

intel® Technical Advisory

TA-0789-3

5200 NE Elam Young Parkway
Hillsboro, OR 97124

June 27, 2006

Intel® Server System SR870BH2 Upgrade to Intel® Itanium® 2 Processor 9000 Sequence

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Products Affected

Intel® Server System SR870BH2

Description

The Itanium® 2 Processor 9000 Sequence requires a particular BIOS and firmware version. A special process is needed 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 update.

Upgrade Instructions:

Before beginning, the user must have a functional Intel® Server System SR870BH2 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 S870BH2D.rec file, create an Itanium® 2 Processor 9000 Sequence Basic Input Output System (BIOS) recovery image on an Extensible Firmware Interface (EFI) viewable El Torito* CD-ROM. A recovery .iso image is also available in the package to simplify creation of this CD.
3. Ensure your system has the following BIOS version, depending upon the installed processor:
 - Transition BIOS T01 Build 221 for Itanium(r) 2 Processor with up to 6MB L3 cache
 - BIOS PR3.4 Build 225 for Itanium(r) 2 Processor with up to 9MB L3 Cache, or laterIf necessary, update your system using the appropriate SUP Package/BIOS image.
4. Ensure your system has the BMC firmware version 33 or later. If necessary, update your system using the latest SUP package.
2. Insert the 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 standby power from the server.

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Remove the Top Cover

1. If the chassis is rack-mounted, slide the chassis out to expose the back area of the top cover.
2. To open the top cover, use a coin to turn the locking mechanism to the unlocked position.
3. Push the top cover towards the back of the system until it stops, approximately 1-inch towards the rear.
4. Lift the cover up from the front and remove it from the chassis.

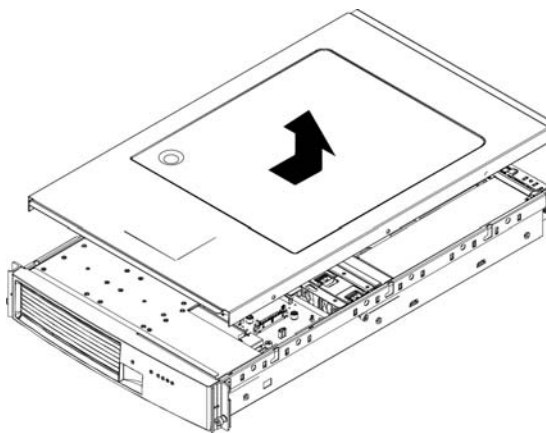


Figure 1. Remove the Top Cover

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Remove the Processor Air Duct

The processor air duct must be removed to access the processor(s). Use the following outlined steps:

1. Locate the processor air duct and loosen the four Phillips* head screws that secure the air duct over the processors.
2. Lift the processor air duct from the system and set it aside.

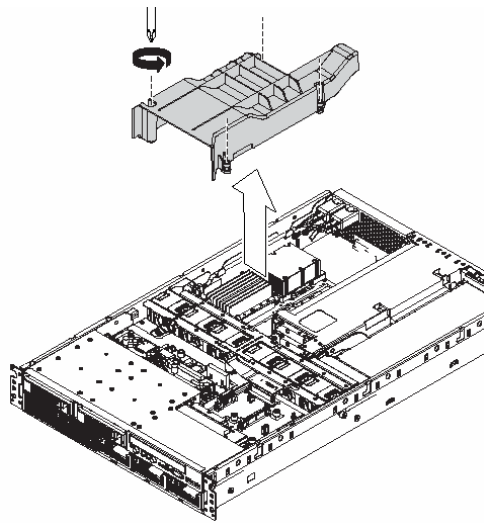


Figure 2. Remove the Processor Air Duct



NOTE

Your server may have one or two processors with an associated power pod installed on the main board. A thermal blank is used to direct airflow for proper cooling when a single processor is installed in the server system. If your server system has two processors installed, it will not have a thermal blank installed. If the system contains only one processor, the processor must be installed into the CPU1 socket for proper termination. The thermal blank must be in place over the CPU2 position.

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Remove the Power Pod

1. Disconnect the Y-cable from the power pod by pushing the connectors' white tab in and pulling up. Refer to letter "A"
2. Loosen the four captive screws on the power pod. Refer to letter "C".
3. Slide the power pod away from the processor to disengage it. Refer to letter "D".
4. Lift the power pod out of the system. Refer to letter "E" in the figure.

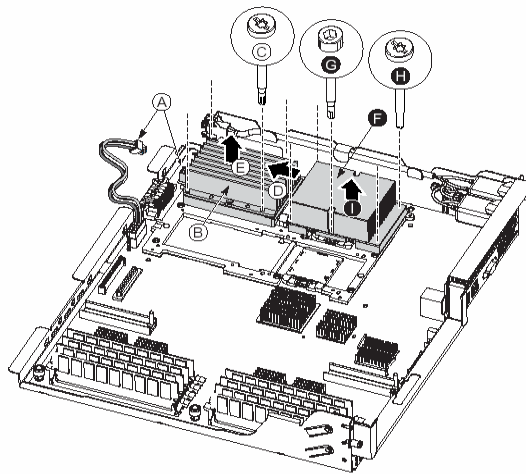


Figure 3. Remove the Power Pod

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Remove the Processor

1. Use a 2.5 mm Allen* head key to rotate the processor release mechanism 90 degrees right to left to release the processor's pins. Refer to letter "G" in the figure below.
2. Loosen the four captive screws on the processor.
3. Lift the processor from the socket.

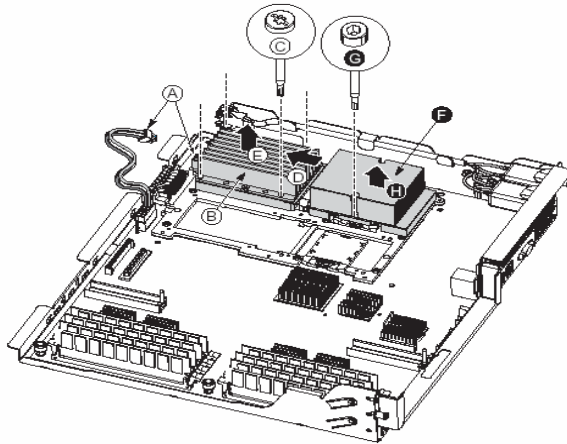


Figure 4. Remove the Processor

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NOTE

Once the processor is removed, the release mechanism indicates the socket is open (When the tab on the side of the socket is extended = open). If another processor will not be installed, use a 2.5 mm Allen* head key to rotate the hex screw clockwise to the closed position to release spring tension in the mechanism.

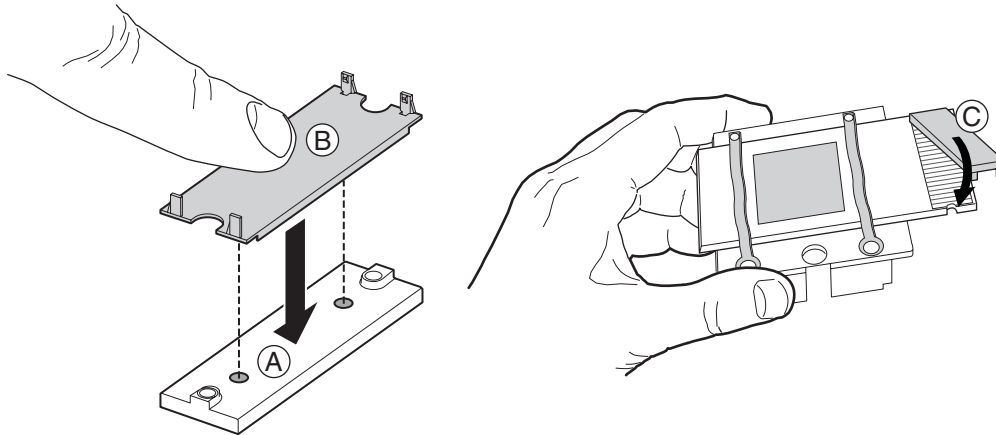
Install Itanium® 2 Processor 9000 Sequence

1. Place the bolster plate onto a horizontal surface and snap the insulator onto the bolster plate.
2. Rotate the bolster plate subassembly onto the edge of the processor substrate and snap into place.



NOTE

These items may be packaged with the MVR.



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Figure 5. Installing the Insulator and the Bolster Plate

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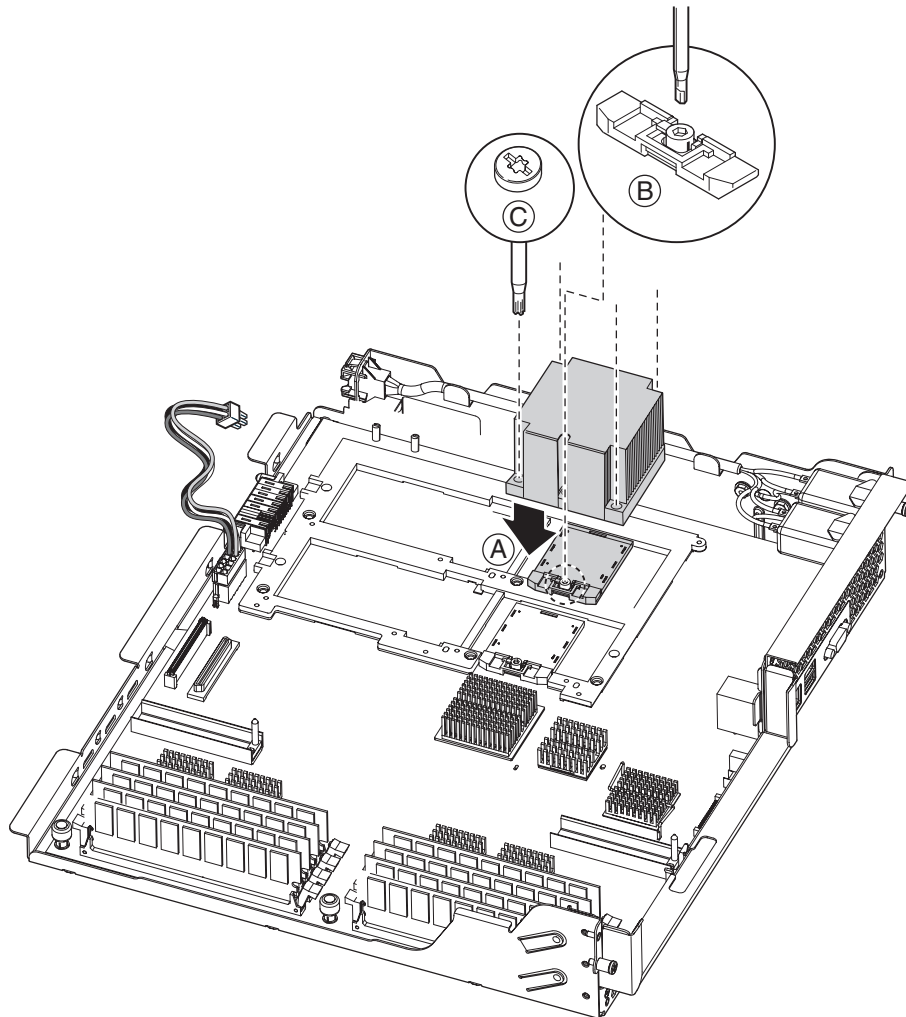
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NOTE

If the system contains only one processor, that processor must be installed into the CPU1 slot for proper termination of the front side bus signals.



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Figure 6. Install a Processor

- A. Lower processor into place
- B. 2.5 mm processor release mechanism
- C. Processor screws

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3. Before trying to insert the processor, verify that the processor release mechanism is in the open or unlocked position. See letter "B" in Figure 6. Install a Processor to locate the release mechanism.
4. Position the processor, with its attached heat sink, over the processor socket, inside the four posts. See letter "A" in Figure 6. Install a Processor. When the processor is centered in the socket, the weight of it will cause the processor to drop into the socket; do not apply force.
5. Once the processor is in the socket, gently press on it to verify it is seated.
6. Using a 2.5 mm hex driver, rotate the processor release mechanism 180 degrees left to right so that the indicator tab shows the processor socket is locked. The access to the release mechanism is through a slot along the side the processor, as indicated by letter "B" in Figure 6. Install a Processor.
7. Tighten the four captive screws in a cross-pattern to 4-inch pounds to secure the processor to the processor mechanism on the main board. See letter "C" in Figure 6. Install a Processor.

Install an MVR

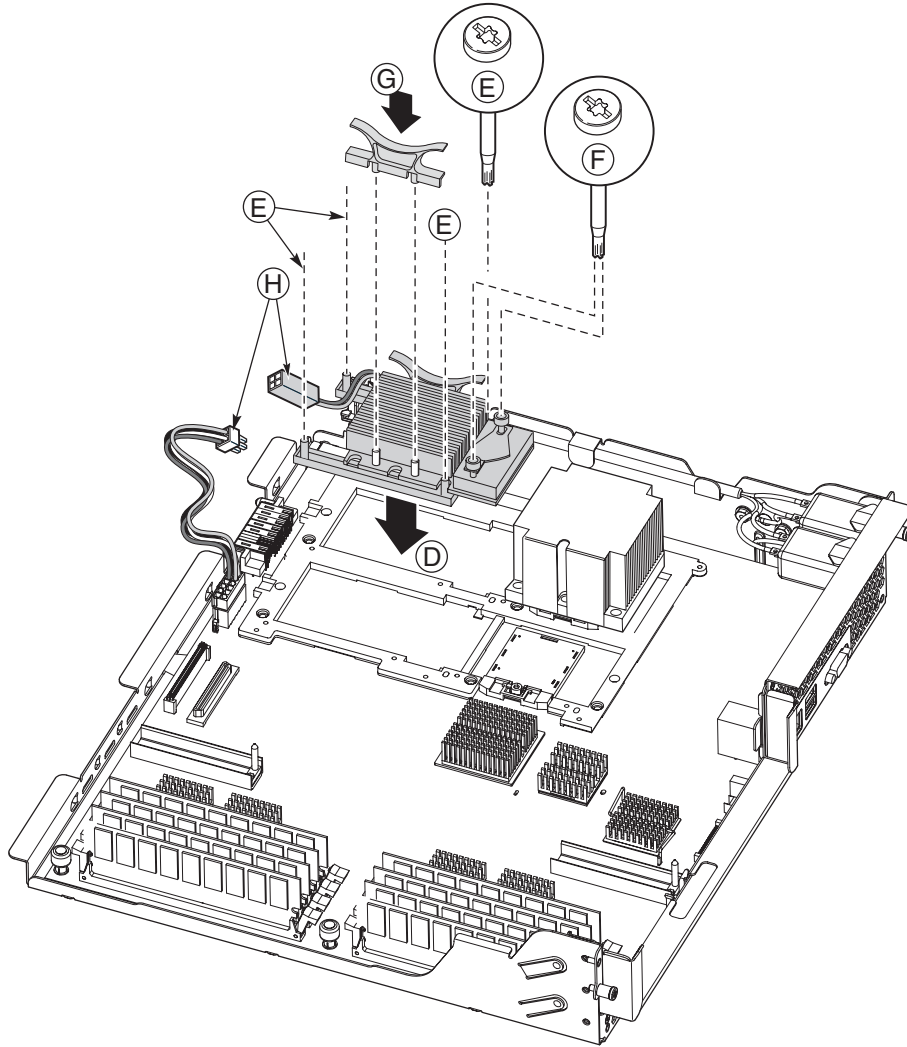
1. Remove the retention handles, if attached, and set aside.
2. Remove the VR372 connector cap.
3. Place the MVR into position on the processor by aligning the two VR372 retention screws onto the bolster plate standoffs. See letter "D" in Figure 7. Install an MVR.
4. Tighten the four captive screws on the MVR standoffs using a Torx* 10 driver. See letter "E" Figure 7. Install an MVR.
5. Hand tighten the VR372 retention screws three full revolutions. See letter "F" in Figure 7. Install an MVR.
6. Tighten the two VR372 retention screws using a Torx* 20 driver and set to eight pounds to secure the screws to the bolster place.
7. 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 "G" in Figure 7. Install an MVR.
8. Connect one side of the Y-cable to the MVR and verify that the Y-cable connects to all installed MVRs. See letter "H" in Figure 7. Install an MVR.
9. Install the thermal blank (in a single processor configuration only).

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Figure 7. Install an MVR

- D. Lower MVR into place
- E. MVR Standoff screws
- F. VR32 screws
- G. Retention handles
- H. Y-cable

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Install the Processor Air Duct and Top Cover

1. Locate the processor air duct and place it over the processors and power pods, it should drop in place once the unit is aligned correctly.
2. Tighten the four captive Phillips* head screws that secure the air duct to the main board.
3. Replace the top cover.

Complete the upgrade process

1. Reconnect the AC power source (both AC cords are required) and power the system on.
2. At this point, the BIOS recovery CD should already be loaded in the CD / CDRW drive. The system will automatically enter the BIOS recovery mode when it senses the new processors.
3. **One full beep** indicates the recovery image is loading from disk to memory.
4. **Wait two minutes.** Video will not be displayed during the upgrade process.
5. **Two beeps** indicate the BIOS recovery has completed successfully and the system will automatically reboot.
6. Remove the BIOS recovery CD from the CD / CDRW drive.
7. 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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