# Dell® PowerEdge® 2200 Systems
# Microprocessor Replacement

This document provides the procedures for replacing the Intel® Pentium® II microprocessor(s) in a Dell PowerEdge 2200 system.

## Precautionary Measures

Before you perform any of the procedures in this document, take a few moments to read the following warning for your personal safety and to prevent damage to the computer system from ESD.

**WARNING FOR YOUR PERSONAL SAFETY AND PROTECTION OF THE EQUIPMENT: Only trained service technicians should perform the following procedures. Before you start to work on the computer, perform the following steps in the sequence listed.**

1. **Turn off the computer and any attached peripherals.**
2. **Disconnect the computer and any attached peripherals from their power sources to reduce the potential for personal injury.**
3. **Disconnect any communications cables.**
4. **Wear a wrist grounding strap, and clip it to any unpainted metal surface on the computer chassis.**

   **If a wrist grounding strap is not available, touch any unpainted metal surface on the back of the computer chassis to discharge any static charge from your body.**

**WARNING: The power supply in this computer system produces high voltages and energy hazards, which can cause bodily harm. Only trained service technicians are authorized to remove the computer cover and access any of the components inside the computer.**

# Replacing a Microprocessor

In addition to the connector for the primary microprocessor on the system board, there is a second connector to accommodate a secondary microprocessor. (In a single-microprocessor system, a terminator card is installed in the second microprocessor connector.)

The secondary microprocessor must have the same operating frequency as the primary microprocessor. For example, if the system has a 300-MHz Pentium II primary microprocessor, your secondary microprocessor must also be a 300-MHz Pentium II microprocessor.

Use the following procedure to install a microprocessor:

1. **Enter the System Setup program and check the system BIOS revision. The BIOS revision must be A05 or higher.**

   If the system has a BIOS revision lower than A05, follow these steps to update the BIOS:

   a. Insert the BIOS diskette that came in the replacement kit into drive A.

   b. Turn on the system.

   c. After the system completes the boot routine, follow the instructions on the screen.

   d. After the `BIOS has been successfully installed` message appears on the screen, remove the diskette from drive A and follow the instructions on the screen to reboot the system.

2. **Save the EISA Configuration Utility settings to the *EISA Configuration Utility Diskette* provided in the replacement kit.**

   The EISA Configuration Utility must be version D07 or higher to recognize the 300- and 333-MHz microprocessors. An updated version of the *EISA Configuration Utility Diskette* has been included in the replacement kit; use it instead of the EISA Configuration Utility on the *Dell Server Assistant* CD. Follow these steps to save the settings:

   a. Insert the *EISA Configuration Utility Diskette* into drive A and reboot the system.

   b. When the Welcome screen appears press <Enter>. The Main Menu appears.

   c. Select Step 5: Save and Exit, and then follow the online instructions to save the current system configuration information.

3. **Remove the computer cover (see Figure 1).**

   a. Remove the four screws along the back edge of the cover. If a keylock screw is installed in one of the cover-mounting screw locations, use the key provided with the system to remove it.

   b. Slide the cover backward about an inch; then grasp the front of the cover and the handle at the back of the cover, and lift the cover straight up off the chassis.

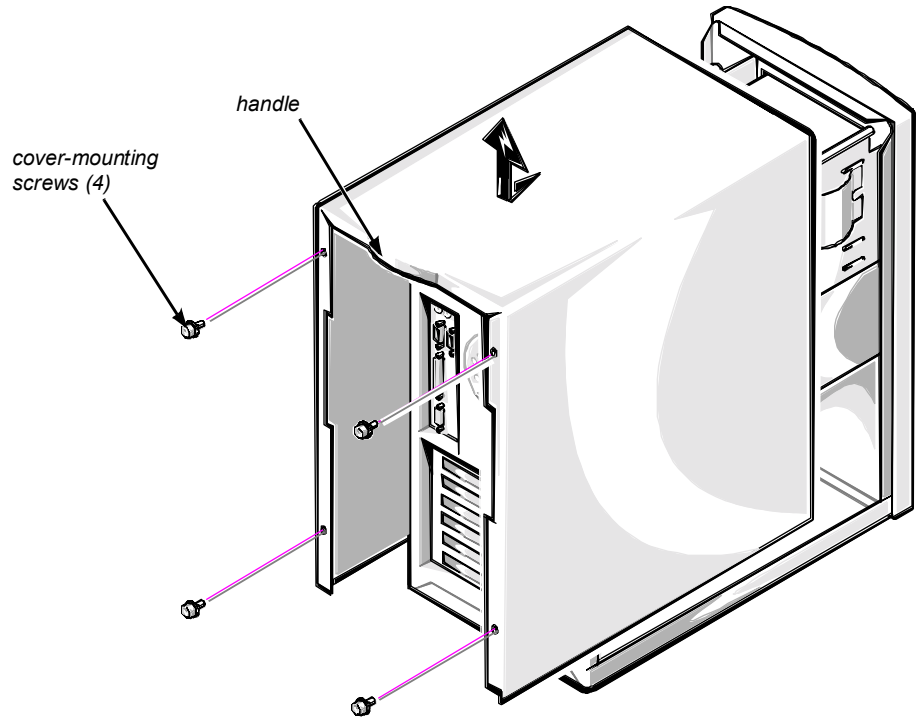


***Figure 1. Removing the Computer Cover***

4. ***If you are adding a secondary microprocessor*, remove the terminator card from the second microprocessor connector (see Figure 2).**

   *NOTE: If you are not adding a secondary microprocessor, do not remove the terminator card. Go to step 5.*

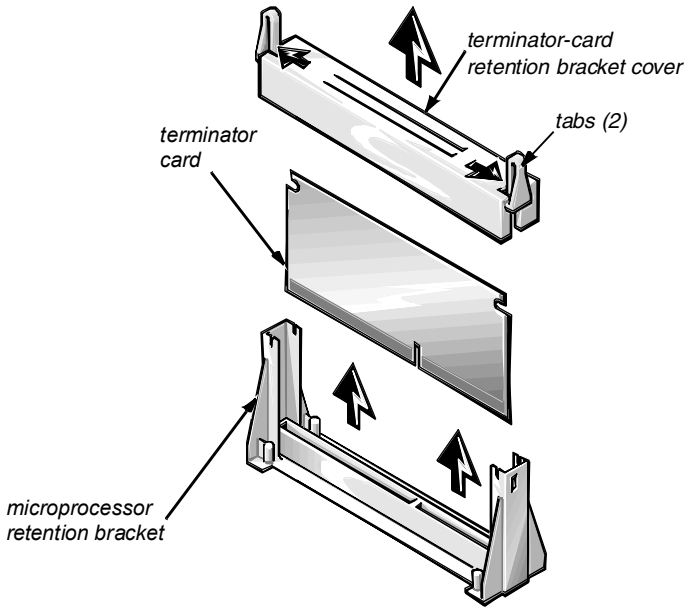


***Figure 2. Removing a Terminator Card***

a. Remove the terminator-card retention bracket cover that holds the terminator card in place. Using the thumb and forefinger of each hand, pinch the vertical tabs at each end of the cover, and then lift the cover straight up.

b. Remove the terminator card. Holding the card by its edges, lift the card straight up from the microprocessor retention bracket.

**5. If you are upgrading an existing microprocessor, remove the microprocessor module as follows.**

**WARNING: The microprocessor-module heat sink can get extremely hot. Be sure that it has had sufficient time to cool before proceeding.**

a. Using a 1/4-inch nut driver, remove the two hexagonal screws securing the microprocessor module to the system board assembly (see Figure 3).

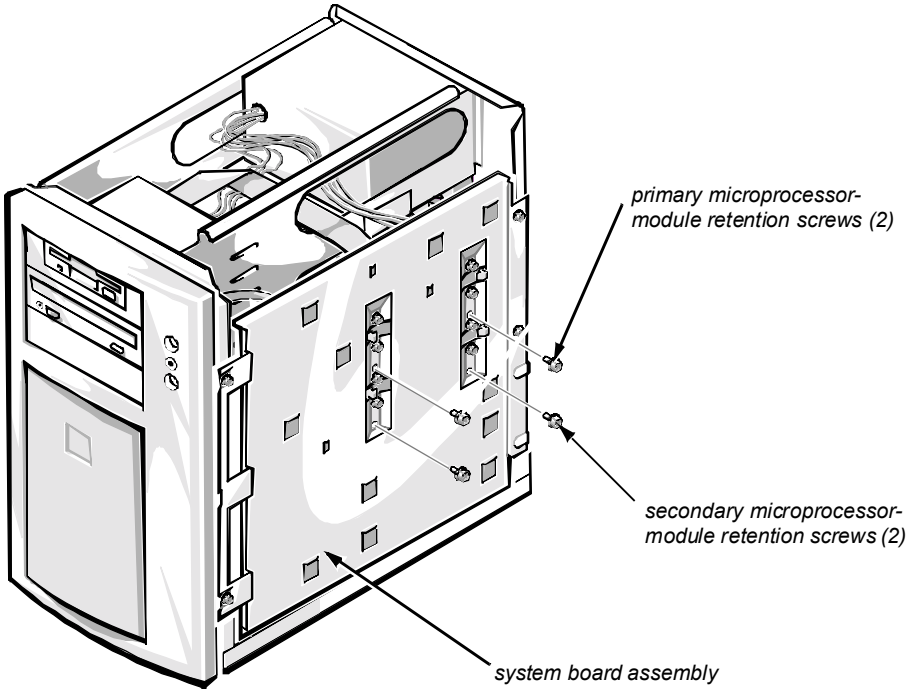


***Figure 3. Microprocessor-Module Retention Screws***

b. Carefully lay the system on its right side so the microprocessor module(s) are visible from the top.

c. Disconnect the temperature sensor cable from the system board and the microprocessor module.

d. Press inward on the microprocessor-module retention latches until they snap into a retracted position (see Figure 4).

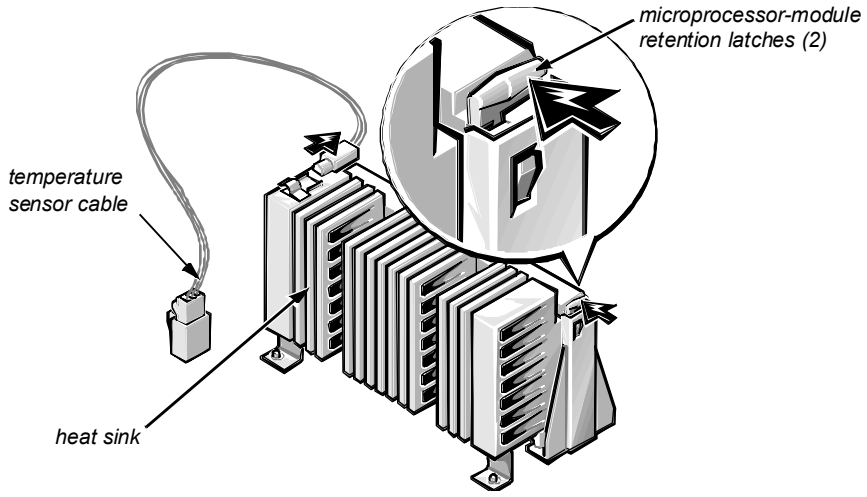


***Figure 4. Removing a Microprocessor Module From a Retention Bracket***

e. Lift the microprocessor module straight up and out of the microprocessor retention bracket on the system board.

6. **Install the new microprocessor module.**

   a. Make sure the new microprocessor-module retention latches are in a protracted position so that the retention latches will snap into position when the microprocessor module is installed.

   b. Align the microprocessor module with the microprocessor retention bracket on the system board.

   c. Lower the microprocessor module into the microprocessor retention bracket, and press firmly on the top of the module until the module is fully seated and the retention latches snap into position (see Figure 5).

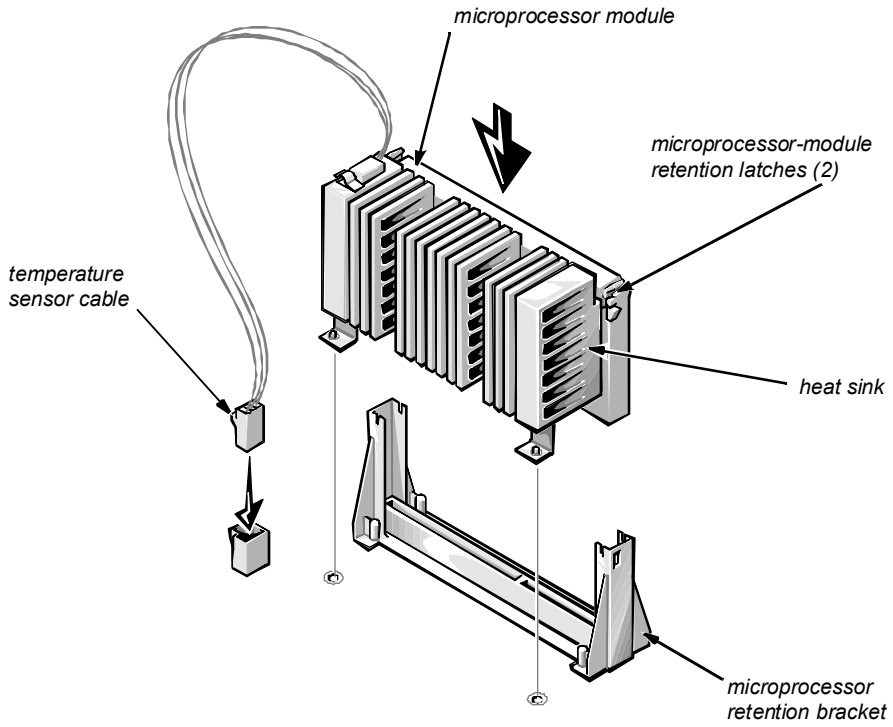


***Figure 5. Installing a Microprocessor Module***

7. **Reinstall the two screws securing the microprocessor-module heat sink to the system board assembly.**

   Stand the system upright, and reinstall the two hexagonal screws in the system board assembly.

8. **Change the microprocessor speed jumper setting to correspond to the new microprocessor's operating frequency.**

   The microprocessor speed jumper should be set for the installed microprocessor's rated internal speed. For a 300-MHz Pentium II processor, a jumper plug should be installed on the jumper labeled "RSVD1." For a 333-MHz Pentium II processor, a jumper plug should be installed on the jumper labeled "RSVD2" (see "System Board Jumpers" found later in this document).

   *NOTE: The system BIOS revision must be A05 or higher to use the RSVD1 and RSVD2 jumpers.*

9. **Connect the temperature sensor cable to the microprocessor module and to the system board.**

   The cable for the primary microprocessor attaches to the TEMP_1 connector on the system board, while the cable for the secondary microprocessor attaches to the TEMP_2 connector on the system board. The connectors on the cable are keyed to ensure proper orientation.

10. **Replace the computer cover.**

11. **Reconnect your computer and peripherals to their power sources, and turn them on.**

    As the system boots, it detects the presence of the new microprocessor and automatically changes the system configuration information in the System Setup program.

12. **Enter the System Setup program, and confirm that the Processor 1 and Processor 2 categories correctly identify the installed microprocessor(s).**

13. **Run the system diagnostics to verify that the new microprocessor is operating correctly.**

    See Chapter 2, "Using the Dell Server Assistant CD," in the *Dell PowerEdge 2200 Systems User's Guide* for information on running the diagnostics from the *Dell Server Assistant* CD. The *Diagnostics and Troubleshooting Guide* provides additional information on running the Dell Diagnostics and troubleshooting any problems that may occur.

# System Board Jumpers

To change a jumper setting, pull the plug off its pin(s) and carefully fit it down onto the pin(s) indicated (see Figure 6). See Table 1 for jumper descriptions.

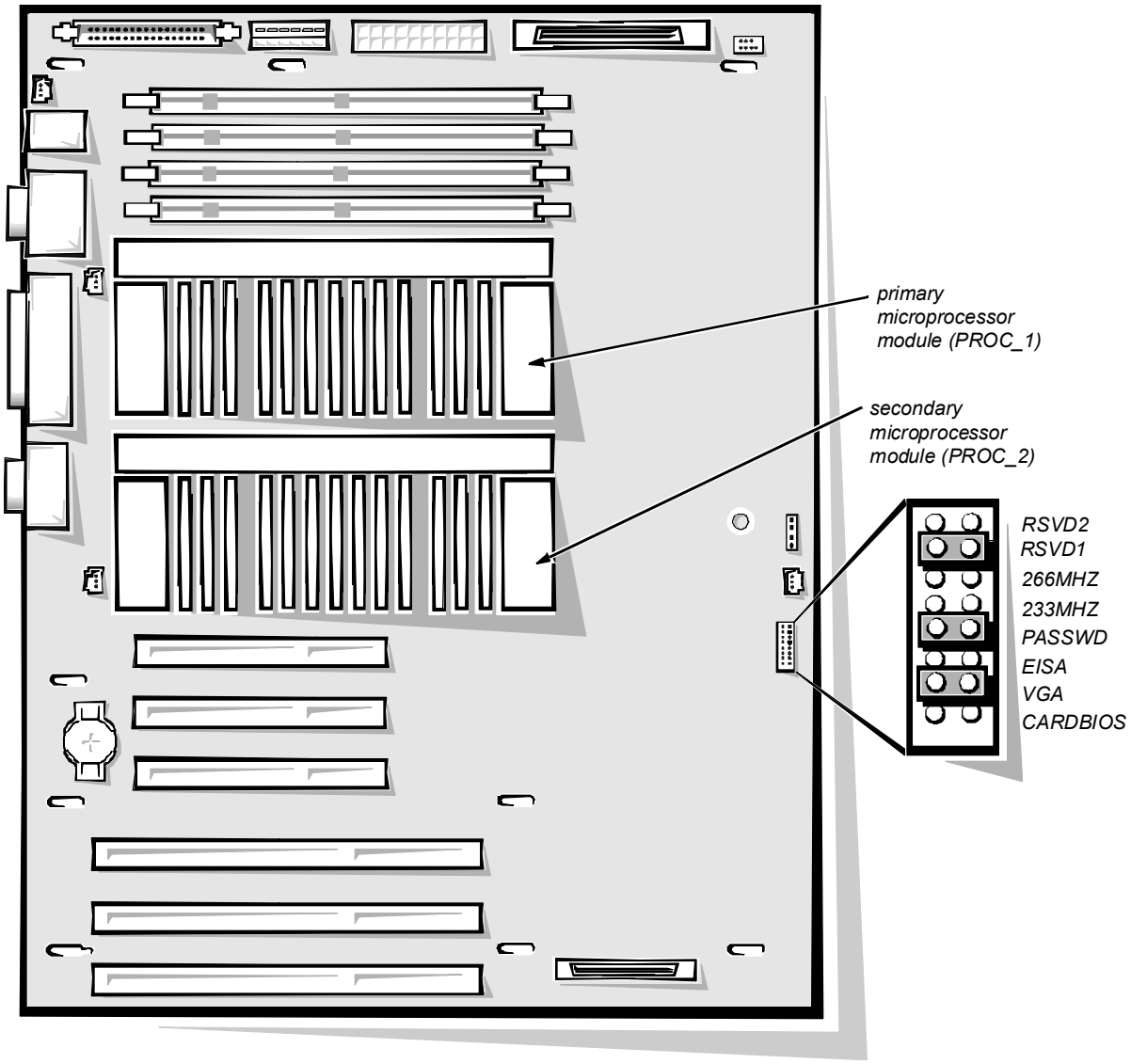


***Figure 6. System Board Jumpers***

***Table 1. Microprocessor Jumper Descriptions***

| Jumper | Description | Settings |
|---|---|---|
| RSVD2 | For 333-MHz microprocessor speed | Jumper installed only if microprocessor's internal speed is 333 MHz. |
| RSVD1 | For 300-MHz microprocessor speed | Jumper installed only if microprocessor's internal speed is 300 MHz. |
| 266MHZ | For 266-MHz microprocessor speed | Jumper installed only if microprocessor's internal speed is 266 MHz. |
| 233MHZ | For 233-MHz microprocessor speed | Jumper installed only if microprocessor's internal speed is 233 MHz. |