

Dell® PowerEdge® 6100/200 System Memory Update

Your Dell PowerEdge 6100/200 system now supports up to 4 gigabytes (GB) of memory using 128-megabyte (MB) dual in-line memory modules (DIMMs). This document describes operating system requirements and the process of installing and removing the 4-GB memory module.

Operating System Memory Requirements

The following subsections address the memory requirements for the Microsoft® Windows NT® 4.0 and 3.51 operating systems and for the Novell® NetWare® 4.xx and 3.12 operating systems.

Windows NT 4.0 and 3.51

The Windows NT 4.0 operating system requires the installation of the Microsoft Service Pack 2 or higher; however, you cannot install this Service Pack on a system with more than 2 GB of memory. Before you install Service Pack 2 or higher, you must remove all DIMMs that provide more than 2 GB of memory. After installing the Service Pack, you can install the additional memory.

The Microsoft Service Pack 5 is recommended for the Windows NT 3.51 operating system if you want to install more than 2 GB of memory. You can install Service Pack 5 on a system with more than 2 GB of memory.

Novell NetWare 4.xx

If your system has more than 3 GB of memory, you must update the **server.exe** file to the latest version of Support Pack for Novell NetWare 4.xx.

NOTE: You must remove all DIMMs that provide more than 3 GB to properly install or update a Novell NetWare Support Pack. After installing or updating the operating system and Support Pack, you can replace the additional memory.

For instructions on installing Support Pack 3.0A on Novell NetWare 4.11, see “Installing the Dell-Supported Novell Patches” in the *Novell NetWare 4.11 Technical Update*.

For instructions on installing Support Packs on earlier versions of NetWare, see the **iwsp2.txt** file in the **iwsp2** directory on the *Dell IntranetWare Support CD*.

Novell NetWare 3.12

The Novell NetWare 3.12 operating system supports more than 3 GB of memory. Dell recommends that you update the NetWare operating system along with the **loader.exe** file to the most recent version. See the Novell World Wide Web site, <http://support.novell.com>. The file is named **312PTx.exe**, where *x* is the latest version available.

After you install all the patches, use the **register memory console** command so the operating system will recognize the additional memory.

Adding Memory

The 4-GB memory module has 32 DIMM sockets and a capacity of 0.5 GB to 4 GB, increased in 0.5-GB increments. You can upgrade the computer system to 4 GB by installing 128-MB DIMMs, which should be rated at 60 nanoseconds (ns). The memory upgrade kits can be purchased from Dell as needed.

Systems With More Than 2 GB of Memory and a RAID Controller

If your Dell PowerEdge 6100 system has more than 2 GB of memory and a Dell PowerEdge Expandable RAID controller, you must have the following to perform the memory upgrade:

- System: BIOS version A06 or later
- Controller: Firmware version U.77 or later

If you have an earlier version of the BIOS, contact Dell for an upgrade. (See the chapter titled “Getting Help” in the *Dell PowerEdge 6100/200 System Installation and Troubleshooting Guide*.)

Refer to the Dell PowerEdge Expandable RAID controller documentation for more information.

DIMM Installation Guidelines

When installing DIMMs, populate the DIMM sockets from J2 through J33 consecutively, using groups of four DIMMs. For example, you must install the first four DIMMs in sockets J2, J3, J4 and J5 (see Figure 1 for socket locations).

CAUTION: Handle DIMMs carefully. Hold them only by their edges. Do not slide them across any surface. Applying too much pressure on retaining clips can break the clips or damage the socket.

The 4-GB memory module supports error detection and correction, memory downsizing, and address-bit permuting. All configurations result in four-way interleaving.

The total memory reported by the system will be 32 MB less than the actual memory installed. For example, if your system has 4 GB of memory, it will report 4064 MB instead of 4096 MB. The top 32 MB is reserved for the basic input/output system (BIOS), Peripheral Component Interconnect (PCI) devices, and event log area.

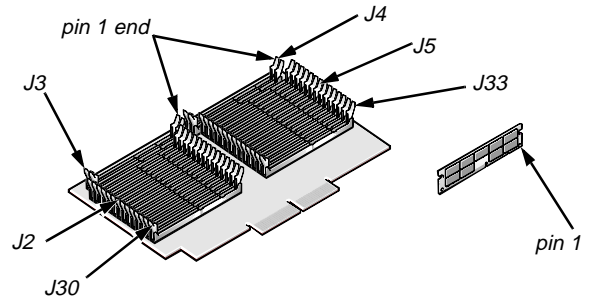


Figure 1. Memory Module and DIMM Sockets

Table 1 lists the possible memory configurations.

Table 1. DIMM Configurations

Total Desired Memory	Sockets Populated
0.5 GB	J2–J5
1.0 GB	J2–J9
1.5 GB	J2–J13
2.0 GB	J2–J17
2.5 GB	J2–J21
3.0 GB	J2–J25
3.5 GB	J2–J29
4.0 GB	J2–J33

Performing a Memory Upgrade

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

WARNING: Before a trained service technician accesses the inside of the computer, any and all power supplies must be disconnected from their power sources, and the cables to the power supplies must also be disconnected.

Use the following procedure to perform a DIMM memory upgrade. Detailed instructions for these steps can be found in Chapter 7, “Checking Inside the Computer,” in the *Installation and Troubleshooting Guide*, unless otherwise noted.

1. **Remove the left computer cover.**
2. **Remove the support panel.**

Remove the two screws from the support panel and pull the back-edge tabs on the panel out of the slots in the chassis.

3. **Remove the memory module.**

CAUTION: Be careful not to touch the components or the card-edge connectors on the module.

4. **Place the memory module component-side up on an antistatic surface.**
5. **Locate the DIMM sockets in which you will install or replace DIMMs.**

Refer to Figure 1 for the location of the DIMM sockets on the memory module.

6. **Install or replace the DIMMs as necessary to reach the desired memory total.**

Follow the instructions in “Installing DIMMs” or “Removing DIMMs” found later in this document, as appropriate.

7. **Replace the memory module.**

Hold the module by the corners with the DIMM sockets facing down. Ease the module into the slot guides until it is touching the system board connector. Press the module carefully but firmly into the system board connector.

CAUTION: Make sure that the memory module is completely seated in the system board connector and aligned correctly.

8. **Replace the support panel.**

Align the panel so that the two tabs are to the left. Fit the tabs into the two slots on the back of the chassis and swing the panel closed. Replace the two screws.

9. **Replace the left computer cover, and then reconnect the computer and peripherals to their power sources and turn them on.**

CAUTION: Make sure that the memory module is completely seated in the system board connector before applying power. Incomplete insertion can damage the system board and memory module.

After the system completes the power-on self-test (POST) routine, it runs a memory test that displays the new memory total, including all newly installed memory.

The system reports that the total memory is 32 MB less than the actual memory installed. For example, if your system has 4 GB of memory, the system reports only 4160512 kilobytes (KB).

NOTE: If the memory total is incorrect, turn off the computer and peripherals and disconnect them from their power sources. Then repeat steps 1 through 4. Make sure that all DIMMs are seated properly in their sockets. Then repeat steps 6 through 9. If the total memory reported is still incorrect, call your Dell service representative.

The system detects that the new memory does not match the system configuration information stored in nonvolatile random-access memory (NVRAM). The monitor displays an error message that includes the following statement:

Press <F1> for Setup.

10. **Press <F1> to enter the system setup program, and check the Extended Memory category in the Main menu of the system setup screens.**

For more information, see Chapter 4, “Using the System Setup Program,” in the *Dell Power-Edge 6100/200 System User’s Guide*.

The system changes the value in the Extended Memory category to reflect the new memory. Verify the new total.

The system reports that the total memory is 32 MB less than the actual memory installed. For example, if your system has 4 GB of memory, the system reports only 4160512 KB.

Exit and save the system setup information.

NOTE: The value of Extended Memory is given in kilobytes. To convert kilobytes to megabytes, divide the kilobyte total by 1024.

If the total is incorrect, one or more of the DIMMs may not be installed properly. Repeat steps 1 through 10. Make sure that the DIMMs are firmly seated in their sockets.

11. Enter the system configuration utility. Then save the system configuration information and exit the utility.

Running the system configuration utility and saving the system configuration information are required for the system to recognize the newly installed DIMMs. See Chapter 5, “Using the System Configuration Utility,” in the *User’s Guide* for instructions on running the utility and saving the configuration.

12. Run the RAM Test Group in the system diagnostics.

See Chapter 5, “Running the System Diagnostics,” in the *Installation and Troubleshooting Guide* for information.

Installing DIMMs

The memory module has 32 DIMM sockets arranged in four banks. Install DIMMs consecutively in groups of four starting with socket J2.

NOTE: Use only DIMMs approved for use in this system.

To install the DIMMs, use the following procedure.

CAUTION: Handle DIMMs carefully. Hold them only by their edges. Do not slide them across any surface. Applying too much pressure on retaining clips can break the clips or damage the socket.

- 1. Remove the memory module as described in steps 1 through 4 of “Performing a Memory Upgrade” found earlier in this section.**
- 2. Place the memory module flat, with the component-side up and the memory module oriented with the edge connectors toward you.**
- 3. Install the DIMM by orienting the pin-1 end of the DIMM with the pin-1 end of the memory module socket (see Figure 1).**
- 4. Hold the DIMM at a 90-degree angle to the memory module and press the DIMM carefully into a socket until it is held by the retaining clips.**

Check for proper installation by ensuring that there is no gap between the retaining clips and the DIMM.

If the DIMM is not properly installed, remove it according to the following removal procedure. Then reinsert the DIMM into the memory module socket.

- 5. Continue with steps 7 through 12 of “Performing a Memory Upgrade” found earlier in this section.**

Removing DIMMs

To remove the DIMMs, use the following procedure:

- 1. Remove the DIMMs from the memory module by starting from the highest-numbered socket.**
- 2. Open the retaining clips just enough to pull the top edge of the DIMM away from the retaining clips.**
- 3. Pull the DIMM away from the socket, and store it properly.**

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