

# intel® Technical Advisory

TA-788-3

5200 NE Elam Young Parkway  
Hillsboro, OR 97124

Date: June 27, 2006

## Intel® Server System SR870BN4 Upgrade to Intel® Itanium® 2 Processor 9000 Sequence

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### Products Affected

Intel® Server System SR870BN4

### Description

The Itanium® 2 Processor 9000 Sequence requires a particular BIOS and firmware version. A special process is needed in order to upgrade from the Intel® Itanium® 2 Processor with up to 9MB or 6MB L3 Cache. This Technical Advisory documents the process required to perform this upgrade.



### NOTE

Upgrading from a system that is configured with the Itanium® 2 processor with up to 3MB of L3 Cache is not supported.

### Upgrade Instructions:

Before you begin, you must have a functional Intel® Server System SR870BN4 configured with Itanium® 2 Processors with up to 9MB or 6MB L3 Cache. To complete the upgrade, perform the following steps:

1. Record any changes made to the BIOS setup and EFI Boot Manager Settings. The process will reset BIOS setup options to defaults and erase any Boot Manager options that have been added, including operating system boot options.
2. Using the S870BN4D.rec file, create an Itanium® 2 Processor 9000 Sequence Basic Input Output System (BIOS) recovery image on an Extensible Firmware Interface (EFI) viewable EI Torito CD-ROM. A recovery .iso image is also available for download to simplify creation of this CD.
3. Ensure your system has the following BIOS version, depending upon the installed processor:
  - BIOS PR6.2 Build 975 for Itanium(r) 2 Processor with up to 6MB L3 cache or later
  - BIOS PR2.4 Build 976 for Itanium(r) 2 Processor with up to 9MB L3 cache or laterIf necessary, update your system using the appropriate SUP package.
4. Ensure your system has the BMC firmware version 34 or later. If necessary, update your system using the latest SUP package.
5. Insert the Itanium® 2 Processor 9000 Sequence BIOS recovery CD into the CD-ROM drive.
6. Power down the system by pressing and holding the power button on the front panel for several seconds.
7. Unplug both AC power cords to remove the standby power from the server.

Then, complete the following steps:

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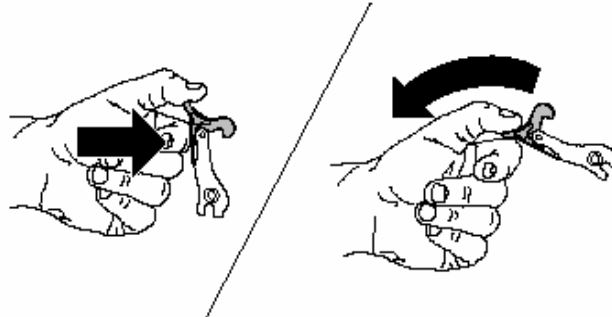
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## Remove the Processor/Memory Module

1. Push in and pull down on the uniform levers of the processor memory module (front of system) to release the catches.
2. Continue to pull down on the levers to cam the module out of its housing.



**Figure 1. Removing the Module**

3. Pull the module out of the chassis until it stops.
4. To remove the module completely, press in on the secondary latches on either side of the module and pull the module free of its slides.
5. Place the module on a clean, static-free work surface.
6. Place the module primary side up on a clean, static-free work surface. (The primary side is identified along the top, front edge of the case and on the label.)
7. Unlatch the fasteners by pulling them in the direction of the arrow.

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8. Open the module in the direction of the arrow.

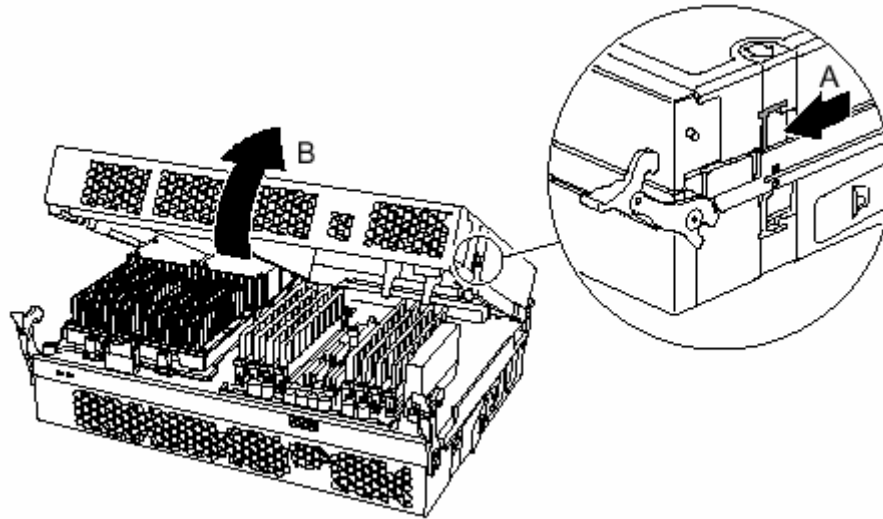


Figure 2. Opening the Module

## Remove Power Pods

1. Disconnect the Y-cable from the power pod by pushing the connectors' white tab in and pulling up.
2. With a T15 Torx\* driver, loosen the captive screws on the power pod and pull the power pod back away from the processor to disengage it from its connector.
3. Lift the power pod out of the system.

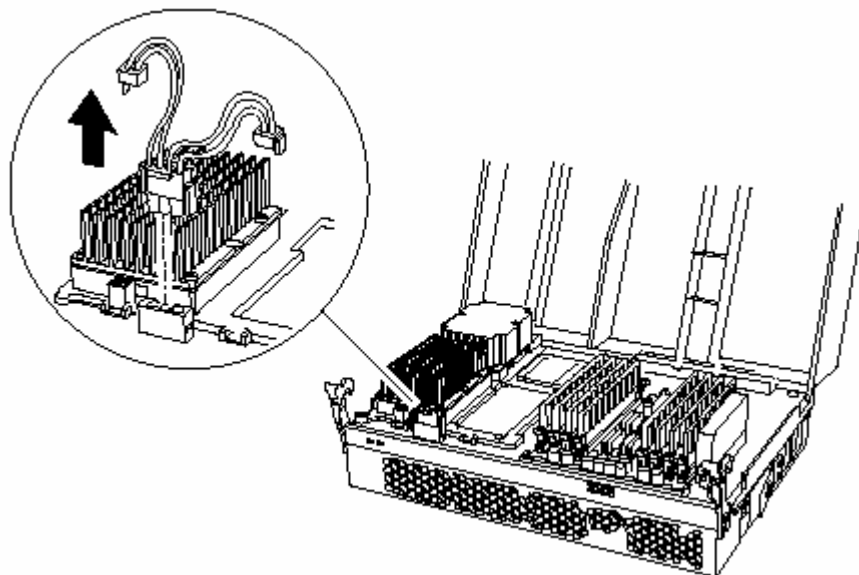


Figure 3. Removing the Power Pods

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## Remove Processors

1. With a T15 Torx driver, loosen the four captive screws on the processor.
2. Using a 2.5 mm hex driver, rotate the processor release mechanism 180 degrees right to left to release the processor's pins.
3. Lift the processor out of the socket.
4. Place the processor on a clean, ESD-protected work surface, in an antistatic bag, or in the processor's original "clamshell" container.

## Install Itanium® 2 Processor 9000 Sequence

1. Before trying to insert the processor, verify that the processor release mechanism is in the open or unlocked position. (The metal tab should note be visible.)
2. Place the bolster plate onto a horizontal surface and snap the insulator onto the bolster plate. Rotate the bolster plate subassembly onto the edge of the processor substrate and snap into place. See Figure 4. Installing the Insulator and the Bolster Plate



### NOTE

These items should be packaged with the MVR.

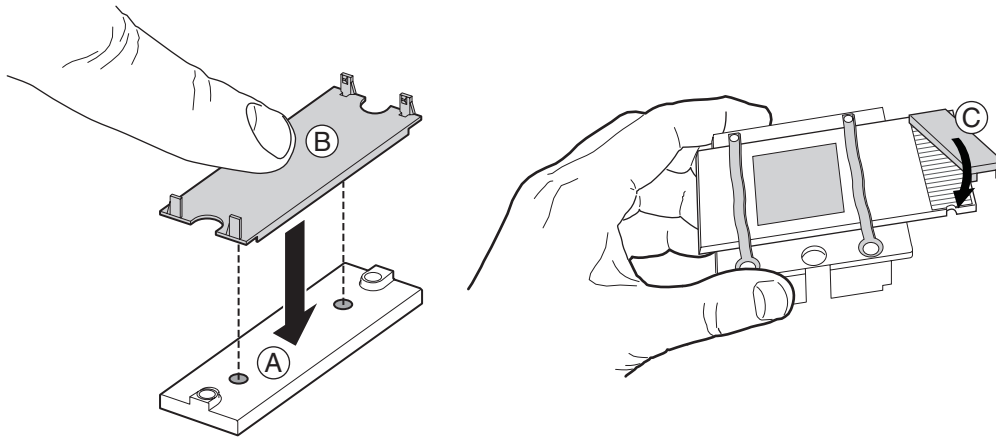


Figure 4. Installing the Insulator and the Bolster Plate

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3. Position the processor (with heat sink attached) inside the four posts on the processor board, pins toward the back and over the socket. Once centered in the socket, the weight of the processor/heat sink assembly should cause the processor to drop into the socket. Do not apply force. Once the processor is in the socket, gently press the processor to verify the processor has seated properly.

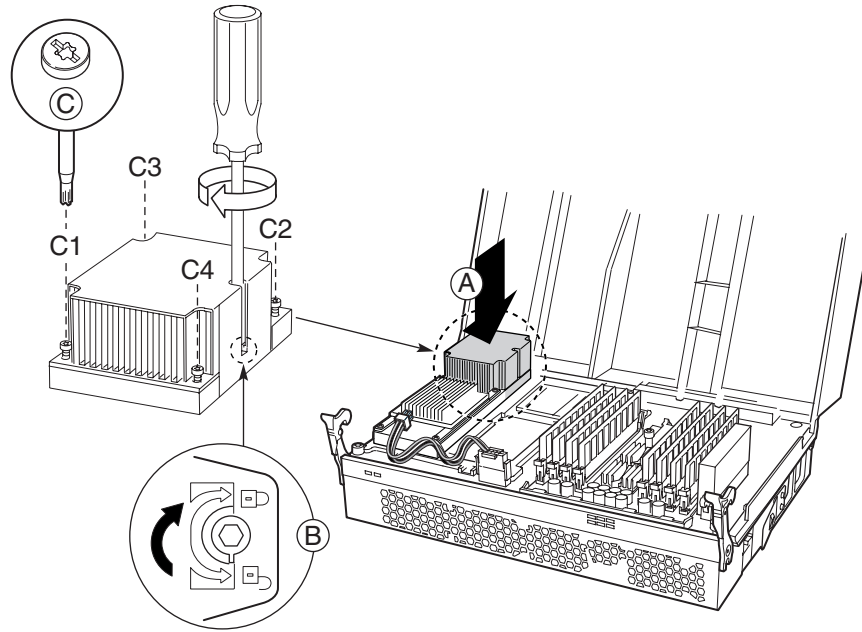
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- Using a 2.5 mm hex driver, rotate the processor release mechanism 180 degrees left to right (see letter B in the figure below) so that the indicator flag shows the processor socket is locked (see inset).
- Tighten the four captive screws in a cross-pattern in this order: C1, C2, C3, and C4 as shown in figure below, to secure the processor to the processor board.



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Figure 5. Installing the Processor

## Install MVR

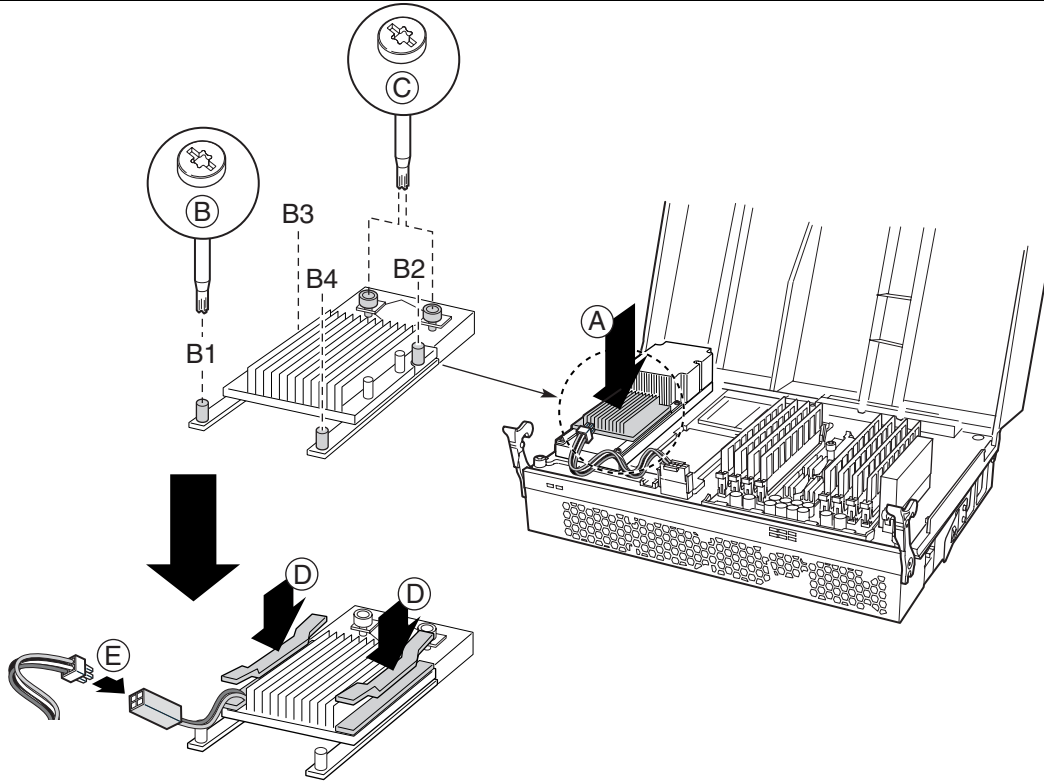
- Remove the retention handles, if attached, and set aside.
- Remove the VR372 connector cap.
- Place the MVR into position on the processor by aligning the two VR372 retention screws into the bolster plate standoffs (see letter "A" in Figure 6. Installing an MVR)
- Tighten the four captive screws on the MVR standoffs using a Torx 10 driver (see letters B1, B2, B3, and B4 in Figure 6. Installing an MVR).
- Hand tighten the VR372 retention screws three full revolutions (see letter "C" in Figure 6. Installing an MVR).
- Tighten the two VR372 retention screws using a Torx 20 driver and set to eight pounds to secure the screws to the bolster place (see letter "C" in Figure 6. Installing an MVR).
- Install the MVR retention handles using a maximum of 15 pounds of force. The flanges of the retention handles should face outward away from the MVR (see letter "D" in Figure 6. Installing an MVR).
- Connect one side of the Y-cable to the MVR and verify that the Y-cable connects to all installed MVRs. See letter "E" in the figure below.

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Figure 6. Installing an MVR

9. Repeat above steps in the Install Itanium® 2 Processor 9000 Sequence and Install MVR sections for all installed processors and MVRs on both the primary and secondary sides of the processor/memory module.

## Install the Processor/Memory Module

1. Close the processor/memory module and verify that the latches are secure.
2. With the uniform levers in the maximum open position, place the module into its housing and slide it until the uniform levers contact the front of the chassis.
3. Raise the uniform levers to the vertical position to clamp the module into the chassis.
4. Push in and lift up on the uniform levers to engage the catches (reverse of figure illustrating release of uniform levers).

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## Perform BIOS Recovery

1. Reconnect the AC power and switch the server power on. When performing the processor upgrade, the system will automatically force recovery mode. SA81 switch #1 does not need to be toggled.
2. At this point, the recovery CD should already be loaded into the CD-ROM drive. **One full beep** indicates load of SR870BN4D.REC from the disk to the memory.
3. **Wait two minutes.** No video will be displayed during this process. **Two beeps** will sound that indicate the BIOS recovery has completed successfully. The system will automatically reboot.
4. Remove the CD-ROM.
5. Restore the BIOS setup and the Boot Manager Settings.

Please contact your Intel Sales Representative if you require more specific information about this issue.

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