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# Silicon Graphics® O2® Workstation Memory Installation Instructions

This flier provides hardware and software instructions for installing dual inline memory modules (DIMMs) in a Silicon Graphics O2 workstation. Depending on which version of IRIX you are using and the total size of the memory after the new memory installation, you may or may not have to install software patches.

- If you have an O2 workstation running IRIX 6.5, skip to “About DIMMs” on page 4 to begin the installation process. You do not have to install any software.
- If you have an O2 workstation running IRIX 6.3, you must check the particular version of the operating system and install patches for memory configurations larger than 256 MB. For example, if you will have a total of 256 MB of memory after installing the new DIMMs, you do not need the patches. If you will have more than 256 MB of memory after you have installed the new DIMMs, you need to install the patches. Begin the installation process with “Checking the Operating System Version” on page 2.

The following topics are covered in this flier:

- “Checking the Operating System Version” on page 2
- “Installing the Patches for IRIX 6.3 With More Than 256 MB of Memory” on page 3
- “About DIMMs” on page 4
- “Installing the DIMMs” on page 5
- “Verifying the Hardware Installation” on page 7
- “Troubleshooting” on page 8
- “Locating Printed Memory Upgrade Instructions” on page 8
- “Locating Online Memory Upgrade Instructions” on page 9

## Checking the Operating System Version

Before installing either the patches or the DIMMs, make sure you are running “IRIX 6.3 for O2 Including R10000” (or later). Follow the steps below to check your operating system version.

1. To check your workstation’s IRIX version, in a shell window, enter

**uname -R**

- If you see 6.3 O2 R10000, you have the correct IRIX version. Go to “Installing the Patches for IRIX 6.3 With More Than 256 MB of Memory” on page 3.
- If you see 6.3 O2, you need to upgrade your workstation to “IRIX 6.3 for O2 Including R10000” before installing the patches and the hardware. This version was mailed to all current O2 owners in December 1996. It is also available from the following SGI Web site:  
[http://www.sgi.com/support/patch\\_intro.html](http://www.sgi.com/support/patch_intro.html)

**Caution:** Do not install the patches until after the IRIX CDs are installed and you have rebooted the workstation. If you install the patches without rebooting, the flash PROM environment variables may become corrupt.

Read any letters or instructions that came with the “IRIX 6.3 for O2 Including R10000” CD. Also read the online release notes. The booklet that comes with the CD explains how to read release notes.

2. After installing “IRIX 6.3 for O2 Including R10000,” you must reboot the system before installing any patches. From the toolchest, choose Restart System. Log in as usual when you see the login screen.

## Installing the Patches for IRIX 6.3 With More Than 256 MB of Memory

**Caution:** It is important that you install the entire patch set. If you install less than the complete set, you may not be able to boot your system. Also, if you have more current patch versions installed, and patches on this CD are downgrades, keep the most current versions. Do not install the downgrades.

Follow these instructions to install the patches.

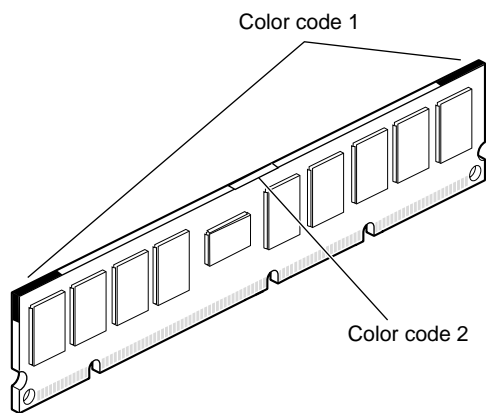
1. Insert the Patches CD in the CD-ROM drive. Wait a few seconds while the system reads the CD, and then double-click the CD-ROM drive icon on the desktop. If you have a root password set, you are prompted to enter it.
2. Read the Installation Startup Message that displays and click *Dismiss*.
3. Select `/CDROM/dist/6.3_02/` in the Software Manager window, and click *Open*.
4. Read the Installation Startup Script and click *OK*.
5. In the Software Manager window, click *Start* to begin auto-installation. When you are asked in the Open Additional Distribution window if you want to install additional software, click *Done*.
6. Follow the installation instructions that are displayed in Software Manager. When the installation is complete, from the Software Manager File menu, choose *Exit*.
7. Place the cursor over the CD-ROM drive icon, right click the mouse, and choose *Eject CD-ROM*.
8. From the Toolchest, choose *System > Restart System*.

Once you have installed the software, go to the next section to install the hardware.

## About DIMMs

Before you begin installing the DIMMs you received, read this section. The DIMMs are color-coded to assist you in identifying what is already installed. Knowing what is installed is important because the largest size DIMMs must be in the first bank. Several other important rules also apply to installing DIMMs in your O2 workstation. These rules follow the table in this section.

To determine which DIMMs are already installed, use the following illustration and table.



**Figure 1** Locating the Color Codes on the DIMM

DIMM color code 1 is located on the top corners of each DIMM. Color code 2 is located in the middle of the top edge of the DIMM.

Kit (2 DIMMs per kit)	DIMMs	SGI Part No.	Color Code 1 (by Size)	Color Code 2	Single-Sided (SS) or Double-Sided (DS)	DIMM Type
32 MB	16 MB ea.	030-0881-xxx	Purple	-	SS	A
64 MB	32 MB ea.	030-0876-xxx	Yellow	-	DS	A
128 MB	64 MB ea.	030-1492-xxx	Green	White	SS	B
256 MB	128 MB ea.	030-1080-xxx	Silver	-	DS	A
256 MB	128 MB ea.	030-1473-xxx	Silver	White	DS	B

- Color-coding relates to size. See the table on page 4 for a list of DIMM sizes and color codes.
- The DIMMs in slots 1 and 2 make up Bank A. DIMMs in slots 3 and 4 make up Bank B, and so on. See Figure 2 on page 6.
- A bank of two slots must have a DIMM in each slot or be empty (except for slots 1 and 2 which must always be populated.)
- The two DIMMs in any bank must be of the same size, type, and color code.
- The largest size DIMMs must be in Bank A.
- DIMM banks must be filled sequentially, beginning with bank A.
- Do not skip banks, or the memory is not recognized.
- The maximum memory configuration in the O2 workstation is 1 GB.

## Installing the DIMMs

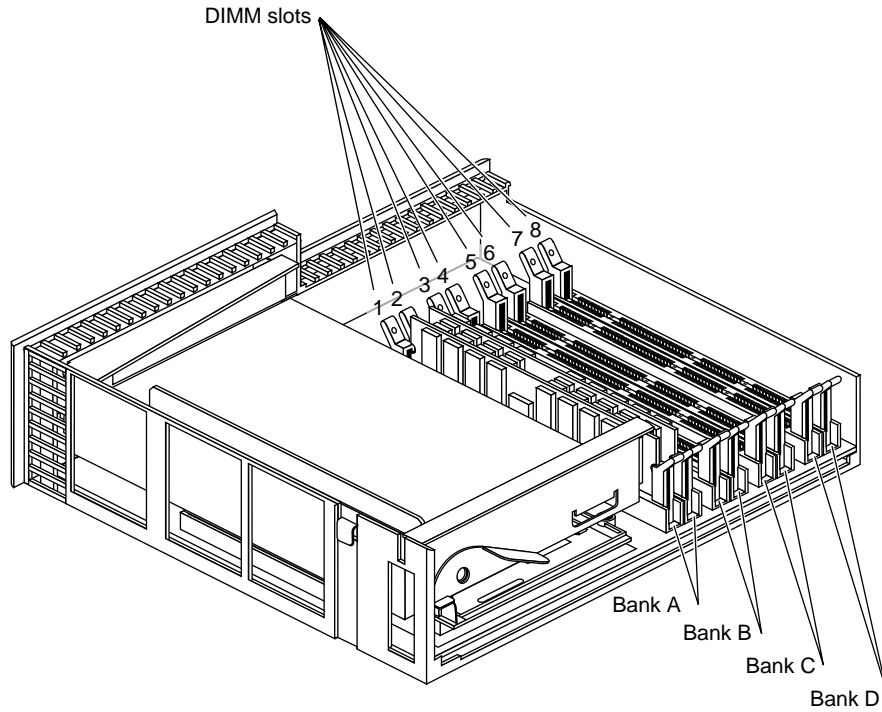
This is an installation overview for more experienced users. For fully illustrated instructions, see the section “Installing Memory Modules” in your printed *O2 Workstation Owner’s Guide*, part number 007-3282-004.

If you do not have your owner’s guide handy, it is available on the Internet in the SGI Technical Publications Library at the following location:

<http://techpubs.sgi.com/library/>

(See “Locating Online Memory Upgrade Instructions”.)

1. Turn off the workstation and remove the power cable from the exterior of the chassis. There is no need to remove the cables attached to the system module, although you may find the installation process easier if you do.
2. Pull down the lever of the system module and slide it out of the chassis. (The system module is on the extreme left as you face the rear of the workstation.) Place it on a clean, flat surface, such as your desktop.
3. Before touching any of the components, attach the wrist strap included in this package to your wrist and to a metal part of the chassis.



**Figure 2** Locating the Memory Banks

**Caution:** Memory modules are extremely sensitive to static electricity. Handle the modules carefully, and wear the wrist strap while installing them.

4. Locate the memory banks in the system module (Figure 2). There are four banks comprising eight sockets. The sockets are numbered 1 through 8. The numbers are printed next to the DIMM socket as shown in Figure 2.

Two sockets form a bank. Socket 1 is closest to the CPU on the system board. Socket 8 is closest to the edge of the system module.

**Caution:** It is extremely important that you install the largest size memory modules starting in the lowest-numbered slots. If you do not, you may not be able to reboot your workstation.

5. Remove the existing memory modules by pushing down the latches on both sides to release them.

6. Install the largest size memory modules in bank A, slots 1 and 2.
  - Hold the DIMM over the socket without tilting it.
  - Lower the DIMM, pushing it straight down into the socket gently but firmly. You hear a click as it is seated and the latches on each side snap up.
7. Reinstall the rest of the memory modules consecutively in groups of two, beginning with the lowest open slot. Do not leave a slot or bank empty between banks.
8. Return the system module to its upright position and slide it into the chassis until the lever engages. Push the module all the way in to seat it properly, and then push the lever up to lock the module in place.
9. Reconnect the power cable and any other cables you removed.
10. Turn on the workstation by pressing the power button on the front.

## Verifying the Hardware Installation

Follow these steps to verify that the system recognizes the new memory you just installed.

1. From the Toolchest on your desktop, choose System > System Manager > About This System.
2. Check the amount of memory shown. It should equal the total amount of memory you installed plus any memory that was already installed. For example, if you had 32 MB of memory when you started, and you installed another 256 MB, the total shown should be 288 MB.
3. If the system does not show the total amount of memory, turn off the workstation, remove the power cable, remove the system module, and check that each DIMM is installed correctly. Here are a few tips. Look at the DIMMs from the side, and check the following:
  - Make sure you have installed the largest size memory in the lowest-numbered slots, starting with slot 1. Check that there are no empty slots between the DIMMs.
  - The DIMMs should be absolutely vertical (no leaning). If one is leaning, it probably is not seated all the way in the slot.

- The tops of the DIMMs in the same bank should be even. If one DIMM is higher than the other one in the same bank, it probably is not seated all the way in the slot.
- The latches on the sides should fit snugly against the DIMM.

## Troubleshooting

If after installing the additional memory, your system does not boot UNIX, follow these steps:

1. Turn off the O2 by pressing the power button on the front.
2. Disconnect the power cord.
3. Remove the system module.
4. Look at the DIMMs from the side to make sure they are seated all the way, and none are leaning. Check that the largest size DIMMs are installed in the lowest slots, that is, slots 1 and 2.
5. Read the installation instructions in this flier and the owner's guide or reference guide again to see if you missed a step.
6. If the system still does not boot IRIX, restart the workstation.
7. When you see the "Starting up the system" notifier, click *Stop for Maintenance*, or press Esc. The System Maintenance Menu appears.
8. Choose "Run Diagnostics" to see if the DIMMs are faulty.
9. If the operating system still does not boot, call your authorized service provider.

## Locating Printed Memory Upgrade Instructions

If the instructions in this note are not detailed enough, you can find complete instructions with illustrations in the printed *O2 Workstation Owner's Guide* that came with your workstation. Find the chapter "Installing or Removing Memory and Option Boards" and follow the instructions. If you do not have the printed Owner's Guide handy, see the next section, "Locating Online Memory Upgrade Instructions."



## Locating Online Memory Upgrade Instructions

There are several ways you can view the online documentation.

- If your system is running “IRIX 6.3 for O2 Including R10000, the *O2 Workstation Hardware Reference Guide* is in the InSight Library on your system disk (unless it was removed). See “Viewing the Book From the IRIS InSight Library” below.
- If the book was removed from your O2 workstation’s system disk, see “Installing the O2 Workstation Hardware Reference Guide From a CD” below.
- If you have access to the Internet, you can view the *O2 Workstation Hardware Reference Guide* in the SGI Technical Publications Library at the following location:  
<http://techpubs.sgi.com/library/>  
For instructions, see “Viewing the Book on the Internet” below.

### Viewing the Book From the IRIS InSight Library

To locate the online book, from the Toolchest on your O2 desktop, choose Help > Online Books > SGI End User > O2 Workstation Hardware Reference Guide.

Search for the chapter “Installing or Removing Memory and Option Boards.” You can view the book online, or print the information you need. To print, from the Books menu in IRIS InSight, choose Print.

### Viewing the Book on the Internet

If you have access to the Internet, you can view the *O2 Workstation Hardware Reference Guide* in the Technical Publications Library on the publications home page at <http://techpubs.sgi.com/library/>

Search for *O2 Workstation Hardware Reference Guide*. Then choose “Installing or Removing Memory and Option Boards.”

## Installing the O2 Workstation Hardware Reference Guide From a CD

If the online manual has been removed from your system disk, you can reinstall it from the O2 IRIX 6.3 operating system CD. Follow these steps:

1. Place the "IRIX 6.3 for O2 Including R10000" CD in the CD-ROM drive and double-click the CD-ROM icon on your desktop. The Software Manager window appears.
2. Click *Customize Installation*.
3. When the Open Additional Distribution dialog box appears, click *Done*.
4. From the Selected menu, choose Unmark All.
5. From the Selected menu, choose Find...
6. When the dialog box appears, enter **Hardware Reference Guide**, and click *Search*. Software Manager highlights the *O2 Hardware Reference Guide* in its Software Inventory Window.
7. Click in the Install check box to select the book for installation, and click *Start* to begin the installation. When the installation is complete, you see a message `Installation and removals were successful. You may continue with installation or quit now.` Click *OK*.
8. Exit Software Manager by choosing Exit from the File menu.
9. To locate the online books, from the Toolchest choose Help > Online Books > SGI End User > O2 Workstation Hardware Reference Guide.
10. If the book does not appear on the End User bookshelf, you may have to update the InSight database. In a shell window, enter the commands below.

```
su
/usr/lib/infosearch/bin/booksAdmin -full -hwdi
/usr/share/Insight/library/SGI_bookshelves
```



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