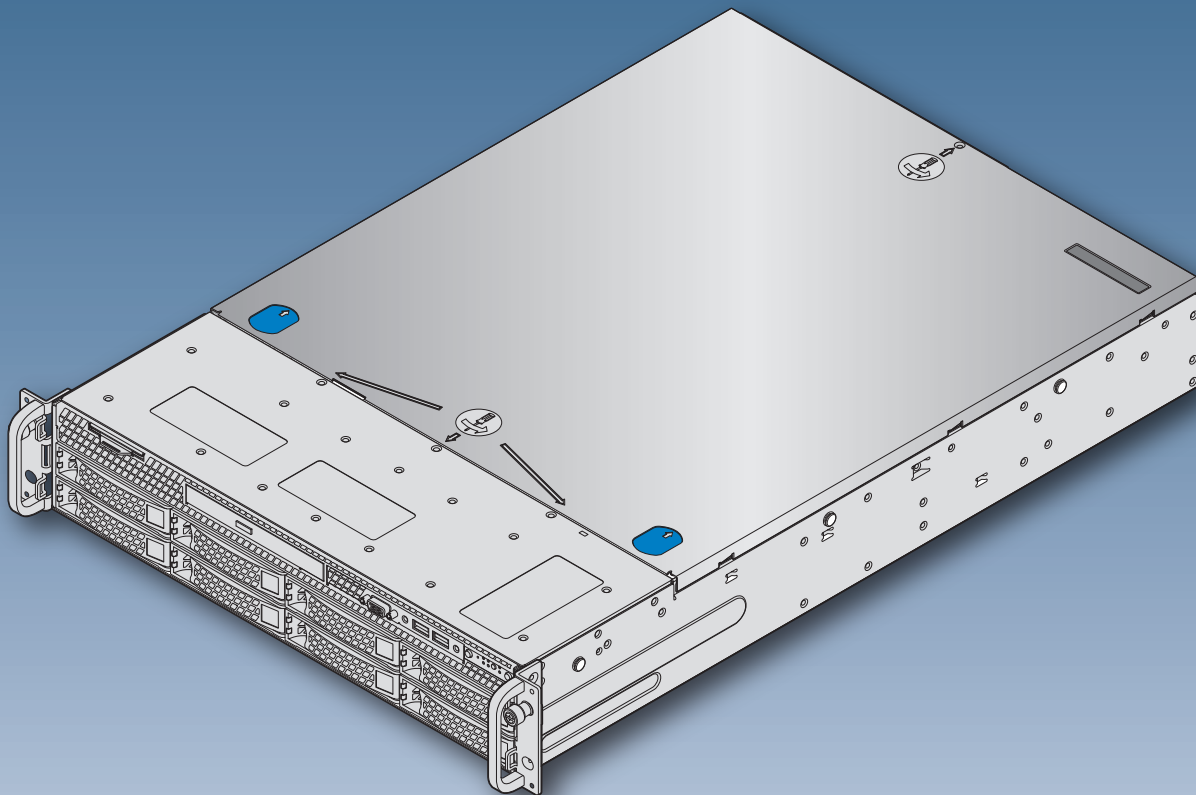


# Intel® Server System R2000SC Family Quick Installation User's Guide

Thank you for buying an Intel® Server System. The following information will help you assemble your Intel® Server System and install components.

If you are not familiar with ESD [Electrostatic Discharge] procedures used during system integration, see the complete ESD procedures described in your *Service Guide*.

This guide and other supporting documents are located on the web at:  
<http://www.intel.com/support>.



G71872-002

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## 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://www.intel.com/support/motherboards/server/sb/cs-010770.htm> for complete safety information.

## Warning



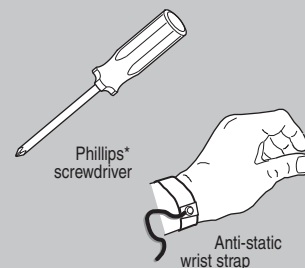
Installation and service of this product to be performed only by qualified service personnel to avoid risk of injury from electrical shock or energy hazard.

## 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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# Thermal Operation and Configuration Requirements

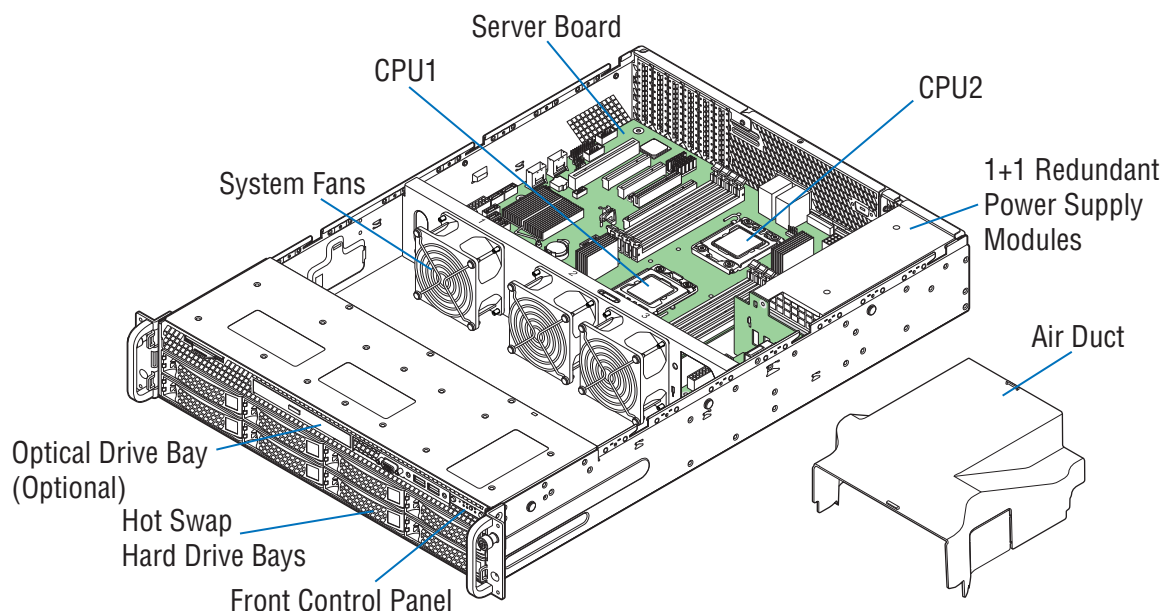
To keep the system operating within supported maximum thermal limits, the system must meet the following operating and configuration guidelines:

- Ambient in-let temperature cannot exceed 35° C and should not remain at this maximum level for long periods of time. Doing so may affect long term reliability of the system.
- The CPU-1 processor + CPU heatsink must be installed first.
- **Memory Slot population requirements:**  
NOTE: Specified memory slots either can be populated with a DIMM or supplied DIMM Blank (DIMM blanks are only provided in systems that require them). Memory population rules apply when installing DIMMs.
  - **DIMM Population Rules on CPU-1**  
Install DIMMs in order; Channels A, B, and C. Start with 1st DIMM slot (blue) on each channel, then 2nd slot.
  - **DIMM Population Rules on CPU-2**  
Install DIMMs in order; Channels D, E, and F. Start with 1st DIMM slot (blue) on each channel, then 2nd slot.
- All hard drive bays must be populated. Hard drive carriers either can be populated with a hard drive or supplied drive blank.
- The air duct must be installed at all times.
- In single power supply configurations, the second power supply bay must have the supplied filler blank installed at all times.
- The system top-cover must be installed at all times.

# System Overview

## Intel® Server System R2000SC Family

### System Features and Components



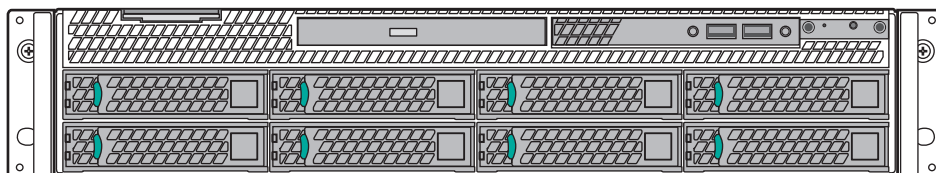
\* R2308SC2SHDR as shown

#### Useful Information:

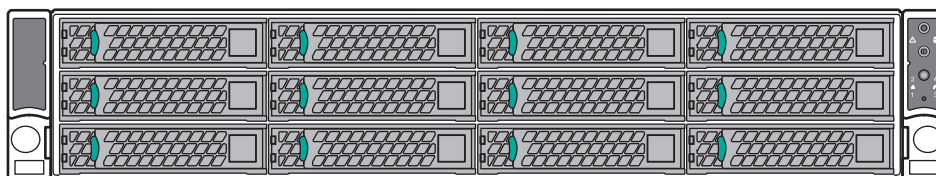
- The system must be configured with two CPUs to enable PCIe slot 5 (blue color).
- The mini-SAS connector labeled SCU\_1 requires an 8-port SATA/SAS Intel® RAID C600 Upgrade Key to be functional.
- DIMM channels D-F can only be used in dual processor configurations.

### Hot Swap Hard Drive Bay Options

8 x 3.5" Hot Swap Hard Drive Bay Option



12 x 3.5" Hot Swap Hard Drive Bay Option



# General Installation Process

The installation instructions in this section are for common components of Intel® Server System R2000SC family.

## Minimum Hardware Requirements

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

- **Processor:**  
Intel® Xeon® Processor E5-2400 product family.
- **Memory Type:**  
Minimum of one 1 GB, 240-pin, RDIMM or UDIMM, DDR3-1066, DDR3-1333, or DDR3-1600.
- **Hard Disk Drives:** SATA

For a complete list of compatible processors, heatsinks, and memory, see [http://www.intel.com/p/en\\_US/support](http://www.intel.com/p/en_US/support).

# 1

## Preparing the System

Observe normal ESD (Electrostatic Discharge) procedures.

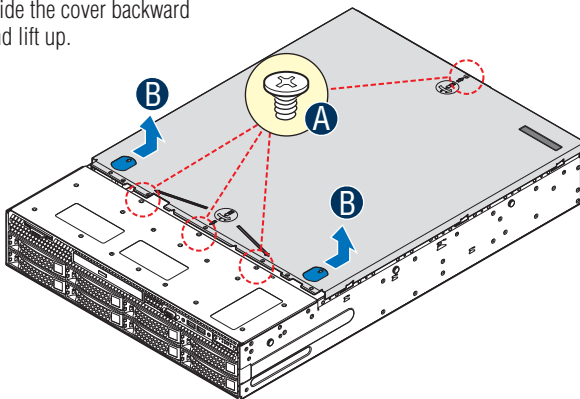


Place your Intel® Server System on a flat anti-static surface to perform the following integration procedures. Observe ESD procedures before reaching inside to make server board connections or install components.

# 2

## Remove the Top Cover

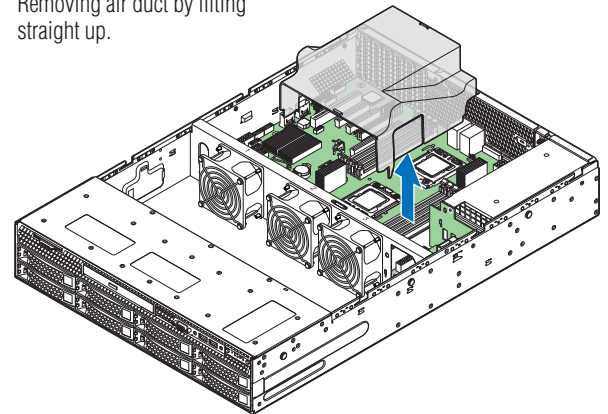
- Remove the four screws.
- Slide the cover backward and lift up.



# 3

## Remove the Air Duct

Removing air duct by lifting straight up.



# 4

## Remove Processor Heatsink(s)



### IMPORTANT!

Before proceeding further, check your Intel® Server System for disconnected or loose cables and components that may have occurred during shipping.

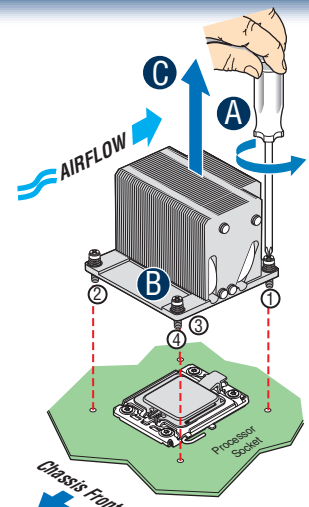


**CAUTION:** The heatsink has thermal interface material (TIM) on the underside of it. Use caution so that you do not damage the thermal interface material. Use gloves to avoid sharp edges.

The heatsink is attached to the server board / processor socket with captive fasteners.

Using a #2 Phillips\* screwdriver, loosen the four screws located on the heatsink corners in a diagonal manner using the following procedure:

- Using a #2 Phillips\* screwdriver, start with screw 1 and loosen it by giving it two rotations and stop. (IMPORTANT: Do not fully loosen.)
- Proceed to screw 2 and loosen it by giving it two rotations and stop. Similarly, loosen screws 3 and 4.  
Repeat steps A and B by giving each screw two rotations each time until all screws are loosened.
- Lift the heatsink straight up.



# General Installation Process

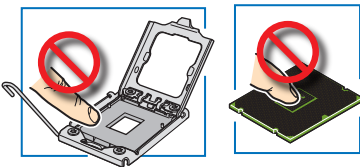
## 5

### Install the Processor(s)



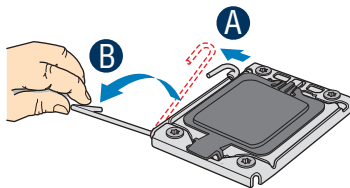
#### CAUTION:

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.



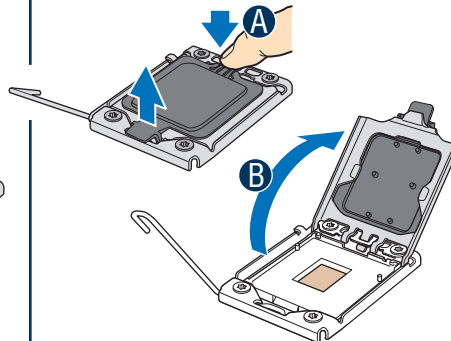
#### A. Open the Socket Lever

- 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 the Processor Protective Cover

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



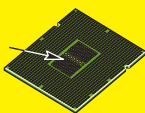
### Install the Processor(s) ... continued

#### D. Install the Processor



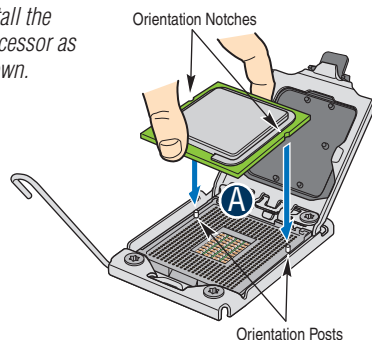
CAUTION: The underside of the processor has components that may damage the socket wires if installed improperly.

Components



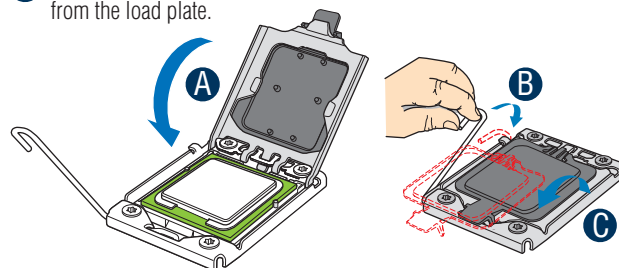
Processor must align correctly with the socket opening before installation.  
DO NOT DROP processor into the socket!

- 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.*



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

- A Close the load plate all the way as shown.
- B Close the socket lever.
- C Remove the protective cover after it been automatically disengaged from the load plate.



## 6

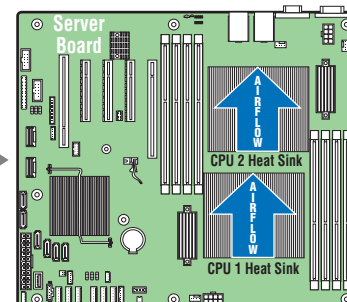
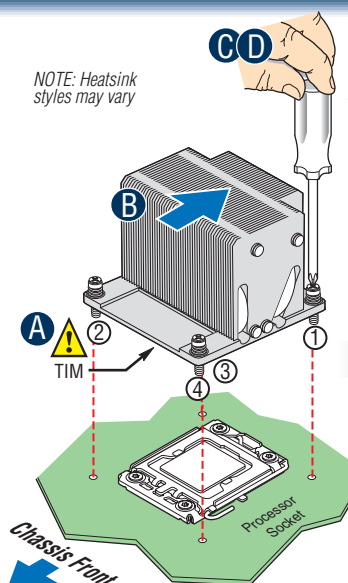
### Install Processor Heatsink(s)

- A If a protective film covers the thermal interface material (TIM) on the underside of the heatsink, remove the protective film.
- B Align the heat sink fins to the front and back of the chassis for correct airflow. Airflow goes from front-to-back of chassis.
- C Using a #2 Phillips\* screwdriver, finger-tighten each fastener diagonally, according to the white-circled numbers.
- D Securely re-tighten each fastener again in the same order as performed in Step C.

NOTE: Heatsink styles may vary



CAUTION: Do not over-tighten fasteners.





# General Installation Process

## 7

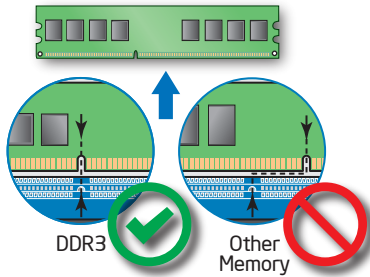
### Install Memory Modules

#### DDR3 DIMM Memory Identification:



**CAUTION:** Observe normal ESD (ElectroStatic Discharge) procedures to avoid possible damage to system components.

DIMM notch and socket bump must align as shown below.

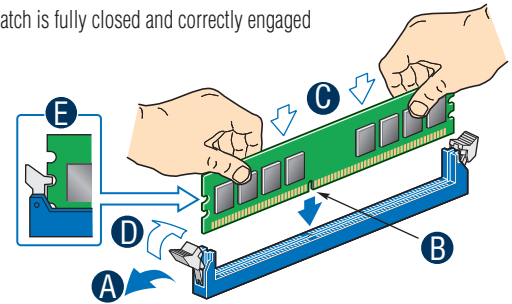


#### To Install DIMMs:

- 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.

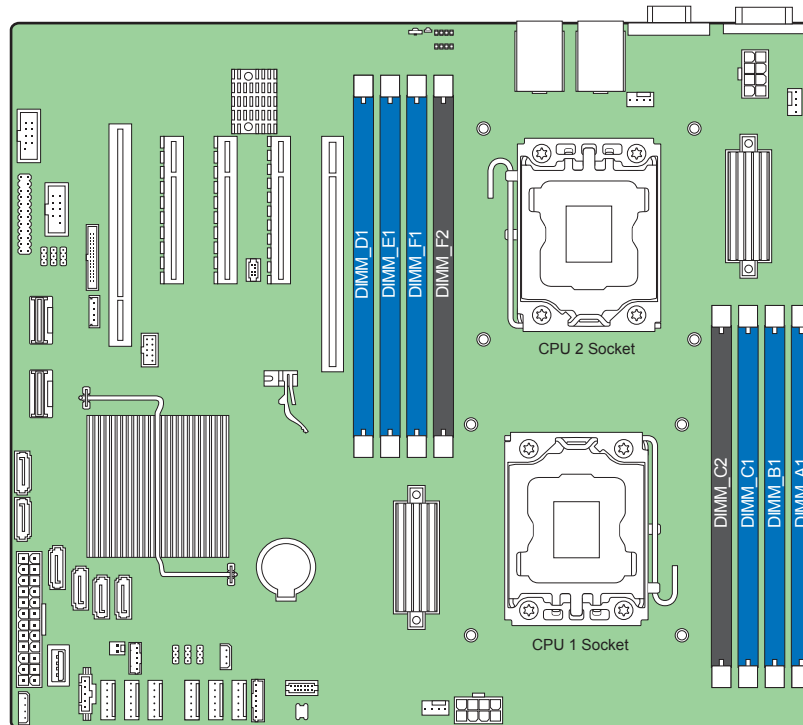


**CAUTION:** Avoid touching contacts when handling or installing DIMMs.



### Install Memory Modules... *Continued*

#### Intel® Server Board S2400SC



#### Memory Configurations and Population Order:

For best performance, a minimum of three DIMMs per CPU is recommended, populated in the blue slot of each memory channel.

In a single-processor configuration, always populate A1 DIMM first.

In a dual-processor configuration, always populate A1 DIMM first for CPU 1 and D1 DIMM first for CPU2.

Note: For additional memory configurations, see the *Service Guide* on the Intel® Server Deployment Toolkit CD that accompanies your Intel® Server System S2400SC, or go to <http://www.intel.com/support/motherboards/server/>.

Memory sizing and configuration is supported only for qualified DIMMs approved by Intel. For a list of supported memory, see the tested memory list at: <http://www.intel.com/support/motherboards/server/>.

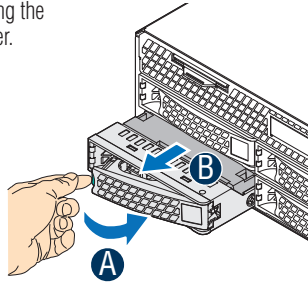


# General Installation Process

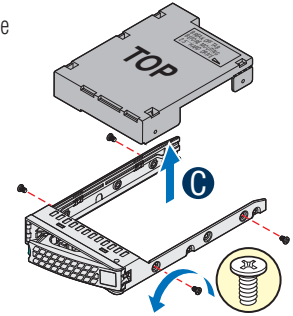
## 8

### Install Hard Drives

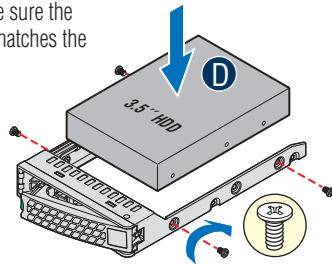
- A** Remove the drive carrier by pressing the **green** button and opening the lever.
- B** Slide the carrier out.



- C** Remove the four screws securing the plastic drive blank and remove the plastic drive blank.



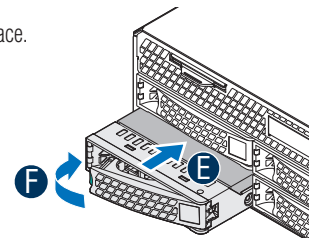
- D** Install the hard disk drive using the same four screws as shown. Make sure the connector end of the drive matches the backplane connector.



- E** With the lever open, insert the hard disk drive assembly into the chassis.

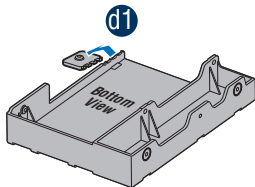
- F** Push in the lever to lock it into place.

**CAUTION:** If you don't install all drives, empty drive bays must be occupied by carriers with plastic drive blank provided to maintain proper system cooling.

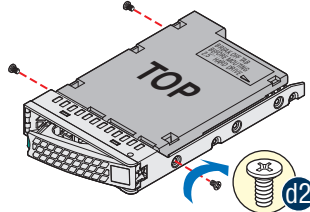


Install 2.5" Hard Drive as option:

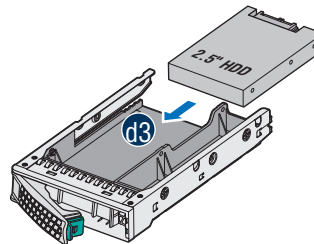
- d1** Break off the tab on the plastic drive blank.



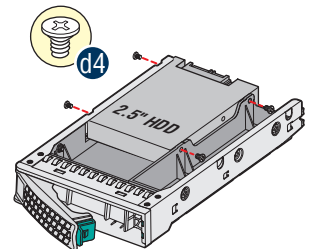
- d2** Install the plastic drive blank from top. Secure the bracket with three screws as shown.



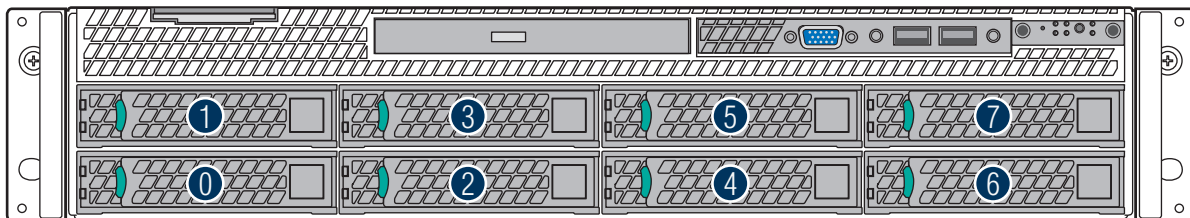
- d3** Slide the 2.5" HDD into the plastic drive blank to align the screw holes with the right and left rail.



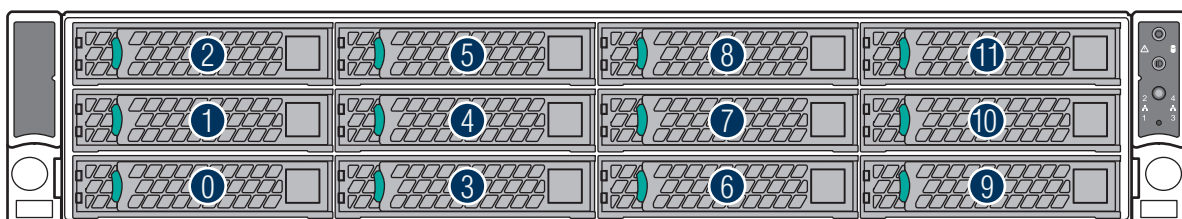
- d4** Secure the hard disk drive using the four screws for 2.5" HDD.



### Hard Drive Numbering Diagram



8 x 3.5" hard drive bay as shown



Drive 0 Primary

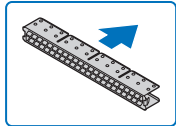
12 x 3.5" hard drive bay as shown

# General Installation Process

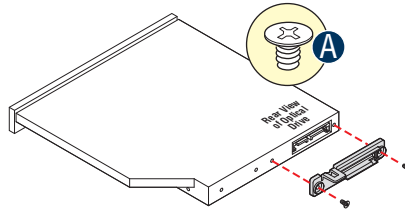
9

## Install Optical Drive

**IMPORTANT NOTE:** If you do not install a device at this location, install the optical device bay filler panel shown below. This is required to maintain proper system cooling.

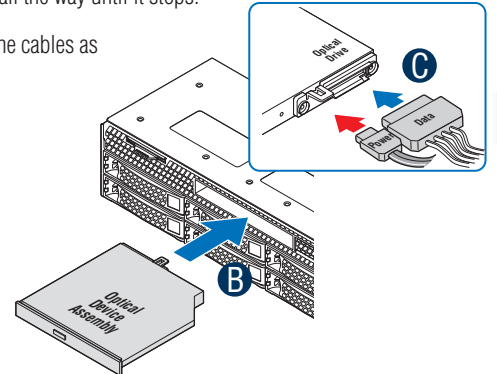


- A** Install the plastic guide onto the back of the drive and attach with two screws as shown.



- B** Insert the optical drive into chassis opening and push all the way until it stops.

- C** Connect the cables as shown.

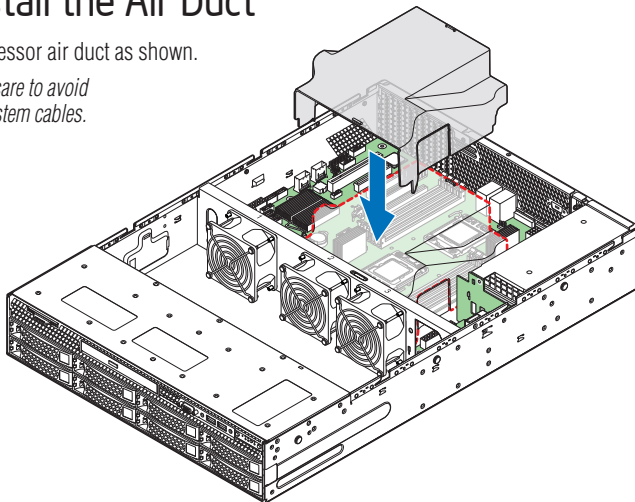


10

## Install the Air Duct

Install processor air duct as shown.

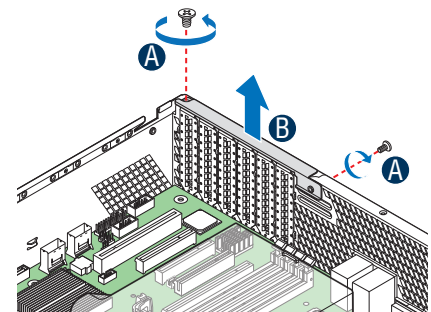
**NOTE:** Use care to avoid pinching system cables.



11

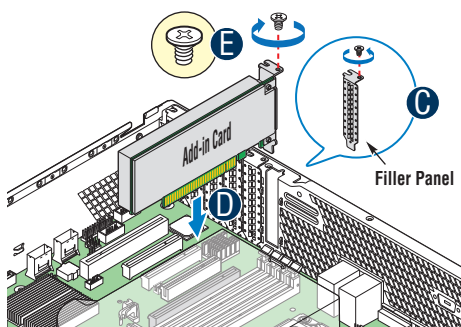
## Install Add-in Card

- A** Remove the screw.  
**B** Slide the retention device and lift upward.

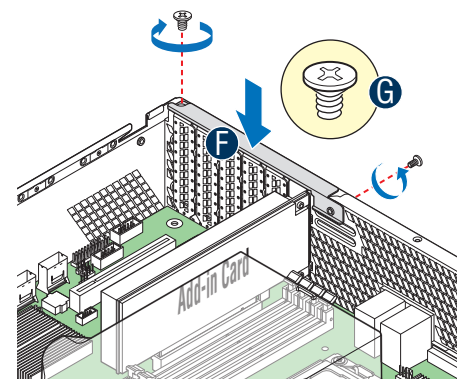


## Install Add-in Card ... continued

- C** Push out the filler Panel from the chassis and remove it.  
**D** Position riser card edge connector over the server board socket then press down uniformly until it seats in riser socket.  
**E** Tighten the screw.



- F** Install the retention device.  
**G** Tighten the screw.

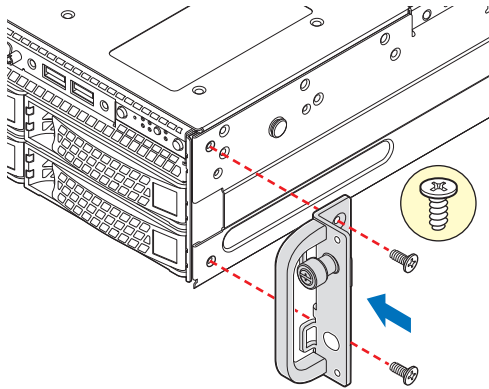


# General Installation Process

## 12

### Install Rack Handles

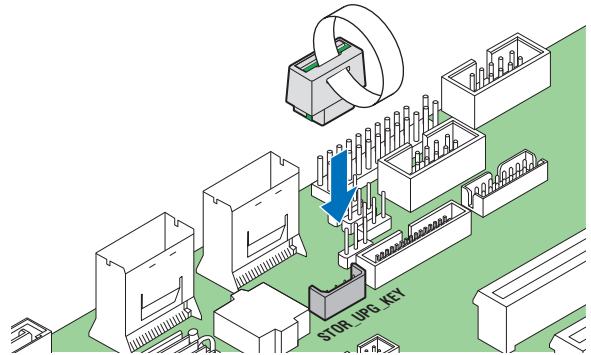
*NOTE: Rack handles are required to install the bezel. For detailed instructions, see the Service Guide.*



## 13

### Install Intel® RAID C600 Upgrade Key (optional)

Locate the white 4-pin key header. Carefully pickup the Intel® RAID C600 Upgrade Key. Match the Key and connector orientation and press down to install.

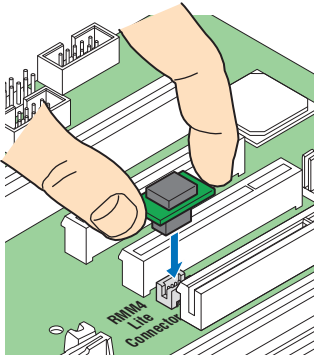


## 14

### Install Intel® Remote Management Module 4 (optional)

#### Install Intel® RMM4 Lite

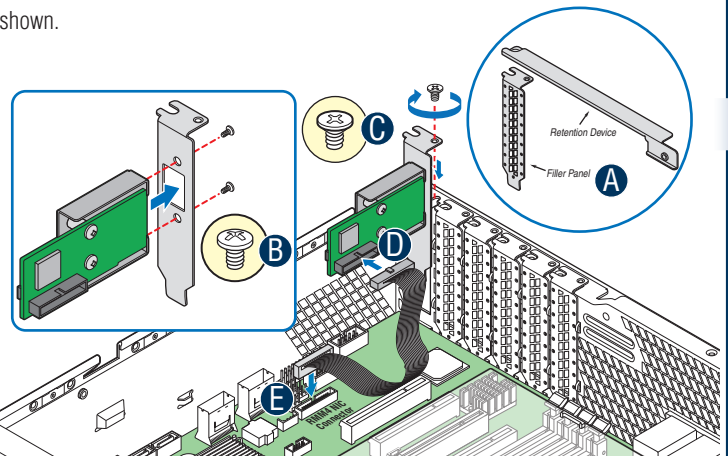
Locate the RMM4 Lite connector, carefully pickup the Intel® RMM4 Lite module, match the alignment pin of the module and the connector on server board, then press to install.



#### Install Intel® RMM4 NIC

- A** Remove the filler Panel and Retention Device refer to **STEP 11**.
- B** Attach the RMM4 module with two screws as shown.
- C** Fasten the bracket with one screw as shown.
- D** Connect one end of the flex cable to the RMM4 connector on the RMM4 NIC module.
- E** Connect the opposite end of the flex cable to the RMM4 connector on the server board.

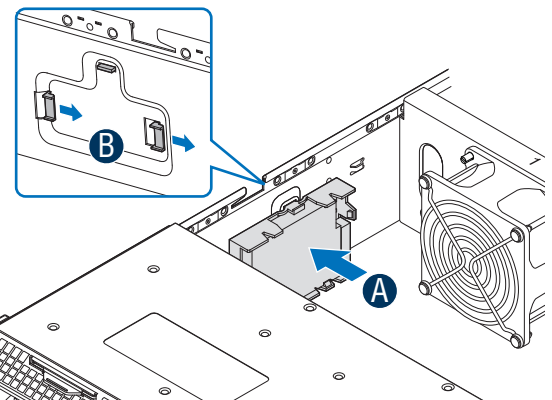
*Note: The cable connectors are keyed and can only go in one way.*



## 15

### Install Intel® RAID Smart Battery (optional)

- A** Position the battery against the side wall.
- B** Align the tabs on the plastic battery holder with the mounting holes in the chassis and slide the plastic battery holder toward the front of the system until the tabs engage with the mounting holes.

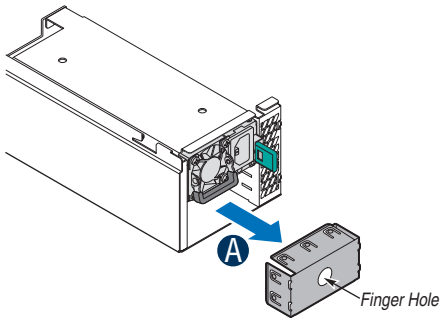


# General Installation Process

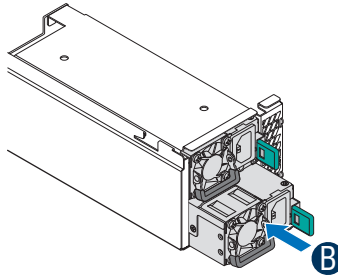
## 16

### Install Second Power Supply Module (optional)

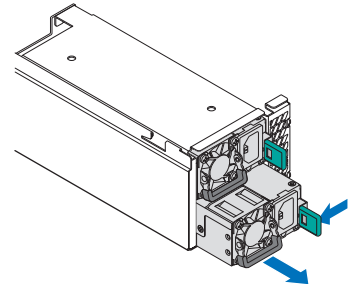
- A** Use the 'finger hole' to remove the filler panel.



- B** Insert the power supply module into the power supply cage and push all the way until it clicks into place.



To remove a power supply module, push the green latch in the direction shown while pulling out of the system by the handle.

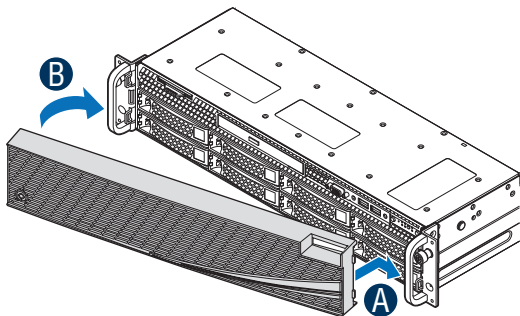


## 17

### Install Bezel (optional)

Note: Before installing the bezel, you must install the rack handles.

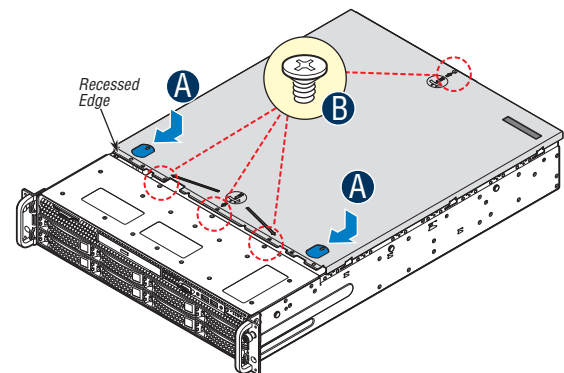
- A** Lock the right end of the front bezel to the rack handle.  
**B** Rotate the front bezel clockwise till the left end clicks into place. Lock the bezel if needed.



## 18

### Install the Top Cover

- A** Place the top cover on system and slide towards the front of the chassis until the recessed front edge is fully engaged.  
**B** Install the three screws at the front and torque to 7-9in-lbs. Then install the screw at the back and torque to 7-9in-lbs.



## 19

### Finishing Up

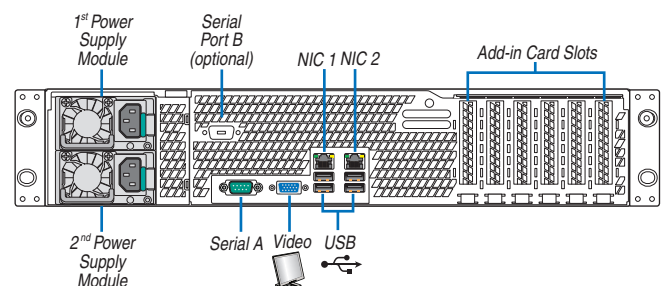
Before installing your operating system, you must finish your system installation, make I/O connections, and plug in power cord(s).

1. Verify the system top cover is installed.
2. Install the server into the rack using the instructions provided with the rack mounting kit.
3. Connect your USB keyboard/mouse, video and other I/O cables/devices as shown.

Then connect the power cord(s).



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



# General Installation Process

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## Software ■ BIOS, Drivers, and Operating System Installation

### A. Update the System Software:

1. Boot from the Intel® Server Deployment Toolkit CD.
2. Use the Wizard to access the latest versions on the Internet and update the BIOS, firmware, FRUSDRs, and Intel® RMM4. *Note: You may also download files on a USB key. Note: The FRUSDR utility must be run for full server configuration.*

### B. Configure your RAID Controller:

If using a RAID card, use the instructions provided with the RAID controller. If using on-board RAID, you must activate RAID in the BIOS setup. See the *Intel® Server Board S2400SC Technical Product Specification* for more information.

### 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 CD. If using a Microsoft Windows\* operating system, the Express Installer 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.

### E. Install Intel® System Management Software (optional):

Download the latest version of the Intel® System Management Software from <http://www.intel.com/go/servermanagement> and use the instructions provided at that link to install the software.

*\* Other brands and names may be claimed as the property of others..*



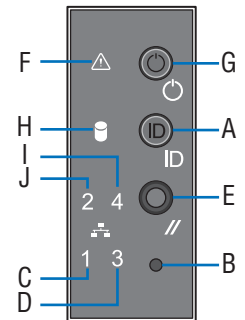
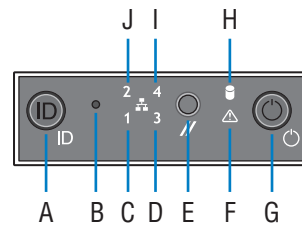
# Reference

## Front Panel Controls and Indicators

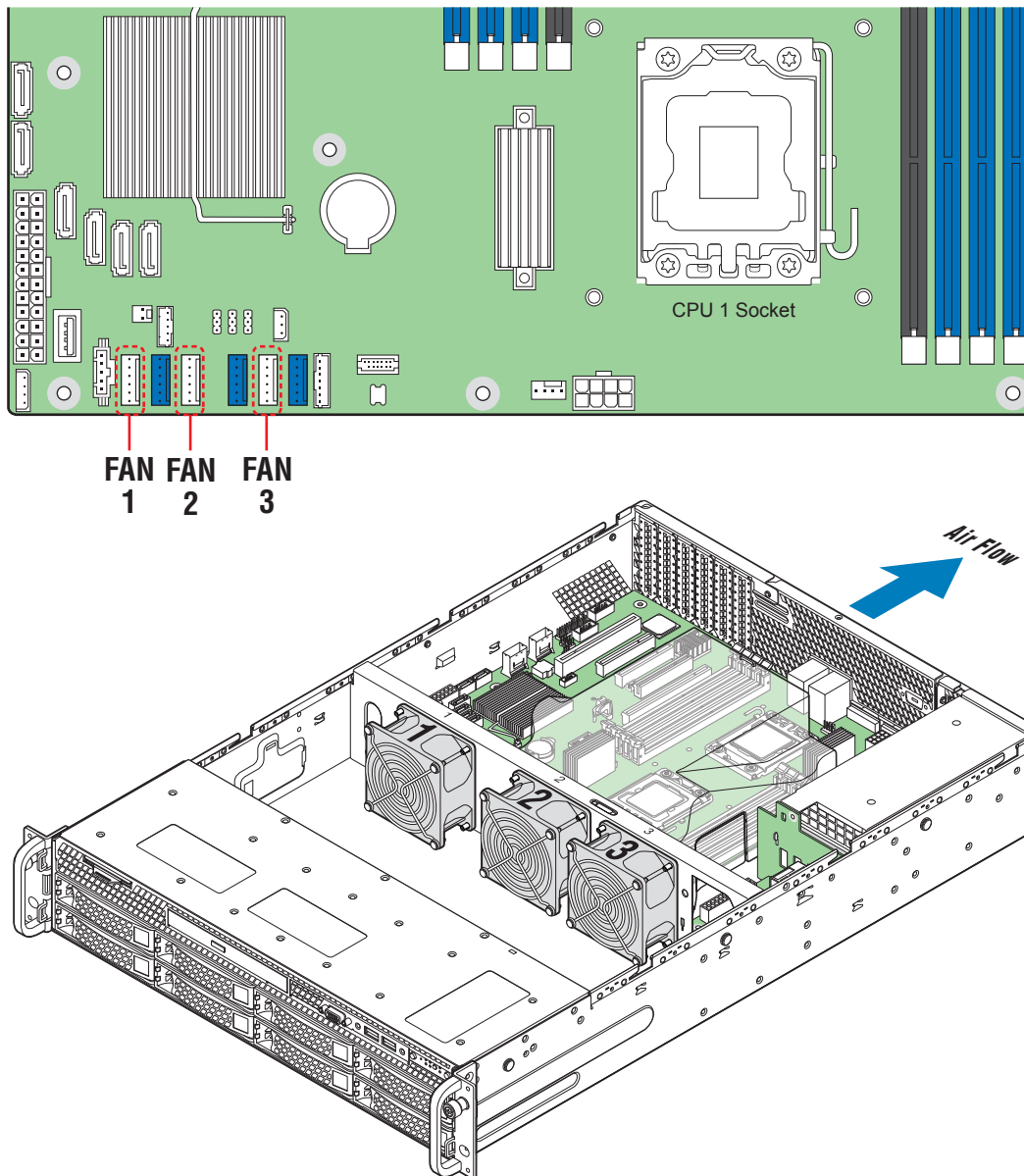
Your system may include one of two front control panel types. The features of each are as follows:

- |                                  |                                     |
|----------------------------------|-------------------------------------|
| A. ID Button with integrated LED | F. System Status LED                |
| B. NMI Button                    | G. Power Button with integrated LED |
| C. LAN-1 Activity LED            | H. HDD Activity LED                 |
| D. LAN-3 Activity LED            | I. LAN-4 Activity LED               |
| E. System Cold Reset Button      | J. LAN-2 Activity LED               |

### Standard Control Panel

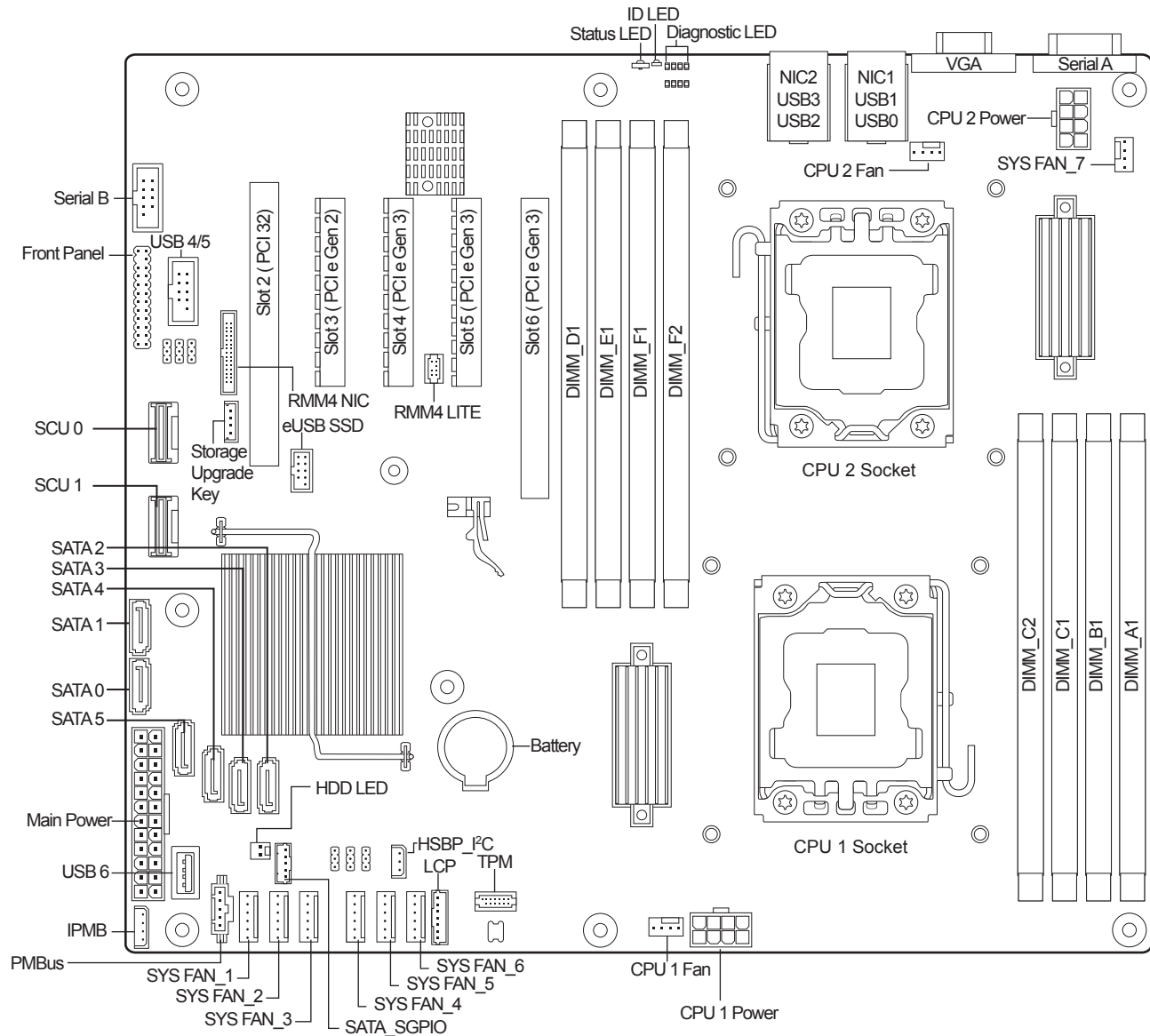


## System Fan Connection



# Reference

## Intel® Server Board S2400SC Component Layout



See your Intel® Server System S2400SC Service Guide for expanded component and connection information.

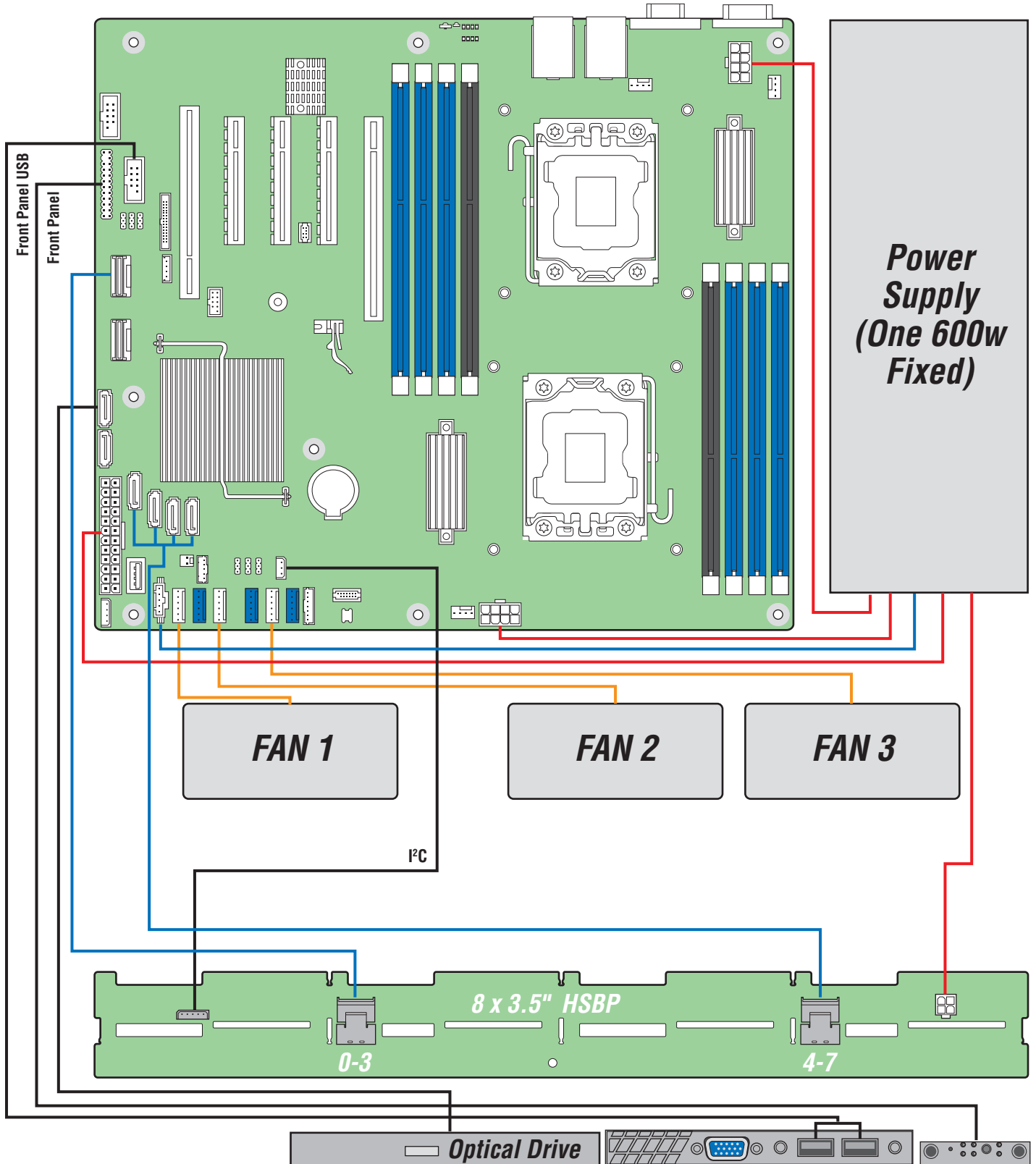
A complete list of accessories and spares can be found at: <http://www.intel.com/support>.



# Reference

System Cabling Diagram

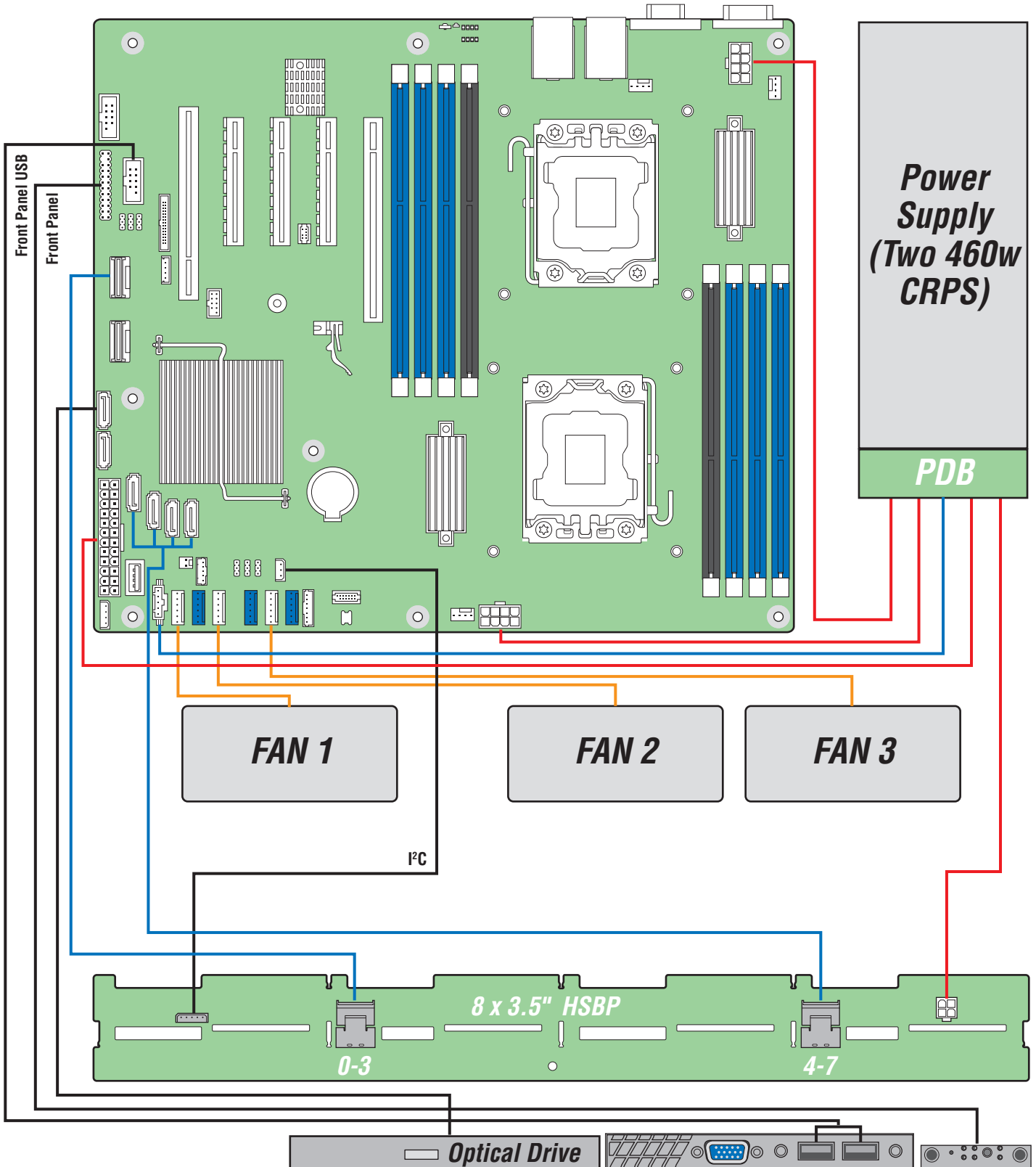
**R2308SC2SHFN**



# Reference

System Cabling Diagram

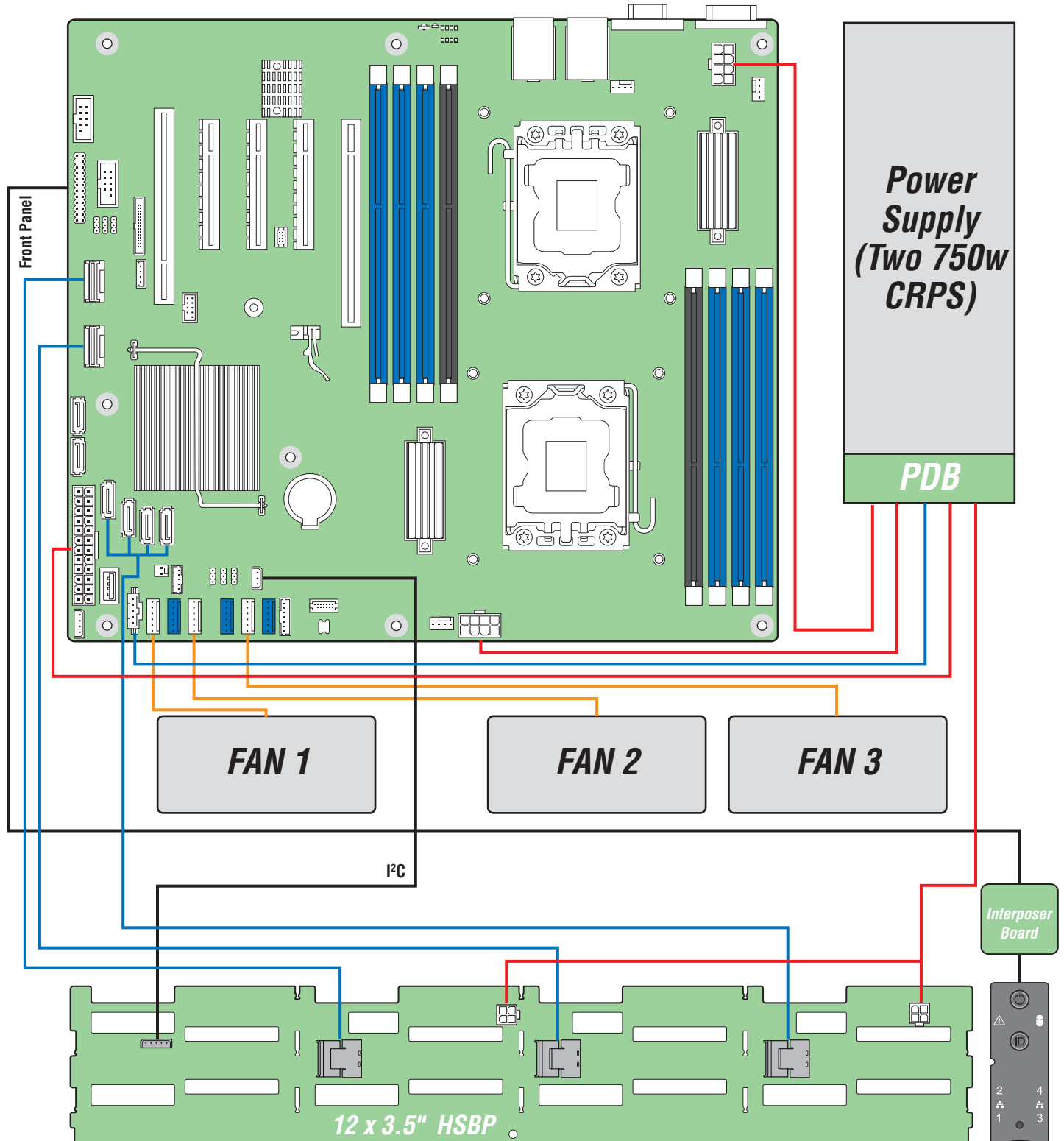
**R2308SC2SHDR**



# Reference

System Cabling Diagram

**R2312SC2SHGR**



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