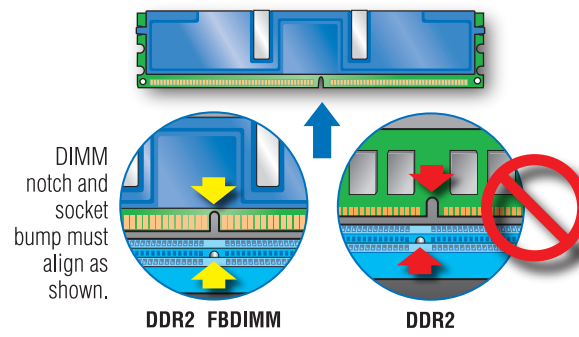


## 7 Install DIMM Memory Modules

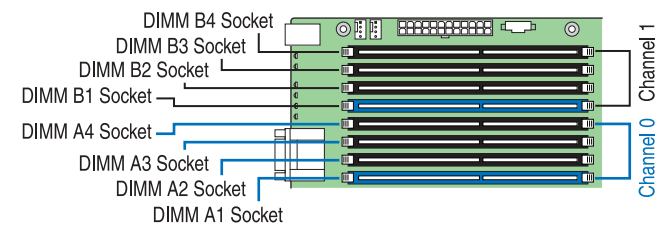
### DDR2 FBDIMM Memory Identification:

**Warning:** This server board supports up to eight DDR2-533 or DDR2-667 Fully Buffered DIMMs (FBD memory). DDR2 DIMMs that are not FBD memory are not supported on this server board.

**Warning:** FBDIMM DDR2 memory varies in height. Only use 1.2" DIMMs with an Intel® Server Chassis.



### Memory Configurations and Population Order:



Memory Type: Minimum of one 512MB, DDR2 FBDIMM 533/667 MHz compliant 240-pin gold DIMM.

Populate DDR2 FBDIMMs beginning with A1 (single FBDIMM only). Second FBDIMM must be in socket B1. Additional FBDIMMs must be populated only in pairs in the following order: A2 - B2, A3 - B3 and A4 - B4.

DIMM pairs must be identical with respect to size, speed, and organization.

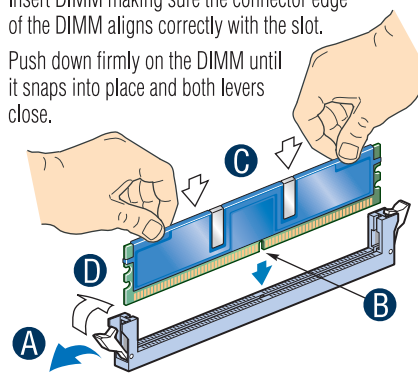
Note: For additional memory configurations, see the User's Guide on the CD that accompanied your Intel® Server Board S5000VSA, or go to: <http://support.intel.com/support/motherboards/server/s5000vsa>

Memory sizing and configuration is guaranteed only for qualified DIMMs approved by Intel®.

### To Install DIMMs:

**CAUTION:** Avoid touching contacts when handling or installing DIMMs.

- Open both DIMM socket levers.
- Note location of alignment notch.
- Insert DIMM making sure the connector edge of the DIMM aligns correctly with the slot.
- Push down firmly on the DIMM until it snaps into place and both levers close.

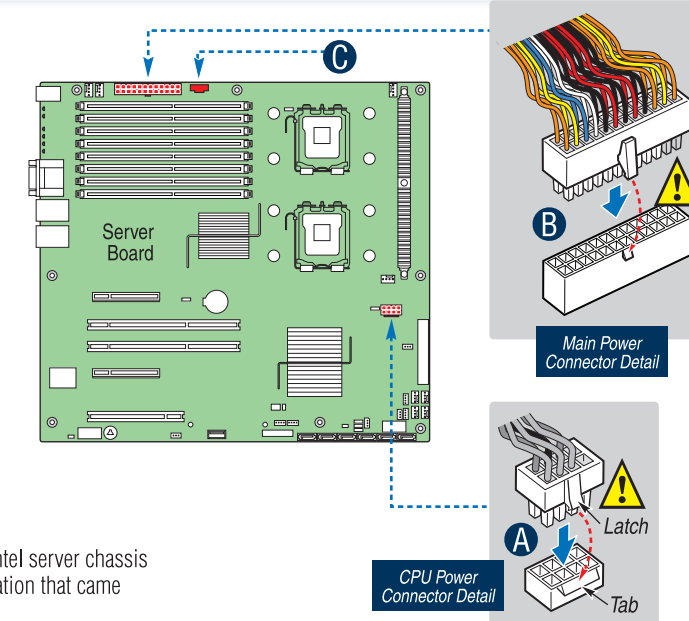


## 8 Make Server Board Power Connections

- Attach the CPU power connector.
- Attach the main power connector.
- Attach the AUX power connector if you are using the Intel® Entry Server Chassis SC5299-E BRP.

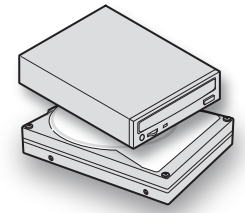
**CAUTION:** Note the location of the latch on each power cable connector and align it with the matching tab on each server board socket.

**IMPORTANT NOTE:** If you are using a non-Intel server chassis with an ATX power supply, see the documentation that came with your chassis for installation information.

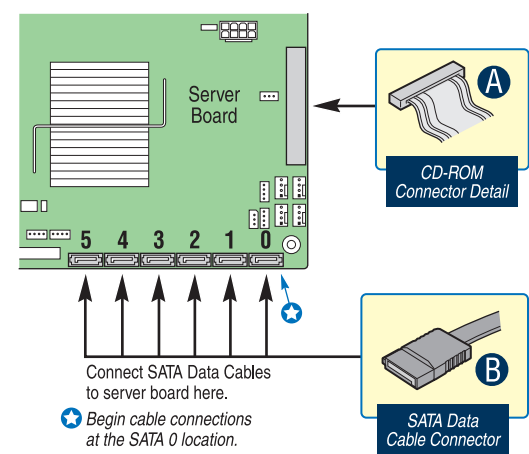


## 9 Install Optical Drive and Hard Drive(s)

See the documentation that came with your server chassis for drive installation.

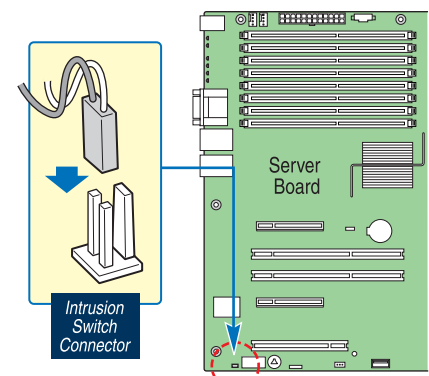


## 10 Connect Hard Drives/ CD-ROM to Server Board



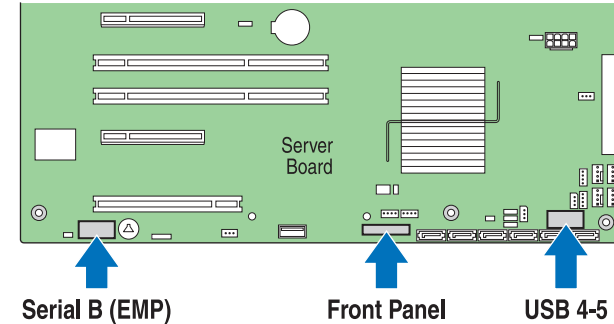
Connect SATA Data Cables to server board here.  
Begin cable connections at the SATA 0 location.

## 11 Attach Intrusion Switch Cable (Non-Intel Chassis Only)



For a non-Intel chassis, see your chassis documentation for intrusion switch requirements.

## 12 Attach Front Panel, Serial and USB Connections

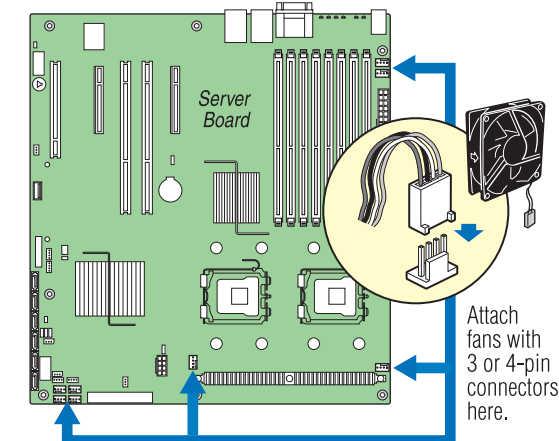


Note: For a non-Intel chassis, see your chassis documentation for front panel features and server board connection requirements.

**IMPORTANT NOTE:** Return to your Intel® Server Chassis Quick Start User's Guide, or your non-Intel chassis documentation to finish installation and configuration of your Intel® Server Board S5000VSA.

Return to this document to finish up, including software, BIOS, drivers and operating system installation.

## 13 Chassis Fan Connections

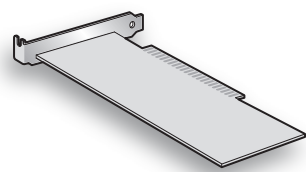


For a non-Intel server chassis, see the "Making Connections ... Quick Reference" section below, and the documentation accompanying your chassis for specific chassis fan connection requirements.

## 14 Install Add-in Cards

See the documentation that came with your server chassis for add-in card installation.

For the Intel® Server Chassis SC5299-E, see the Quick Start User's Guide accompanying the chassis.

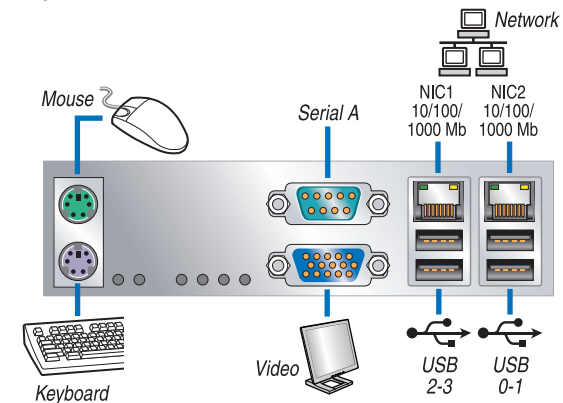


## 15 Finishing Up

Before installing your operating system, you must finish your chassis installation, make I/O connections and plug in AC power.

See your chassis documentation for AC power and grounding requirements.

**CAUTION:** See your chassis documentation for AC power and grounding requirements.



## 16 Software • BIOS, Drivers, and Operating System Installation

**A. Confirm BIOS Version:** Look on the Server/System Management screen in the BIOS Setup Utility to determine the installed BIOS version. Compare this to the versions at: <http://support.intel.com/support/motherboards/server/s5000vsa>. If new versions are available, update the BIOS on your server. See the User Guide on the Intel® Server Deployment Toolkit 2.0 CD for update instructions.

**B. Configure your RAID Controller:** Use the instructions provided with the RAID controller.

**C. Install your Operating System:** Use the instructions provided with the RAID controller and with the operating system.

**D. Install Operating System Drivers:** With the operating system running, insert the Intel® Server Deployment Toolkit 2.0 CD. If using a Microsoft® Windows® operating system, the Intel® Deployment Assistant will autoun and allow you to select the appropriate drivers to install. On other operating systems, browse the CD folders to locate and install the driver files.

**E. Install Intel® SMaRT Tool (optional):** With the operating system running, insert the Intel® Server Deployment Toolkit 2.0 CD. The Express Installer will autoun. Click Intel® SMaRT Tool at the left side of the screen. Follow the on-screen instructions. For information about Intel® SMaRT Tool, see <http://developer.intel.com/design/servers/smarttool/index.htm>.

## Reference

Accessories and Order Codes	
Intel® Entry Server Chassis SC5299-E with 550W fixed power supply	SC5299DP
Intel® Entry Server Chassis SC5299-E with 650W 1+0 hot-swap power supply	SC5299BRP
Intel® Entry Server Chassis SC5299-E with 550W fixed power supply and North American power cord	SC5299DPNA
Intel® Entry Server Chassis SC5299-E with 650W 1+0 hot-swap power supply and North American power cord	SC5299BRPNA
Optional 650W power supply for the Intel® Entry Server Chassis SC5299-E BRP	APP4650WPSU

A complete list of accessories and spares can be found at: [www.intel.com/go/serverbuilder](http://www.intel.com/go/serverbuilder)

## Common Problems and Solutions

For a list of hardware components that have been tested with this system, see: <http://support.intel.com/support/motherboards/server/s5000vsa/>

- The system does not boot or show video at power-on.
  - Check that +12V CPU power connector is plugged in. Without this cable the processor will not have any power.
  - Beep code 4-3-2-1 in a system using a Dual-Core Intel® Xeon® processor 5000 sequence (minimum of 2.8 GHz) means you have unrecognized or bad memory.
  - Remove and replace DIMMs one bank at a time to isolate which one is causing problems.
  - Remember, all DIMMs must be:
    - FBDIMM 1.533/667 MHz compliant 240-pin DIMMs.
    - The same speed.
    - From the same manufacturer.
    - Installed beginning with DIMM A1.
  - Your power supply must provide a minimum of 550W with 3A standby current, which complies with the SSI EPS12V specification.

The system sometimes works, but is exhibiting erratic behavior.
 

- This is typically the result of using an under-rated power supply. Make sure you are using at least a 550W power supply.

## Making Connections to the Server Board ... Quick Reference

Required Connections for Selected Chassis	Intel® Entry Server Chassis SC5299-E
H. +12V CPU Power Connector	■
E. Main Power Connector	■
F. Auxiliary Power Connector	■
Q. Front Panel Header	■

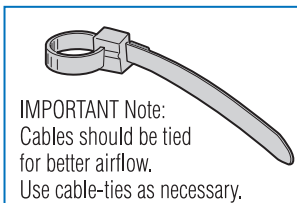
Note: Auxiliary Power Connector (F) is not available on the Intel® Server System SC5299-DP.

CPU/System Fan Connections for Selected Chassis	Intel® Entry Server Chassis SC5299-E
C. System Fan 6 Header (Rear Chassis Fan)	■
D. System Fan 5 Header	■
G. CPU1 Fan Header (right) Connect CPU2 Fan Header (left) if CPU2 present	■
K. System Fan 3 Header	■
L. System Fan 4 Header	■
M. System Fan 2 Header	■
N. System Fan 1 Header (Drive Bay Fan)	■

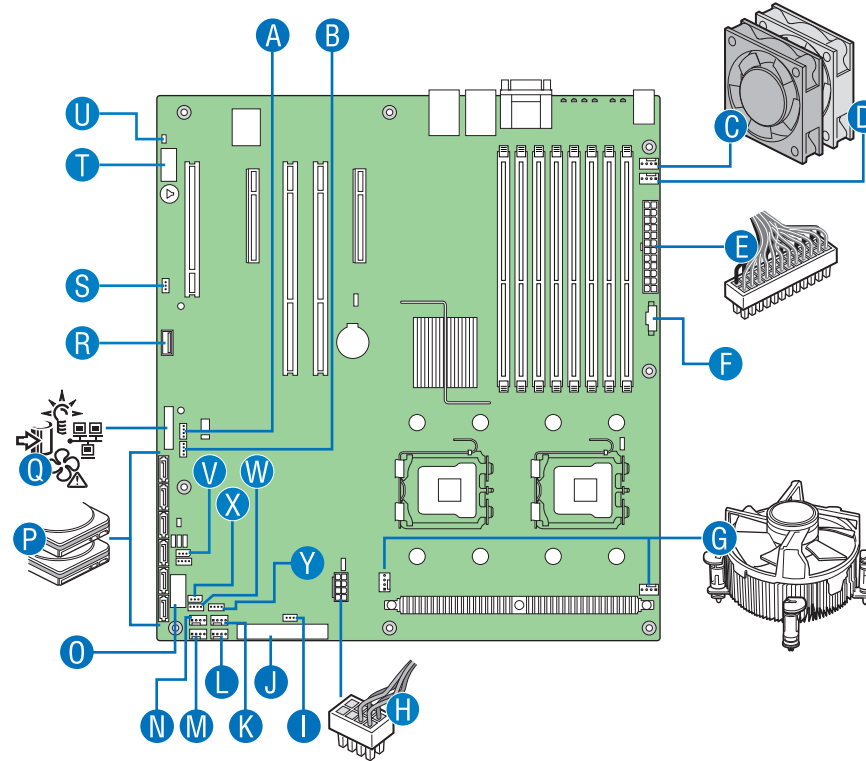
Notes: Not all optional connections are shown in this diagram. Refer to the Reference section of this Quick Start User's Guide, your Intel® Server Board S5000VSA User's Guide, and your server chassis documentation for additional connection information.

For a non-Intel Chassis, see your chassis documentation for server board connection information.

Optional Connections for Selected Chassis	Intel® Entry Server Chassis SC5299-E
A. HSBP_A	■
B. HSBP_B	■
I. SAS RAID 5 Key	■
J. CD-ROM/IDE Connector	■
O. USB 4-5	■
P. SATA connectors	■
R. USB 6	■
S. SATA RAID 5 Key	■
T. Serial B (EMP)	■
U. Chassis Intrusion Header	■
V. IPMB	■
W. SATA SGPIO	■
X. SAS_SES2	■
Y. SAS_SGPIO	■



**IMPORTANT Note:** Cables should be tied for better airflow. Use cable-ties as necessary.



## Intel® Server Board S5000VSA Component Layout

- A. PCI 32/33 Slot 1
- B. PCI\* x4 Slot 3
- C. PCI-X\* 64/133 Slot 4
- D. PCI-X\* 64/100 Slot 5
- E. PCI\* x4 Slot 6
- F. Back Panel I/O Ports
- G. Diagnostic LEDs (1)
- H. System ID LED (1)
- I. System Status LED (1)
- J. System Fan 6
- K. System Fan 5
- L. Main Power Connector
- M. Auxiliary Signal Connector
- N. DIMM Sockets (2)
- O. CPU 1 Socket
- P. CPU 2 Socket
- Q. CPU Fan 2 Header
- R. CPU Fan 1 Header
- S. CPU Voltage Regulator
- T. Battery
- U. CPU Power Connector
- V. IPMB
- W. SAS RAID 5 Key (3)
- X. IDE Connector
- Y. LCP
- Z. SAS\_SES2 (3)
- AA. SAS\_SGPIO (3)
- BB. System Fan 3
- CC. System Fan 4
- DD. System Fan 2
- EE. System Fan 1
- FF. SATA\_SGPIO
- GG. USB 4-5
- HH. SATA 0 Connector
- II. SATA 1 Connector
- JJ. SATA 2/SAS 0 Connector
- KK. SATA 3/SAS 1 Connector
- LL. SATA 4/SAS 2 Connector
- MM. SATA 5/SAS 3 Connector
- NN. HSBP\_B
- OO. Front Panel Header
- PP. HSBP\_A
- QQ. USB 6 (1)
- RR. SATA RAID 5 Key
- SS. Speaker
- TT. Serial B EMP Connector
- UU. Chassis Intrusion
- VV. SAS RAID 5 Key (3)
- XX. IDE Connector
- YY. SAS\_SGPIO (3)

