Dell™ Systems

Redundant Power Supply Installation Guide

Notes, Notices, and Cautions

NOTE: A NOTE indicates important information that helps you make better use of your computer.

NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

Redundant Power Supply Installation

This document provides instructions on upgrading your system's dual, redundant hot-pluggable power supplies with a power-supply distribution board (PSDB).

⚠ CAUTION: This system may have more than one power supply cable. To reduce the risk of electrical shock, a trained service technician must disconnect all power supply cables before servicing the system.
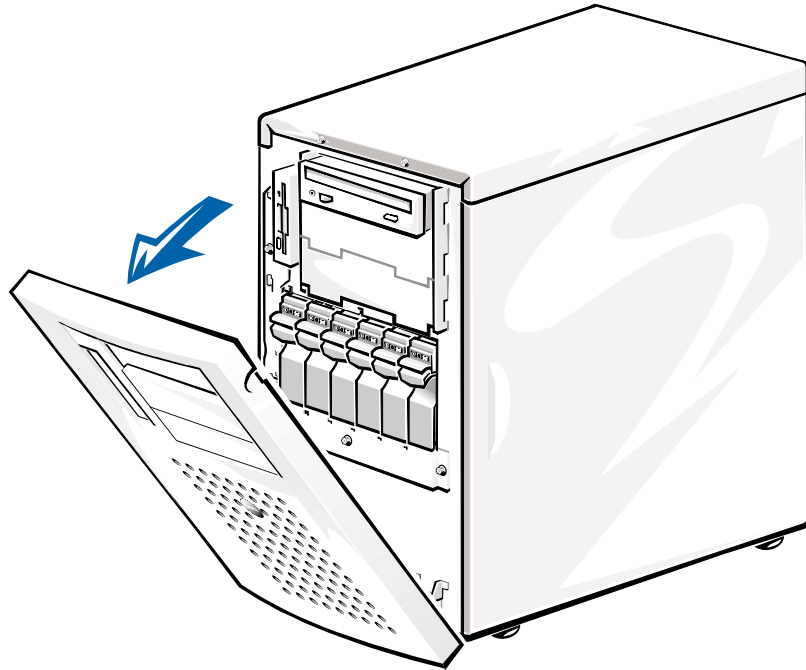
Removing the Front Bezel and Covers

The system is enclosed by a front bezel, left- and right-side covers, and a top cover. Removal of the side and top covers allows access to the PSDB, which is required when installing the redundant power supplies. For more information on removing and replacing the bezel and covers, see your system's *Installation and Troubleshooting Guide*.

Removing the Front Bezel

1 Turn off the system, including any attached peripherals, and disconnect the system from the electrical outlet.

2 Using the system key, unlock the front bezel.

3 Grasp the bezel by the indentations on each side and pull it slightly away from the chassis to release the top of the bezel (see Figure 1-1).

4 Pivot the bezel downward until it is at right angles to the chassis.

5 Grasp the bezel along the edge adjacent to the chassis and unsnap the bezel to remove it from the chassis.

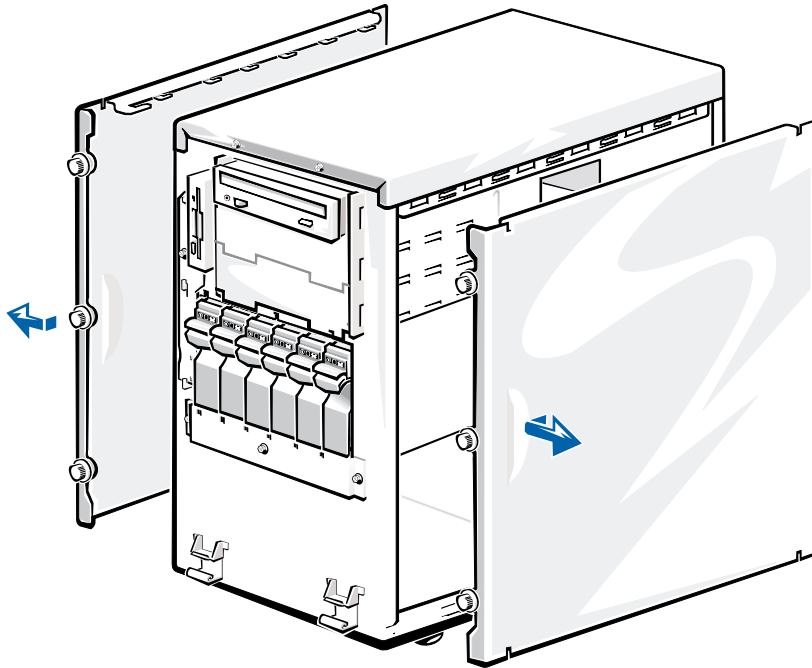**Figure 1-1.   Removing the Front Bezel**

Removing the Side Covers

1 Remove the front bezel (see "Removing the Front Bezel").

2 Loosen the three thumbscrews on the front of the system for each side cover (see Figure 1-2).

3 Slide the side cover forward and grasp it at both ends.

4 Carefully lift the cover away from the system.

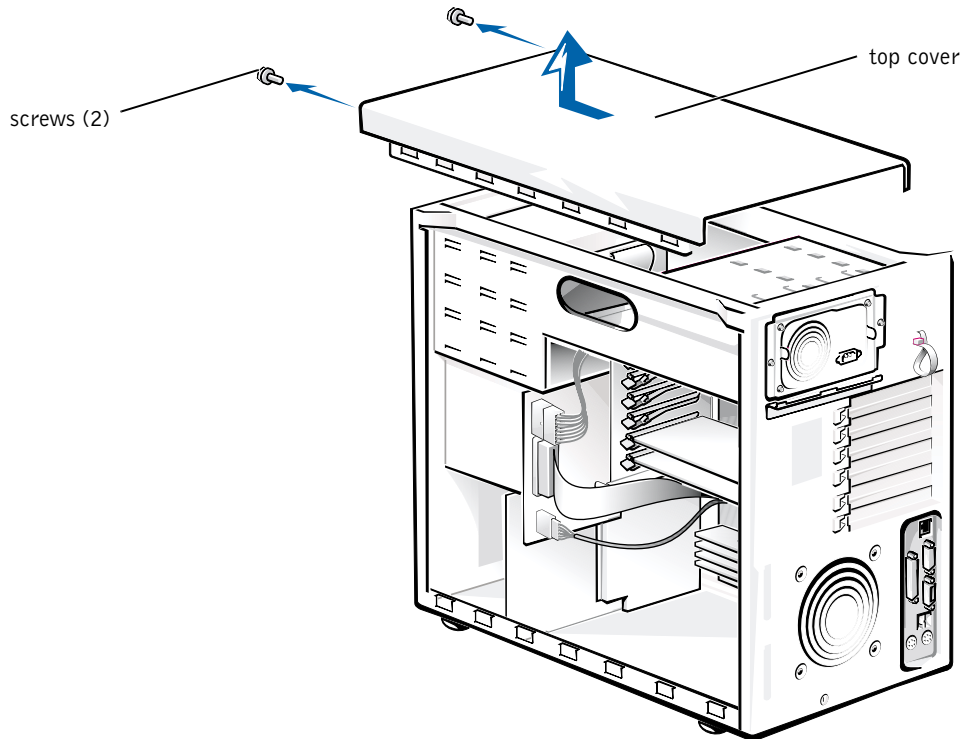**Figure 1-2.   Removing the Side Covers**

Removing the Top Cover

1 Remove both side covers (see "Pivot the bezel downward until it is at right angles to the chassis.").

2 Using a #2 Phillips screwdriver, remove the two screws securing the top cover to the chassis (see Figure 1-3).
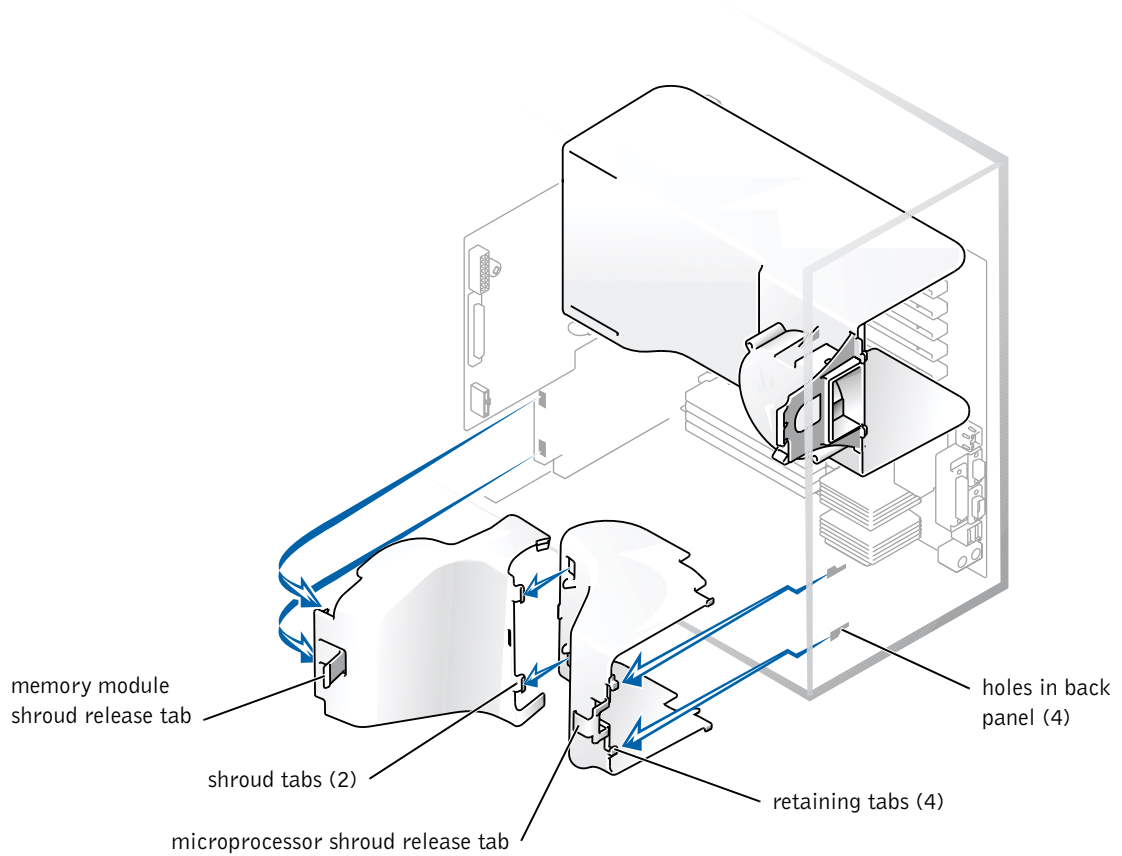
Figure 1-3.   Removing the Top Cover

screws (2)

top cover

3 Slide the top cover forward and grasp it at both ends.

4 Carefully lift the cover away from the system.

Removing the Cooling Shrouds

Your system contains microprocessor and memory module cooling shrouds and a PCI cooling shroud. You must remove these shrouds to facilitate the installation of the PSDB. For more information on removing and replacing the cooling shrouds, see your system's *Installation and Troubleshooting Guide*.

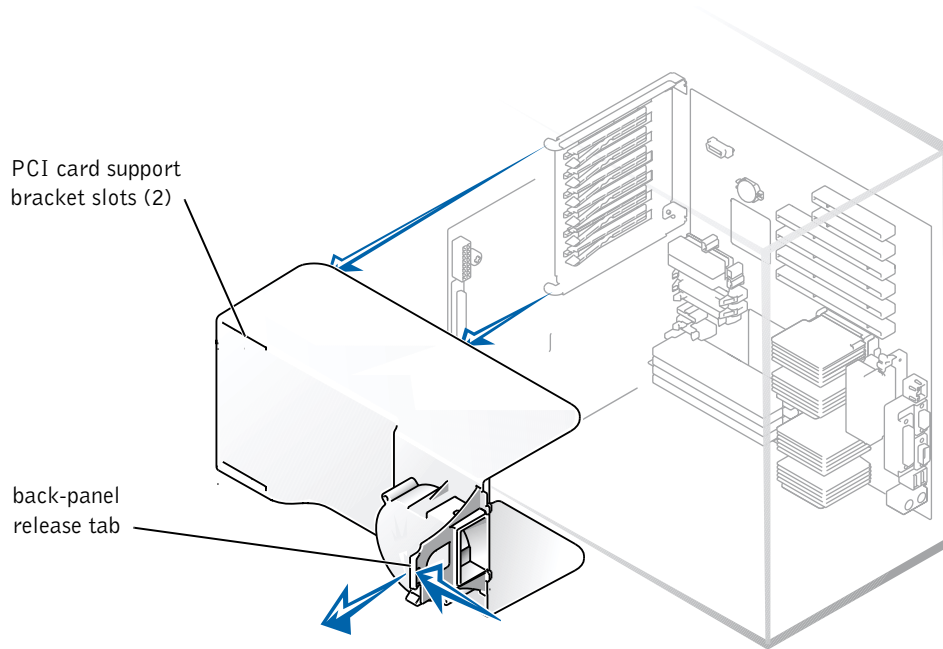### Removing the Microprocessor and Memory Module Cooling Shrouds

1 Remove the system's right-side cover (see "Pivot the bezel downward until it is at right angles to the chassis.").

2 Press the release tab on the memory module shroud and rotate the shroud until the tabs release from the slots in the microprocessor shroud (see Figure 1-4).

3 Lift the memory module shroud from the system.

4 While pulling the release tab on the microprocessor shroud, lift the shroud upward so that the four retaining tabs that secure the shroud to the back of the chassis can be pulled through the back panel (see Figure 1-4).

5 Lift the microprocessor shroud from the system.

Figure 1-4. Removing the Microprocessor and Memory Module Shrouds

memory module
shroud release tab

shroud tabs (2)

microprocessor shroud release tab

holes in back
panel (4)

retaining tabs (4)

Removing the PCI Cooling Shroud

1 Remove the system's right-side cover (see "Pivot the bezel downward until it is at right angles to the chassis.").

2 Remove the microprocessor and memory module cooling shrouds (see "Removing the Microprocessor and Memory Module Cooling Shrouds").

3 Use your index finger to pull the back-panel release tab on the PCI cooling shroud and swing the shroud up and out of the chassis (see Figure 1-5).

4 Disconnect the PCI fan power cable from the system board. To identify the system board connectors and sockets, see your system's *Installation and Troubleshooting Guide*.

Figure 1-5. Removing the PCI Shroud

PCI card support bracket slots (2)
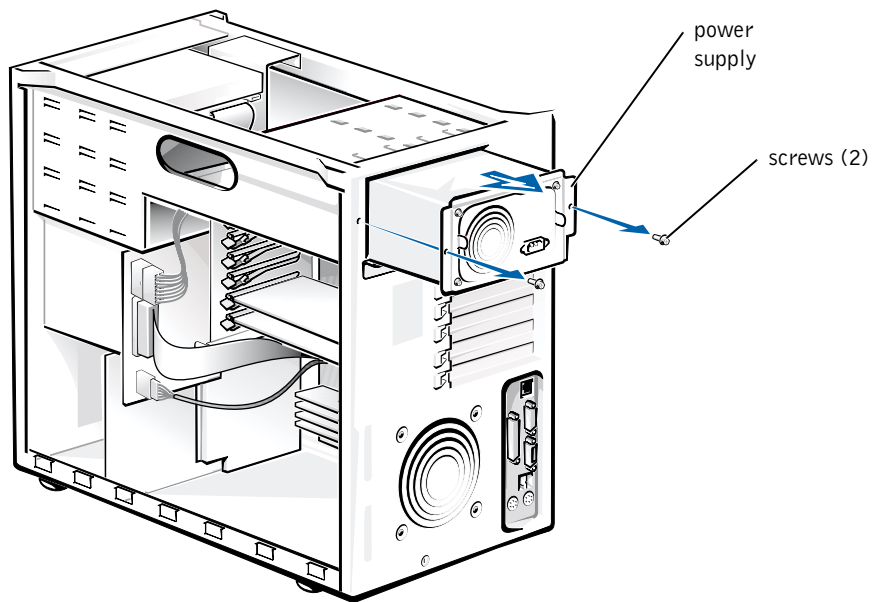
back-panel release tab

Installing the Redundant Power Supplies

To install the dual, redundant hot-pluggable power supplies, you must remove the single nonredundant power supply, install the PSDB, and then install the dual power supplies.
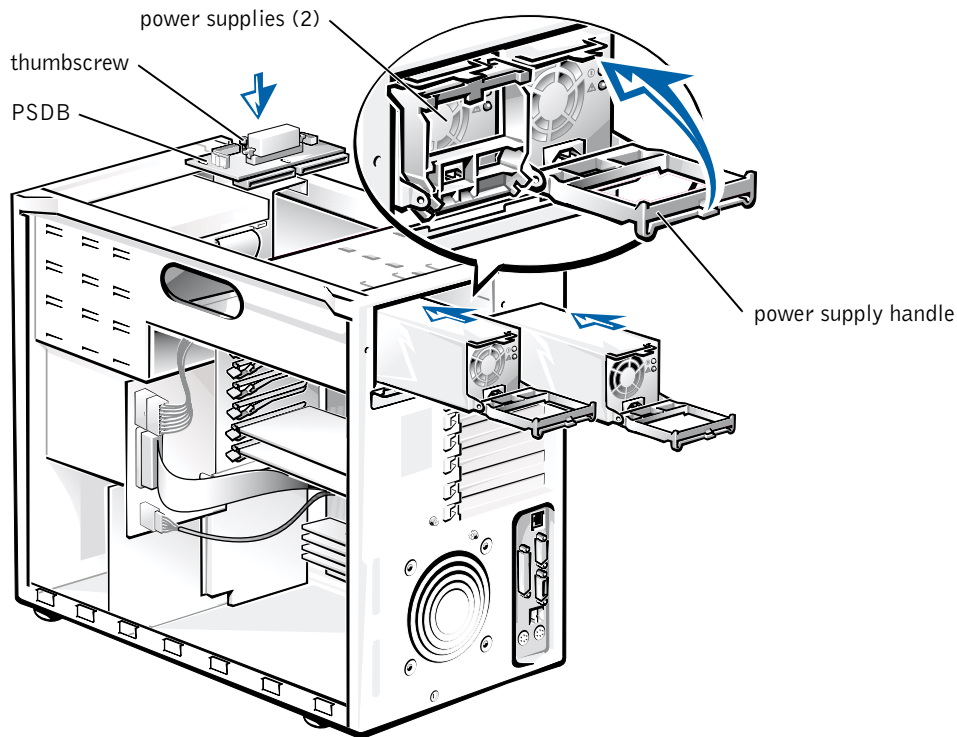
1 Remove the front bezel and covers (see "Removing the Front Bezel and Covers").

2 Remove the cooling shrouds (see "Removing the Cooling Shrouds").

3 Disconnect the power cable harness from the SCSI backplane, system board, diskette drive, and any other devices in the peripheral drive bay.

4 Release the power cables from the cable clamps at the edge of the system board. These clamps help route cables through the system.

5 Using a #2 Phillips screwdriver, remove the two screws securing the power supply to the chassis (see Figure 1-6).

6 Slide the power supply out of the chassis.

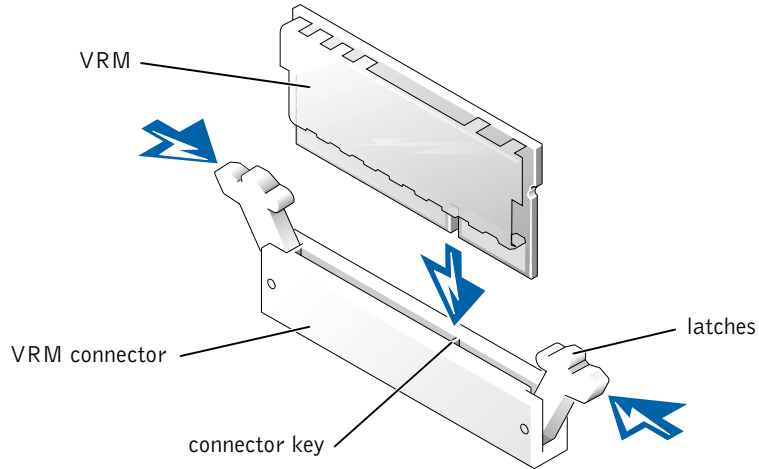**Figure 1-6.   Removing the Nonredundant Power Supply**

7 Install the PSDB onto the PSDB tray (see Figure 1-7):

    a While holding the PSDB by its edges, position the PSDB so that the three tabs on the PSDB tray fit through the corresponding slots in the PSDB and the two power supply connectors face the back of the chassis.

    b Slide the PSDB toward the front of the system about 1 cm (about 0.5 inch).

    c Secure the PSDB by tightening the thumbscrew.

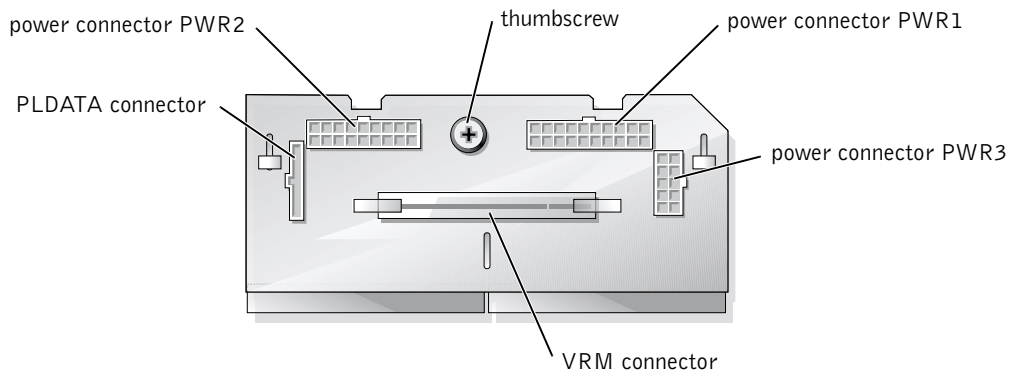**Figure 1-7. Installing the PSDB and Dual Power Supplies**

8 Install the VRM in the connector on the PSDB (see Figure 1-8). To identify the VRM connector on the PSDB, see Figure 1-9.

The VRM connector is keyed to prevent improper installation. Align the slot in the bottom of the VRM with the key inside the connector.

Figure 1-8. Installing the VRM

VRM

VRM connector

connector key

latches

9 Attach the cable labeled "PWR3" to the PWR3 connector on the PSDB (see
Figure 1-9), attach the 6-pin cable connector labeled "P11" to the P11 system board
connector, and attach the 4-pin cable connector labeled "P12" to the P12 system board
connector. To identify the system board connectors and sockets, see your system's
Installation and Troubleshooting Guide.

Figure 1-9. PSDB Features

power connector PWR2

PLDATA connector

thumbscrew

power connector PWR1

power connector PWR3

VRM connector

10 Attach the cable labeled "PWR1" to the PWR1 connector on the PSDB and the P1 connector on the system board.

11 To attach the cable harness provided in the upgrade kit, perform the following steps:

    a Attach the connector labeled "PWR2" to the PWR2 connector on the PSDB.

    b Attach the 16-pin connector to the connector labeled "POWER" on the SCSI backplane board.

    c Connect the remaining connectors on the cable harness to the diskette drive, CD drive, and other drives in the external drive bays.

12 Attach the thin PSDB interface cable to the PLDATA connector on the PSDB and the PSDB CONN connector on the system board.

13 Secure the PWR3, PWR1, and PSDB interface cables in the cable clamps at the edge of the system board. These clamps help route cables through the system.

14 Replace the top cover.

15 Replace the two side covers.

16 Replace the front bezel.

17 Install the redundant power supplies by sliding each new power supply into the chassis and swinging the handle closed until it snaps into place (see Figure 1-7).