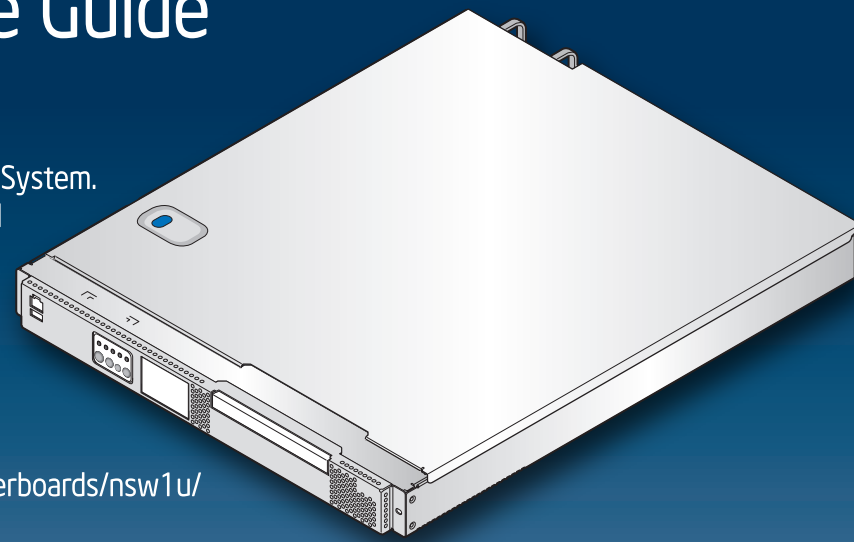


# Intel® IP Network Server NSW1U-R Hardware Reference Guide

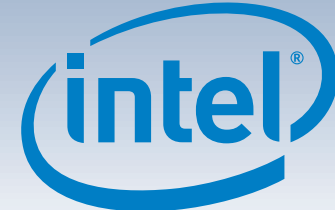
Thank you for buying an Intel® IP Network Server System. The following information will help you set up and install your Intel® IP Network Server NSW1U-R and service components.



This guide and other supporting documents are located on the web at <http://support.intel.com/support/telecom/computerboards/nsw1u/>

If you are not familiar with ESD (Electrostatic Discharge) procedures used during system integration, please see the Intel® IP Network Server NSW1U Product Guide, available on the CD or at <http://support.intel.com/support/telecom/computeboards/nsw1u/>

Read all cautions and warnings first before starting your server platform integration.



## Minimum Hardware Requirements

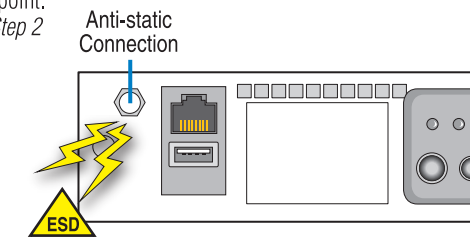
To avoid integration difficulties and possible board damage, your system must meet the following minimum requirements:

- Processor: Dual Core Intel® Xeon® Processor 5100 series.
- Memory: Minimum of one 512MB, 240-pin DDR2 533/667 MHz FBDIMM.
- For power requirements, see the Intel® IP Network Server NSW1U Technical Product Specification.

## 1 Attaching Your Ground Strap

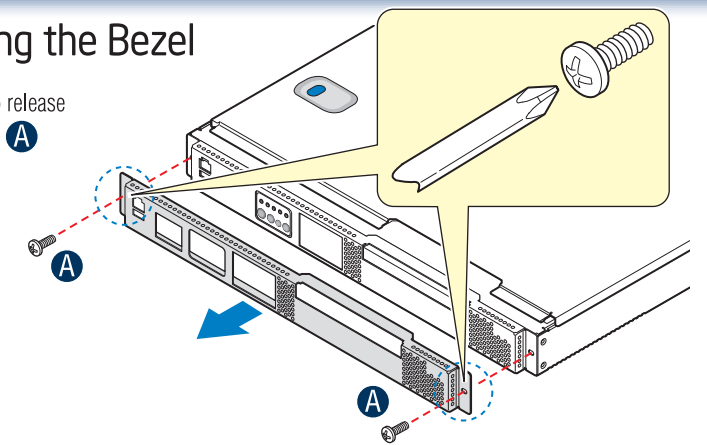
You must remove the bezel to access the ground strap attachment point. If the bezel is installed, see Step 2 at right.

Attach ground strap to anti-static connection point.



## 2 Removing the Bezel

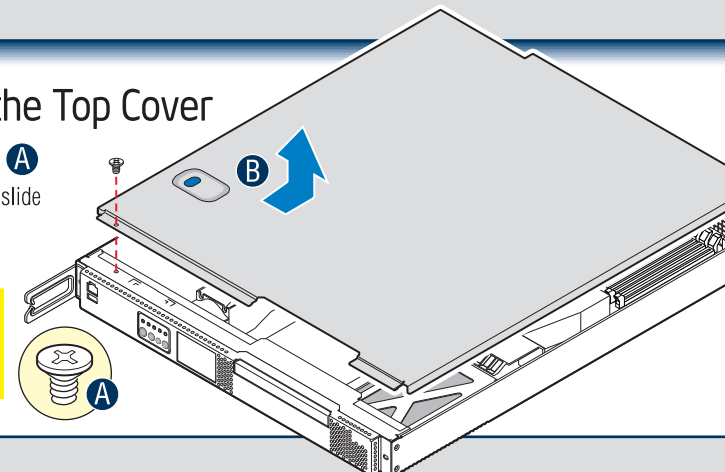
1. Remove two screws to release the bezel and remove.



## 3 Removing the Top Cover

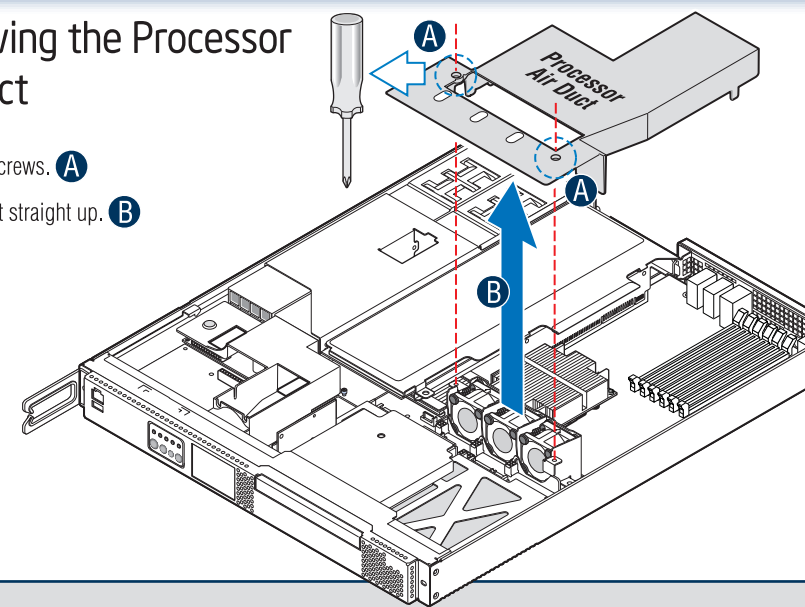
1. Remove the shipping screw.
2. Push BLUE locking button, slide cover rearward, then lift up and remove.

**CAUTION:** This unit must be operated with the top cover installed to ensure proper cooling.



## 4 Removing the Processor Air Duct

1. Remove the two screws.
2. Grasp duct and lift straight up.



## 5 Replacing an Add-in Card

**Remove the Riser Assembly:**

1. Loosen blue captive thumbscrew on the back panel.
2. Loosen blue captive screw securing the PCI riser assembly to the server board.

**CAUTION:** Touching the battery with a metallic object, such as any part of the PCI riser assembly, can momentarily short the battery.

3. Lift riser assembly straight up and remove.
4. Note location of "fork" and "pin". These must align when re-installing riser assembly.

**CAUTION:** Place PCI riser assembly upside down during installation or removal of add-in cards.

**Remove Add-in Card:**

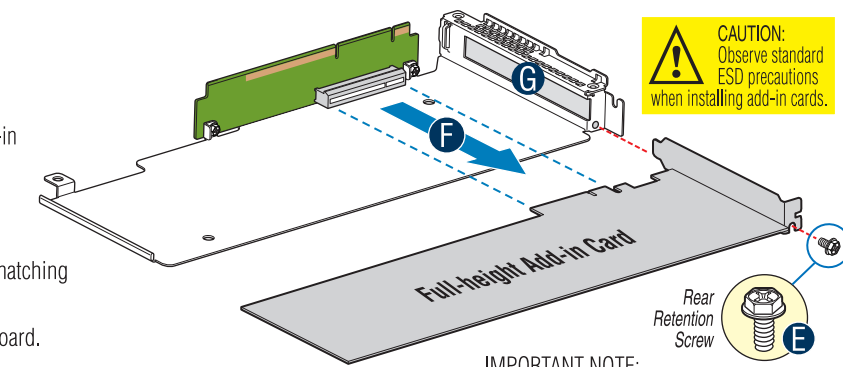
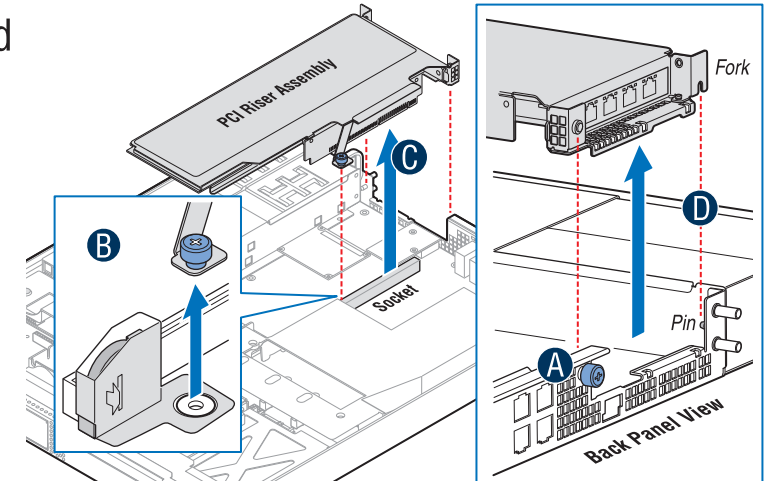
5. Remove the rear retention screw.
6. Remove the add-in card.

**Install Add-in Card:**

7. If the add-in card slot was empty, push out the add-in card filler panel, then reverse the previous steps to complete installation of an add-in card.

**Install the Riser Assembly:**

8. Fork at rear of riser card assembly must engage matching pin on chassis back panel.
9. Press riser card into matching socket on server board.
10. Fasten the blue thumbscrew to the server board.
11. Tighten thumbscrew at rear.



**IMPORTANT NOTE:** Make sure the add-in card edge connector seats correctly into the riser card socket.

## 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.

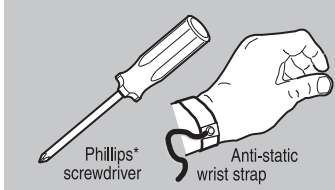
## Warning

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

## Caution

Observe standard ESD (Electrostatic Discharge) procedures during system integration to avoid possible damage to server board and/or other components.

## Tools Required



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## 6 Installing Memory

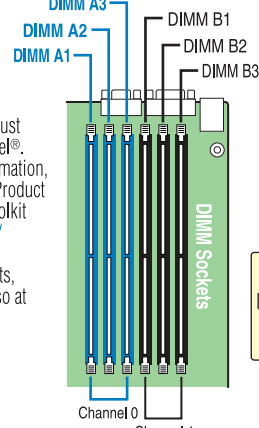
**Memory Configurations and Population Order:**

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

Populate DDR2 FBDIMMs in pairs in the following order: A1-B1, A2-B2, and A3-B3. For best performance, Intel® recommends installing memory in pairs. If installing only one DIMM, you must use slot A1.

DIMMs in each pair must be identical with respect to size, speed, and organization.

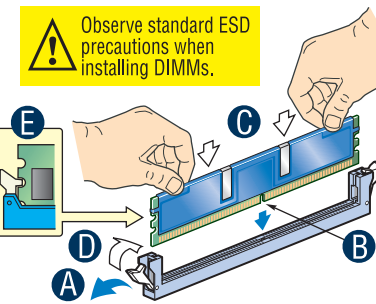
Note: Memory sizing and configuration must use only qualified DIMMs approved by Intel®. For additional memory configuration information, see the Server Board TPS or the NSW1U Product Guide on the Intel® Server Deployment Toolkit CD or at <http://support.intel.com/support/telecom/computeboards/nsw1u/>. For a list of supported memory components, see the S5000PHB Tested Memory List also at the location.



**To Install DIMMs:**

1. Open both DIMM socket levers.
2. Note location of alignment notch.
3. Insert DIMM making sure the connector edge of the DIMM aligns correctly with the slot.
4. Using both hands, press down evenly and firmly on both sides of the DIMM until it snaps into place and the levers close.

**IMPORTANT!** Visually check that each latch is fully closed and correctly engaged with its DIMM edge slot.



**CAUTION:** Observe standard ESD precautions when installing DIMMs.

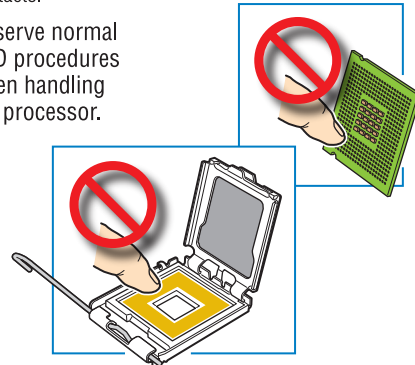
## 7 Installing the Processor

**CAUTIONS:**

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

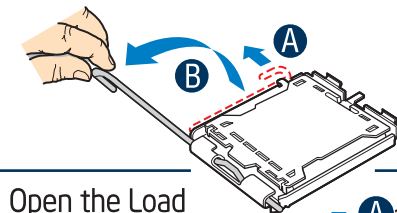
When unpacking a processor, hold by the edges only to avoid touching the gold contacts.

Observe normal ESD procedures when handling the processor.



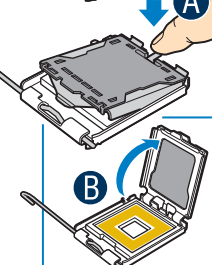
**Open the Socket Lever**

1. Push the lever handle down and away from the socket to release it.
2. Pull the lever and open all the way.



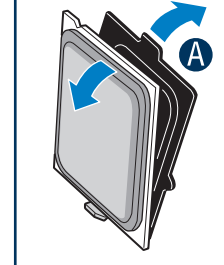
**Open the Load Plate**

1. Press here to lift front edge of load plate.
2. Open all the way.



**Remove the Processor Protective Cover**

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

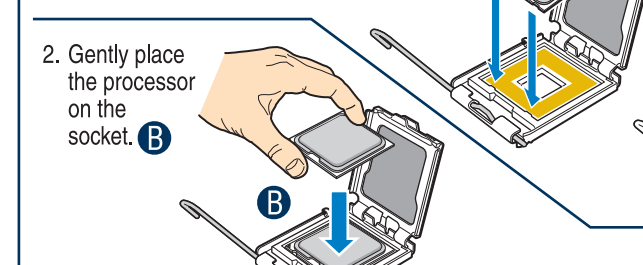


**Install the Processor**

**CAUTION:** The underside of the processor has components that may damage the socket pins if installed improperly. Processor must align correctly with socket opening before installation.

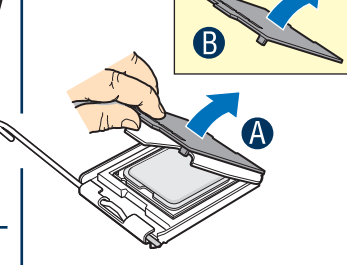
DO NOT DROP processor into socket!

1. Orient the processor so that its cutouts match the socket's notches.
2. Gently place the processor on the socket.



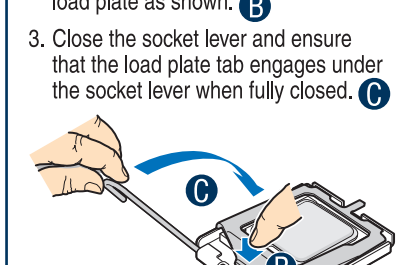
**Remove Socket Protective Cover**

1. Grasp the socket protective cover tab and pull away from the load plate as shown.
2. Remove the socket protective cover and store for future use.



**Close Load Plate and Socket Lever**

1. Close the load plate all the way as shown.
2. With your finger, push down on the load plate as shown.
3. Close the socket lever and ensure that the load plate tab engages under the socket lever when fully closed.



## 8 Installing the Processor Heat Sink

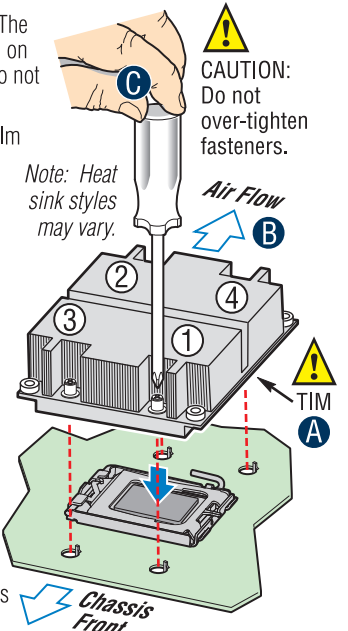
**CAUTION:** Use gloves to avoid sharp edges. The heat sink has thermal interface material (TIM) on the underside of it. Use caution so that you do not damage the thermal interface material.

1. If this is a new heat sink, remove the protective film on the TIM if present.
2. Align heat sink fins to the front and back of the chassis for correct airflow. Airflow goes from front to back of chassis.

Each heat sink has four captive fasteners and should be tightened using the following procedure:

1. Using a Phillips #2 screwdriver, loosely tighten each fastener in the order shown, i.e. fastener #1 followed by the one diagonally across from it, #2, and so on.
2. Gradually and equally tighten each captive screw in diagonal order until each is firmly tightened.

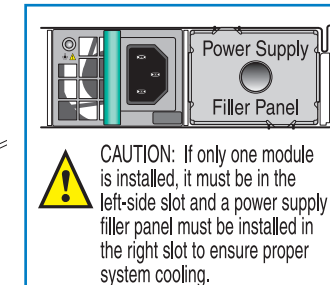
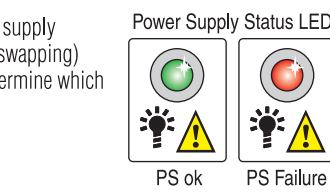
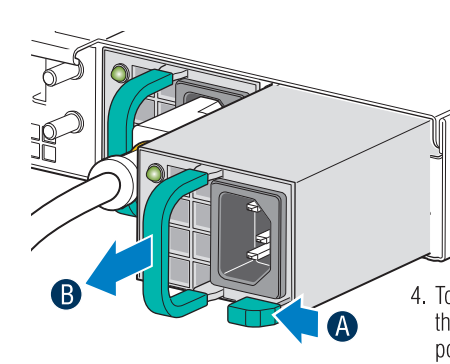
**CAUTION:** The torque spec for these screws is 8 inch-pounds. Be careful not to exceed it.



## 9 Replacing a Power Supply Module

**IMPORTANT NOTES:** There must be an active power supply module in BOTH chassis slots before replacing (hot-swapping) a power supply module. Check the status LED to determine which PS module has failed ... (see detail at right).

1. Disconnect appropriate power cord.
2. Slide green safety lock to the left.
3. Grasp handle and pull module out.



4. To insert a new power supply, slide and hold the green safety lock to the left and slide the power supply module into the chassis slot.

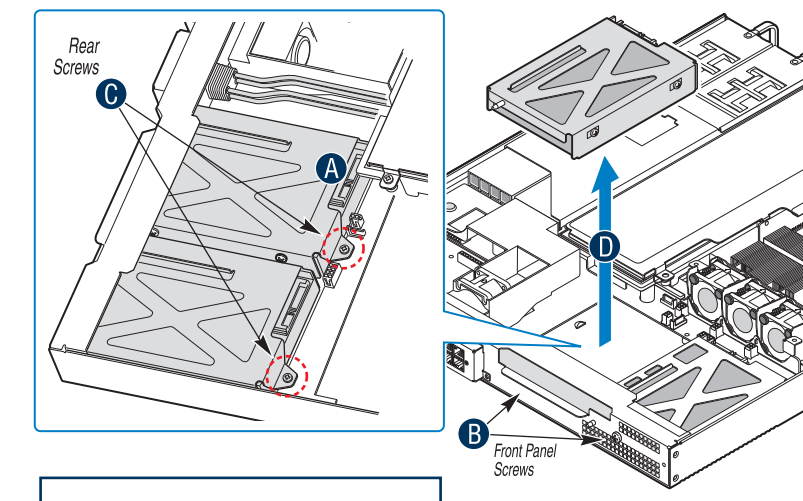
## 10 Installing a Hard Disk Drive

- Remove the Bezel
- Remove the Top Cover
- Remove the Processor Air Duct
- Remove the Optical Device Tray

**Remove the Hard Drive Tray Assembly**

**CAUTION:** Hard disk drives are NOT hot-swappable. See the Intel® IP Network Server NSW1U Product Guide for detailed hard disk drive service procedures.

1. Disconnect cable (power and data) at rear of hard disk drive if a drive is already installed in this bay.
2. Remove the front panel screw securing the drive tray assembly.
3. Remove the screw at the rear of the drive tray assembly.
4. Slide the drive tray assembly rearward, lift up and remove.



**Install Drive into Tray**

5. Lower the tray onto the drive and engage the side with the two spring-loaded screws first. Hold the rear surface of the drive against the wall of the tray to align the screws.
6. Gently deflect the single screw on the other side of the tray out of the way, then lower the tray onto the drive.

7. Tighten the three screws to fasten the tray to the hard drive. Note: Tighten the screws with a regular screw driver, not a powered one, to prevent cross-threading.
8. Use guide pin to insert drive tray into the front panel.
9. Fasten front panel screw and rear screw.
10. Attach combination data/power connector to the back of drive.

