Intel® Workstation Board S5520SC Quick Start User's Guide

Thank you for buying the Intel® Workstation Board S5520SC. The following information will help you integrate your new server board into a server chassis. The Intel® Workstation Board S5520SC is designed for use with the Intel® Server Chassis SC5600Base and the Intel® Server Chassis SC5650WS.

For details on these chassis or to select a third-party chassis, please visit: http://support.intel.com/support/motherboards/server.

When installing the server board into a reference chassis, refer to the reference chassis instructions.

Service Guides are also available on the CDs that accompanied your Intel® Workstation Board S5520SC.

If you are not familiar with ESD (Electrostatic Discharge) procedures used during system integration, please see the Intel® Workstation Board S5520SC Service Guide, available on the Intel® Server Deployment Toolkit 3.0 CD or at http://support.intel.com/support/motherboards/server/S5520SC/manual.htm





Warning

Read all caution and safety statements in this document before performing any of the instructions. Also see the *Intel*[®] Server Board and Server Chassis Safety Information document at: http://support.intel.com/support/ notherboards/server/sb/cs-010770 .htm for complete safety information.

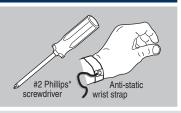
Warning

Installation and service of this product should only be this product should survice performed by qualified service personnel to avoid risk of injury from electrical shock or energy hazard.

Caution

Observe normal ESD [Electrostatic Discharge] procedures during system integration to avoid possible damage to server board and/or other components.

Tools Required



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Install the Workstation Board

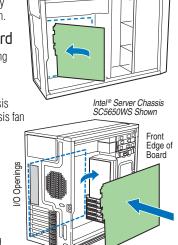
IMPORTANT NOTE: If you are using a non-Intel server chassis, see your chassis documentation for preparatory steps prior to server board installation

A. Insert Workstation Board Place the board into the chassis, making sure that back panel I/O openings and

chassis standoffs align correctly.

 When using the Intel[®] Server Chassis SC5600Base, remove the rear chassis fan and then insert the I/O connector side (back) of the board first.

 When using the Intel® Server Chassis SC5650WS, remove the front drive bay and rear chassis fan, and then insert the front of the board first. Slide the board back so the I/O connectors fit through the I/O shield.



B. Attach the Workstation Board

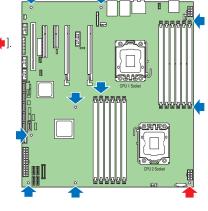
The Intel® Server Chassis SC5600Base and the Intel® Server Chassis SC5650WS use different screws to attach the workstation board to the chassis. Use the screws indicated for your chassis. For a non-Intel server chassis, use the fasteners that came with your chassis.

Intel® Server Chassis SC5600Base: Attach the board to the chassis at the nine locations indicated by the solid blue arrows in the figure [🛊] and at the one location indicated by the solid red arrow [.

Intel® Server Chassis SC5650WS: Push down firmly to engage the snap-top standoffs at the location indicated by the solid red arrow [...]. Use screws to attach the board to the chassis at the nine locations indicated by the solid blue arrows [







Minimum Hardware Requirements

To avoid integration difficulties and possible board damage, your system must meet the following minimum requirements

- Processor: Minimum of one Intel® Xeon® Processor 5500 Series or one Intel Xeon Processor 5600 Series.
- Supports maximum 95 watt processor in the Intel[®] Server Chassis SC5600Base.
- Supports maximum 130 watt processor in the Intel® Server Chassis SC5650WS.
- Heat Sink(s): Minimum of one active heat sink for the Intel® Server Chassis SC5600Base and SC5650WS.
- Memory Type: Minimum of one 1 GB, 240-pin, RDIMM or UDIMM, DDR3-800, DDR3-1066, or DDR3-1333.
- AC Power: SSI EPS 12V compliant power supply. Recommended minimum of 670 Watts with 3 A of standby current, or calculate your system power demand with the power

For a complete list of compatible processors, heat sinks, and memory, see:

| map.//oupportantenessin/oupport/methorsource/control/coolsource/ | | | | |
|--|---|--|--|--|
| CAU | In the Intel® Server Chase SC5600Base | sis Server Chassis | | |
| Supported Processor | Maximum 95 watt process | | | |
| Supported Graphics Car | d One maximul 150 watt grap card in PCI Express* Slo | phics PCI Express* Slot 6 or TWO maximum 150 watt graphics cards. Empty PCI | | |

NOTE: Graphics cards with power greater than 75 W must be self-cooled

Preparing the Chassis

Observe normal ESD

procedures.

Place your

Intel® Server

(Electrostatic Discharge)

Chassis on a flat anti-static

procedures. Observe ESD

reaching inside to make

or install components.

server board connections

surface to perform the

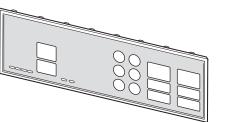
following integration

procedures before

Installing the I/O Shield and Attach I/O Labels

Prepare the I/O shield

Do not remove the three circular knockouts that are at the edge next to the openings for the NIC, USB, Serial A, and 1394 ports. Use caution so you do not deform the shield.



Attach the Labels to the I/O Shield

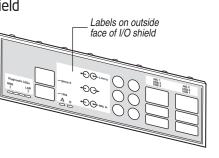
Note: Make sure you install the labels on the correct side of the I/O shield. Note the orientation of the cutouts in the drawing before attaching your labels.

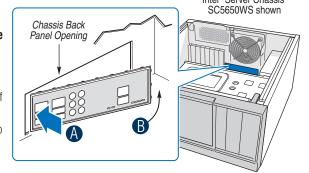
- A Remove the backing from the I/O shield labels included with your server board.
- Press each label onto the I/O shield as shown.

Install the I/O shield

Shield installs from inside of chassis. The labels should be visible from the outside of the chassis.

- A Insert one side edge of shield as shown.
- B Push shield firmly into chassis opening until it clicks into place.





Install Workstation **Board Bumpers**

with exhaust out the back of the chassis

NOTE: If you are using an Intel® Server Chassis you must install the chassis oumpers included with the chassis. Refer to your Intel® Workstation Board and Intel® Server Chassis Quick-Start User's Guide for proper bumper nstallation guidelines. If you are using a non-Intel server chassis that ncludes bumpers, refer to the non-Intel server chassis documentation for the correct bumper installation procedure. If the non-Intel server chassis does not include bumpers, then you should consult with the chassis vendor determine whether bumpers are required or not.

Prepare Workstation Board

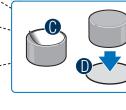
A Rotate board to show underside and hold upright

CAUTION: To avoid damage to the board, do not lay flat with the component side down

B Locate the five circles as shown.

Attach the Bumpers Remove the backing from each bumper.

Press a bumper onto each of the five circles.



Install the Processor(s)

Cautions:

1. When opening a socket, DO NOT TOUCH the gold socket wires.

2. When unpacking a processor, hold by the edges only to avoid touching the gold contact wires.

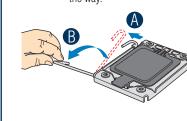




A. Open the Socket Lever

A Push the lever handle down and away from the socket to release it

Rotate the lever open all



B. Open the Load Plate

A Push the rear tab with your finger tip to bring the front end of the load plate



Open the load plate as shown.



Processor **Protective Cover**

C.Remove the

A Take the processor out of the box and remove the protective shipping



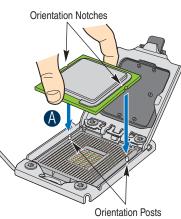
Install the Processor(s) ... continued E. Close Load Plate and Socket Lever D. Install the Processor

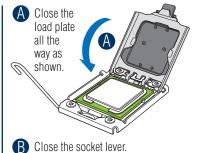
CAUTION: The underside of the processor has components that may damage the socket wires if installed improperly.

Processor must align correctly with the socket opening before installation. DO NOT DROP processor

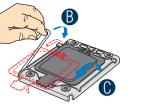
into the socket!

A Orient the processor with the socket so that the orientation notches on the processor align with the two orientation posts on the socket. Install the processor as shown.

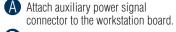




Remove the protective cover after it been automatically disengaged from the load plate.



Make Workstation Board Power Connections

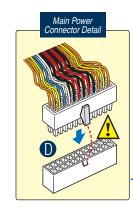


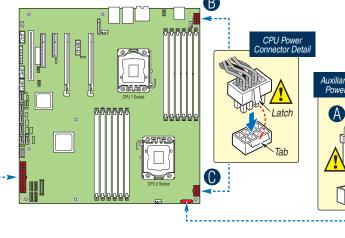
B Attach the CPU 1 power connector to the workstation board. Attach the CPU 2 power connector

to the workstation board. Attach the main power connector to the workstation board.

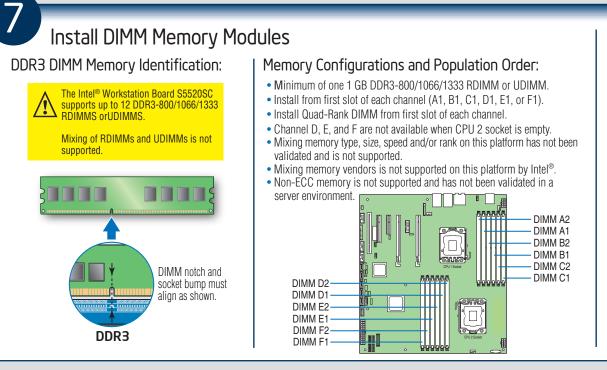
CAUTION: Note the location of the latch on each power cable connector and align it with the matching tab on each workstation board socket.

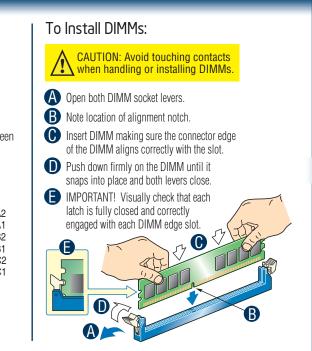
IMPORTANT NOTE: If you are using a non-Intel server chassis with an ATX power supply, see the documentation that came with your chassis for installation information.

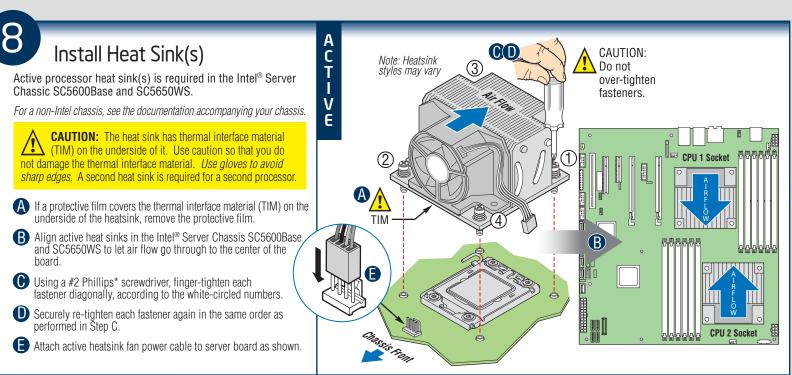




Go to Side 2



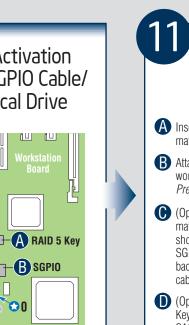


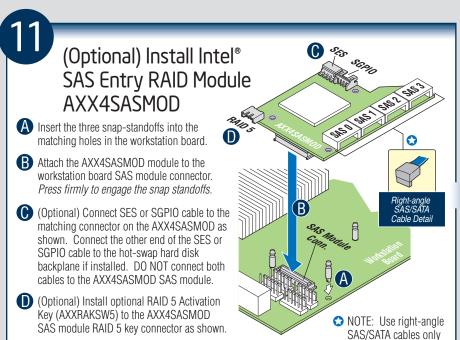


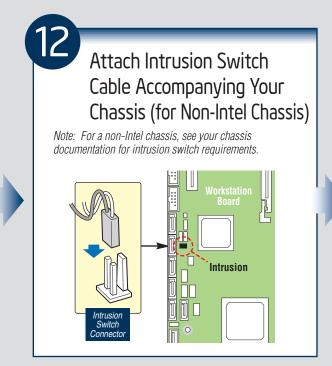
Install Optical Drive and Hard Drive(s) See the documentation that came with your server chassis for drive installation.

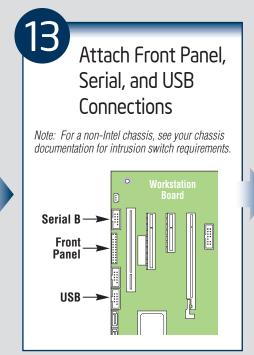


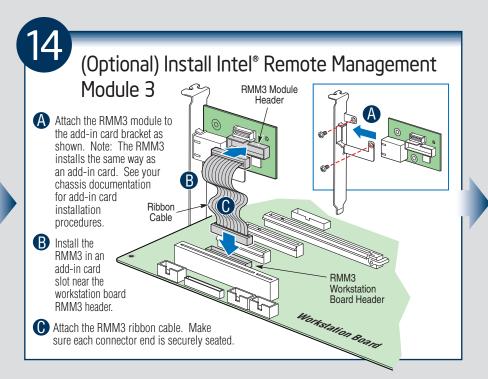
- key (AXXRAKSW5) on on-board RAID 5 key connector as shown.
- (Optional) Connect the SGPIO cable to the workstation board SGPIO connector as shown. Connect the other end of the SGPIO cable to the hot-swap hard disk backplane
- Connect SATA data cables to the workstation board as
- Begin cable connections at the SATA 0 location.











IMPORTANT NOTE eturn to your Intel[©] Server Chassis Quick your non-Intel chassi locumentation to fin configuration of your ntel® Workstation oard S5520SC. Return to this documen

to finish up, including

oftware, BIOS, driver

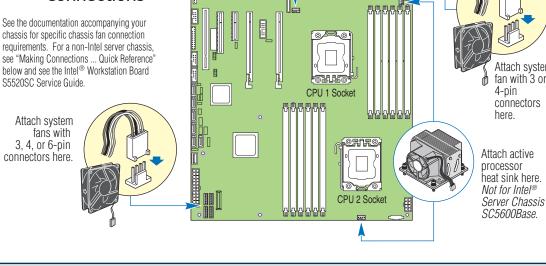
and operating system

nstallation.

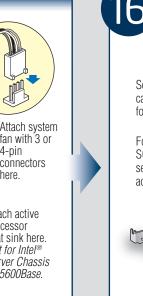
Chassis Fan Connections See the documentation accompanying your chassis for specific chassis fan connection requirements. For a non-Intel server chassis, see "Making Connections ... Quick Reference

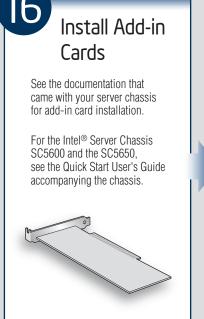
> Attach system fans with 3, 4, or 6-pin connectors here.

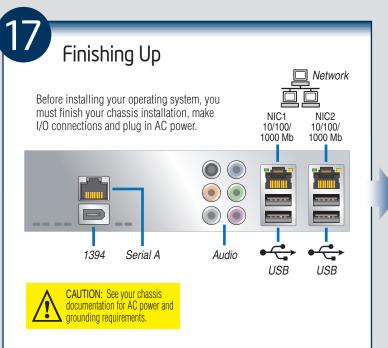
S5520SC Service Guide.



-B SGPIO







Software • BIOS, Firmware, Drivers, and Operating System Installation

A. Confirm BIOS Version: Confirm BIOS, BMC, and FRUSDR Versions. Look on the Server/System Management screen in the BIOS Setup Utility to determine the installed BIOS, BMC firmware, and FRUSDR version. Compare these to the versions at: http://support.intel.com/support/motherboards/server/S5520SC

If new versions are available, see the Intel® Workstation Board S5520SC Week Technical Update to update the BIOS, BMC, and FRUSDR on your server.

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

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 3.0 CD, which comes with the production version of the Intel® Workstation Board S5520SC. If using a Microsoft Windows* operating system, the Intel® Deployment Assistant (in the Deployment Toolkit 3.0 CD) will autorun 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

Common Problems and Solutions

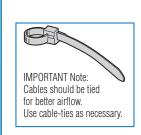
For a list of hardware components that have been tested with this system, see: http://support.intel.com/support/motherboards/

The system does not boot or show video at power-on:

- Check that all processor power connectors are plugged-in.
- Without these connections, the server cannot boot. Beep code 3 means you have bad memory; replace the faulty
- Remember, all DIMMs must be:
- DDR3 800/1066/1333-compliant, 240-pin DIMMs.
- No mixing of DDR3 RDIMMs and UDIMMs.
- Installed beginning with first slot of each channel.
 Install Quad-Rank DIMM from first slot of each channel.

The system sometimes works, but is exhibiting erratic behavior. This is probably the result of using an underrated power supply.

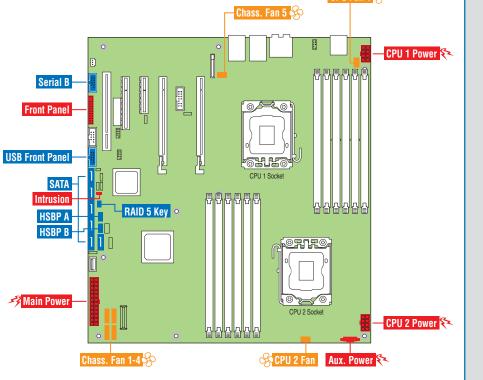
Making Connections Required Connections to the Workstation Board Quick Reference

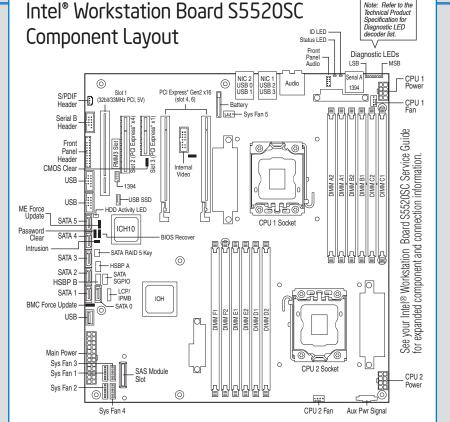


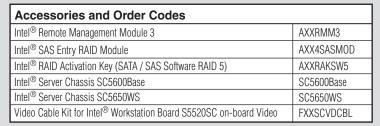
Note: Not all optional connections are shown in this diagram. Refer to the Reference section of this Quick Start User's Guide, your Intel® Workstation Board S5520SC Service Guide, and your server chassis documentation for additional connection information.



| Chassis Fan 1 Connector | | |
|---|---|---------------------------------------|
| Chassis Fan 2 Connector | | |
| Chassis Fan 3 Connector | | |
| Chassis Fan 4 Connector | | |
| Chassis Fan 5 Connector | | |
| Optional Connections | Intel® Server Chassis SC5600Base | Intel® Server Chassis SC5650WS |
| HSBP_A | | |
| HSBP_B | | |
| USB_Front Panel | | |
| SATA Connectors | | |
| SATA Software RAID 5 Key | | |
| SAS Module SAS Connectors (optional) | | |
| Serial B | | |
| SATA SGPIO | | |
| SAS Module SES (optional) | Either SAS SES or SGPIO | ■ Either SAS SES or SGPIO |
| SAS Module SGPIO (optional) | Either SAS SES or SGPIO | ■ Either SAS SES or SGPIO |
| SAS Software RAID 5 Key (optional) | | |
| Note: For a non-Intel chassis, see your c | hassis documentation for workstati | ion board connection information. |







A complete list of accessories and spares can be found in the Intel® Workstation Board S5520SC

| Available Documents | | | |
|---------------------------------|--|--|--|
| Document Type | Content | | |
| Technical Product Specification | In-depth technical information | | |
| Spares and Configuration Guide | Supported accessories and spares list | | |
| Server Configurator Tool | Tested peripherals and operating systems list Tested memory list Supported processors list | | |
| Software and Drivers | Up-to-date firmware, driver and utility information | | |

