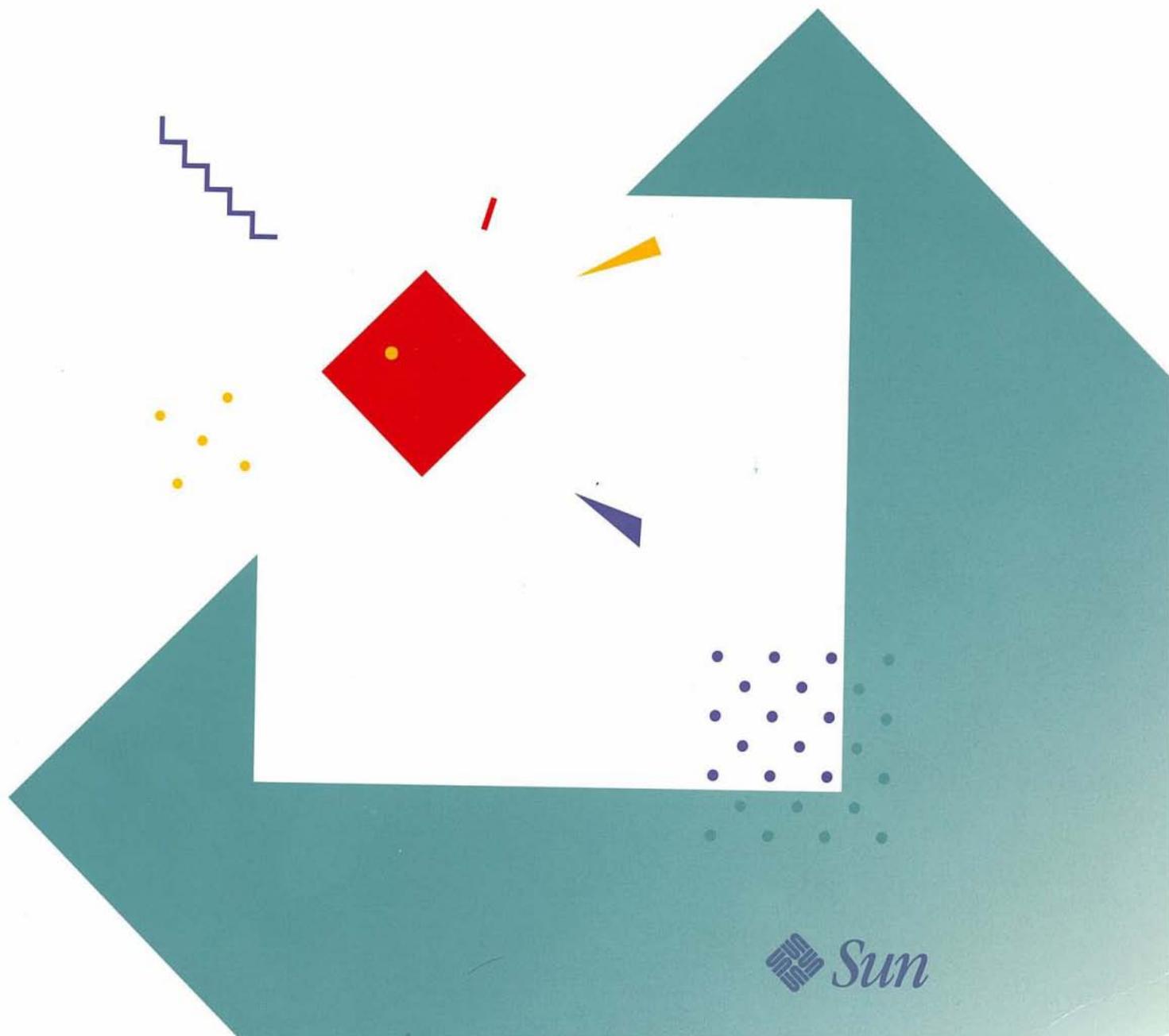# Desktop Storage Module
Installation and User's Guide

Sun

Desktop Storage Module Installation and User's Guide

Sun

FCC Class B Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded Cables: Connections between the workstation and peripherals must be made using shielded cables in order to maintain compliance with FCC radio frequency emission limits.

Modifications: Modifications to this device which are not approved by Sun Microsystems, Inc. may void the authority granted to the user by the FCC to operate this equipment.

DOC Class B Notice — Avis Du Ministère des Communications, Classe B

This digital apparatus does not exceed Class B limits for radio noise emission for a digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Bundesrepublik Deutschland—Federal Republic of Germany

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Sun Microsystems, Incorporated: 2550 Garcia Avenue, Mountain View, California 94043-1112, U.S.A.

Japan

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　取扱説明書に従って正しい取り扱いをして下さい。

Contents

Figures

Tables

Preface

This book describes how to connect and set up Desktop Storage Modules to your system.

Who Should Read This Book

Sun customers, technicians, and system administrators should use this book. A Sun customer with a little computer experience should be able to install the Desktop Storage Module.

What This Book Contains

This book contains:

- Chapter 1 "Preparing the System for Service" provides information needed to prepare the system for service.

- Chapter 2 "Connecting Desktop Storage Modules to Desktop Systems" describes how to remove and replace printed circuit boards in the card cage and the chassis.

- Chapter 3 "Connecting Desktop Storage Modules to Deskside and Rack Systems" contains procedures to connect the Desktop Storage Module to deskside and rack mounted systems.

- Chapter 4 "Using the 8mm Tape Drive" describes how to operate the tape drive as well as how to use and care for tapes.

- Chapter 5 "Accessing SCSI Devices" describes how to access the Desktop Storage Module's disk and tape drives.

- Appendix A "Hardware Specifications" describes the physical and electrical characteristics of the Desktop Storage Module.

- Appendix B "Small Computer System Interface, Information" describes details and specifications of the SCSI interface.

- Appendix C "Connecting Desktop Storage Modules to Other Devices" describes and illustrates how to connect Desktop Storage Packs, External Storage Modules, and Desktop Storage Modules to your system.

- Appendix D "Troubleshooting" explains procedures to follow when the Desktop Storage Module is not working properly.

- Appendix E "Conformité aux Normes de Sécurité is a French translation of "Safety Agency Compliance."

- Appendix F "Sicherheitsbehördliche Vorschriften is a German translation of "Safety Agency Compliance."

- Appendix G "Conformidad Con La Agencia de Seguridad" is a Spanish translation of "Safety Agency Compliance."

Typographical Conventions

This book uses a number of typographical conventions.

- *Italic type* is used for emphasis, for a command argument for which you must replace the argument name, and for the book title. For example:

  Desktop Storage Module Service Manual

- Courier type indicates text the system displays on the screen. This font also indicates characters and words you type (as shown within text.) For example:

  Syncing file systems... done

  Enter passwd.

- **Courier bold type** indicates what you type (when these words are illustrated in screen examples.) For example:

```
% whoami
```

- When you see two key names separated by a hyphen (-), press and hold the first key, then press the second key. For example:

  To press Control-D, press and hold Control, then press D.

Related Books

The following books contain additional information about the Desktop Storage Module and other expansion units.

- *Desktop Storage Module Service Manual*, written for customers with self-maintenance contracts, system administrators, and Sun customer support engineers, contains instructions on how to replace parts in the Desktop Storage Module.

- *Desktop Storage Pack Installation Manual* describes how to install a Desktop Disk Pack, Desktop Backup Pack, or Desktop SunCD™ Pack.

- *External Storage Module Installation Guide* describes how to install the External Storage Module and replace customer replaceable units (CRUs).

- *OpenBoot PROM 2.0 Command Reference* describes how to use the open boot PROM commands. This book is useful if you have a disk version of the Desktop Storage Module and have a system with the open boot PROM 2.0 or greater, such as a SPARCstation™ 2, IPX, ELC or 10.

- The installation manual for your system may contain additional information about SCSI address information for internal devices installed in your system.

When You Need Help with UNIX Commands

This manual might not include specific software commands or procedures. Instead, it names software tasks and refers you to operating system documentation or the handbook that was shipped with your peripheral.

The type of information that you might need to use references for includes:

- Shutting down the system
- Configuring devices
- Other basic software procedures

Depending on the operating system you are using, you can find descriptions of commands and procedures in the following documents:

- *Solaris 1.x (SunOS 4.x) Handbook for SMCC Peripherals*, P/N 801-2424-xx. (Contains SunOS 4.x software commands.)
- *Solaris 2.x Handbook for SMCC Peripherals*, P/N 801-2425-xx. (Contains Solaris 2.x software commands.)
- On-line *AnswerBook*. (Contains the complete set of documentation supporting SunOS 4.x or Solaris 2.x.)
- Other software documentation that you received with your system.

Task Map for Getting Your System Running

The diagram below outlines the tasks you can perform to successfully install a new peripheral. Each numbered item in the diagram represents a procedure and the arrows point to manuals in which these procedures are detailed.

```
┌─────────────────────────────────────┐          ┌──────────┐
│ 1. Unpack Peripheral Hardware       │─────────▶│          │   Hardware Installation
└─────────────────────────────────────┘          │          │   Manual
                                                  │          │
┌─────────────────────────────────────┐          │          │
│ 2.Verify Hardware Components         │─────────▶│          │
└─────────────────────────────────────┘          └──────────┘

┌─────────────────────────────────────┐
│ 3. Shut Down the System             │
└─────────────────────────────────────┘

┌─────────────────────────────────────┐
│ 4. Install Peripheral Hardware      │
└─────────────────────────────────────┘

┌─────────────────────────────────────┐          ┌──────────┐
│ 5. Start Up the System              │─────────▶│          │   Handbook for Peripherals
└─────────────────────────────────────┘          │          │
                                                  │          │
┌─────────────────────────────────────┐          │          │
│ 6. Configure the Device             │─────────▶│          │
└─────────────────────────────────────┘          └──────────┘
```
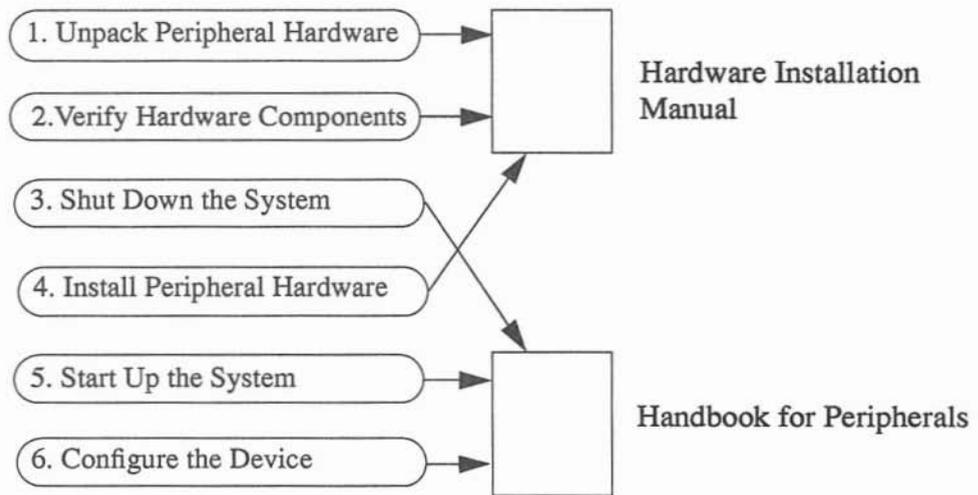
After you perform these tasks, you will be ready to use the new peripheral with your system.

Safety Agency Compliance

This section provides safety precautions to follow when installing a Sun Microsystems®, Inc. product.

Safety Precautions

For your protection, observe the following safety precautions when setting up your equipment:

- Follow all warnings and instructions marked on the equipment.

- Ensure that the voltage and frequency of your power source matches the voltage and frequency inscribed on the equipment's electrical rating label.

- Never push objects of any kind through openings in the equipment. Dangerous voltages may be present. Conductive foreign objects could produce a short circuit that could cause fire, electric shock, or damage to your equipment.

Symbols

The following symbols mean:

⚠	**Caution** – Risk of personal injury and equipment damage. Follow the instructions.

⚡	**Warning** – Hazardous voltages are present. To reduce the risk of electric shock and danger to personal health, follow the instructions.

|	**On** – The principal on/off switch is in the *on* position.

○	**Off** – The principal on/off switch is in the *off* position.

Modification to Equipment

Do not make mechanical or electrical modifications to the equipment. Sun Microsystems, Inc. is not responsible for regulatory compliance of a modified Sun product.

Placement of a Sun Product

⚠	**Caution** – To ensure reliable operation of your Sun product and to protect it from overheating, openings in the equipment must not be blocked or covered. A Sun product should never be placed near a radiator or heat register.

Power Cord Connection

Warning – Sun products are designed to work with single-phase power systems having a grounded neutral conductor. To reduce the risk of electrical shock, do not plug Sun products into any other type of power system. Contact your facilities manager or a qualified electrician if you are not sure what type of power is supplied to your building.

Warning – Not all power cords have the same current ratings. Household extension cords do not have overload protection and are not meant for use with computer systems. Do not use household extension cords with your Sun product.

Warning – Your Sun product is shipped with a grounding type (3-wire) power cord. To reduce the risk of electric shock, always plug the cord into a grounded power outlet.

Cover

Warning – It is not safe to operate Sun products without the system unit cover in place. Failure to take this precaution may result in personal injury and system damage.

Introducing the Desktop Storage Module 1 ≡

Desktop Storage Modules are external drive units, and are available as two distinct products:

- Desktop Storage Module with a 1.3 Gbyte disk drive
- Desktop Storage Module with a 5.0 Gbyte 8 mm tape drive

Figures 1-1 and 1-2 show the disk version and tape version.
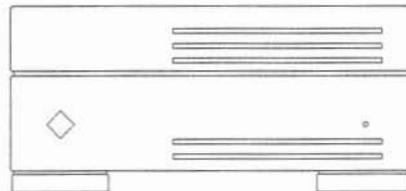
Figure 1-1   Desktop Storage Module with a 1.3 Gbyte Disk Drive
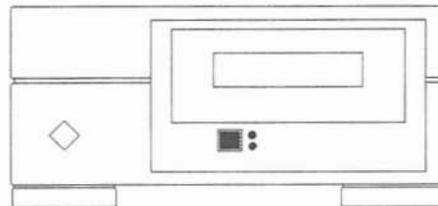
Figure 1-2   Desktop Storage Module with a 5.0 Gbyte 8 mm Tape Drive

The Desktop Storage Module occupies the same desk space as the Desktop Storage Pack and the SPARCstation IPC and IPX. The tape version of the Desktop Storage Module uses 8 mm tapes to store information.

Table 1-1 lists the computer systems and operating systems that support the Desktop Storage Module.

Table 1-1   Computer Systems and Operating Systems Supporting the Desktop Storage Module

Systems	Devices	Operating System*
SPARCstation IPC, SPARCstation 2	1.3 Gbyte disk	SunOS 4.1.1 or higher
SPARCstation IPX, SPARCstation ELC	1.3 Gbyte disk	SunOS 4.1.1 or higher
SPARCstation IPC, SPARCstation 2	5.0 Gbyte tape	SunOS 4.1.2 or higher
SPARCstation IPX, SPARCstation ELC	5.0 Gbyte tape	SunOS 4.1.2 or higher
SPARCstation 10	1.3 Gbyte disk, 5.0 Gbyte tape	SunOS 4.1.3 or higher
SPARCserver™ 630	5.0 Gbyte tape, 1.3Gbyte disk	SunOS 4.1.2 or higher
SPARCserver 670	5.0 Gbyte tape, 1.3Gbyte disk	SunOS 4.1.2 or higher
SPARCserver 690	5.0 Gbyte tape	SunOS 4.1.2 or higher

* Also Solaris 2.x or other compatible operating system

Figure 1-3 shows the rear panel of the Desktop Storage Module. Note that the rear panel has two SCSI connectors, a power input plug, the on/off switch, and a SCSI address switch.
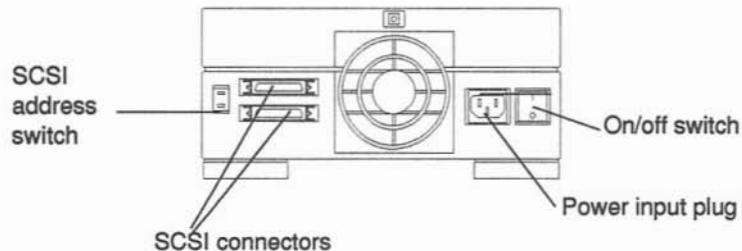
Figure 1-3   Rear Panel of a Desktop Storage Module

Connecting Desktop Storage
Modules to Desktop SPARCstations   2 ≡

This chapter describes how to connect Desktop Storage Modules to desktop SPARCstations.

If you have other SCSI devices, such as Desktop Storage Packs connected to your system, refer to the instructions in Appendix C.

Unpacking

To unpack the Desktop Storage Module, do the following:

1. **Inspect the shipping carton before opening it.**
   If the carton is damaged, arrange for a carrier agent to be present when you remove the equipment.

2. **Remove the contents from the shipping carton.**
   Save the carton and the packing material. You will need this material if you want to ship your Desktop Storage Module elsewhere.

3. **Check the contents and make sure you have everything.**
   You should have the following:

   • Desktop Storage Module
   • Power cable
   • SCSI cable
   • SCSI terminator
   • 8 mm tape (if tape version)

Figure 1-1 shows the basic components of the disk version. Figure 1-2 shows the basic components of the tape version.

Desktop
Storage Module
(Disk version)

Power
cable

SCSI
terminator
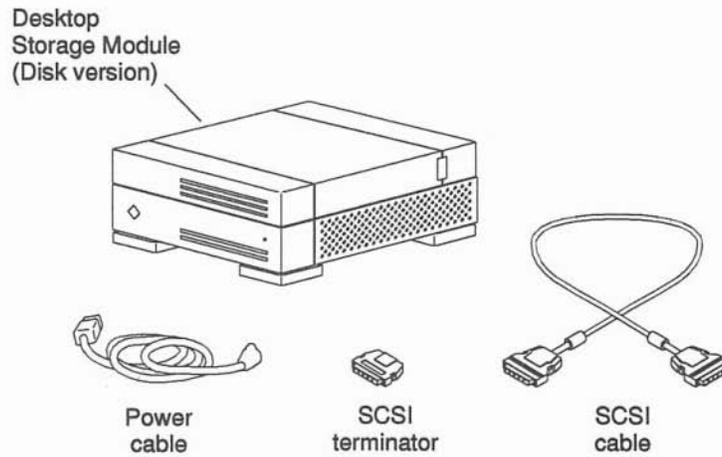
SCSI
cable

Figure 2-1   Components of the Disk Version

Desktop
Storage Module
(5.0GB tape version)

Cleaning
tape

Data tape

Power
cable

SCSI
terminator
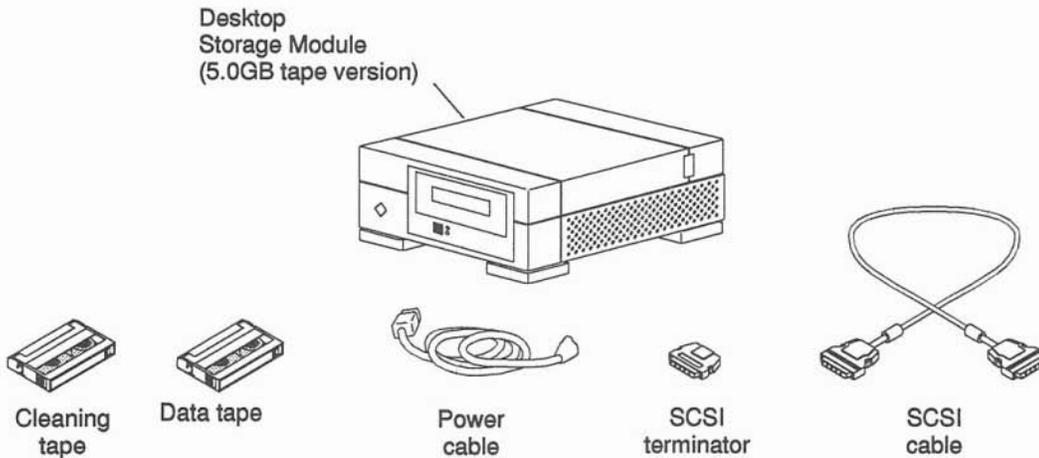
SCSI
cable

Figure 2-2   Components of the 5.0 Gbyte Tape Version

Determining SCSI Addresses

You must know how many disk drives, tape drives, CD-ROM drives, and other SCSI devices are connected to or installed in your computer system.

Note – The disk number, for example sd0, is the operating system disk number, *not* the SCSI address. The disk number and the SCSI address are different.

To determine the number of internal SCSI devices installed in or connected to your computer system and their SCSI addresses, follow these steps. If you need references to help with the commands listed, see the *Preface*, "When You Need Help with UNIX Commands."

1. **Determine which version of the operating system you are running. For example, for either Solaris 1.x (SunOS 4.x) or Solaris 2.x (SunOS 5.x) enter:**
   uname -rs

Before turning off the system power, you must halt the operating system:

2. **Go to the appropriate handbook for your operating system (the *Handbook for SMCC Peripherals* that came with the Desktop Storage Module).**

3. **See the section about shutting down the system, and return to this book after you perform the procedure.**

4. **Type** n **at the** > **prompt and press** Return.
   You should see the ok prompt.

5. **Type** probe-scsi **at the** ok **prompt and press** Return.

6. **Look for unused device addresses (targets) and write them down.**
   There are seven available SCSI device addresses (0 - 6) for each SCSI bus. Address 7 is reserved for the SCSI processor.

7. **Type** old-mode **and press** Return **to return to the** > **prompt.**

Shutting Down the System and Turning Off Power

Shutting Down a System That Is Operating Normally

Note – If you have already completed the steps in the section "Determining SCSI Addresses," turn the power off (O position) when the > prompt displays.

Before turning off the system power, you must halt the operating system. To halt the operating system, follow these steps:

1. **Determine which version of the operating system you are running. For example, for either Solaris 1.x (SunOS 4.x) or Solaris 2.x (SunOS 5.x) enter:**
   ```
   uname -rs
   ```

2. **Go to the handbook that came with your peripheral to find this procedure.**

3. **See the section about shutting down the system.**
   Perform the procedures specified in the handbook.

4. **Press the power switch to the computer system and all attached devices to the off (O) position.**

Shutting Down a System That Does Not Respond to the Keyboard or Mouse

If your system does not respond to the mouse or keyboard, end your work session and turn off the power as follows:

1. **If your system is on a network, wait a few minutes before turning off the power.**
   Your system's slow response might be due to NIS problems or network delays.

2. **Press the keyboard combination that halts your system, as described in your system User's Guide or Operating System Guide.**
For example, the keyboard combination could be **L1-a, Stop-a** or **Break**. This will put the system into the PROM (Programmable Read Only Memory) monitor mode.

The monitor mode command prompt is indicated on the screen with either a "greater than symbol" (>) or with the letters ok.

3. **Press the power switch to the computer system and all attached devices to the off (O) position.**

Installing the Desktop Storage Module

Use the instructions in this chapter if you *do not* have SCSI devices, such as Desktop Storage Packs, attached to your system.

Note – If you have SCSI devices attached to your system, use the instructions in Appendix C instead of the instructions in this chapter.

Cabling

Cables supplied with Sun equipment should be long enough to meet your needs. If the supplied cables are too short, ask your Sun sales representative about the availability of alternate length cables.

Some of the cables supplied with your Sun equipment must be specific lengths to conform with engineering and safety standards. For example, the SCSI cable supplied with your Desktop Storage Module conforms to the SCSI bus length specification.

Caution – Using cables other than the cable supplied with your Desktop Storage Module or cables recommended by Sun could damage the equipment.

To connect Desktop Storage Modules to the system:

1. **Make sure that you will not exceed the maximum SCSI bus length of 20 feet (6 meters).**
   Refer to "SCSI Bus Length" in Appendix B.

2. **Make sure you know the number of SCSI devices in your computer system and the SCSI addresses of all SCSI devices.**
   Refer to "Determining the SCSI Addresses" earlier in this chapter.

3. **Make sure you have halted the system and turned off power to all devices.**
   Refer to "Halting the System and Turning Off Power" earlier in this chapter.

4. **Make sure that the power switch is turned off (O position) and that the power cord is unplugged from the Desktop Storage Module and from the wall outlet.**
   On a SPARCstation 2 and 10, the power switch is on the back of the system on the right. On SPARCstation IPCs, IPXs, and ELCs the power switch is on the back of the system on the left.
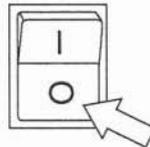
5. **Select the SCSI address for each Desktop Storage Module.**
   Assign each SCSI a specific and unique SCSI address. Do not assign the same address to two SCSI devices on the same physical SCSI bus.

   Refer to the SCSI address you wrote down in step 5 of the section "Determining the SCSI Addresses."

6. **Locate the SCSI address switch on the Desktop Storage Module.**
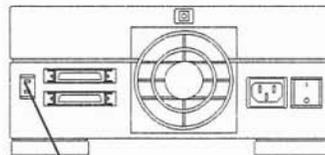
   SCSI address switch

7. **Set the SCSI address on each Desktop Storage Module. Press the buttons on the top or bottom of the switch until the selected address number appears in the window.**
SCSI address 2, shown in the following figure, is an example only. The SCSI address you set may be different.

— Press this side to increase address

— Press this side to decrease address
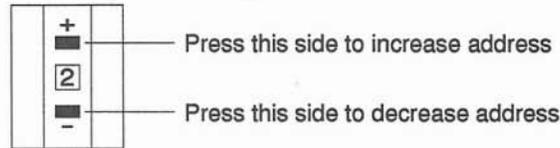
8. **Connect the SCSI cable to either one of the two SCSI connectors on the back of the Desktop Storage Module. Both ends of the cable are identical.**
This icon identifies the SCSI connectors.

9. **Place the unit next to the computer system. If you have a SPARCstation 2 or SPARCstation 10, place the unit to the right of the system.**
Make sure that objects do not block the vents on either side or the fan on the back. Allow enough space between the computer system and the Desktop Storage Module to insert and remove diskettes.

Do not block
vents on sides.

Do not block fan
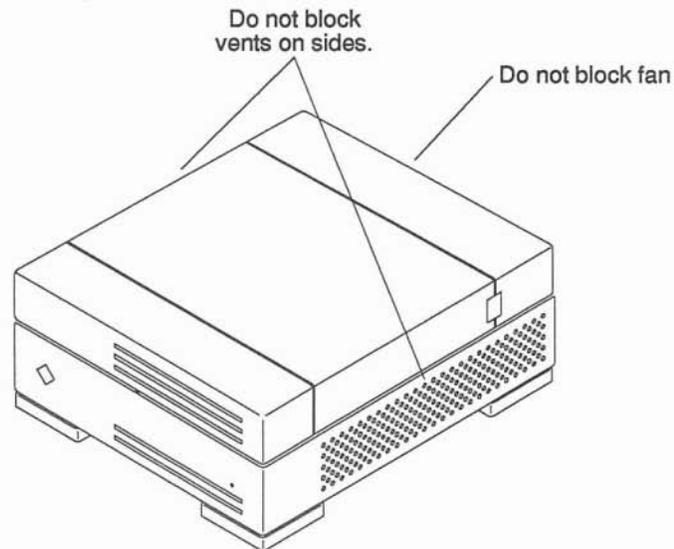
10. **Connect the Desktop Storage Module to the computer system.**

- If you are connecting the Desktop Storage Module directly to the computer system, connect the other end of the SCSI cable to the SCSI connector on the computer system. This icon identifies the SCSI connector.
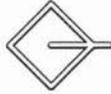
Go to step 11.

Note – If you are connecting the Desktop Storage Module to the SCSI connector of an SBus card, connect the other end of the SCSI cable to the SCSI connector of the SBus card. The SBus card provides an additional SCSI connector and thus adds another SCSI bus to the system.

---

11. **Connect the power cord to the power input plug on the Desktop Storage Module and to the wall outlet.**
    If you are connecting more than one Desktop Storage Module, go to the next step.

    If you are connecting one Desktop Storage Module, go to step 16.

12. **Connect another SCSI cable to the SCSI connector of the next Desktop Storage Module.**

13. **Place the Desktop Storage Module on the work surface.**

Caution – *Do not stack* Desktop Storage Modules. Stacking Desktop Storage Modules can cause electrical magnetic interference problems. You can stack a Desktop Storage Module on top of a computer system.

---

14. **Connect the other end of the SCSI cable to the unused SCSI connector of the previous Desktop Storage Module.**

15. **Connect the power cord to the power input plug on the Desktop Storage Module and to the wall outlet.**
    Repeat steps 12 through 15 if you are connecting more than two Desktop Storage Modules.

16. **Connect the terminator supplied with the Desktop Storage Module to the unused SCSI connector of the last device in the SCSI bus.**
   If you connected one device, connect the terminator to the unused SCSI connector of the Desktop Storage Module.

   A terminator resembles a SCSI cable plug, without a cable.
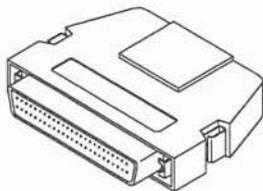
   Figure 2-3 shows an example of where to plug in the terminator.

   Terminator   Cable with micro-miniature
                       SCSI connectors
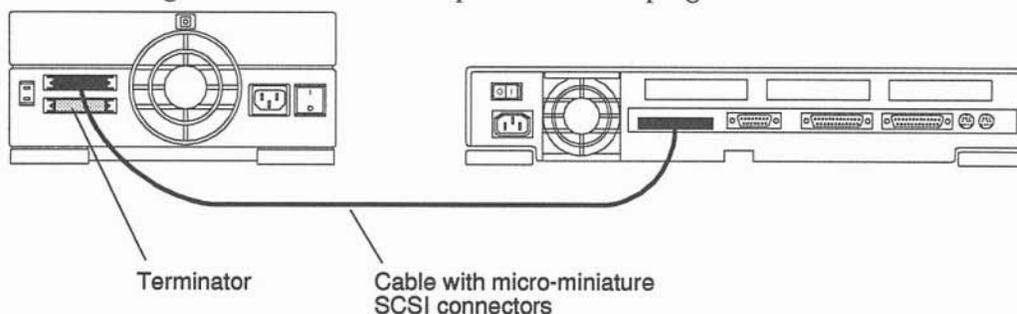
Figure 2-3   Connecting One Desktop Storage Module to a Desktop System

17. **Turn the power switch of the Desktop Storage Module to the on (I position).**

   a. **Turn the power on to the unit farthest from the system on the SCSI bus first (the device with the terminator attached.)**

   b. **Turn the power on to the unit nearest the system last.**
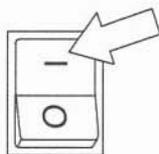
18. Turn the power switch to the monitor on (I position), if you turned it off.

19. Turn the power switch to the computer system on (I position).

Caution – Always allow 10 seconds between turning off the power and turning it back on again. This pause prevents possible damage to power supply components in the system.

Connecting Desktop Storage Modules to Deskside and Rack Systems 3≡

This chapter explains how to connect the Desktop Storage Module to the SPARCserver 630, 670, and 690 systems.

Determining SCSI Addresses

You must know how many disk drives, tape drives, CD-ROM drives, and other SCSI devices are connected to or installed in your computer system.

Note – The disk number, for example sd0, is the operating system disk number, *not* the SCSI address. The disk number and the SCSI address are different.

To determine the SCSI addresses of SCSI devices installed in or connected to the computer system, follow these steps. If you need references to help with the commands listed, see the *Preface*, "When You Need Help with UNIX."

1. **Go to the appropriate handbook for your operating system (the *Handbook for SMCC Peripherals* that came with the *Desktop Storage Module*).**

2. **See the section about shutting down the system, and return to this book after you perform the procedure.**

3. **Type** n **at the > prompt and press** Return.
   You should see the ok prompt.

4. **Type** probe-scsi **at the ok prompt and press** Return.

5. **Look for unused device addresses (targets) and write them down.**
   There are seven available SCSI device addresses (0 - 6) for each SCSI bus. Address 7 is reserved for the SCSI processor.

6. **Type** `old-mode` **and press** `Return` **to return to the** > **prompt.**

Halting the System and Turning Off Power

Halting a System That Is Operating Normally

If you completed the steps in the section "Determining SCSI Addresses," turn the power off (O position) when the > prompt displays.

Before turning off the system power, you must halt the operating system. To halt the operating system, follow these steps:

1. **Go to the appropriate handbook for your operating system (the** *Handbook for SMCC Peripherals* **that came with the** *Desktop Storage Module***).**

2. **See the section about shutting down the system, and return to this book after you perform the procedure.**

3. **Return to this book after you perform the procedure.**

Halting a System That Does Not Respond to the Keyboard or Mouse

If your system does not respond to the mouse or keyboard, end your work session and turn off the power as follows:

1. **If your system is on a network, wait a few minutes before turning off the power.**
   Your system's slow response might be due to NIS problems or network delays.

2. **Press the keyboard combination that halts your system, as described in your system User's Guide or Operating System Guide.**
   For example, the keyboard combination could be **L1-a, Stop-a** or **Break**. This will put the system into the PROM (Programmable Read Only Memory) monitor mode.

   The monitor mode command prompt is indicated on the screen with either a "greater than symbol" (>) or with the letters `ok`.

3. **Press the power switch to the computer system and all attached devices to the off (O) position.**

Connecting Desktop Storage Modules to the SPARCserver 630

You cannot connect more than two Desktop Storage Modules to the SCSI connector of the system. To connect more than two Desktop Storage Modules to your system, insert an SBE/S SBus card into one of the SBus slots of the system board. This card provides Ethernet and SCSI connectors.

To install the SBE/S card, refer to the installation instructions that came with the SBE/S SBus card. Refer to "Additional SCSI Buses" in Appendix B for more information.

Tools Required

You will need the following tools and equipment:

* Needlenose pliers
* Phillips screwdriver
* Container for screws

Installing the Desktop Storage Modules

To connect Desktop Storage Modules to a SPARCserver 630:

1. **Make sure you have a 79 inch (2 meter) SCSI cable.**
   Order the cable (part number 530-1836) from the accessory section of the *Price List*.

   The 32 inch (.8 meter) standard SCSI cable, supplied with the Desktop Storage Module, is not long enough to reach the SCSI connector of the Desktop Storage Module, placed on a desktop, from the SCSI connector of the system.

2. **Make sure that you will not exceed the maximum SCSI bus length of 20 feet (6 meters) for each SCSI bus.**
Refer to "SCSI Bus Length" in Appendix B.

3. **Make sure you know the SCSI addresses of all SCSI devices (internal and external SCSI drives). From the SCSI addresses already set, determine the available SCSI addresses.**
Refer to "Determining the SCSI Addresses" earlier in this chapter.

4. **Make sure you have halted the system and turned off power to all devices.**
Refer to "Halting the System and Turning Off Power" earlier in this chapter.
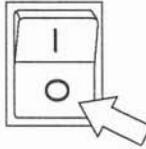
5. **Locate the SCSI address switch on the Desktop Storage Module.**
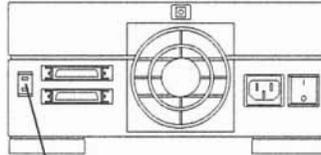
SCSI address switch

6. **Set the SCSI address for each Desktop Storage Module.**
Each device on the SCSI bus must be assigned a specific and unique SCSI address. Do not assign the same address to two SCSI devices on the same physical SCSI bus.

Refer to the SCSI address you wrote down in step 5 of the section "Determining the SCSI Addresses."

Press this side to increase address

Press this side to decrease address
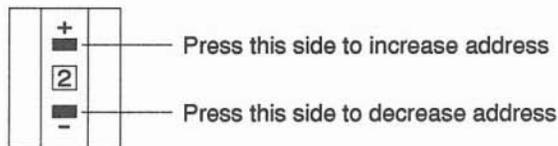
7. **Remove the top cover to the system:**

a. Locate the knob at the rear of the top cover.

b. Turn the knob counterclockwise a half-turn or until you hear a click.

c. Pull the top cover about 6 inches towards the rear of the system. Lift it away from the system.

d. Set the cover aside.
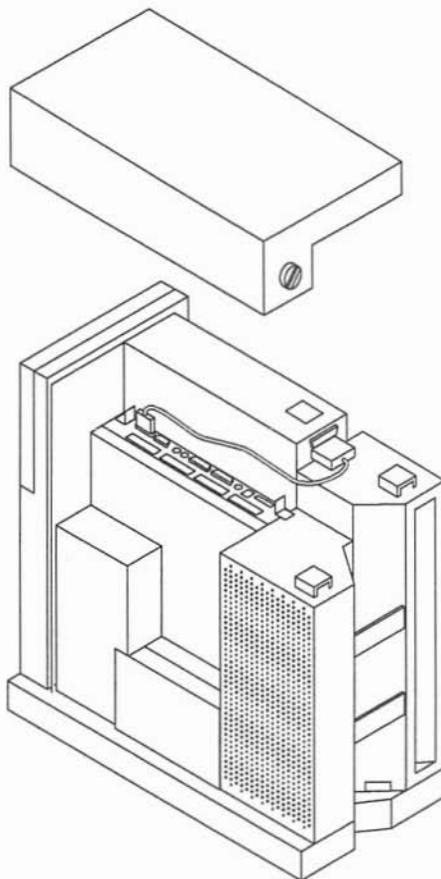
8. Use a Phillips screwdriver to remove the screws holding the SCSI terminator access panel. Remove the two screws and the panel.

SCSI terminator
access panel
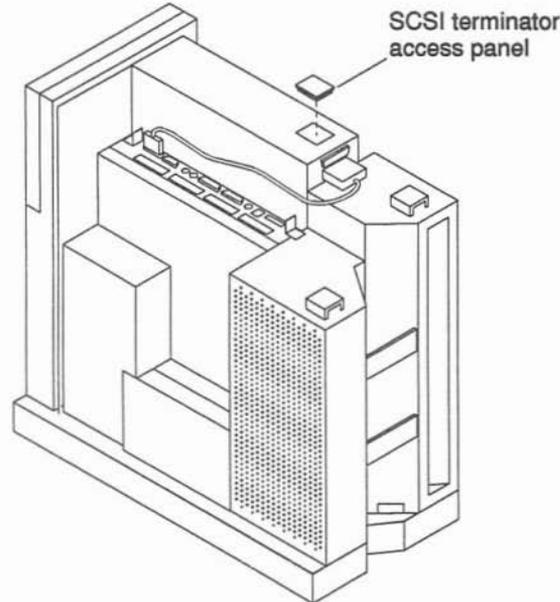
9. Using a pair of needlenose pliers, move the three Single Inline Package (SIP) termination resistors inside the SCSI terminator access panel to the sockets labeled Storage.

Storage 1

S101

Storage 2

Storage 3

S102

S100
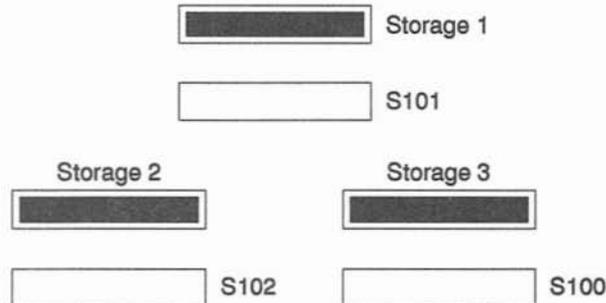
10. Using a Phillips screwdriver, replace the two screws that secure the SCSI terminator access panel.

11. **Connect the SCSI cable to one of the two SCSI connectors on the back panel of the Desktop Storage Module. Both ends of the cable are identical.**

    This icon identifies the SCSI connector.

12. **If you are connecting the Desktop Storage Module to the internal SCSI bus, go to Step a. If you are connecting the Desktop Storage Module to the SBE/S SBus card (an additional SCSI bus), go to Step b.**

    a. **Connect the other end of the SCSI cable to the SCSI connector labeled SCSI to EXTERNAL. If the cable is long enough, route the cable through the first cable restraint.**

       Go to step 13.
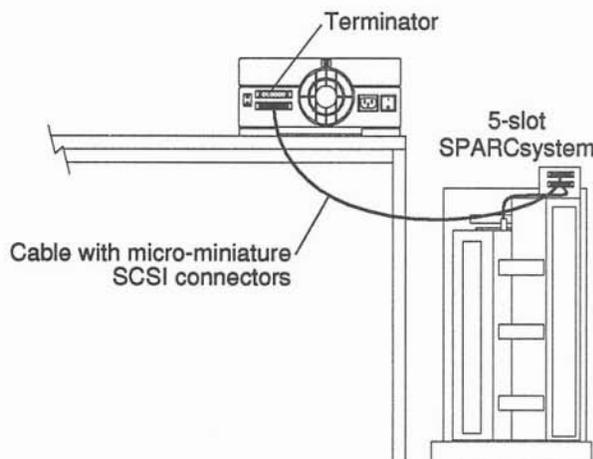
Terminator

5-slot
SPARCsystem

Cable with micro-miniature
SCSI connectors

    b. **Insert the SBE/S SBus card into the system, referring to the installation instructions that came with the card. Connect the other end of the SCSI cable to the SCSI connector on the SBE/S SBus card.**

13. **Connect the power cord to the outlet on the Desktop Storage Module and to the wall outlet.**

    If you are connecting more than one Desktop Storage Module, go to the next step.

    If you are connecting one Desktop Storage Module, go to step 18.

14. **Connect another SCSI cable to the SCSI connector of the next Desktop Storage Module.**
Use the 31.5 inch (8 meter) standard SCSI cable supplied with the Desktop Storage Module.

15. **Place the additional unit on a work surface.**
You can position the Desktop Storage Module on top of a desktop SPARCstation or Desktop Storage Pack. The Desktop Storage Module must be the top unit.

> **Caution –** *Do not stack* Desktop Storage Modules. Stacking Desktop Storage Modules can cause electrical magnetic interference problems. You can stack a Desktop Storage Module on top of a computer system.

16. **Connect the other end of the SCSI cable to the unused SCSI connector of the previous Desktop Storage Module.**

17. **Connect the power cord to the outlet on the Desktop Storage Module and to the wall outlet.**

18. **Connect the terminator to the unused SCSI connector of the last device in the SCSI bus.**
A terminator resembles a SCSI cable plug without a cable.
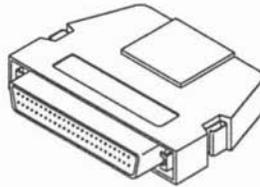
19. **Turn the Desktop Storage Module power on (I position).**

   a. **Turn the power on first to the unit farthest from the system on the SCSI bus (the unit with the SCSI terminator attached).**

   b. **Turn the power on last to the unit nearest the system (the unit with the SCSI cable connected to the computer system).**
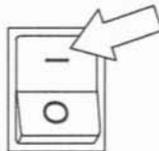
20. **Turn the power to the monitor on (I position).**

21. **Turn the power to the system on (I position).**

> ⚠ **Caution** – Always allow 10 seconds between turning off the power and turning it back on again. This pause prevents possible damage to power supply components in the system.

22. **If you connected a tape unit, refer to Chapter 4 for instructions about using the tape drive. Refer to the peripheral handbook shipped with your Desktop Storage Module for software instructions (such as mounting the tape drive.)**

23. **If you connected a disk unit, refer to the peripheral handbook shipped with your Desktop Storage Module for software instructions (such as mounting the disk drive.)**

Connecting Desktop Storage Modules to the SPARCserver 670

You cannot connect more than two Desktop Storage Modules to the SCSI connector of your system. To connect more than two Desktop Storage Modules to your system, insert an SBE/S SBus card into one of the SBus slots of the system board. This card provides Ethernet and SCSI connectors. Refer to the installation instructions that came with the SBE/S SBus card. Refer to "Additional SCSI Buses" in Appendix B for more information.

To connect Desktop Storage Modules to the SPARCserver 670:

1. **Make sure you have a 79 inch (2 meter) SCSI cable.**
   Order the cable (part number 530-1836) from the accessory section of the *Price List*.

   The 32 inch (.8 meter) standard SCSI cable, supplied with the Desktop Storage Module, is not long enough to reach the SCSI connector of the Desktop Storage Module, placed on a desktop, from the SCSI connector of the system.

2. **Make sure that you will not exceed the maximum SCSI bus length of 20 feet (6 meters) for each SCSI bus.**
   Refer to "SCSI Bus Length" in Appendix B.

3. **Make sure you know the SCSI addresses of all SCSI devices (disk, tape, and CD-ROM) in the system and attached to the system.**
   Refer to "Determining the SCSI Addresses" earlier in this chapter.

4. **From the SCSI devices already set, determine the available SCSI addresses.**
   Refer to step 5 in the section "Determining the SCSI Addresses" earlier in this chapter.

5. **Make sure you have halted the system and turned off power to all devices.**
   Refer to "Halting the System and Turning Off Power" earlier in this chapter.

6. **Locate the SCSI address switch on the Desktop Storage Module.**
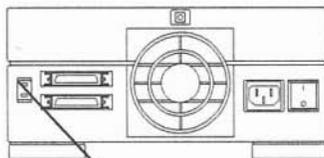
SCSI address switch

7. **Set the SCSI address on each Desktop Storage Module. Press the buttons on the top or bottom of the switch until the selected address number appears in the window.**
   Assign each device on the SCSI bus a unique SCSI address.

Press this side to increase address

Press this side to decrease address
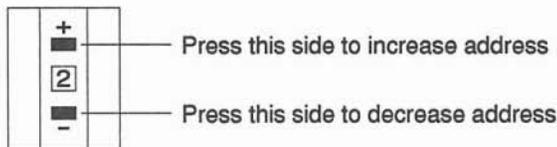
8. **If you are connecting the Desktop Storage Module to the SCSI connector of the system, remove the SCSI terminator from the SCSI Out connector, located on the rear panel of the system.**

9. **Connect one end of the 79 inch (2 meter) SCSI cable to one of the two SCSI connectors on the back panel of the Desktop Storage Module. Both ends of the cable are identical.**
This icon identifies the SCSI connector.

10. **If you are connecting the Desktop Storage Module to the internal SCSI bus of the system, go to step a. If you are connecting the Desktop Storage Module to the SBE/S SBus card, go to step b.**

    a. **Connect the other end of the SCSI cable to the SCSI connector labeled SCSI to EXTERNAL.**
    Go to step 11.
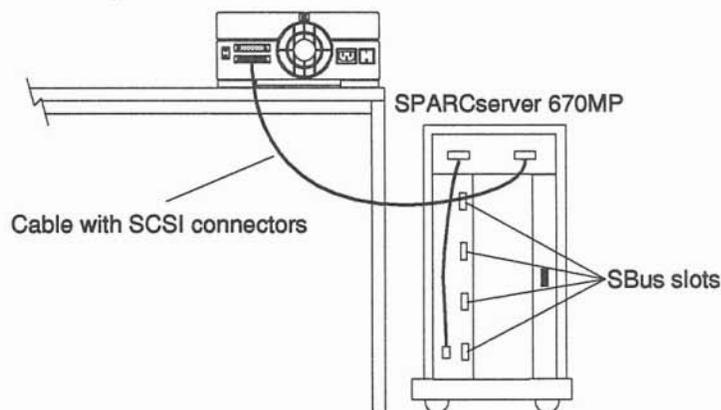
    SPARCserver 670MP

    Cable with SCSI connectors

    SBus slots

    b. **Insert the SBE/S SBus card into the system, referring to the installation instructions that came with the card. Connect the other end of the SCSI cable to the SCSI connector of the SBE/S SBus card.**

11. **Connect the power cord to the outlet on the Desktop Storage Module and to the wall outlet.**
    If you are connecting more than one Desktop Storage Module, go to the next step.

    If you are connecting one Desktop Storage Module, go to Step 16.

12. **Connect a 32 inch (.8 meter) SCSI cable supplied with the Desktop Storage Module to the SCSI connector of the next Desktop Storage Module.**

13. **Place the Desktop Storage Module on the work surface.**
You can position the Desktop Storage Module on top of a desktop SPARCstation or Desktop Storage Pack. *It must be the top unit.*

⚠ **Caution –** *Do not stack* Desktop Storage Modules. Stacking Desktop Storage Modules can cause electrical magnetic interference problems. You can stack a Desktop Storage Module on top of a computer system.

14. **Connect the other end of the SCSI cable to the unused SCSI connector of the previous Desktop Storage Module.**

15. **Connect the power cord to the outlet on the Desktop Storage Module and to the wall outlet.**

16. **Connect the terminator to the unused SCSI connector of the Desktop Storage Module.**
A terminator resembles a SCSI cable plug without a cable.
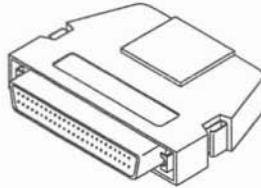
17. **Turn the power on (I position) to each Desktop Storage Module.**

    a. **Turn the power on first to the unit farthest from the system on the SCSI bus (the device with the SCSI terminator attached.)**

    b. **Turn the power on last to the unit nearest the system.**
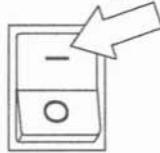
18. **Turn the power to the monitor on (I position).**

19. **Turn the power to the system on (I position).**

⚠

Caution – Always allow 10 seconds between turning off the power and turning it back on again. This pause prevents possible damage to power supply components in the system.

20. **If you connected a tape unit, refer to Chapter 4 for instructions about using the tape drive. Refer to the peripheral handbook shipped with your Desktop Storage Module for software instructions (such as mounting the tape drive.)**

21. **If you connected a disk unit, refer to the peripheral handbook shipped with your Desktop Storage Module for software instructions (such as mounting the disk drive.)**

Connecting Desktop Storage Modules to the SPARCserver 690

Only the tape unit is supported on the SPARCserver 690. Connecting the Desktop Storage Module tape unit to the SPARCserver 690, requires the following:

- 156 inch (4 meter) SCSI cable
  The 4 meter SCSI is not supplied with the Desktop Storage Module. Order the cable (part number 530-1852) from the accessory section of the *Price List*.

- SBE/S SBus card installed into one of the SBus slots.
  This card provides Ethernet and SCSI connectors. Refer to the installation instructions that came with the SBE/S SBus card. Also refer to "Additional SCSI Buses" in Appendix B for more information.

Note – *Do not* connect the Desktop Storage Module directly to the SCSI OUT connector of the system because you will exceed the 6 meter (20 feet) maximum SCSI bus length.

To connect the Desktop Storage Module to SPARCserver 690:

1. **Make sure you have a 158 inch (4 meter) SCSI cable.**
   Order the cable (part number 530-1852) from the accessory section of the *Price List*.

2. **Make sure that you will not exceed the maximum SCSI bus length of 20 feet (6 meters) for each SCSI bus.**
   Refer to "SCSI Bus Length" in Appendix B.

3. **Make sure you know the SCSI addresses of all SCSI devices in the system and attached to the system. From the SCSI addresses now set, determine the available SCSI addresses.**
   Refer to "Determining the SCSI Addresses" earlier in this chapter.

4. **Make sure you have halted the system and turned off power to all attached units.**
   Refer to "Shutting Down the System and Turning Off Power" earlier in this chapter.

5. **Install an SBE/S SBus card into one of the SBus slots of the system.**
   Refer to the installation instructions that came with the card.

6. **Locate the SCSI address switch on the Desktop Storage Module.**
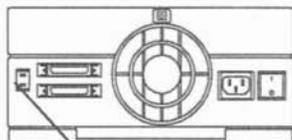
SCSI address switch

7. **Set the SCSI address switch on each Desktop Storage Module. Press the buttons on the top or bottom of the switch until the selected address number appears in the window.**
   Assign each device on the SCSI bus a unique SCSI address. Do not assign two SCSI devices the same SCSI address on the same SCSI bus.

Press this side to increase address

Press this side to decrease address
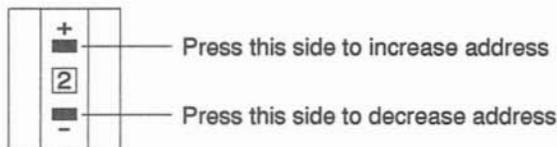
8. **Connect one end of the SCSI cable to one of the two SCSI connectors on the back panel of the Desktop Storage Module. Both ends of the cable are identical.**
   This icon identifies the SCSI connector.

9. **Connect the other end of the SCSI cable to the SCSI connector of the SBE/S SBus card.**

Route the cable from the system board down along the left mounting rail on the SPARCserver 690. Use tie wraps to secure the cable to the left mounting rail.

SPARCserver 690MP
(rear panel removed)

SBus slots

Cable with SCSI connectors
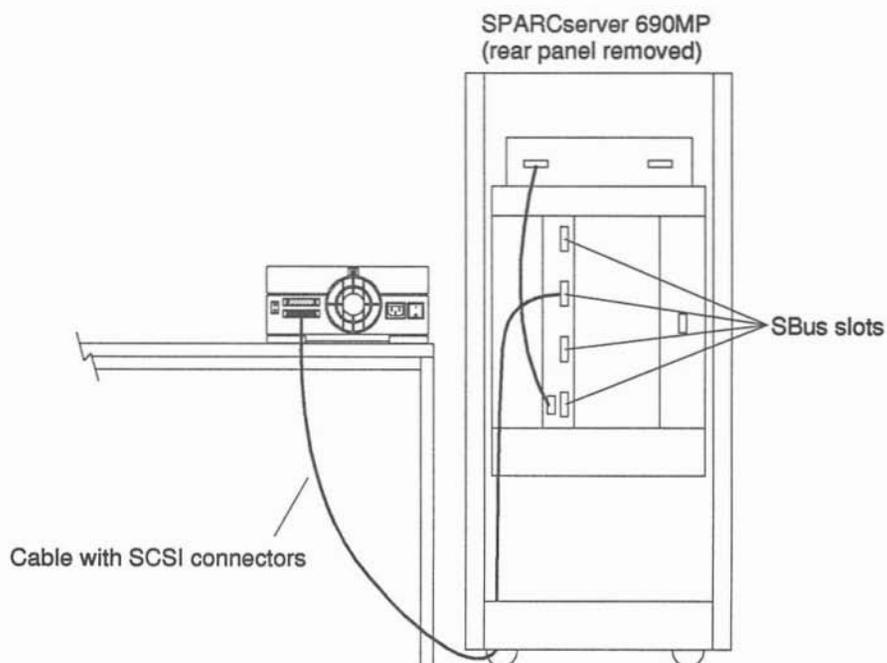
10. **Connect the power cord to the outlet on the Desktop Storage Module and to the wall outlet.**

If you are connecting more than one Desktop Storage Module, go to the next step.

If you are connecting one Desktop Storage Module, go to step 15.

11. **Connect a 32 inch (.8 meter) SCSI cable supplied with the Desktop Storage Module to the SCSI connector of the next Desktop Storage Module.**

Make sure you do not exceed the maximum SCSI bus length of 20 feet (6 meters). The Desktop Storage Module internal circuitry is .3 meters, the first SCSI cable is 4 meters, and each additional SCSI cable is .8 meters.

12. **Place the Desktop Storage Module on the work surface.**
You can position the Desktop Storage Module as the top unit on a desktop SPARCstation or Desktop Storage Pack. *It must be the top unit.*

Caution – *Do not stack* Desktop Storage Modules. Stacking Desktop Storage Modules can cause electrical magnetic interference problems. You can stack a Desktop Storage Module on top of a computer system.

13. **Connect the other end of the SCSI cable to the unused SCSI connector of the previous Desktop Storage Module.**

14. **Connect the power cord to the outlet on the Desktop Storage Module and to the wall outlet.**

15. **Connect the terminator to the unused SCSI connector of the Desktop Storage Module.**
A terminator resembles a SCSI cable plug without a cable.
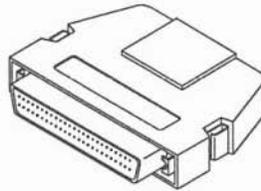
16. **Turn the power on (I position) to each Desktop Storage Module**

    a. **Turn the power on first to the unit farthest from the system on the SCSI bus (the device with the SCSI terminator attached).**

    b. **Turn the power on last to the unit nearest the system.**
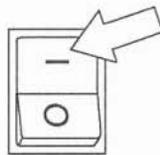
17. **Turn the power to the monitor on (I position).**

18. **Turn the power to the system on (I position).**

> ⚠ **Caution –** Always allow 10 seconds between turning off the power and turning it back on again. This pause prevents possible damage to power supply components in the system.

19. If you connected a tape unit, refer to Chapter 4 "Using the 8 mm Tape Drive." Refer to the peripheral handbook shipped with your Desktop Storage Module for software instructions.

20. If you connected a disk unit, refer to the peripheral handbook shipped with your Desktop Storage Module for software instructions (such as mounting the disk drive or creating files systems).

≡ 3

Using the 8 mm Tape Drive 4≣

This chapter describes how to operate the 8 mm tape drive. It includes the following topics:

- How to operate the tape drive
- How to use the tape drive
- How to maintain the tape drive

Operating the Tape Drive

Operate the tape drive in an environment with a relative humidity between 20% - 80%.

Controls and Indicators

The front panel of the drive has the following features:

- Unload button
- Amber light
- Green light

Figure 4-1 illustrates the unload button and lights.

Unload button   Green light   Amber light
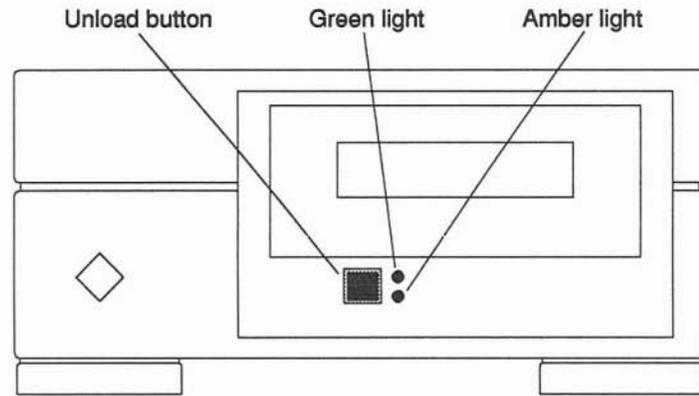
Figure 4-1   5.0 Gbyte Tape Drive Unload Button and Lights

Use the Unload button to open the door and eject the tape. Refer to
"Removing Tapes from the Tape Drive" and "Inserting Tapes Into the Tape
Drive" in this chapter for instructions.

When you turn on the tape drive, the drive performs self-test diagnostics.
Table 4-1 explains the status of the tape drive in diagnostic and operating
modes.

Note – When you push the unload button, the tape automatically rewinds (this
could take up to two minutes). An amber light flashes, letting you know that
the rewind is in progress.

Table 4-1 Status During Self-Test Diagnostics and Operating Mode for the 5.0 Gbyte
Tape Drive

Mode	LED Indicator		Status
	Amber	Green	
Diagnostic			
	On	On	Power-up diagnostics in progress
	Off	Off	Self-test completed, drive passed
	Fast flash*	Off	Self-test completed, drive failed
	Slow flash†	On or Off	Cyclic redundancy check failed
	On	Off	Unrecoverable fault has occurred
Operation			
Normal Operation			
	On or Off	On	Tape loaded, drive ready
	Random flash	On or Off	SCSI interface activity in progress
	On or Off	Slow flash†	Normal tape motion
	On or Off	Fast flash*	High-speed search/rewind
Unload Operation			
	Fast flash*	Off	Unload in progress
	On	Off	Unload operation failed

* A fast flash is approximately four flashes per second.
† A slow flash is approximately one per second.

Tape Information

The tape drive uses 8 mm tapes to store information. (Sun recommends using digitally certified 8 mm data cartridges.)
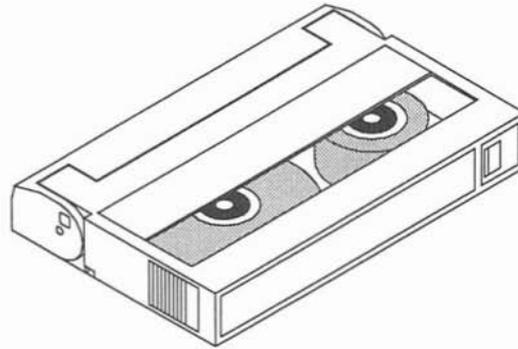
Figure 4-2   Sample of an 8 mm Tape

The tape drive can use the same 8 mm data cartridge. Various lengths of cartridges are available from 15m to 112m. The table below lists the maximum data capacity for each tape length on both models of drive.

Table 4-2   5.0 Gbyte Tape Drive Data Capacities

Tape Length	Drive Capacity
15m	512 Mbyte
112m	5.0 Gbyte

Conditioning the Tape

You do not have to format the tape. However, you should condition the tape before using it by leaving the tape in the same environment as the drive for at least 24 hours before using it.

Inserting Tapes Into the Tape Drive

Follow these steps to insert and load a tape:

1. **Locate the write-protect tab on the lid of the tape cassette to verify that the tape is set correctly.**

   a. **If you want to write to the tape, use your fingernail to slide the tab to the REC position.**
      In the REC position the tab is not visible and you can write to the tape.

   b. **If you do not want to write to the tape, use your fingernail to slide the tab to the SAVE position.**
      In the SAVE position (tab visible), you cannot write to the tape.
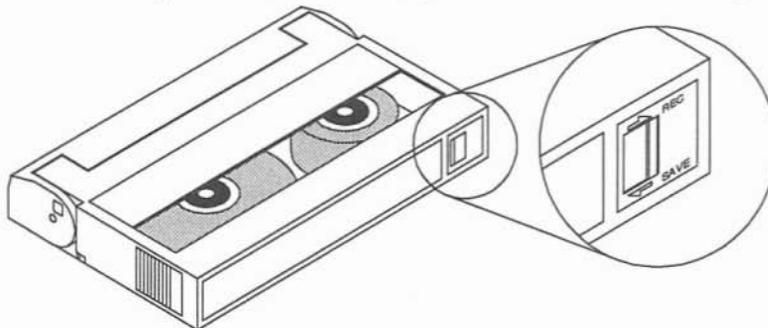
2. Press the Unload button to open the tape access door.
Continue reading if a tape is in the drive when you pressed the Unload button.

- With the 5.0 Gbyte tape drive, if a tape cartridge is in the drive when you press the Unload button, the Amber light blinks randomly several times then the tape ejects. The drive does not rewind the tape.
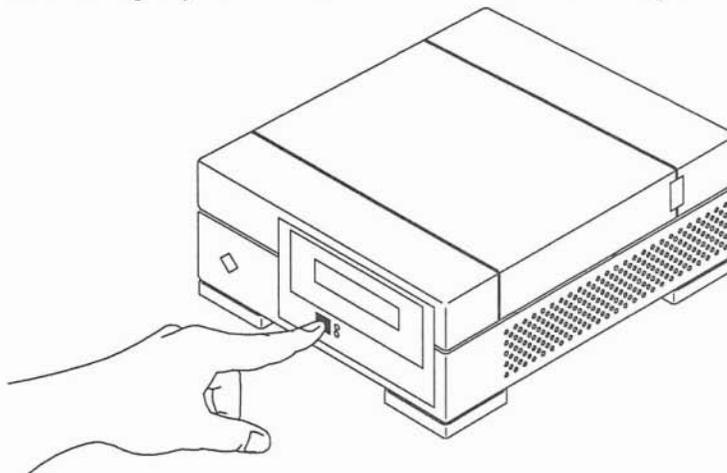
3. **Insert the tape cartridge label side up with its lid facing the drive.**
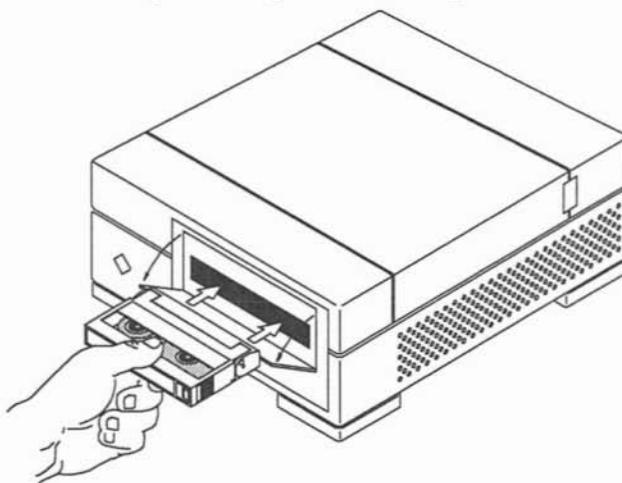
4. **Gently close the tape access door.**
   With the 5.0 Gbyte tape drive, the tape rewinds (if needed) and loads
   automatically.

Note – It will take 10 to 60 seconds after inserting tape (depending on the drive
model) before you can use the tape drive. The green light goes on when the
drive is ready.

Removing Tape Cartridges From the Tape Drive

To remove a tape cartridge from the tape drive:

1. Press the Unload button.

* With the 5.0 GByte tape drive, when you press the Unload button, the Amber light blinks randomly several times then the tape ejects. The drive does not rewind the tape.
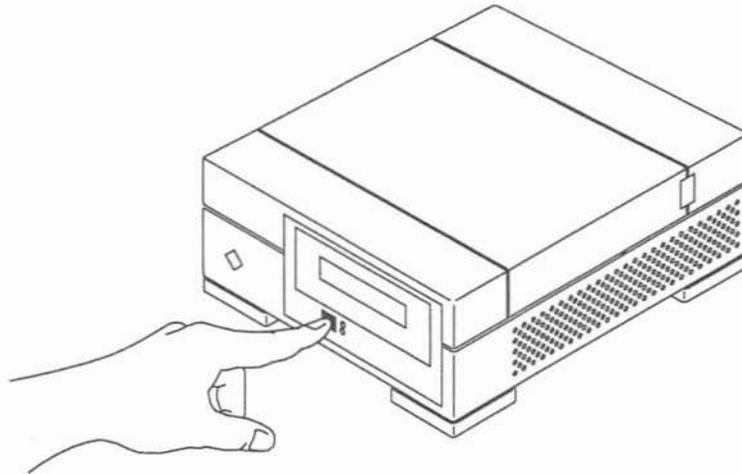
The tape drive unloads and ejects the tape *unless* one of the following conditions exists:

The drive is not powered up.
The drive is active.
The drive cannot eject the tape because you typed a command which prevents ejecting the tape. In this case, the tape unloads but is not ejected.

Recovering After Tape Cartridge Ejection

If the drive ejects a tape cartridge and you did not press the Unload button, follow this recovery procedure:

1. After the tape cartridge is ejected, press the Unload button.
This action resets the drive. The amber light will go out.

2. **Clean the drive with a cleaning cartridge kit designed for this drive.**
   Refer to "Maintaining the Tape Drive" in this chapter for information on the cartridge cleaning kit.

3. **Load a tape cartridge that you know is undamaged.**
   If it loads successfully, press the Unload button to eject the tape.

   If it fails, the drive is defective.

4. **Load the tape cartridge that was ejected in step 1 again.**
   If it loads successfully, retry the original command sequence.

   If it fails to load and is ejected by the drive, the tape cartridge is probably defective.

Emergency Tape Ejection Procedure

If you press the Unload button and the tape drive does not eject the tape cartridge, do the following:

1. **Power cycle the drive.**

   a. **Turn the power to the Desktop Storage Module off (O position).**
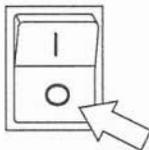
   b. **Wait 10 seconds.**

   c. **Turn the power to the Desktop Storage Module on (I position).**
   Wait for the drive to power up completely. This will take about 30 seconds.
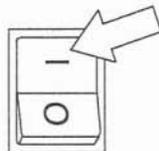
2. Press the Unload button.

- With the 5.0 Gbyte tape drive, when you press the Unload button, the Amber light blinks randomly several times, then the tape ejects. The drive does not rewind the tape.
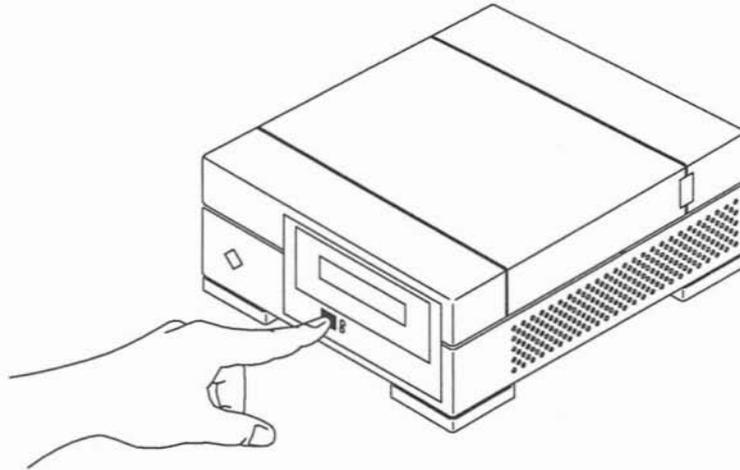
Handling Tapes

When handling and storing 8 mm tapes, follow these guidelines:

* Store tapes in their plastic containers away from anything magnetic in a clean, dust-free environment.

* Keep tapes out of direct sunlight and extreme sources of heat or cold.

* Make sure the tape cartridge is at room temperature before using it.

Maintaining and Troubleshooting the Tape Drive

You should clean the drive after 30 hours of tape motion operation. Follow the instructions found on the cleaning cartridge kit designed for the tape drive (part number 370-1318).

Caution – Do not use cleaning cartridges or fluids designed for use in 8 mm video devices. Using these cartridges or fluids can damage this tape drive.

If a problem occurs with the tape drive, refer to Table D-1 in Appendix D for a list of problems and corrective actions.

≡ 4

Accessing SCSI Devices 5 ≣

This chapter provides SCSI device information for internal and external SCSI devices of desktop systems.

SPARCstation IPC

The SPARCstation IPC ships with the 1.x OpenBoot™ PROM. If you upgraded your SPARCstation IPC to the OpenBoot PROM 2.0 or greater, the boot command will be different. Refer to Tables 5-1 and 5-2 for boot command information.

Note – The SCSI device names in the tables are valid only for SunOS 4.x. For valid device names in Solaris 2.x, see the *Solaris 2.x Handbook for SMCC Peripherals* that came with this unit. Specifically, see the section "Selecting Addresses," Table 5-2.

Table 5-1 Boot Commands and SCSI Addresses for Internal and External SCSI Devices,
SPARCstation IPC, and Other Systems Supporting the 1.x OpenBoot PROM

Boot Command		SCSI	SCSI	
ok prompt	> prompt	Address	Device Name *	
ok boot sd(0,0,0)	>b sd(0,0,0)	3	sd0	Default hard disk (first internal disk drive)
ok boot sd(0,1,0)	>b sd(0,1,0)	1	sd1	External hard disk (or second internal hard disk on systems containing more than one hard disk)
ok boot sd(0,2,0)	>b sd(0,2,0)	2	sd2	External hard disk
ok boot sd(0,3,0)	>b sd(0,3,0)	0	sd3	External hard disk
ok boot st(0,0,0)	>b st(0,0,0)	4	st0	First tape drive
ok boot st(0,1,0)	>b st(0,1,0)	5	st1	Second tape drive
ok boot sd(0,6,2)	>b sd(0,6,2)	6	sr0	Boot munix from CD-ROM

* SCSI device names for SunOS 4.x only

SPARCstation 2, IPX, and ELC

A new feature of the 2.x boot PROM is the alias definition, or simply alias,
which is a shorthand definition of the device path. For example, the alias *disk*
may represent the device path for the SunOS 4.x device name sd@3,0:

```
/sbus/esp@0,800000/sd@3,0
```

An alias represents an entire device path. Each implementation has a number
of predefined aliases for devices commonly installed on the system. You can
create, modify, and examine aliases with the devalias command. However,
after resetting or power cycling the system, you will lose aliases you
previously defined. To prevent losing aliases, store the devalias command in
nvramrc.

The devalias and nvramrc commands are OpenBoot PROM commands
which you enter at the ok prompt. For more information on the OpenBoot
PROM 2.0, the devalias command, and nvramrc, refer to the manual
OpenBoot PROM 2.0 Command Reference which is part of the SBus Developer's
Kit 2.0.

Table 5-2 describes the boot commands and aliases, alias definition (boot path),
SCSI address, and the SCSI device names for SunOS 4.x.

Note – The SCSI device names in the tables are valid only for SunOS 4.x. For
valid device names in Solaris 2.x, see the *Solaris 2.x Handbook for SMCC
Peripherals* that came with this unit. Specifically, see the section "Selecting
Addresses," Table 5-2.

Table 5-2   Boot Commands and Aliases for Internal and External SCSI Devices,
SPARCstation 2, IPX, ELC and Other Systems Supporting the
2.x Boot PROM

Boot Command and Alias ok prompt	> prompt	Alias Definition (boot path for SunOS 4.x)	SCSI Address	SCSI Device Name *	
ok **boot disk**	> **b disk**	/sbus/esp@0,800000/sd@3,0	3	sd0	Default hard disk drive (first internal disk drive) or external hard disk drive (in diskless systems)
ok **boot disk0**	>**b disk0**	/sbus/esp@0,800000/sd@3,0	3	sd0	First internal hard disk drive (same as default) or external hard disk drive (in diskless systems)
ok **boot disk1**	>**b disk1**	/sbus/esp@0,800000/sd@1,0	1	sd1	Second internal hard disk (or external disk drive if only one internal disk drive)
ok **boot disk2**	>**b disk2**	/sbus/esp@0,800000/sd@2,0	2	sd2	External hard disk
ok **boot disk3**	>**b disk3**	/sbus/esp@0,800000/sd@0,0	0	sd3	External hard disk
ok **boot tape**	>**b tape**	/sbus/esp@0,800000/st@4,0	4	st0	First tape drive

Table 5-2   Boot Commands and Aliases for Internal and External SCSI Devices, SPARCstation 2, IPX, ELC and Other Systems Supporting the 2.x Boot PROM (Continued)

Boot Command and Alias ok prompt	> prompt	Alias Definition (boot path for SunOS 4.x)	SCSI Address	SCSI Device Name *	
ok **boot tape1**	>b **tape1**	/sbus/esp@0,800000/st@5,0	5	st1	Second tape drive
ok **boot cdrom**	>b **cdrom**	/sbus/esp@0,800000/sd@6,0:c	6	sr0	Boot from CD-ROM
ok **boot cdroma**	>b **cdroma**	/sbus/esp@0,800000/sd@6,0:a	6	sr0	sr0Boot from CD-ROM (partition a)

Note that the SPARCstation ELC does not have any internal SCSI devices. Therefore, all SCSI device numbers and addresses are available for external SCSI devices.

* SCSI device names for SunOS 4.x only

Hardware Specifications A≣

Tables A-1, A-2, and A-3 describe the physical specifications, input power requirements, and environmental requirements of the Desktop Storage Module.

≡ A

Physical Specifications

Table A-1 Physical Specification of the Desktop Storage Module

Physical Specification	Dimension
Height	4.57 inches (116.00 mm)
Width	9.61 inches (244.00 mm)
Depth	10.39 inches (264.00 mm)
Weight	12 pounds (5.45 kg)

Input Power Requirements

Table A-2 Input Power Requirements for the Desktop Storage Module

Operating Voltage Range	Maximum Input Current	Maximum Input Power	Maximum Input Volt-Amps	Thermal Disipation	Operating Frequency Range
AC 100-240	1.7 Amps	90 Watts	130	90 Watts	47-63 Hz

Environmental Requirements

Table A-3 Environmental Requirements of the Desktop Storage Module

	Temperature	Humidity	Altitude
Operating Environment	10 - 45° C (50 - 113° F)	20 - 80% relative noncondensing at 40 C (104 F)	-305 to 2,000 m (-1000 to 6,560 ft)
Non-Operating Environment	10 - 45° C (50 - 113° F)	20 - 80% relative noncondensing at 40 C (104 F)	-305 to 3000 m (-1000 to 10,000 ft)
Storage Environment	-10 - 50° C (14 - 122° F)	5 - 95% relative noncondensing at 40 C (104 F)	-305 to 3000 m (-1000 to 10,000 ft)

Small Computer Systems Interface Information

$B\equiv$

This chapter explains the following information about the Small Computer Systems Interface (SCSI). Some topics covered in this chapter include the following:

- SCSI connectors
- Types of connection (direct connection and daisy chaining)
- SCSI bus length
- SCSI bus termination information

SCSI Connectors

There are two Micro-miniature SCSI connectors on the back panel of the Desktop Storage Module. The SCSI connectors have 50 pins divided into two rows. You can connect the Desktop Storage Module to your system in two ways — *direct connection* or *daisy-chaining*.

Note – If Fast SCSI devices and old-style connector devices must be used in the same system, the old-style connector devices should be connected to a separate SCSI port that contains no Fast SCSI devices. The mixing of Fast SCSI devices and old-style connector devices in the same daisy chain is not recommended. Old style connectors can be identified by a 3-row 50-pin D connector or a ribbon style connector.

Connection Types

You can connect the Desktop Storage Module to your system in two ways —
direct connection or *daisy-chaining*. Connecting the SCSI cable of the Desktop
Storage Module to the SCSI connector of your system is direct connection.
Connecting the SCSI cable of the Desktop Storage Module to the SCSI
connector of another SCSI device is daisy-chaining.

Direct Connection

Use direct connection when you are connecting the first SCSI device in the
SCSI bus to the computer system: connect one end of the SCSI cable to one of
the SCSI connectors on the peripheral device and the other end of the SCSI
cable to the SCSI connector of the computer system. You connect an active
SCSI terminator to the other SCSI connector on the peripheral device as
illustrated in Figure B-1.

Terminator   Cable with micro-miniature
                      SCSI connectors
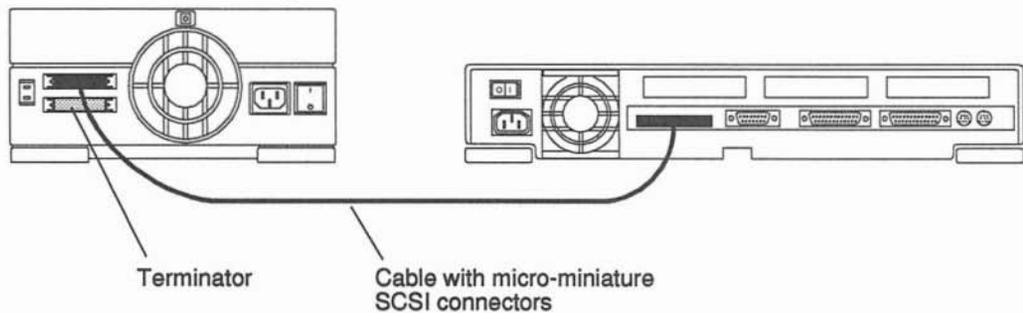
Figure B-1   A Desktop Storage Module Directly Connected With an Active SCSI
Terminator Attached

If you installed an SBus - SCSI Host Adapter Card (SBus card with an
additional SCSI connector in the computer system,) you can connect the
Desktop Storage Module to the SCSI connector of the SCSI Host Adapter Card.

Daisy-Chaining

SCSI devices can be daisy-chained. A daisy-chain is a means of connecting a
number of devices to a system. A SCSI cable connects the system to the nearest

of the devices, and then a separate SCSI cable connects the first device to the second device. Another cable connects the second to the third and so forth.

Daisy-chaining allows a single connector on the system to connect to more than one device. If you want more than one device on a bus, you will need to daisy-chain.

⚠️ **Caution –** Devices with the 3-row 50-pin D connector or the 50-pin ribbon connector (old-style connectors) should not be used on the same bus (daisy-chained) with Fast SCSI devices.

If you connect SCSI devices to your system in this manner, connect the terminator supplied with the Desktop Storage Module to the unused SCSI connector on the last device in the daisy-chain. The total cable length should not exceed 6 meters.

Terminating SCSI Devices

You must attach a SCSI terminator (supplied with the Desktop Storage Module) to the SCSI connector at the end of the SCSI bus. Figure B-2 illustrates the SCSI terminator shipped with the Desktop Storage Module. The terminator holds the bus at a predetermined signal level when the bus is not active and maintains impedance matching. All SCSI daisy-chains must be terminated at the last units attached to the SCSI bus. A terminator is built in to all SBus SCSI cards and to all host systems.
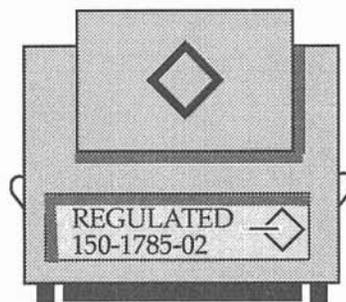
Figure B-2   SCSI Terminator

≡ B

Follow these SCSI termination rules:

- The SCSI devices at the end of a daisy chain *must* be electrically terminated.

- Only the last device in a SCSI daisy chain is terminated.

- The regulated terminator supplied with this unit *should* be used. If any fast SCSI devices are in the external daisy chain or are internal to the computer, the regulated terminator *must* be used.

SCSI Bus Length

A *bus* is a signal route to which several parts of a computer system may be connected so that signals can pass between them. The total length of a SCSI bus includes:

- The length of the external SCSI cable *plus*
- The length of the internal SCSI buses for the device and the system

The maximum SCSI bus length is 20 feet (6 meters). Reliable operation is guaranteed only up to the maximum SCSI bus length of 6 meters.

Table B-1 lists the SCSI cable lengths and the internal SCSI buses for the Desktop Storage Module and your system. When connecting the Desktop Storage Module to your system, find the total SCSI bus length for your configuration. To do this, add the cable and internal bus lengths for the system and each device. This total length must be less than 20 feet (6 meters).

Table B-1   Table of SCSI Bus Lengths, Desktop Storage Module and Computer Systems

Devices and Cables	SCSI Bus Length Meters	Inches
Devices, Internal Cables:		
Desktop Storage Module	0.3	11.8
Desktop Storage Pack	Internal circuitry not significant	
SPARCstation 2, IPC, IPX	0.5	19.7
SPARCstation 1 and 1+	0.6	23.6
SPARCstation 10	0.8	31.0
SPARCstation SLC and ELC	0.2	7.9
SPARCserver 630*	2.8	110.2
SPARCserver 670**	2.5	98.4
External SCSI Cables: Standard 0.8 meter Desktop Storage Module Cable (to connect to a desktop system or to daisy-chain a second DSM to the first on a 630, 670 or 690)	0.8	31.5

Table B-1   Table of SCSI Bus Lengths, Desktop Storage Module and Computer Systems

Devices and Cables	SCSI Bus Length Meters	Inches
2 meter Desktop Storage Module Cable✳ (to connect the first DSM to a 630 or 670)	2.0	78.8
4 meter Desktop Storage Module Cable (to connect the first DSM to a 690)	4.0	157.6
0.8 meter Desktop Storage Pack Cable	0.8	31.5
SBE/S or FSBE/S Host Adapter Card	0	0
SBus Host Adapter Card	0	0

**   The 2.5 meter SCSI bus length is a total of the internal SCSI length (1.7 m) and the CPU to SCSI-IN external cable (0.8 m).

*   The 2.8 meter SCSI bus length for the SPARCserver 630MP is a total of the internal SCSI length (2.0 m) and the CPU to SCSI-IN external cable (0.8 m).

✳   The 2 meter cable is not supplied with the Desktop Storage Module. It is available from Sun (part number 530-1836).

Examples for Computing the SCSI Bus Length, Internal SCSI Bus

If you have a SPARCstation 2 and two Desktop Storage Modules, add the following cable lengths:

- 0.5 meters (for the internal circuitry of the SPARCstation 2)
- 1.6 meters (for two Desktop Storage Module cables, 0.80 m x 2)
- 0.6 meters (for the internal circuitry of two Desktop Storage Modules (0.3 m x 2)

This totals 2.7 meters of cable, less than the 6 meter maximum for each SCSI bus.

If you have a SPARCstation 10 and two Desktop Storage Modules, add the following cable lengths:

- 0.8 meters (for the internal circuitry of the SPARCstation 2)
- 1.6 meters (for two Desktop Storage Module cables, 0.80 m x 2)

- 0.6 meters (for the internal circuitry of two Desktop Storage Modules (0.3 m x 2)

This totals 2.99 meters of cable, less than the 6 meter maximum for each SCSI bus.

If you have a SPARCstation IPC or IPX, one Desktop Storage Module, and one Desktop Storage Pack, add the following cable lengths:

- 0.5 meters (for the SPARCstation IPC or IPX)
- 0.8 meters (for the Desktop Storage Pack cable)
- 0 meters (internal circuitry of the Desktop Storage Pack)
- 0.8 meters (Desktop Storage Module cable)
- 0.3 meters (internal circuitry of the Desktop Storage Module)

This totals 2.4 meters of cable, less than the 6 meter maximum for each SCSI bus.

If you have a SPARCserver 670MP and two Desktop Storage Modules connected to the internal SCSI bus (SCSI bus 0), add the following cable lengths:

- 2.5 meters (for the SPARCserver 670MP)
- 0.8 meters (for the additional Desktop Storage Module cable)
- 0.6 meters (internal circuitry of two Desktop Storage Modules (0.3 m x 2)

This totals 3.9 meters of cable, less than the 6 meter maximum for each SCSI bus.

Additional SCSI Buses

If the SCSI bus length exceeds 6 meters, install some devices on additional SCSI buses by installing an SBus SCSI Host Adapter card with desktop systems or an SBE/S or FSBE/S SBus card with deskside or rack systems. The SBus SCSI Host Adapter card provides an additional SCSI connector (SCSI bus) for your system. The SBE/S or FSBE/S SBus card provides an additional SCSI connector and an Ethernet connector.

When you insert an SBus SCSI Host Adapter card into your system, there is no internal cable. For example, if you have a SPARCstation IPC and are connecting two Desktop Storage Modules and two Desktop Storage Packs to the SBus SCSI Host Adapter card of the system, you need to add the following cable lengths:

* 3.2 meters (4 SCSI cables, 0.8 meters x 4 cables)
* 0.6 meters (2 Desktop Storage Modules, 0.3 meters x 2 units)
* 0 meters (2 Desktop Storage Packs, 0 meters x 2 units)

This totals 3.8 meters of cable length, less than the 6 meter maximum for each SCSI bus. Note that you do not include the length of the internal cable of the SPARCstation IPC (0.5 meters).

Additional SCSI buses, SCSI bus 1, 2, 3, and 4 are named based on the order they are found by the Open Boot PROM when probing SBus slots. SBus slots are probed in this order: on-board, slot 0, slot 1, slot 2, slot 3. For example, if the first SBE/S or FSBE/S SBus card is in slot 2, when the system probes the SBus slots, it begins probing the on-board SCSI bus, then SBus slot 1, then SBus slot 2, and so on. Because slot 2 contains the first SBE/S or FSBE/S SBus card, this is SCSI bus 1. As Table B-2 illustrates, SCSI bus 1 supports disk, tape, and CD-ROM.

Table B-2   Devices Supported With Additional SCSI Buses

SCSI Bus Number	Device
SCSI bus 1, first SBE/S or FSBE/S SBus card	Disk
	Tape
	CD-ROM
SCSI bus 2, second SBE/S or FSBE/S SBus card	Disk
SCSI bus 3, third SBE/S or FSBE/S SBus card	Disk
	Tape
	CD-ROM
SCSI bus 4, fourth SBE/S or FSBE/S SBus card	Disk

To attach a tape drive or CD-ROM to SCSI bus 2 or 4, you must reconfigure the operating system kernel. Refer to manuals *Solaris 1.x (SunOS 4.x) Handbook for SMCC Peripherals*, (for SunOS 4.x operating systems), *Sun System & Network Manager's Guide* (Desktop systems), *Installing SunOS 4.1.2 System Software* or to the *SunOS 4.1.2 Release Manual*. SunOS 4.1.2 is also known as Solaris 1.0.1.

≡ B

Connecting Desktop Storage Modules to Other Devices

C≡

This chapter describes how to connect one or more Desktop Storage Modules to a Desktop Storage Pack (Desktop Disk Pack, Desktop Backup Pack, or a Desktop SunCD Pack). Figure C-1 illustrates a Desktop Storage Pack.
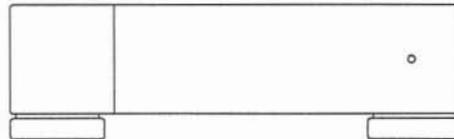
Figure C-1   Desktop Storage Pack

Determining SCSI Addresses

You must know how many disk drives, tape drives, CD-ROM drives, and other SCSI devices are connected to or installed in your computer system.

Note – The disk number, for example sd0, is the operating system disk driver name, *not* the SCSI address. The driver name and the SCSI address are different.

To determine the number of SCSI devices installed in or connected to your computer system and their SCSI addresses, follow these steps. If you need references to help with the commands listed, see the *Preface*, "When You Need Help with UNIX Commands."

≡ C

1. **Determine which version of the operating system you are running. For
   example, for either Solaris 1.x (SunOS 4.x) or Solaris 2.x (SunOS 5.x) enter:**
   ```
   uname -rs
   ```

   Before turning off the system power, you must halt the operating system:

2. **Go to the appropriate handbook for your operating system (the** *Handbook
   for SMCC Peripherals* **that came with the Desktop Storage Module).**

3. **See the section about shutting down the system, and return to this book
   after you perform the procedure.**

4. **Type** n **at the** > **prompt and press** Return.
   You should see the ok prompt.

5. **Type** probe-scsi **at the** ok **prompt and press** Return.

6. **Look for unused device addresses (targets) and write them down.**
   There are seven available SCSI device addresses (0 - 6) for each SCSI bus.
   Address 7 is reserved for the SCSI processor.

7. **Type** old-mode **and press** Return **to return to the** > **prompt.**

Shutting Down the System and Turning Off Power

1. **Follow steps 1 through 3 of the prervious procedure for determining SCSI addresses.**

2. **When you see the > prompt, turn the on/off switch to off (O position) on the system, the monitor, and all other attached devices in any order.**
   If the monitor uses a power cord connected directly to the system, leave its power switch on.
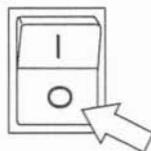
When the power is turned off, the green light on the front of the computer system is not lit and the fan in the power supply is not running. The power cord should be plugged into a wall outlet and into the computer system.

Go to "Tables You Will Need" later in this appendix.

If your system does not respond to the mouse or keyboard, end your work session and turn off the power as follows:

1. **If your system is on a network, wait a few minutes before turning off the power.**
   Your system's slow response might be due to NIS problems or network delays.

2. **Press the keyboard combination that halts your system, as described in your system User's Guide or Operating System Guide.**
   For example, the keyboard combination could be **L1-a, Stop-a** or **Break**. This will put the system into the PROM (Programmable Read Only Memory) monitor mode.

   The monitor mode command prompt is indicated on the screen with either a "greater than symbol" (>) or with the letters ok.

3. **When you see the > prompt, turn the on/off switch to off (O position) on the system, monitor (if the power cord is not directly connected to the system) and all other attached devices in any order.**

When the power is turned off, the green light on the front of the computer system is not lit and the fan in the power supply is not running. The power cord should be plugged into a wall outlet and into the computer system.
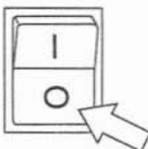
Tables You Will Need

Use the tables in this section to select the SCSI address of your Desktop Storage Module.

Table C-1 Desktop Storage Module SCSI Addresses

If you have:	Refer to this table for the SCSI address setting:
Desktop Storage Module disk unit connected to the internal SCSI bus (SCSI connector supplied with the system or units connected to this connector)	C-2
Desktop Storage Module tape unit connected to the internal SCSI bus (SCSI connector supplied with the system or units connected to this connector)	C-3
Disk or tape unit connected to the SCSI connector of an SBus card	C-4
External Expansion Module with SCSI addresses pre-set (no SCSI address switch on the back panel)	C-5

Table C-2 Disk Unit SCSI Address Settings for the Internal SCSI Bus (SCSI Connector Supplied on the Computer System)

If you have one of the following computer systems:	Set the SCSI address on the disk version to:
SPARCstation 2 (or other system with 2 disk drives)	0* or 2*
SPARCstation IPC or IPX (or other system with 1 disk drive)	0*, 1*, or 2*
SPARCstation ELC (or other diskless system)	0*, 1*, 2*, or 3*

*   Do not set two SCSI devices with the same SCSI address. Check the SCSI switch of other disk devices before setting the SCSI address of the Desktop Storage Module.

Table C-3 Tape Unit SCSI Address Settings for the Internal SCSI Bus (SCSI Connector Supplied on the Computer System)

If you have one of the following computer systems:	Set the SCSI address on the tape version to:
Any computer system	4 * or 5*

*   Do not set two SCSI devices with the same SCSI address. Check the SCSI switch of other tape devices before setting the SCSI address of the Desktop Storage Module.

Table C-4 SCSI Address Settings for Additional SCSI Host Adapters Added to the System

SCSI Bus Number	Device	Set the SCSI address to:
SCSI bus 1, first SBus SCSI Host Adapter card	Disk Tape	0, 1, 2, or 3 4 or 5
SCSI bus 2, second SBus SCSI Host Adapter card	Disk	0, 1, 2, or 3
SCSI bus 3, third SBus SCSI Host Adapter card	Disk	0, 1, 2, or 3

Note – SCSI bus 1 is the first additional SCSI connector added to the system.

Table C-5 SCSI Addresses of External Expansion Modules Pre-Set At the Factory (No SCSI Address Switch on Drive)

Unit	SCSI Address
External Expansion Module:	
First hard disk drive	1
Second hard disk drive	3
Tape drive	5

Connecting Desktop Storage Modules to Desktop Storage Packs

Use these instructions to connect a Desktop Storage Module to a Desktop Storage Pack.
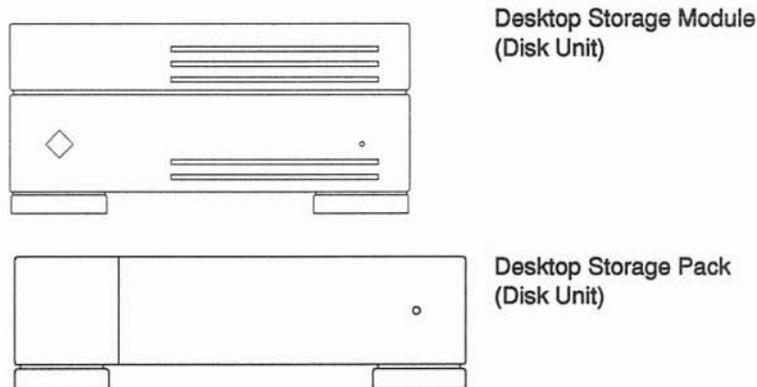
Desktop Storage Module
(Disk Unit)

Desktop Storage Pack
(Disk Unit)

Note – If Fast SCSI devices and old-style connector devices must be used in the same system, the old-style connector devices should be connected to a separate SCSI port that contains no Fast SCSI devices. The mixing of Fast SCSI devices and old-style connector devices in the same daisy chain is not recommended because data loss may result. Old style connectors can be identified by a 3-row 50-pin D connector or a ribbon style connector.

To connect a Desktop Storage Module to a Desktop Storage Pack (Desktop Disk Pack, Desktop Backup Pack, or Desktop SunCD Pack):

1. **Before connecting the Desktop Storage Module, make sure that you will not exceed the maximum SCSI bus length of 6 meters (19.7 feet) for each SCSI bus.**
   Refer to the section "SCSI Bus Length" in Appendix B for additional information.

2. **If you do not know the number of disk drives in your computer system and the SCSI addresses of all attached SCSI devices, invoke the** `probe-scsi` **command to determine the SCSI addresses.**
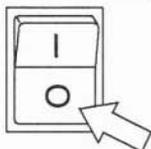   Refer to "Tables You Will Need" earlier in this appendix.

3. **Make sure you have halted the system and turned off power to all devices.**
   Refer to "Shutting Down the System and Turning Off Power" earlier in this appendix.

4. **Make sure that the power switch is turned off (O position) and that the power cord is unplugged from the Desktop Storage Module and from the wall outlet.**
   On a SPARCstation 2, the power switch is on the back of the system on the right. On SPARCstation IPCs, IPXs and ELCs, the power switch is on the back of the system on the left.

5. **Select the SCSI address for each Desktop Storage Module.**
   Each device on the SCSI bus must be assigned a specific and unique SCSI address. Do not assign two SCSI devices the same address. Refer to Tables C-1 through C-5 earlier in this appendix as well as the results of the optional `probe-scsi` command covered earlier in this appendix.

6. **Locate the SCSI address switch on the Desktop Storage Module.**

SCSI address switch

7. **Press the buttons on the top or bottom of the switch until the selected address number appears in the window for each Desktop Storage Module.** Each device on the SCSI bus must be assigned a specific and unique SCSI address. Do not assign two SCSI devices the same address.

Press this side to increase address

Press this side to decrease address
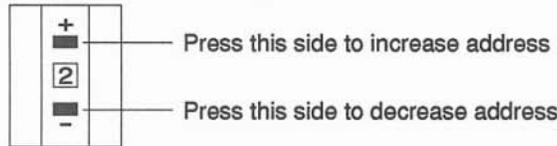
8. **Disconnect the SCSI cable connecting the Desktop Storage Pack from the computer system. Leave the SCSI cable attached to the SCSI connector of the Desktop Storage Pack.**

9. **Place the Desktop Storage Module next to the Desktop Storage Pack.**

Caution – *Do not stack* Desktop Storage Modules. Stacking Desktop Storage Modules can cause electrical magnetic interference problems. You can stack a Desktop Storage Module on top of a computer system but not on a Desktop Storage Pack.

• Make sure that objects do not block the vents on either side or the fan on the back.

Do not block
vents on sides.

Do not block fan
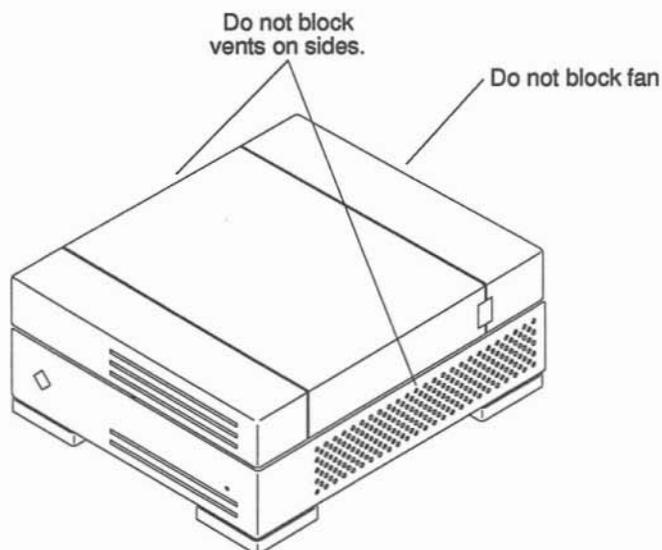
10. **Connect the SCSI cable supplied with the Desktop Storage Module to the bottom SCSI connector of the Desktop Storage Module and to the SCSI connector of the computer system.**
Both ends of the cable are identical.

The following icon identifies the SCSI connector.

11. **Connect the free end of the SCSI cable connected to the Desktop Storage Pack to the unused SCSI connector on the Desktop Storage Module.**

12. **Connect the power cord to the power input plug on the Desktop Storage Module and to the wall outlet.**
    If you are connecting more than one Desktop Storage Module, go to the next step. If you are connecting one Desktop Storage Module, go to step 16.

13. **Connect another SCSI cable to the SCSI connector of the next Desktop Storage Module.**

14. **Connect the other end of the SCSI cable to the unused SCSI connector of the previous Desktop Storage Module.**

15. **Connect the power cord to the power input plug on the Desktop Storage Module and to the wall outlet.**
    Repeat steps 13 through 15 to connect additional Desktop Storage Modules.

16. **Remove the terminator from the Desktop Storage Pack (unit on top). Connect the terminator supplied with the Desktop Storage Module to the unused SCSI connector of the last Desktop Storage Pack in the SCSI bus.**
    This is the SCSI connector from which you just removed the old terminator. A terminator resembles a SCSI cable plug without a cable.
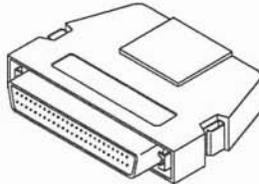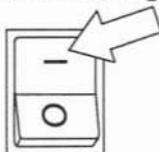

Note – You must use the terminator supplied with the Desktop Storage Module. Do not use the terminator supplied with the Desktop Storage Pack.

---

17. Turn the power switch on (I position) to all Desktop Storage Packs and Desktop Storage Modules.

   a. Turn the power on to the unit farthest from the system on the SCSI bus first (the device with the terminator attached.)

   b. Turn the power on to the unit nearest the system last.

18. Turn the power switch to the monitor on (I position) if you turned it off.

19. Turn the power switch to the system on (I position).

Caution – Always allow 10 seconds between turning off the power and turning it back on again. This pause prevents possible damage to power supply components in the system.

20. If you connected a disk unit, refer to the software documentation that came with your unit for information on creating file systems, and mounting disk drives. If you connected a tape unit, refer to Chapter 4, "Using the Tape Drive" for information on how to use the tape drive.

≡ C

Connecting Desktop Storage Modules and Desktop Storage Packs to Desktop Systems

Use these instructions to connect Desktop Storage Modules and Desktop Storage Packs to desktop systems.

Desktop Storage Module
(Disk Unit)

Desktop Storage Pack
(Disk Unit)
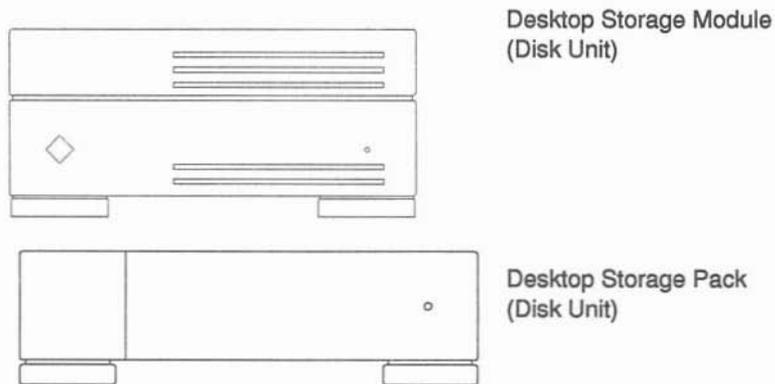
If your SPARCstation has four internal and external disk drives connected to one SCSI bus, you cannot connect a disk version of the Desktop Storage Module to the same SCSI bus. Refer to "SCSI Bus Length" in Appendix B for information on adding additional SCSI buses to your system.

To daisy-chain a Desktop Storage Module to Desktop Storage Packs do the following:

1. **Before connecting the Desktop Storage Module, make sure that you will not exceed the maximum SCSI bus length of 6 meters for each SCSI bus.** Refer to the section "SCSI Bus Length" in Appendix B for additional information. If you do not know the number of disk drives in your computer system and the SCSI addresses of all attached SCSI devices, invoke the `probe-scsi` command to determine the SCSI addresses. Refer to "Determining the SCSI Addresses" earlier in this appendix.

2. **Make sure you have halted the system and turned off power to all devices.**
   Refer to "Shutting Down the System" earlier in this appendix.

3. **Obtain a SCSI micro-miniature to Sub-D cable from Sun Microsystems.**
   This cable has a Micro-miniature SCSI connector at one end and a Sub-miniature D SCSI connector at the opposite end.

4. **Make sure that the power switch is turned off (O position) and that the power cord is unplugged from the Desktop Storage Module and from the wall outlet.**
   On a SPARCstation 2, the power switch is on the back of the system on the right. On SPARCstation IPCs, IPXs, and ELCs, the power switch is on the back of the system on the left.

5. **Select the SCSI address for each Desktop Storage Module.**
   Each device on the SCSI bus must be assigned a specific and unique SCSI address. Do not assign two SCSI devices the same address. Refer to Tables C-1 through C-5 earlier in this appendix as well as the results of the optional probe-scsi command covered earlier in this appendix.

6. **Locate the SCSI address switch on the Desktop Storage Module.**

SCSI Address Switch

7. **Press the buttons on the top or bottom of the switch until the selected address number appears in the window for each Desktop Storage Module.**
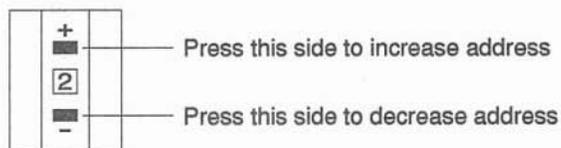   Each device on the SCSI bus must be assigned a specific and unique SCSI address. Do not assign two SCSI devices the same address.

Press this side to increase address

Press this side to decrease address

8. Disconnect the SCSI cable from the SCSI connector of the computer system. Leave the SCSI cable attached to the SCSI connector of the Desktop Storage Pack.

You can identify the SCSI connector by this icon.

9. Place the Desktop Storage Module next to the Desktop Storage Pack.

10. Connect one end of the SCSI cable supplied with the Desktop Storage Module to the bottom SCSI connector of the Desktop Storage Module. Connect the other end of the cable to the SCSI connector of the computer system.

Both ends of the cable are identical. The SCSI connector is identified by the icon illustrated in the step 8.

11. Connect the free end of the SCSI cable connected to the Desktop Storage Pack to the other SCSI connector of the Desktop Storage Module.

12. Connect the power cord to the power input plug on the Desktop Storage Module and to the wall outlet.

13. Connect the small connector of the SCSI micro-miniature to Sub-D cable to the SCSI connector of the last Desktop Storage Module in the SCSI bus.

14. Turn the power switch on (I position) to the Desktop Storage Module.

a. Turn the power on to the unit farthest from the system on the SCSI bus first.

b. Turn the power on to the unit nearest the system last.
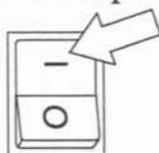
15. Turn the power switch to the monitor on (I position), if you turned it off.

16. Turn the power switch to the system on (I position).

Caution – Always allow 10 seconds between turning off the power and turning it back on again. This pause prevents possible damage to power supply components in the system.

17. If you connected a disk unit, refer to the software documentation that came with your unit for information on creating file systems, and mounting disk drives. If you connected a tape unit, refer to Chapter 4, "Using the Tape Drive" for information on how to use the tape drive.

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Troubleshooting D≣

This appendix lists problems which may occur and information on how to correct the problem. Refer to the *Desktop Storage Module Service Manual* for thorough troubleshooting information. If the drive still fails to function properly, call 1-800-USA-4SUN or your authorized Sun support organization.

Table D-1   Common Installation Problems and Corrective Actions

Problem	Corrective Action
The drive will not operate.	Check that the Desktop Storage Module is turned on and that the power cord is plugged into the Desktop Storage Module and the wall outlet.
	Check that the green light on the front of the Desktop Storage Module is on.
	Check that the SCSI cable is installed properly. Check for bent or pushed pins.
	Check that all connectors are securely fastened.
	Check that a cable is not crimped, pinched, crossed over sharp edges, or under excessive tension.
	Check that the SCSI address switch is set properly. Make sure that the SCSI address of the drive does not conflict with other internal and external SCSI devices on the same SCSI bus.

Table D-1 (Continued)Common Installation Problems and Corrective Actions

Problem	Corrective Action
The green light on the tape drive front panel does not light after inserting a tape into the tape drive.	Check that the Desktop Storage Module is turned on andthat the power cord is plugged into the Desktop Storage Module and into the wall outlet.
You receive an error message when you attempt to write to a tape:	Check that you inserted a tape cartridge.

`(media error)`
`(hardware error)`
`(unit attention`
	Clean the tape head. Try a new (or known good) tape.
	Retry. The drive is broken if it fails. Retry the operation.
	The bus may have been reset.

	Verify that the tape is not write-protected. Refer to the section "Inserting Tapes Into the Tape Drive" in Chapter 4.
A tape fails to load and is ejected by the drive.	Refer to the section "Recovering After Tape Ejection" in Chapter 4.

Conformité aux Normes de Sécurité   *E* ≡

Cette appendice traite des mesures de sécurité qu'il convient de suivre pour l'installation d'un produit Sun Microsystems, Inc.

Mesures de Sécurité

Pour votre protection, veuillez prendre les précautions suivantes pendant l'installation du matériel:

- Suivre tous les avertissements et toutes les instructions inscrites sur le matériel.

- Vérifier que la tension et la fréquence de la source d'alimentation électrique correspondent à la tension et à la fréquence indiquées sur l'étiquette de classification de l'appareil.

- Ne jamais introduire d'objet quel qu'il soit dans une des ouvertures de l'appareil. Vous pourriez vous trouver en présence d'éléments haute tension. Tout objet conducteur introduit de la sorte pourrait produire un court-circuit qui entraînerait des flammes, des risques d'électrocution ou des dégâts matériels.

≣ E

Symboles

Vous trouverez ci-dessous la signification des différents symboles utilisés:

⚠ **Attention** – Risques de blessures corporelles et de dégâts matériels. Veuillez suivre les instructions.

⚡ **Avertissement** – Présence de tensions dangereuses. Pour éviter les risques d'électrocution et de danger pour la santé physique, veuillez suivre les instructions.

| **Marche** – Le commutateur marche/arrêt principal est en position de *marche*.

○ **Arrêt** – Le commutateur marche/arrêt principal est en position *d'arrêt*.

Modification du Matériel

Ne pas apporter de modification mécanique ou électrique au matériel. Sun Microsystems, Inc., n'est pas responsable de la conformité réglementaire d'un produit Sun qui a été modifié.

Positionnement d'un Produit Sun

⚠ **Attention** – Pour assurer le bon fonctionnement de votre produit Sun et pour l'empêcher de surchauffer, il convient de ne pas obstruer ni recouvrir les ouvertures prévues dans l'appareil. Un produit Sun ne doit jamais être placé à proximité d'un radiateur ou d'un registre de chaleur.

Connexion du cordon d'alimentation

⚠ **Avertissement** – Les produits Sun sont conçus pour fonctionner avec des alimentations monophasées munies d'un conducteur neutre mis à la terre. Pour écarter les risques d'électrocution, ne pas brancher de produit Sun dans un autre type d'alimentation secteur. En cas de doute quant au type d'alimentation électrique du local, veuillez vous adresser au directeur de l'exploitation ou à un électricien qualifié.

⚠ **Avertissement** – Tous les cordons d'alimentation n'ont pas forcément la même puissance nominale en matière de courant. Les rallonges d'usage domestique n'offrent pas de protection contre les surcharges et ne sont pas prévues pour les systèmes d'ordinateurs. Ne pas utiliser de rallonge d'usage domestique avec votre produit Sun.

⚠ **Avertissement** – Votre produit Sun a été livré équipé d'un cordon d'alimentation à trois fils du type avec prise de terre. Pour écarter les risques d'électrocution, toujours brancher ce cordon dans une prise mise à la terre.

Couvercle

⚠ **Attention** – Il est dangereux de faire fonctionner un produit Sun sans le couvercle en place. Si l'on néglige cette précaution, on encourt des risques de blessures corporelles et de dégâts matériels.

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Sicherheitsbehördliche Vorschriften   F ☰

In diesem Anhang werden die Sicherheitsmaßnahmen beschrieben, die bei der Installation eines Produkts von Sun Microsystems, Inc., zu befolgen sind.

Sicherheitsmaßnahmen

Beachten Sie zu Ihrem eigenen Schutz die folgenden Sicherheitsmaßnahmen, wenn Sie Ihre Geräte aufbauen:

- Beachten Sie alle auf den Geräten angebrachten Warnungen und Anweisungen.

- Vergewissern Sie sich, daß Spannung und Frequenz Ihrer Stromquelle mit der Spannung und Frequenz übereinstimmen, die auf dem Etikett mit den elektrischen Nennwerten des Geräts angegeben sind.

- Stecken Sie niemals irgendwelche Gegenstände in Öffnungen in den Geräten. Es können gefährliche Spannungen vorliegen. Leitfähige fremde Gegenstände könnten einen Kurzschluß verursachen, der zu Feuer, Elektroschock oder einer Beschädigung Ihrer Geräte führen könnte.

Symbole

Die verwendeten Symbole haben die folgende Bedeutung:

⚠️ **Vorsicht** – Gefahr von Personenverletzung und Geräteschaden. Anweisungen befolgen.

⚡ **Warnung** – Gefährliche Spannungen. Zur Reduzierung des Elektroschockrisikos und der Gesundheitsgefährdung die Anweisungen befolgen.

| **Ein** – Der Hauptschalter steht auf *Ein*.

○ **Aus** – Der Hauptschalter steht auf *Aus*.

Änderung der Geräte

Nehmen Sie keine mechanischen oder elektrischen Änderungen an den Geräten vor. Sun Microsystems, Inc., ist nicht verantwortlich für die Einhaltung behördlicher Vorschriften, wenn an einem Sun-Produkt Änderungen vorgenommen wurden.

Aufstellungsort eines Sun-Produkts

⚠️ **Vorsicht** – Um einen zuverlässigen Betrieb Ihres Sun-Produkts zu gewährleisten und es vor Überhitzung zu schützen, dürfen die Öffnungen im Gerät nicht blockiert oder bedeckt werden. Ein Sun-Produkt sollte niemals in der Nähe eines Heizkörpers oder einer Heizluftklappe aufgestellt werden.

Anschluß des Stromkabels

⚠ **Warnung** – Sun-Produkte sind für den Betrieb mit Einphasen-Stromsystemen mit einem geerdeten Mittelleiter vorgesehen. Um die Elektroschockgefahr zu reduzieren, schließen Sie Sun-Produkte nicht an andere Arten von Stromsystemen an. Wenden Sie sich an Ihren Anlagenleiter oder einen qualifizierten Elektriker, wenn Sie sich nicht sicher sind, welche Art von Strom Ihr Gebäude erhält.

⚠ **Warnung**– Nicht alle Stromkabel besitzen die gleichen Stromnennwerte. Haushaltsverlängerungsschnuren haben keinen Überlastungsschutz und sind nicht zum Gebrauch mit Computersystemen bestimmt. Benutzen Sie keine Haushaltsverlängerungsschnuren für Ihr Sun-Produkt.

⚠ **Warnung** – Ihr Sun-Produkt wird mit einem Erdungs-Netzkabel (3-Leiter) geliefert. Um die Elektroschockgefahr zu reduzieren, schließen Sie das Kabel nur an eine geerdete Steckdose an.

Abdeckung

⚠ **Vorsicht** – Der Betrieb von Sun-Produkten ohne obere Abdeckung ist nicht sicher. Bei Nichteinhalten dieser Vorsichtsmaßregel kann es zu Personenverletzung und Systemschäden kommen.

≡ F

Conformidad Con La Agencia de Seguridad

G≡

Este apéndice presenta las precauciones de seguridad a seguir cuando se instala un producto de Sun Microsystems, Inc.

Precauciones de Seguridad

Para su protección, observe las siguientes preocupaciones de seguridad al instalar su equipo:

- Siga todos los avisos e instrucciones marcados en el equipo.

- Asegúrese de que el voltaje y la frecuencia de su fuente de alimentación sean iguales al voltaje y frecuencia indicados en la etiqueta de la capacidad eléctrica nominal del equipo.

- No introduzca jamás objetos de ninguna clase por las aberturas del equipo porque pueden estar presentes voltajes peligrosos. Cualquier objeto conductor extraño puede producir cortocircuito que podría causar incendio, electrochoque o daños a su equipo.

≡ G

Símbolos

Los siguientes símbolos significan:

⚠ **Precaución**– Peligro de lesión personal y daño al equipo. Siga las instrucciones.

⚡ **Aviso** – Hay presentes voltajes peligrosos. Siga las instrucciones para reducir el riesgo de electrochoque y los peligros contra la salud.

| **Encendido (On)** – El interruptor principal de encendido/apagado está en la posición de *encendido*.

○ **Apagado (Off)** – El interruptor principal de encendido/apagado está en la posición de *apagado*.

Modificaciones al Equipo

No haga modificaciones mecánicas o eléctricas al equipo. Sun Microsystems, Inc., no se hace responsable del cumplimiento de las regulaciones de un producto Sun si ha sido modificado.

Colocación de un Producto Sun

⚠ **Precaución** – Para lograr un funcionamiento seguro de su producto Sun y protegerlo contra el calentamiento excesivo, no se deben bloquear o cubrir las aberturas del aparato. Ningún producto Sun se debe colocar jamás cerca de un radiador o una fuente térmica.

Conexión del cable de alimentación

Aviso – Los productos Sun han sido diseñados para funcionar con sistemas de alimentación monofásicos que tengan un conductor neutro a tierra. Para reducir el riesgo de electrochoque, no enchufe los productos Sun a ningún otro tipo de sistema de alimentación. Si no está seguro del tipo de alimentación eléctrica que se suministra a su edificio, consulte al administrador de la propiedad o a un electricista profesional.

Aviso– No todos los cables de alimentación tienen la misma capacidad nominal de corriente. Las extensiones tipo casero no tienen protección contra sobrecargas y no están destinadas a usarse con sistemas de computación. No use extensiones caseras con su producto Sun.

Aviso – Su producto Sun se le provee con un cable de alimentación con salida a tierra (trifilar). Para reducir el riesgo de electrochoque, enchufe siempre el cable a un tomacorriente con conexión a tierra.

Cubierta

Precaución– Los productos Sun no pueden funcionar sin riesgo si la cubierta no está colocada en su sitio. Si no toma esta precaución, correrá el riesgo de lesionarse personalmente y dañar el equipo.

≡ G

Glossary

bus

A signal route to which several parts of a computer system may be connected so that signals can pass between them.

SCSI

An acronym for Small Computer Systems Interface.

SCSI bus

A signal route to which several parts of a computer system may be connected so that signals can pass between them. The total length of the SCSI bus includes the length of the external SCSI cable plus the length of the internal SCSI buses for the device(s) and the system. The SCSI bus length cannot exceed 6 meters (19.7 feet).

SCSI address

A unique number assigned to each drive on the SCSI bus. There are eight available addresses: 0 - 3 for disk, 4 - 5 for tape, 6 for CD-ROM, and 7 is reserved for the SCSI processor.

SCSI address switch

A switch located on the back of the Desktop Storage Module which sets the drive address. Each drive in the SCSI bus must have a separate and unique SCSI address.

SBus SCSI Host Adapter card

An SBus card which you install into a computer system which provides an additional SCSI connector (another SCSI bus).

terminator

A device resembling a cable without a cord which you connect to the last unused SCSI connector in the SCSI bus.

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Revision History

Revision	Dash	Date	Comments
A	10	March 1992	First Customer Shipment (FCS)
A	11	October 1992	2nd Release

Reader Comments

We welcome your comments and suggestions to help improve the *Desktop Storage Module Installation and User's Guide*, part number *800-7235-11*. Please take time to let us know what you think about this manual.

■ The tasks were well documented and easy to follow.

Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
❑	❑	❑	❑	❑

Comments _____

■ The information provided in the *Desktop Storage Module Installation and User's Manual* was complete.

Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
❑	❑	❑	❑	❑

Comments _____

■ The information I needed was easy to find.

Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
❑	❑	❑	❑	❑

Comments _____

■ The manual was useful to me.

Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
❑	❑	❑	❑	❑

Comments _____

■ Do you have additional comments about the *Desktop Storage Module Installation and User's Guide?*

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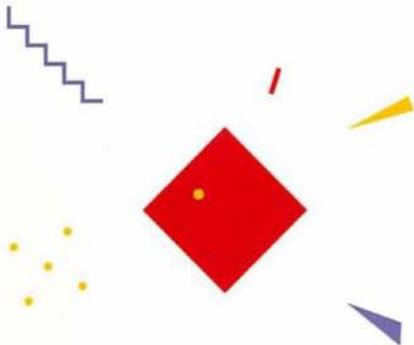
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