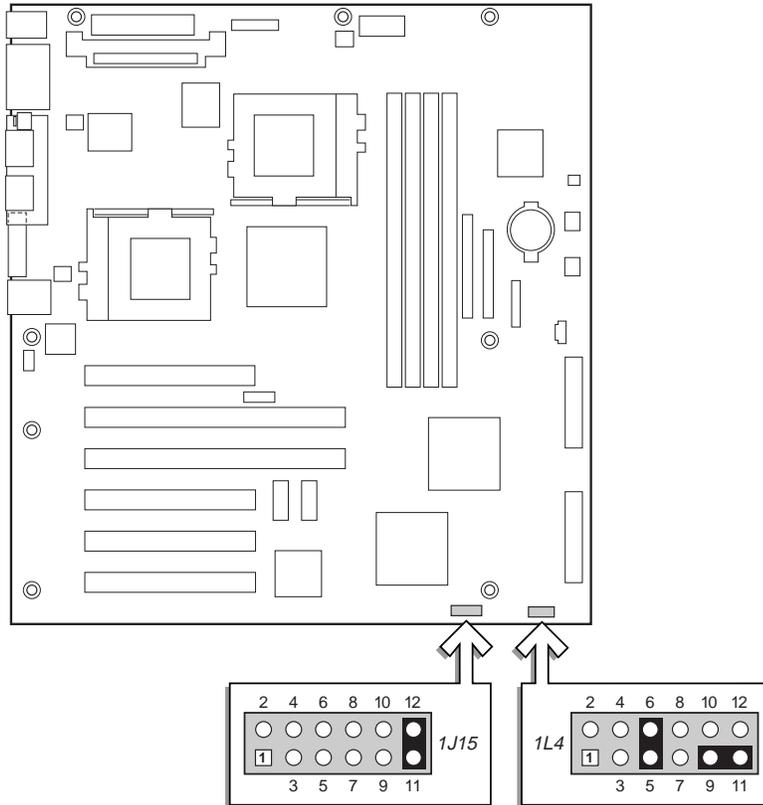
- |   |  |
|---|--|
| A. Main power connector (P33)                       | R. Ultra160 LVD SCSI connector (P8)  |
| B. VRM socket (P32)                                 | S. Configuration jumper block (1L4) (pins 3-4 can be used as an alternate chassis intrusion connector) |
| C. Auxiliary power connector (P34)                  | T. Configuration jumper block (1J15)   |
| D. Primary processor (P13)                          | U. CPU speed jumper block (5E1)  |
| E. Secondary processor (P14)                        | V. 33 MHz/32-bit PCI connectors  |
| F. Secondary processor heatsink fan connector (P36) | W. 66 MHz/64-bit PCI connectors  |
| G. Power supply signal connector (P37)              | X. Chassis intrusion connector (pins 1-2 of 6A)  |
| H. DIMM slots (P15-P18)                             | Y. System fan connector FAN1A (P11)  |
| I. IDE connector (P19)                              | Z. I/O ports   |
| J. Floppy drive connector (P20)                     | AA. Primary processor heatsink fan connector (P12)   |
| K. Speaker connector (two pin, P31)                 |  |
| L. System fan connector FAN3A (P29)                 |  |
| M. Battery  |  |
| N. System fan connector FAN2A (P27)                 |  |
| O. Front panel connector (P23)                      |  |
| P. Speaker connector (P25, four pin)                |  |
| Q. Ultra Single Ended (SE) SCSI connector (P9)      |  |

## Back Panel Connectors



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## Jumpers



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### Configuration Jumper (1J15)

Jumper Name	Pins	What it does at system reset
CMOS clear	1-2	If these pins are jumpered, the CMOS settings will be cleared on the next reset. These pins should <b>not</b> be jumpered for normal operation.
Password Disable	3-4	If these pins are jumpered, the password will be cleared on the next reset. These pins should <b>not</b> be jumpered for normal operation.
Reserved	5-6	Reserved. These pins should <b>not</b> be jumpered for normal operation.
Reserved	7-8	Reserved. These pins should <b>not</b> be jumpered for normal operation.
Reserved	9-10	If these pins are jumpered, the system will attempt BIOS recovery. These pins should <b>not</b> be jumpered for normal operation.
Reserved	11-12	Reserved. These pins <b>should</b> be jumpered for normal operation.

## Configuration Jumper (1L4)

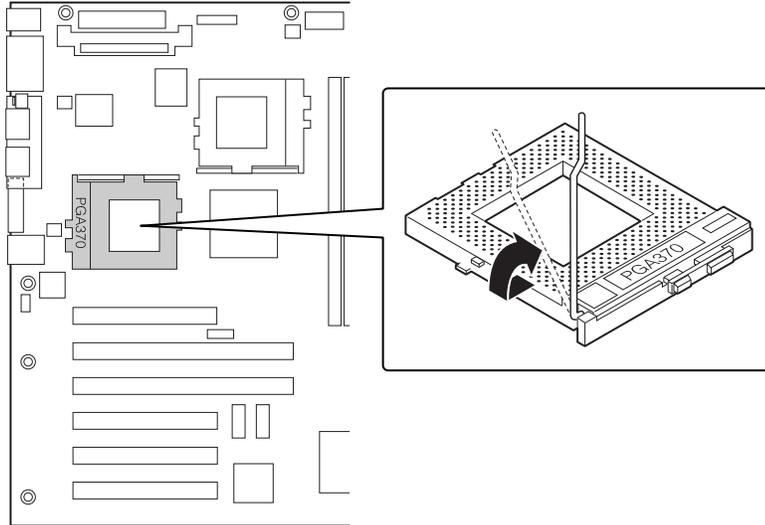
Jumper Name	Pins	What it does at system reset
FRB 3	1-2	If these pins are jumpered, FRB is disabled.
Front Cover Chassis Intrusion Sensor	3-4	This is an alternate connector for the chassis intrusion switch. The preferred connector is pins 1-2 on block 6A.
Reserved	5-6	Reserved. These pins <b>should</b> be jumpered for normal operation.
Reserved	7-8	Reserved. These pins should <b>not</b> be jumpered for normal operation.
Reserved	9-10	Reserved. These pins should <b>not</b> be jumpered for normal operation.
Reserved	11-12	Reserved. These pins should <b>not</b> be jumpered for normal operation. <b>NOTE:</b> Pins 9-11 <b>should</b> be jumpered for normal operation.

## Installation Procedures

### Installing Processors

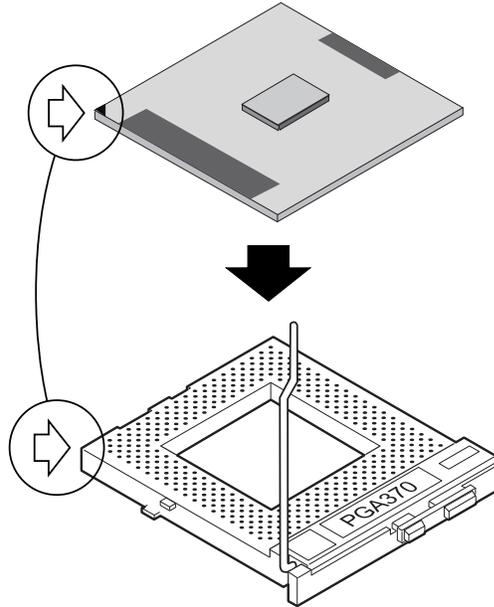
If you are installing only one processor, you **must** install a terminator in the secondary processor socket.

- 1 Observe the safety and ESD precautions at the beginning of this document.
- 2 Raise the locking bar on the socket.



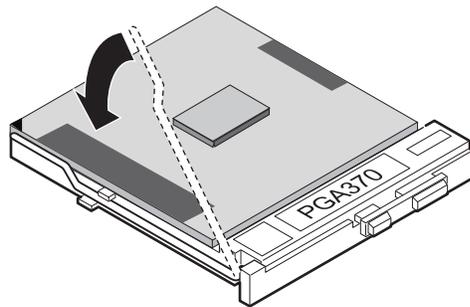
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- 3** Aligning the pins of the processor with the socket, insert the processor into the socket. Note what the processor speed is so you can set the jumpers correctly.



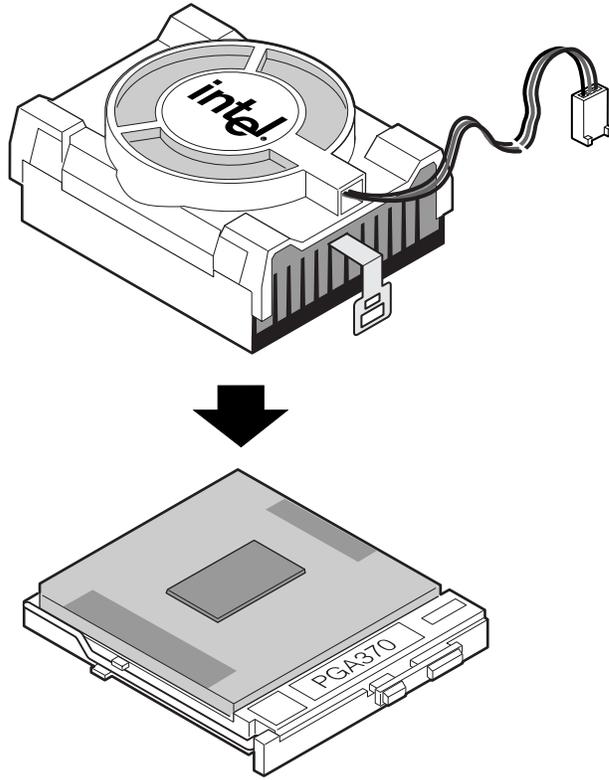
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- 4** Close the handle completely.



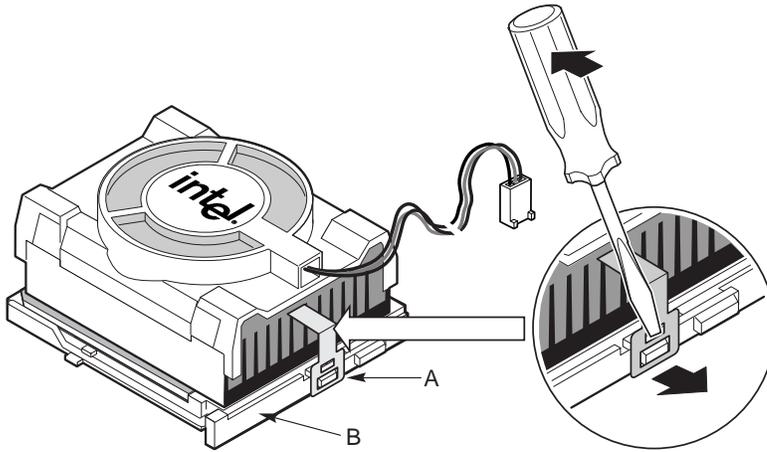
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- 5 Place the fan heatsink on top of the processor.



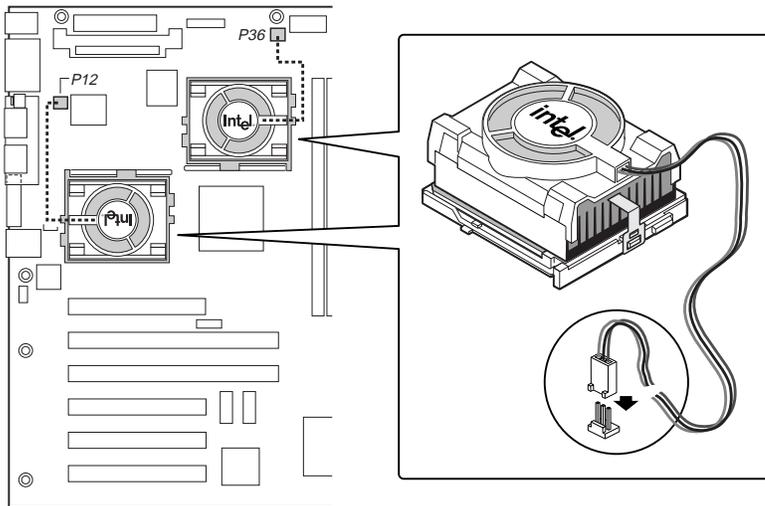
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- 6 Attach the fan heatsink clip to the processor socket. We recommend attaching the side away from the fan cable first. Then use a screw driver or other tool to attach the remaining side.



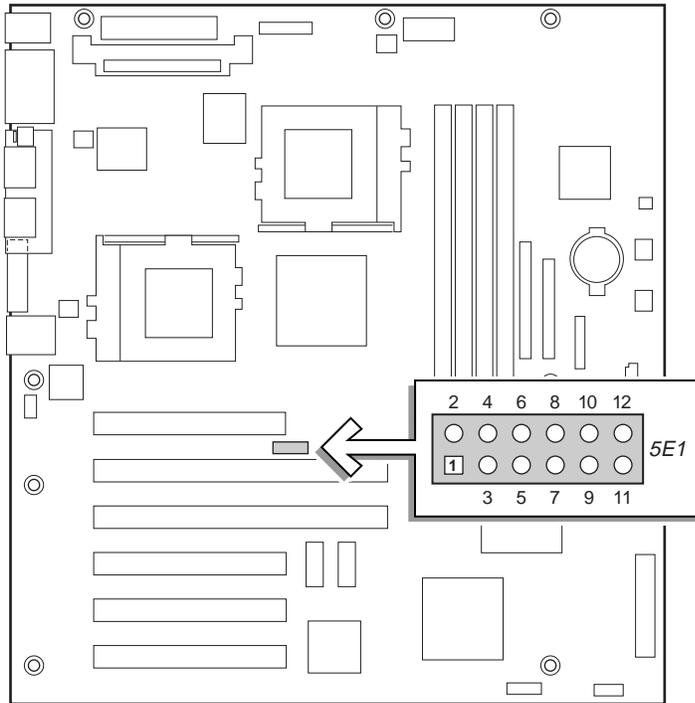
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- 7 Connect the processor fan cable to the processor fan connector.



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- 8 After you have installed the processor(s), you must configure the speed jumpers.



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### CPU Clock Speed (5E1)

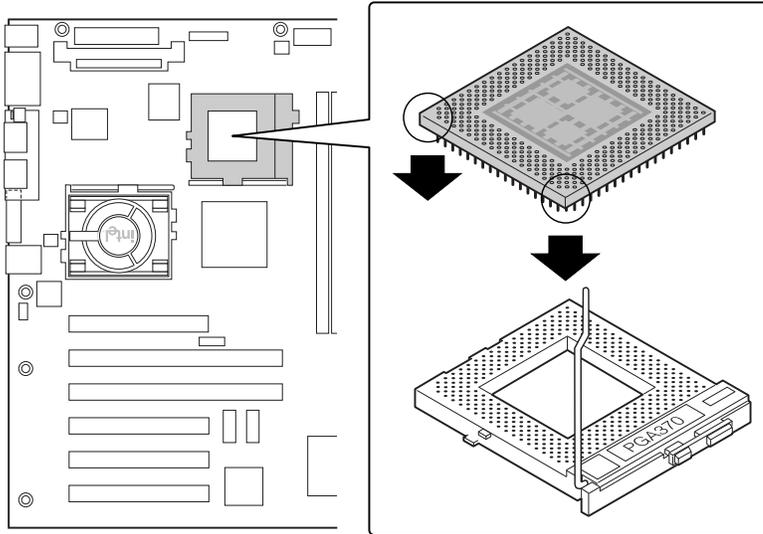
CPU Speed	Pins 1-2	Pins 3-4	Pins 5-6	Pins 7-8	Pins 9-10	Pins 11-12
667			✓	✓		
733			✓			
800	✓	✓		✓		
867	✓	✓				
933	✓			✓		
1000	✓					

- 9 Repeat for the second processor. The second processor must be the same speed and within one stepping of the primary processor. If you are installing two processors, skip the section titled “Install the Processor Terminator.”

### Install the Processor Terminator

If you are installing only one processor, you **must** install a terminator in the secondary processor socket. If you are installing two processors, skip this section.

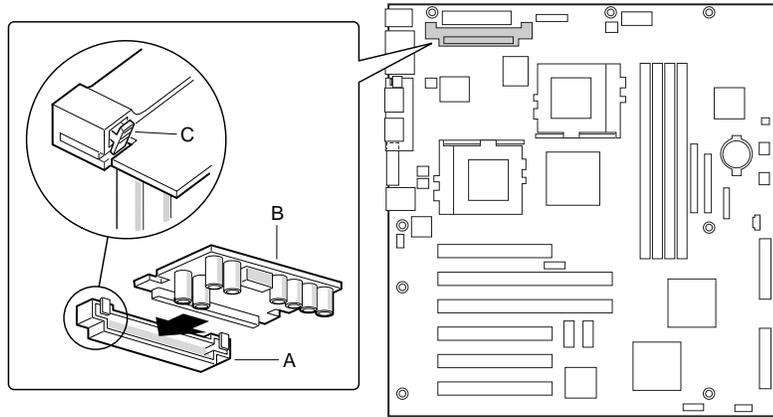
- 1 Raise the locking bar on the socket.
- 2 Aligning the pins of the processor terminator with the socket, insert the terminator into the socket.
- 3 Close the handle completely.



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## Install the Voltage Regulator Module

If you are installing two processors, you **must** install a voltage regulator module (VRM). Orient the VRM as shown and press it into the connector. Make sure the plastic latches engage the VRM.



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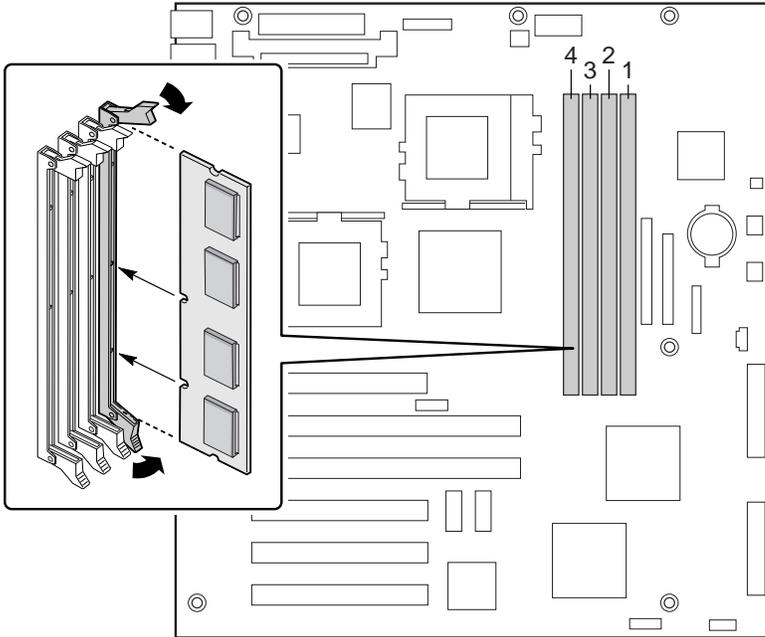
## Memory

Only PC133-compliant SDRAM is supported by the server board. Install from 64 MB to 4 GB of registered, ECC memory, using up to four single- or double-banked DIMMs.

DIMMs must be installed in order from slot 1 to slot 4, no empty slots between installed DIMMs. Slot 1 is the slot farthest from the processors.

Installed DIMMs must be the same speed and must all be registered. For a list of supported memory, call your service representative or visit the Intel Support website:

<http://support.intel.com/support/motherboards/server/STL2/compat.htm>



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## Install the I/O Shield

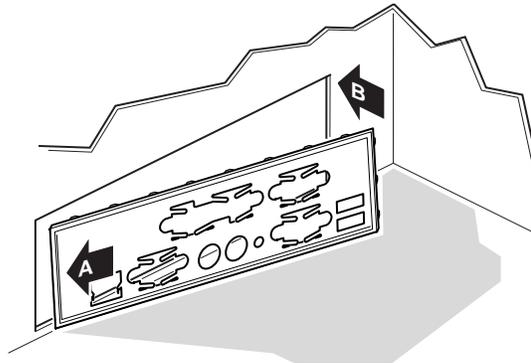


### NOTE

*An ATX 2.03-compliant I/O shield is provided with the server board. The shield is required by Electromagnetic Interference (EMI) regulations to minimize EMI. If the shield does not fit the chassis, obtain a properly sized shield from the chassis supplier.*

The shield fits the rectangular opening near the power supply in the back of the chassis. The shield has cutouts that match the I/O ports.

- 1** Install the shield from inside the chassis. Orient the shield so that the cutouts align with the corresponding I/O connectors on the server board. Make sure the metal fingers are on the inside of the chassis.
- 2** Position one edge so that the dotted groove is outside the chassis wall, and the lip of the shield rests on the inner chassis wall.
- 3** Hold the shield in place, and push it into the opening until it is seated. Make sure the I/O shield snaps into place all the way around.



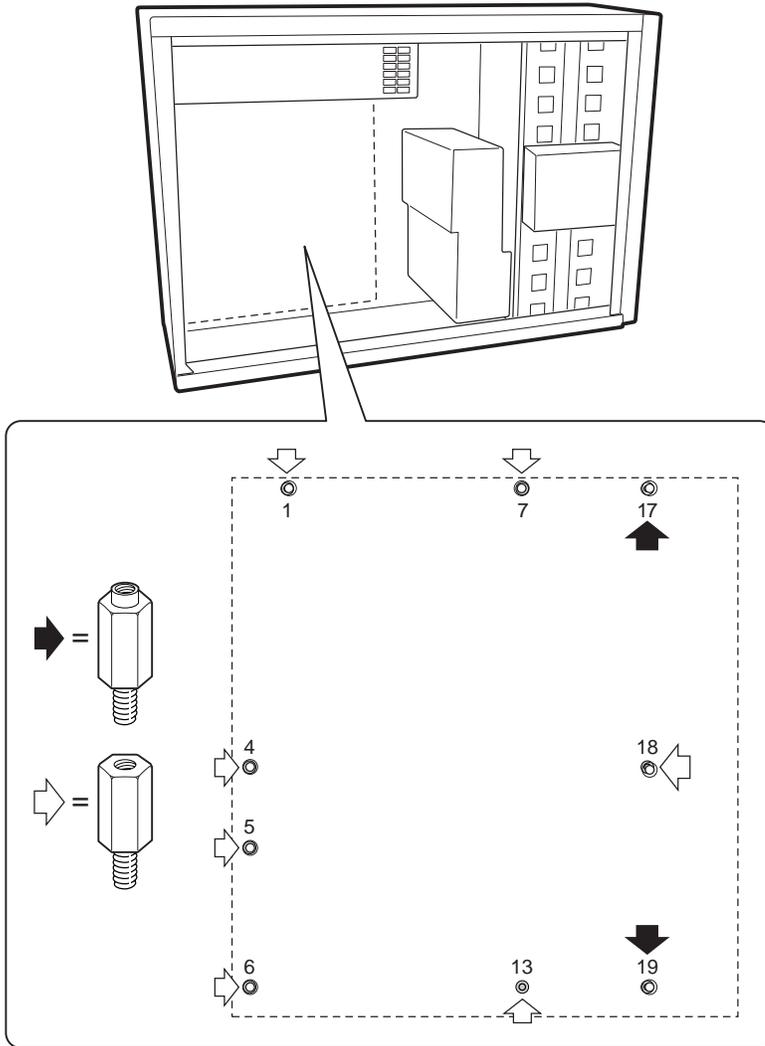
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- 4** Place the I/O label on the I/O shield (on the outside of the chassis). The cutouts on the label are for the top serial port and the parallel port.

## Rearrange the Standoffs

Your chassis may have metal standoffs already installed. You must rearrange them so they match the holes in the server board. Failure to properly rearrange the metal standoffs may cause the server board to malfunction and may permanently damage the server board.

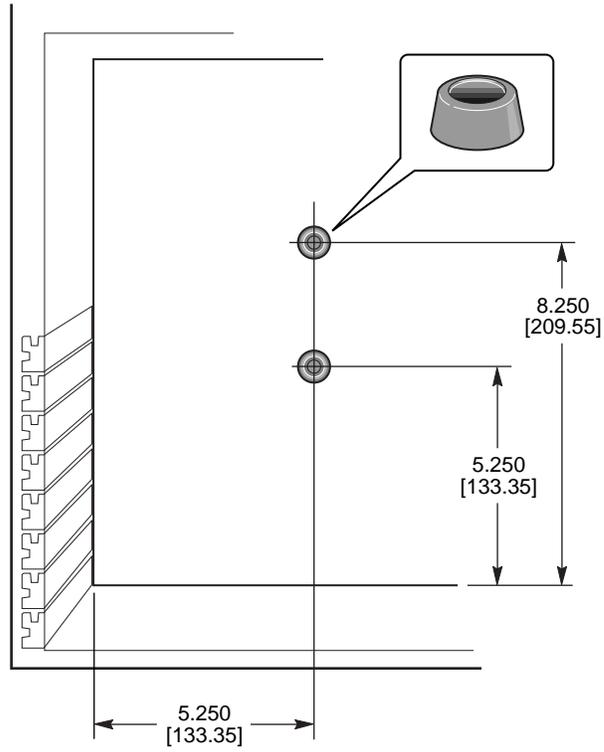
The following illustration shows the Intel® SC5000 Server Chassis. The standoffs in the chassis must be installed in screw holes 1, 4, 5, 6, 7, 13, 17, 18, 19. The hole numbers are stamped in the chassis sheet metal. Make sure the two positioning standoffs are in holes 17 and 19. Your chassis may be different from the illustration.



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### Install the Server Board Bumpers

Peel the adhesive backing from two rubber bumpers; stick the bumpers to the chassis wall.

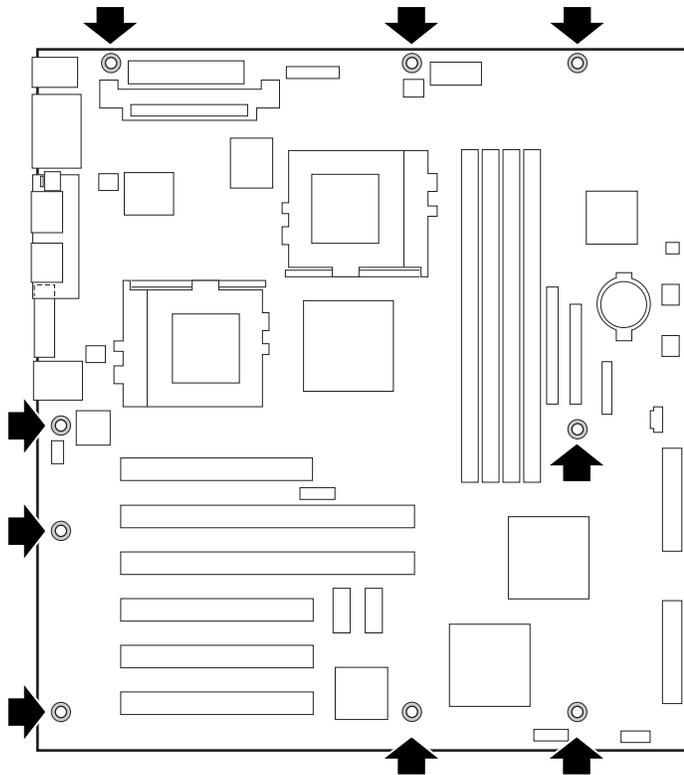


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## Install the Server Board

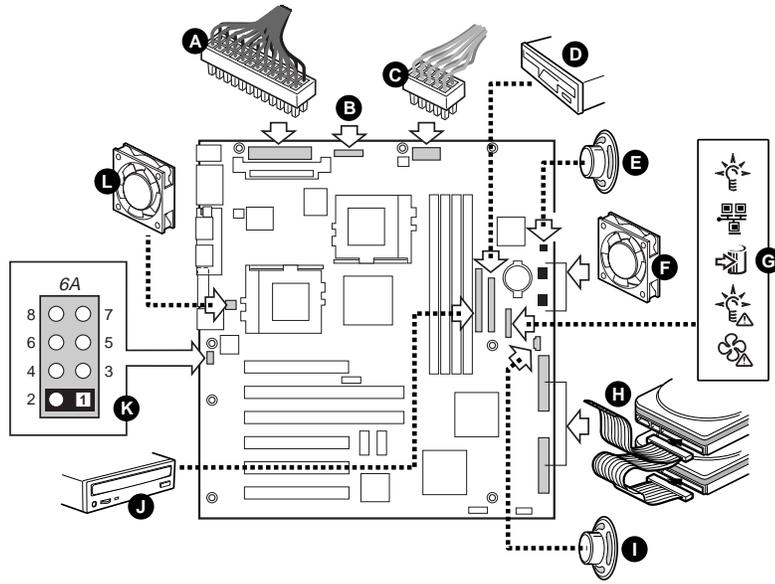
The screws for installing the server board are shipped with the chassis. You may need to move cables out of the way to properly install your server board.

- 1 Tilt the board into the chassis I/O connector end first. Position the board so the screw holes line up with the standoffs. There are two positioning standoffs that extend into the holes on the server board. These two standoffs will help you position the board correctly. Make sure the I/O connectors stick out through the I/O shield. Look through the holes in the I/O shield to make sure that the metal tabs on the I/O shield are on top of the USB and NIC connectors, not inside the connectors.
- 2 Insert one screw through one of the mounting holes of the board and into a threaded standoff. Do not tighten the screw until the next step.
- 3 Insert the remaining screws through the mounting holes and into the threaded standoffs. Make sure the board is properly seated, then tighten all the screws firmly, starting with the screws in the center of the board.



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## Connect Cables



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- 1 Connect the main power (A), auxiliary power (B, if your power supply has it), and power supply signal (C, if your power supply has it) cables to the connectors on the server board.
- 2 Connect the speaker cable (E, if your chassis has two pin speaker cable; I, if your chassis has a four pin speaker cable) to the speaker connector (P31 or P25) on the server board.
- 3 Connect the main chassis fans (F) to the FAN3A (P29) and FAN2A (P27) fan connectors on the server board. If you are integrating an Intel SC5000 server chassis, you must rotate the bottom chassis fan 180° so the fan cable will reach the connector.
- 4 Connect the front panel cable (G) to the SSI connector on the front panel and the front panel connector on the server board (P23).



### NOTE

*If you integrating into an Intel SC5000 or SR2000 chassis, you must use the front panel cable provided with the STL2 server board.*

- 5 Connect the hot swap SCSI cable (H, if your chassis has it) to the Ultra160 LVD SCSI connector (P8) on the server board.
- 6 Connect the chassis intrusion cable to the pins 1-2 of block 6A (K) or pins 3-4 of jumper block 1L4 on the server board.

### **Finish Setting up Your Chassis**

You are now ready to install drives into your chassis. We recommend you install drives before connecting their data cables to the server board. We recommend you connect the blue connector on the IDE cable to the server board before you connect the floppy cable.

## Getting Help

### World Wide Web

<http://support.intel.com/support/motherboards/server/STL2>

### Telephone

Talk to a Customer Support Technician\* (Intel reserves the right to change pricing for telephone support at any time without notice).

In U.S.: **1-900-555-5800** (M–F, 7:00 *am*–5:00 *pm*, Th 7:00 *am*–3:00 *pm*, PST).  
Calls billed at U.S. \$2.50 per minute.

In U.S. and Canada: **1-800-404-2284** (M–F, 7:00 *am*–5:00 *pm*,  
Th 7:00 *am*–3:00 *pm*, PST). Credit card calls billed at U.S. \$25 per incident.

In Europe:

English language: +44-131-458-6847

French language: +44-131-458-6848

German language: +44-131-458-6954

Italian language: +44-131-458-6951

(M, Th, F, 8:00 *am*–5:00 *pm*, T–W, 8:00 *am*–4:00 *pm*, UK time)

Credit card calls billed at U.S. \$25 per incident (levied in local currency at the applicable credit card exchange rate plus applicable VAT).

In Asia-Pacific region (Singapore local time, Oct–April: M–F, 6:00 *am*–4:00 *pm*;  
April–Oct: M–F, 5:00 *am*–4:00 *pm*).

Credit card calls billed at U.S. \$25 per incident.

Australia (Sydney): +1-800-649-931

Hong Kong: +852-2-844-4456

Korea: +822-767-2595

PRC: +852-2-844-4456

Singapore: +65-831-1311

Taiwan: +886-2-718-9915

Rest of the world: Call the North American Service Center at **+1-916-377-7000**  
(M–F, 7:00 *am*–5:00 *pm*, U.S. pacific standard time).

Credit card calls billed at U.S. \$25 per incident.

\* Or contact your local dealer or distributor.

### Technical Training & Support

If you are registered in the Intel Product Dealer Program (North America), the Genuine Intel Dealer Program (Asia-Pacific Region), or the Intel Product Integrator Program (Europe/Latin America), you are eligible for technical training and support.

In U.S. and Canada: **1-800-538-3373**, ext. 442 (M–F, 5:00 *am*–5:00 *pm*, PST)

In Europe: contact your distributor or fax your details to European Literature on **+44 (0) 1793 513142**.

In Asia: **+65-831-1379** (M–F, 8:30 *am*–5:30 *pm*, Singapore local time) or via e-mail: **APAC\_gid@ccm.isin.intel.com**