

# Intel® Workstation System SC5650SCWS

## Quick Start User's Guide

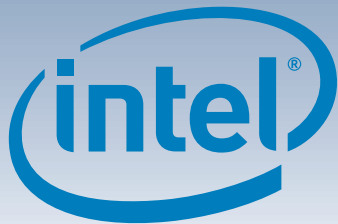
Thank you for buying the Intel® Workstation System SC5650SCWS. The following information will help you to assemble your Intel® Workstation System SC5650SCWS and install components.

These guides and other supporting documents are located on the web at <http://support.intel.com/support/motherboards/server/SC5520SC/>

If you are not familiar with ESD (Electrostatic Discharge) procedures used during system integration, please see the Intel® Workstation System SC5650SCWS service guide, available on the Intel® Server Deployment Toolkit or at <http://support.intel.com/support/motherboards/server/SC5520SC/>

Please boot to the Intel® Server Deployment Toolkit CD first for BIOS and firmware configuration and updates.

Read all cautions and warnings before starting your workstation system integration.



### 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. Maximum 130-W processor or Minimum of one Intel Xeon Processor 5600 Series. Maximum 130-W processor.
- **Heatsink(s):** Minimum of one active heat sink.
- **Memory Type:** Minimum of one 1 GB, 240-pin, RDIMM or UDIMM, DDR3-800, DDR3-1066, or DDR3-1333.
- **Hard Disk Drive:** SATA/SAS SAS Hard Disk Drive requires SAS add-in card or SAS module card



### CAUTION: Intel® Workstation System SC5650SCWS

Supported Processor

Maximum 130 watt processor

Supported Graphics Card

ONE maximum 300 watt graphics card in PCI Express® Slot 6 or TWO maximum 150 watt graphics cards. Empty PCI Express® Slot 3 when a graphics card is installed in PCI Express® slot 4.

NOTE: Graphics cards with power greater than 75W must be self-cooled with exhaust out the back of the chassis.

For a complete list of compatible processors, heatsinks, and memory, see: <http://support.intel.com/support/motherboards/server/SS520SC/>

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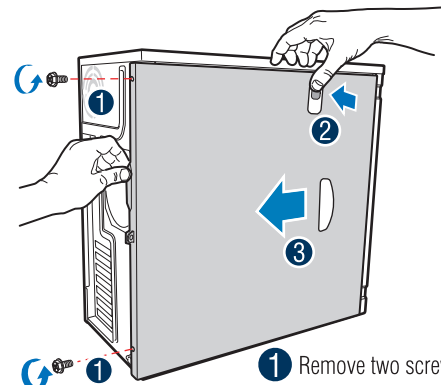
### Preparing the Chassis

Observe normal ESD (Electrostatic Discharge) procedures.

Place your Intel® Server Chassis on a flat anti-static surface to perform the following integration procedures. Observe ESD procedures before reaching inside to make server board connections or install components.

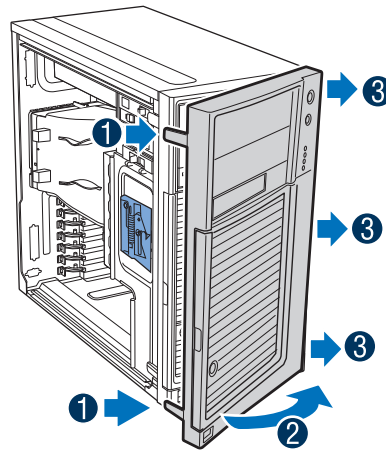
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### Remove Side Cover



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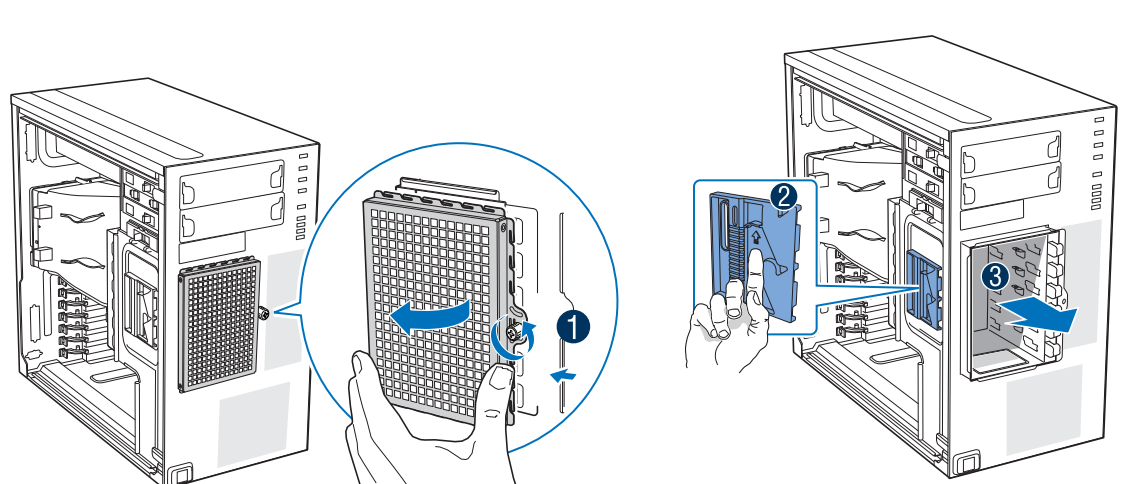
### Remove Front Bezel Assembly



- 1 Lift outward two bezel tabs on left side of bezel assembly to detach bezel assembly from the chassis.
- 2 Rotate left side of front bezel assembly outward slightly.
- 3 Disengage three bezel clips that attach the right side of the bezel to the right side of the chassis and remove.

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### Remove Tool-less Hard Drive Cage



- 1 Loosen thumb screw. Apply pressure to right side of EMI shield to release EMI shield from hard drive cage.
- 2 Push blue plastic release mechanism upward to unlatch hard drive cage.
- 3 Once released, pull hard drive cage out of chassis.

### 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/motherboards/server/sb/cs-010770.htm> for complete safety information.

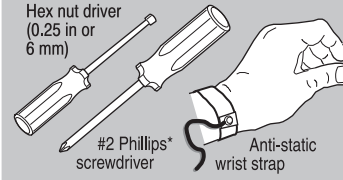
### Warning

Installation and service of this product to be performed only 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.

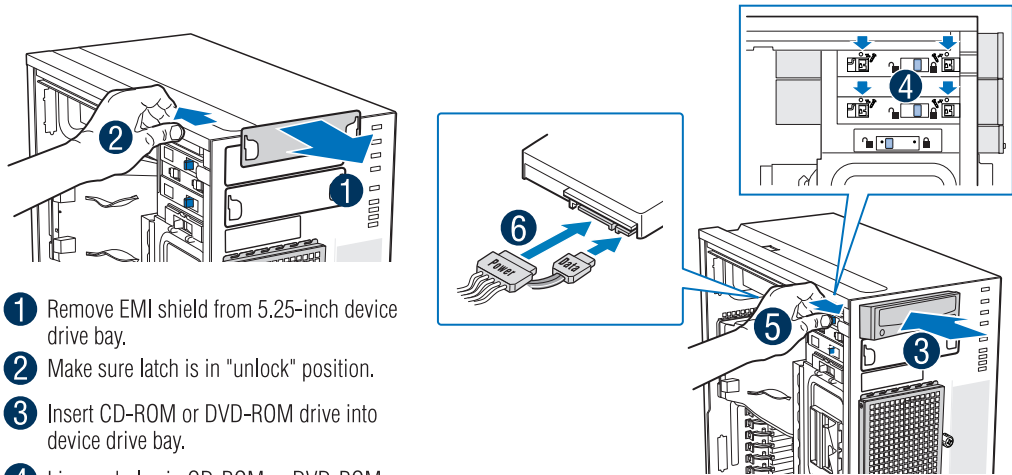
### Tools Required



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### Install Tool-less CD-ROM or DVD-ROM Drive

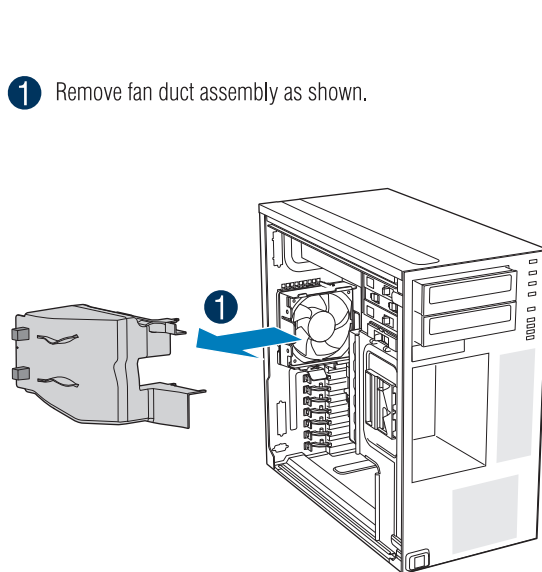


- 1 Remove EMI shield from 5.25-inch device drive bay.
- 2 Make sure latch is in "unlock" position.
- 3 Insert CD-ROM or DVD-ROM drive into device drive bay.
- 4 Line up holes in CD-ROM or DVD-ROM drive with holes in chassis.
- 5 Move latch to "lock" position.
- 6 Connect power (P5 or P6 for DP/BRP/WS; P3 or P4 for UP) cables and data cables to rear of the CD-ROM or DVD-ROM drive.

An additional 4-pin IDE male-to-SATA 15 pin power cable adapter may be needed if the CD-ROM or DVD-ROM does not have a 4-pin power connector. Data cables are included with the Intel® Workstation System.

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### Remove Fan Duct



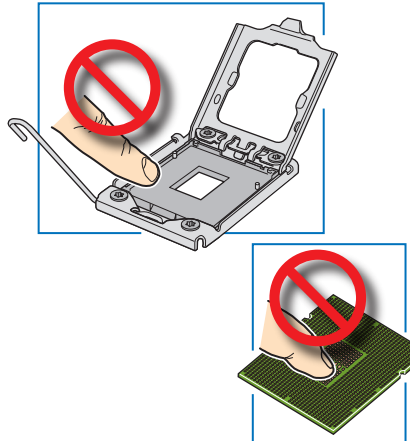
- 1 Remove fan duct assembly as shown.

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### 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.
  - B Rotate the lever open all the way.

- B. Open the Load Plate
- A Push the rear tab with your finger tip to bring the front end of the load plate up slightly.
  - B Open the load plate as shown.

#### C. Remove Socket Protective Cover

- A Grasp the socket protective cover by the two tabs and carefully lift straight up as shown.

To avoid damage, DO NOT DROP the cover onto the socket wires or components.

Save the protective cover.

#### D. Remove the Processor Protective Cover

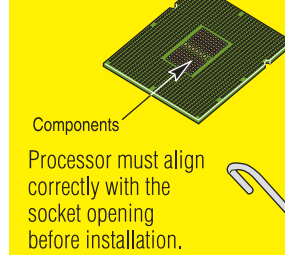
- A Take the processor out of the box and remove the protective shipping cover.

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### Install the Processor(s) ... continued

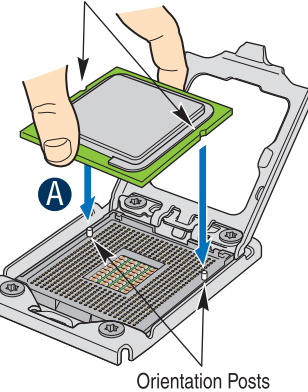
#### E. Install the Processor

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



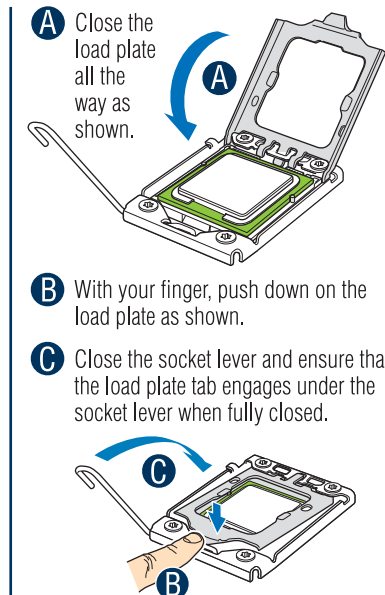
- A Orient the processor with the socket so that the orientation notches on the processor align with the two orientation posts on the socket. Install the processor as shown.

Orientation Notches



Orientation Posts

#### F. Close Load Plate and Socket Lever

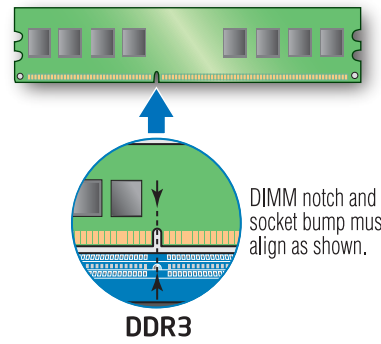


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### Install DIMM Memory Modules

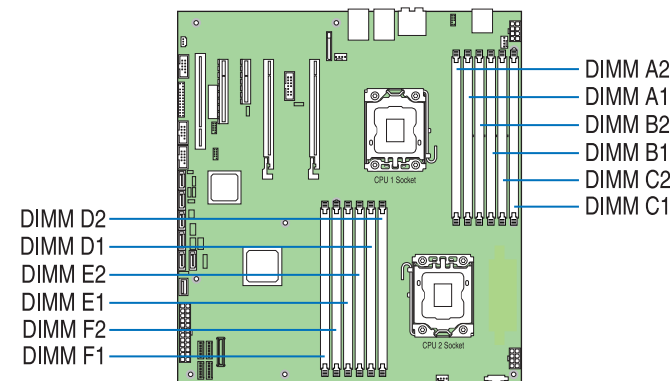
#### DDR3 DIMM Memory Identification:

The Intel® Workstation System SC5650SCWS supports up to 12 DDR3-800/1066/1333 RDIMMs or UDIMMs.



#### Memory Configurations and Population Order:

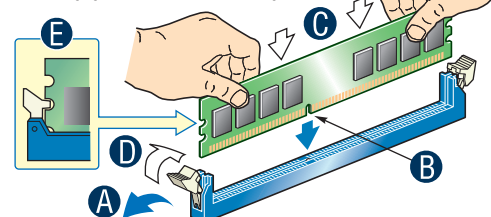
- Minimum of one 1 GB DDR3-800/1066/1333 RDIMM or UDIMM.
- Install from first slot of each channel (A1, B1, C1, D1, E1, or F1).
- Install Quad-Rank DIMM from first slot of each channel.
- Channel D, E, and F are not available when CPU 2 socket is empty.
- Mixing of RDIMMs and UDIMMs is not supported.



#### To Install DIMMs:

CAUTION: Avoid touching contacts when handling or installing DIMMs.

- A Open both DIMM socket levers.
- B Note location of alignment notch.
- C Insert DIMM making sure the connector edge of the DIMM aligns correctly with the slot.
- D Push down firmly on the DIMM until it snaps into place and both levers close.
- E IMPORTANT! Visually check that each latch is fully closed and correctly engaged with each DIMM edge slot.



Go to Side 2

E81423-002





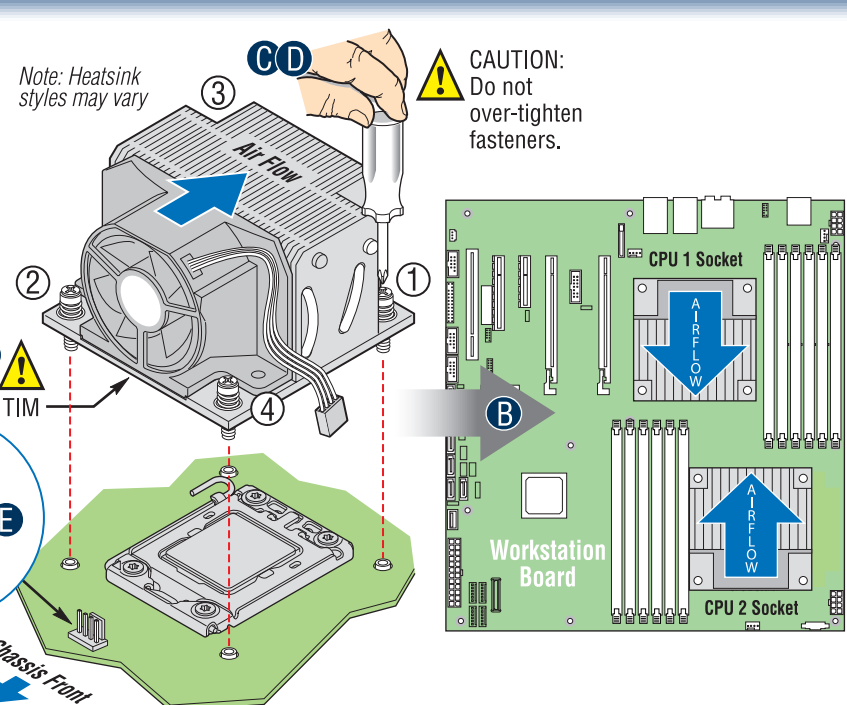
## 9 Install Heat Sink(s)

Active processor heat sink(s) is required in the Intel® Workstation System SC5650SCWS.

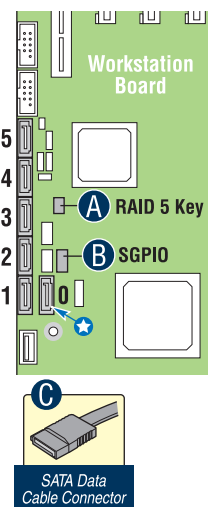
**CAUTION:** The heat sink has thermal interface material (TIM) on the underside of it. Use caution so that you do not damage the thermal interface material. Use gloves to avoid sharp edges. A second heat sink is required for a second processor.

- If a protective film covers the thermal interface material (TIM) on the underside of the heatsink, remove the protective film.
- Align active heat sinks to let air flow go through to the center of the board.
- Using a #2 Phillips® screwdriver, finger-tighten each fastener diagonally, according to the white-circled numbers.
- Securely re-tighten each fastener again in the same order as performed in Step C.
- Attach active heatsink fan power cable to workstation board as shown.

ACTIVE



## 10 Install (Optional) RAID 5 Activation Key/Connect (Optional) SGPIO Cable/Connect Hard Drives/Optical Drive to Workstation Board



- (Optional) Install optional RAID 5 Activation Key (AXXRAKSW5) on on-board RAID 5 Key connector as shown.
  - (Optional) Connect the SGPIO cable to the server board SGPIO Connector as shown. Connect the other end of the SGPIO cable to the hot-swap hard disk backplane if installed.
  - Connect SATA Data Cables to the server board as shown.
- Begin cable connections at the SATA 0 location.

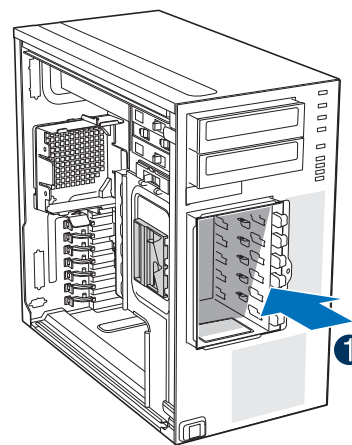
## 11 (Optional) Install Intel® SAS Entry RAID Module AXX4SASMOD

- Insert the three snap-standoffs into the matching holes in the server board.
  - Attach the AXX4SASMOD module to the server board SAS module connector. Press firmly to engage the snap standoffs.
  - (Optional) Connect SES or SGPIO cable to the matching connector on the AXX4SASMOD as shown. Connect the other end of the SES or SGPIO cable to the hot-swap hard disk backplane if installed. DO NOT connect both cables to the AXX4SASMOD SAS module.
  - (Optional) Install optional RAID 5 Activation Key (AXXRAKSW5) to the AXX4SASMOD SAS module RAID 5 key connector as shown.
- NOTE: Use right-angle SAS/SATA cables only

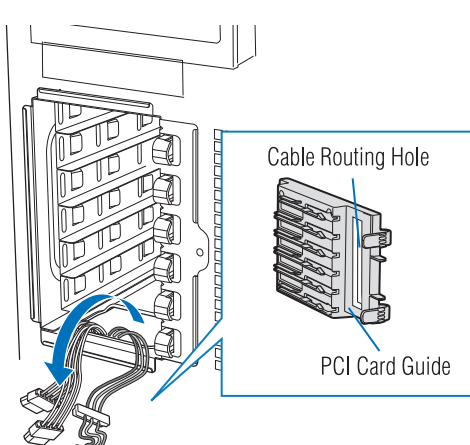
## 12 (Optional) Install Intel® Remote Management Module 3

- Attach the RMM3 module to the add-in card bracket as shown. Note: The RMM3 installs the same way as an add-in card.
- Install the RMM3 in an add-in card slot near the workstation board RMM3 header.
- Attach the RMM3 ribbon cable. Make sure each connector end is securely seated.

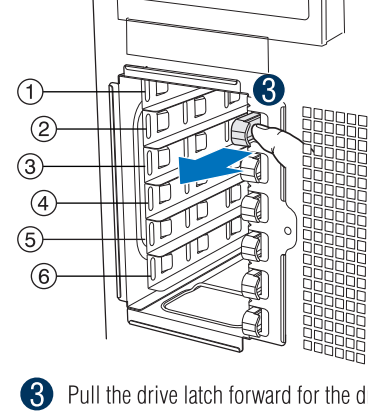
## 13 Install Tool-less Fixed Hard Drives



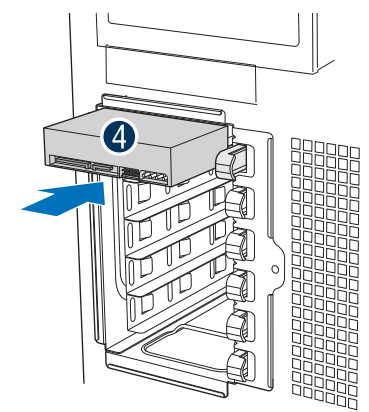
- Insert fixed drive cage into chassis.



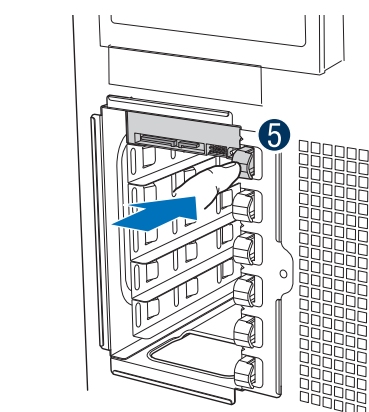
- Route hard disk drive power and data cables through the cable routing hole in PCI card guide.



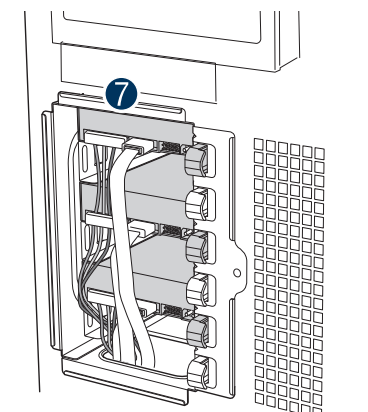
- Pull the drive latch forward for the drive bay you want to install a hard drive in.



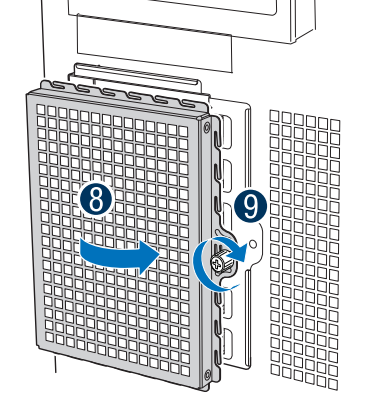
- Insert fixed hard drive into drive bay until it stops. Ensure that the power and data connector end of the hard drive is facing forward.



- Push drive latch in to lock hard drive into drive bay.
- Install additional drives as necessary.



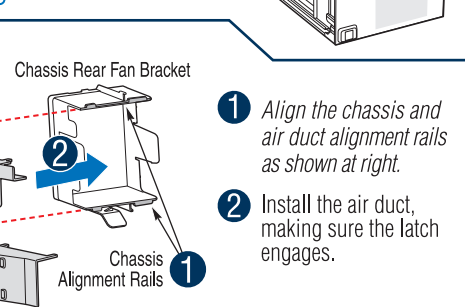
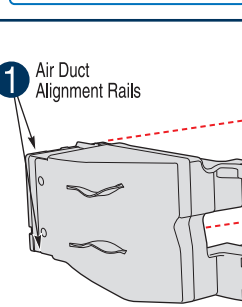
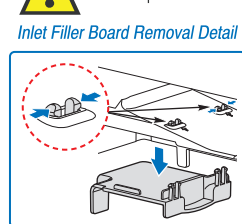
- Install power and data cables to each of the installed drives. The cables route through the oval opening at the bottom of the drive cage.



- Re-attach drive cage EMI shield to chassis.
- Tighten thumb screw.

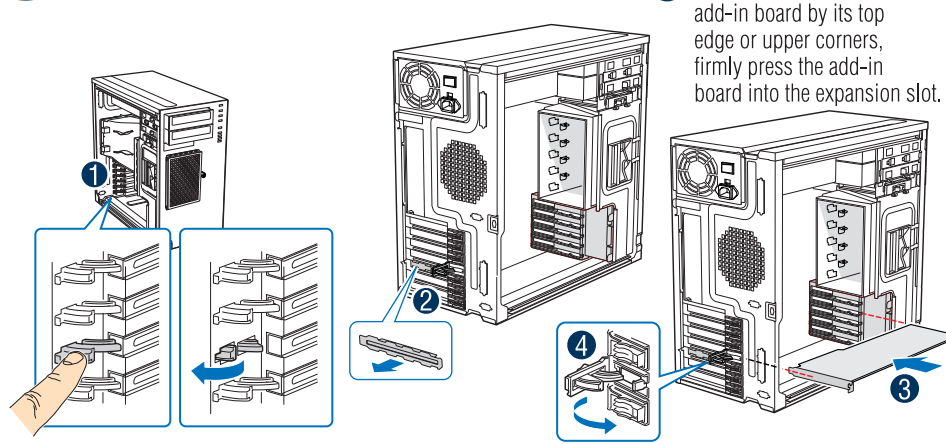
## 14 Install Fan Duct / System Fan Assembly

Warning! Remove the inlet filter board for dual processor configuration



- Align the chassis and air duct alignment rails as shown at right.
- Install the air duct, making sure the latch engages.

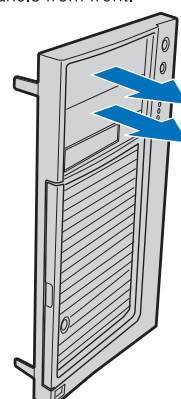
## 15 Install PCI Add-in Boards



- From inside of chassis, press open the back panel PCI add-in board retention device.
- Remove the PCI slot shield by pressing the shield out from the inside of the chassis.
- While holding the PCI add-in board by its top edge or upper corners, firmly press the add-in board into the expansion slot.
- Close the back panel PCI add-in board retention device.

## 16 Remove Filler Panels

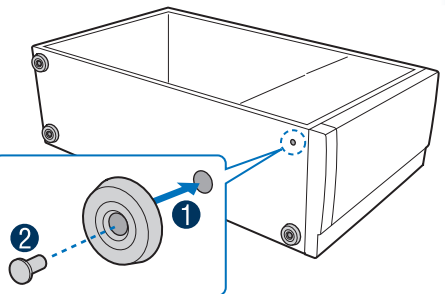
Remove the bezel filler panels for each drive you have installed. Release plastic tabs located at back side of bezel and pull out filler panels from front.



## 17 Install Feet (Pedestal Configuration Only)

Note: This step applies to the pedestal version only. If you plan to configure your chassis as a rack mount system, refer to your system service guide.

- Insert rubber foot into chassis hole.
  - Secure foot by inserting pin through the rubber foot.
- Note: Repeat above steps until all four feet are installed.

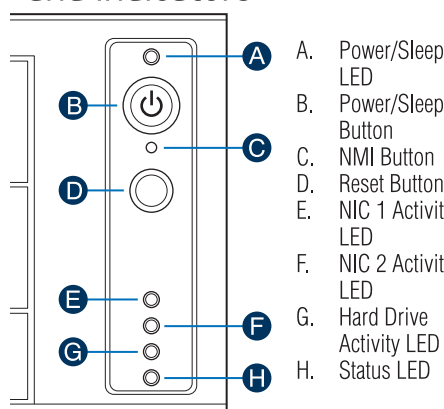


Chassis Fan Connection		
✓ = System Fan header used		Notes:
System Fan 1	✓	PCI Zone Chassis Fan
System Fan 3	✓	HDD Cage Fan
System Fan 5	✓	Rear Chassis Fan

Accessories and Order Codes		
Hot Swap Conversion Kit for AXX6DRV3GR		APPTHSDBKIT
Hot Swap Conversion Kit for AXX6DRV3GEXP		APP3HSDBKIT
6-Drive SAS/SATA Hot Swap Cage without expander		AXX6DRV3GR <sup>1</sup>
6-Drive SAS/SATA Hot Swap Cage with expander		AXX6DRV3GEXP <sup>1</sup>
Intel® Server Chassis Rack Mount Kit		APP3RACKIT
Intel® Server Chassis SC5650 Product Maintenance Kit		APPTPMKIT
Intel® Remote Management Module 3		AXXRMM3
Intel® SAS Entry RAID Module		AXX4SASMOD
Intel® RAID Activation Key (SATA/SAS Software RAID 5)		AXXRAKSW5
Video Cable Kit for Intel® Workstation on-board Video		FXXCVCDBL

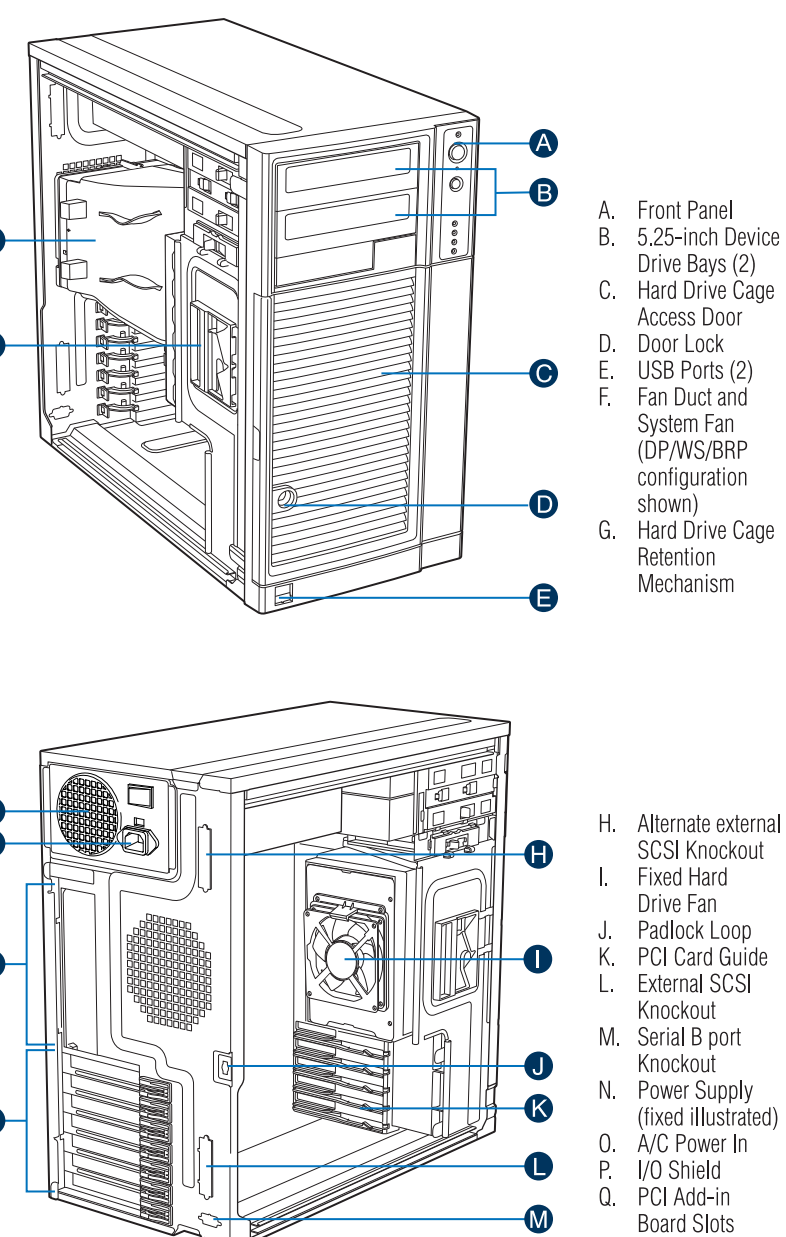
<sup>1</sup> Requires a Hot Swap Conversion Kit. A complete list of accessories and spares can be found at: <http://support.intel.com>

### Front Panel Controls and Indicators

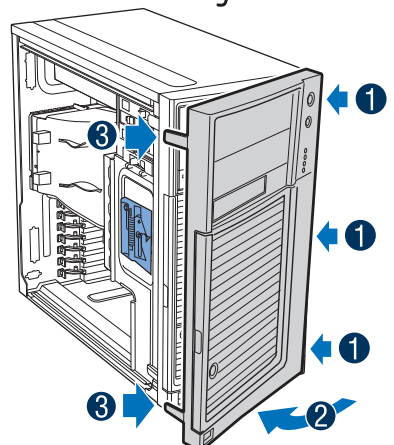


## Reference

### Chassis Features and Components

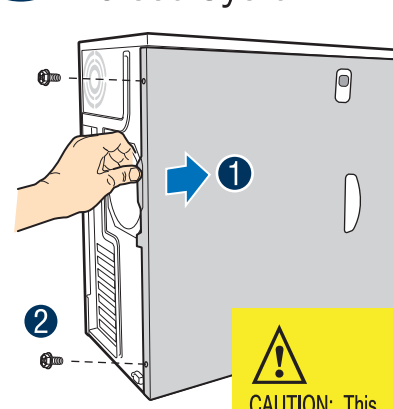


## 18 Install Front Bezel Assembly



- Engage three clips at right edge of chassis.
- Rotate left side of bezel assembly toward chassis.
- Snap two bezel tabs into corresponding recesses at left edge of chassis front panel.

## 19 Close System

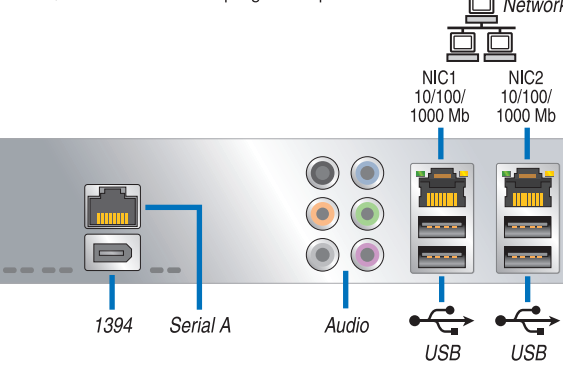


- Slide the side cover on chassis and latch securely.
- Replace screws.

**CAUTION:** This chassis must be operated with the SIDE COVER installed to ensure proper cooling.

## 20 Finishing Up

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



**CAUTION:** Power supply requires a 16-gauge power cord

### 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/s5520SC/>

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 DDR3 DIMM(s).
- Remember, all DIMMs must be:
  - DDR3 800/1066/1333-compliant, 240-pin DIMMs.
  - No mixing of DDR3 RDIMMs and UDIMMs.
  - Installed from first slot of each channel.
  - Install Quad-Rank DIMM from first slot of each channel.

### Available Documents

Document Type	Content
Technical Product Specification	In-depth technical information
Spares and Configuration Guide	Supported accessories and spares list
Software and Drivers	Tested peripherals and operating system lists
Software and Drivers	Tested memory list
Software and Drivers	Supported processors list
Software and Drivers	Up-to-date firmware, driver and utility information

Additional Reference Documents available at: <http://support.intel.com/support/motherboards/server/S5520SC/>

### Intel® Workstation Board S5520SC Component Layout

