Sun™ Ultra™ 450 Workstation Upgrade Guide

THE NETWORK IS THE COMPUTER™

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Preface

The *Sun Ultra 450 Workstation Upgrade Guide,* used with the *Sun Ultra 450 Workstation Owner's Guide*, which also accompanies this upgrade, gives you the information you need to upgrade your Sun™ system to a Sun Ultra™ 450 workstation.

Features and options, installation, troubleshooting, parts replacement, network administration information, and other topics about the Sun Ultra 450 workstation are *all* covered in the *Sun Ultra 450 Workstation Owner's Guide*. Refer to the accompanying documentation to install the parts you will be transferring from other systems into your new Sun Ultra 450 workstation. You should also use the documentation to install any options that you purchased with this upgrade.

In addition, you can also view many of the component installation and replacement procedures in the multimedia CD-ROM application ShowMe™ How™ which also accompanies this upgrade.

Using UNIX Commands

This document may not contain information on basic UNIX® commands and procedures such as shutting down the system, booting the system, and configuring devices.

See one or more of the following for such information:

- *Solaris 2.x Handbook for SMCC Peripherals*
- AnswerBook™ online documentation for the Solaris™ 2.x software environment
- Other software documentation that you received with your system

Shell Prompts

The following table shows the default system prompt and superuser prompt for the C shell, Bourne shell, and Korn shell.

Shell	Prompt
C shell	*machine_name*%
C shell superuser	*machine_name*#
Bourne shell and Korn shell	$
Bourne shell and Korn shell superuser	#

Conventions

The following table describes the typographic conventions used in this book.

Typeface or Symbol	Meaning	Examples
`AaBbCc123`	The names of commands, files, and directories; on-screen computer output.	Edit your `.login` file. Use `ls -a` to list all files. `% You have mail.`
`AaBbCc123`	What you type, when contrasted with on-screen computer output.	`% su` `Password:`
AaBbCc123	Book titles, new words or terms, words to be emphasized. Command-line variable; replace with a real name or value.	Read Chapter 6 in the *User's Guide.* These are called *class* options. You *must* be `root` to do this. To delete a file, type `rm` *filename.*

Related Documents

The following documents contain topics that relate to the information in the *Sun Ultra 450 Workstation Owner's Guide*.

Application	Title
Performing diagnostic tests	*SunVTS User's Guide*
	SunVTS Quick Reference Card
	SunVTS Test Reference Manual
	Solstice SyMON User's Guide
System and network administration	*Solaris System Administrator AnswerBook*
	SPARC: Installing Solaris Software
Using operating system software	*Solaris User's Guide*
Miscellaneous	*Solaris on Sun Hardware AnswerBook*
	Solaris 2.x Handbook for SMCC Peripherals
	SMCC SPARC Hardware Platform Guide

Cautions

Caution – This equipment contains lethal voltage. Accidental contact can result in serious injury or death.

Caution – Improper handling by unqualified personnel can cause serious damage to this equipment. Unqualified personnel who tamper with this equipment may be held liable for any resultant damage to the equipment.

Caution – Use proper electrostatic discharge (ESD) grounding techniques when handling components. Wear an antistatic wriststrap and use an ESD-protected mat. Store ESD-sensitive components in antistatic bags before placing them on any surface.

Individuals servicing this equipment must observe all safety precautions and ensure compliance with skill level requirements, certification, and all applicable local and national laws.

Some procedures in this document must be performed by trained maintenance providers. Only people who have been trained at the Sun Microsystems™ training facilities (or at Sun Microsystems affiliates) and have been certified as required by local and national laws are considered qualified.

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Belgium	02-720-09-09	02-725-88-50
Canada	1-800-873-7869	1-800-944-0661
France	0800-90-61-57	0800-90-61-58
Germany	01-30-81-61-91	01-30-81-61-92
Holland	06-022-34-45	06-022-34-46
Japan	0120-33-9096	0120-33-9097
Luxembourg	32-2-720-09-09	32-2-725-88-50
Sweden	020-79-57-26	020-79-57-27
Switzerland	0800-55-19-26	0800-55-19-27
United Kingdom	0800-89-88-88	0800-89-88-87
United States	1-800-873-7869	1-800-944-0661

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Sun Ultra 450 Workstation Upgrade Guide

This document contains information for upgrading from any Sun Ultra 1 workstation, Sun Ultra 2 workstation, or SPARCstation™ workstation to a Sun Ultra 450 workstation. For important safety and electromagnetic compatibility information, and for installation instructions to be used with this guide, read the *Sun Ultra 450 Workstation Owner's Guide* that comes with this upgrade.

Overview

The following sections of this document describe what is involved in the upgrade procedure:

- Unpacking the shipping cartons
- Backing up data disk drives
- Halting your system
- Removing SBus card(s) and extra memory
- Installing your upgraded system
- Installing new disk drive brackets
- Transferring disk drives into the Sun Ultra 450 workstation
- Transferring UPA graphics cards
- Attaching your Sun monitor to your workstation
- Powering up your upgraded system
- Return material procedure

Be sure to read each section in its entirety, as well as any other material which is referenced, before attempting to perform the upgrade. You should also have on hand the documentation that came with your original system. You will need to refer to it, and to the documentation accompanying the upgrade to perform all of the procedures.

Your upgrade includes a Sun Ultra 450 workstation and may include one or more of the following hardware components:

- Memory modules (32-megabyte or larger capacity SIMMs)
- CPU module with a DC to DC converter
- New disk drive bracket(s)
- UPA graphics card(s)
- Monitor

If any item above is not included in either the upgrade or in your new system, you are expected to transfer the item(s) from your old system to your new system.

For instructions about installing parts into your new system, see the *Sun Ultra 450 Workstation Owner's Guide*, and the *Sun Ultra 450 Workstation Hardware Setup Instructions*, or view the ShowMe How multimedia CD-ROM supplied with your new system.

Note – Since you are upgrading to a new CPU architecture, your system's Ethernet address and host identification (hostid) will change, and applications that are licensed to your system may change as well. Be sure to inform your system administrator of this fact before you begin the upgrade. He or she will need to update certain network configuration files before your system can rejoin the network.

When you upgrade to a Sun Ultra 450 workstation, you must return your old system unit and keyboard to Sun Microsystems. See "Return Material Procedure" on page 9 for additional details.

Unpacking the Shipping Cartons

Illustrations depicting how to unpack your new Sun Ultra 450 workstation system are printed on the shipping cartons—these pictures are self-explanatory. However, there are a few additional steps you should take:

1. **Inspect the shipping cartons before opening them.**

   If there is evidence of damage to a carton, contact your sales representative and arrange for an agent of the carrier to be present when you remove the equipment.

2. **Remove and save the** *Customer Information Sheet***.**

   This sheet is in the plastic envelope on the side of the system unit carton. Retain this sheet for your records. If you are connecting your system to a network, your system administrator will need this sheet during the installation procedure.

3. **Save the cartons and the packing material.**

   You will need them if you ever want to ship your system anywhere. In addition, you may need them to return your old system unit if its original shipping materials are missing.

Backing Up Data Disk Drives

Sun Ultra 450 workstations support 1-inch high and 3.5-inch wide Ultra SCSI disk drives. If you are transferring data disk drives to the new system, back up the data on the drives before halting the system.

Note – You cannot transfer a *boot* disk from your old system and use it as a *boot* disk in your Sun Ultra 450 workstation. You must re-format the drive and install the new version of the operating system software.

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1. **Back up each data disk drive onto media that will be accessible to your new workstation.**

   Use a level 0 dump backup.

2. **Record each disk's device name.**

   Use the `df` command to read the disk device name before removing any disk drive from your old system.

Halting Your System

Caution – You must halt the system in an orderly manner. When the operating system or any other standalone program is up and running, do not press Stop(L1)-a to halt the system. Abruptly aborting program execution may cause damage to data files.

Halt your system using the following procedure:

1. **Save all your work.**

   Consult your software documentation for instructions on ending a work session and saving your files. If you do not save your work, you could lose it when you switch off the power.

2. **Perform a complete system dump before starting the upgrade process.**

   See your operating system documentation if you need instructions on how to do this.

3. **Return to the operating system environment.**

   If you are in a windowing environment, exit from it and wait for the system prompt to appear. See the documentation supplied with your windowing system.

4. **Halt the operating system.**

   See the documentation supplied with your operating system for instructions on how to halt it.

- **For Solaris® 2.x systems, type:**

```
% su
Password: superuser password
# /usr/sbin/shutdown -y -g60 -i0
```

- **Or, for Solaris 1.x systems, type:**

```
% su
Password: superuser password
# /usr/etc/shutdown -h +1
```

   The operating system warns other users of your system of the impending shutdown, and then halts itself after a one-minute delay. If you wish to provide a longer delay, see the man page for `shutdown(1)`.

   The system responds with system halt messages, followed by either the > prompt or the `ok` prompt. When either prompt appears, you can safely turn off the power in the proper sequence.

5. **Turn off the power in sequence to:**

   a. External drive units (if any)

   b. Sun system unit

   c. Monitor (if applicable)

Removing SBus Cards and Extra Memory

If your system unit contains SBus cards, extra memory, or other modules, you should remove them before returning the system unit to Sun Microsystems.

You may transfer memory modules that were factory-installed inside your old system unit, as well as any memory module that you purchased as a separate option.

Consult the documentation that came with your system for detailed instructions about removing SBus cards and extra memory.

Installing Your Upgraded System

Your upgrade includes a Sun Ultra 450 workstation, and also may include one or more of the following hardware components:

- Memory modules (32-megabyte or larger capacity SIMMs)
- CPU module with the DC to DC converter
- New disk drive bracket(s)
- UPA graphics card(s)
- Monitor

To install your upgraded Sun Ultra 450 workstation system, see the installation instructions in the *Sun Ultra 450 Workstation Owner's Guide*.

If you are transferring disk drives with old brackets to your new system, install the brackets now using the following procedure.

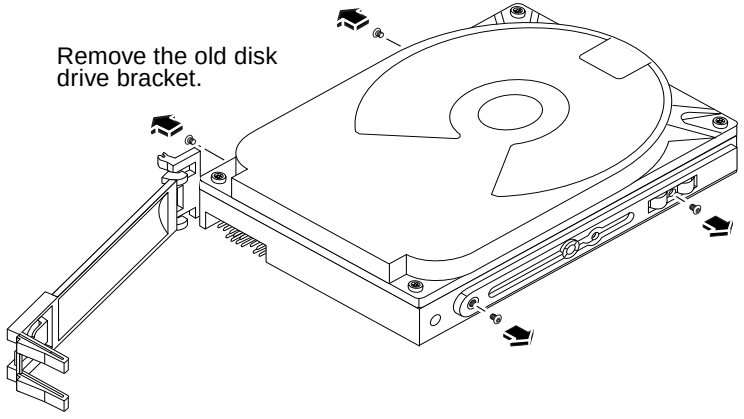
Installing New Disk Drive Brackets

The Sun Ultra 450 workstation supports 1-inch high disk drives with a new bracket. If your 1-inch high disk drives have the old brackets on them, you must install the new brackets that came with your upgrade.

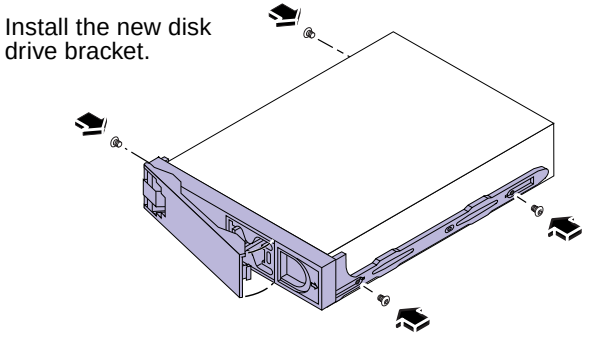
1. **Remove the disk drive from your old system.**

   See the documentation supplied with your system for disk drive removal.

2. **Remove the four Phillips screws securing the old bracket to the disk drive.**



3. **Attach the new bracket to the disk drive using the four Phillips screws.**



4. **Repeat steps 1 to 3 as many times as is necessary to install the new disk drive brackets onto your 1-inch high disk drives.**

Transferring Disk Drives Into the Sun Ultra 450 Workstation

For information about mounting a data disk as an Ultra Enterprise 450 workstation data disk, consult the System Administration Guide accompanying your software documentation. Use the device name you recorded in the section “Backing Up Data Disk Drives” on page 3.

To configure and use any transferred data disk as part of a disk array, consult the Solstice™ Disk Suite™ documentation.

- **Install each disk drive in the Sun Ultra 450 workstation.**

  See the *Sun Ultra 450 Workstation Owner’s Guide* for information about installing and configuring disk drives in your server.

Transferring UPA Graphics Cards

The Sun Ultra 450 workstation supports up to two Ultra Port Architecture (UPA) graphics cards. See the *Sun Ultra 450 Workstation Owner’s Guide* for UPA graphics card configuration information and installation procedures.

Note – The Sun Ultra 450 workstation does not support SBus-based frame buffers. Only UPA- and PCI-based frame buffers are supported on the Sun Ultra 450 workstation.

The upgrade contains nameplates to install on your new workstation if you transfer any UPA graphics card(s) from your old system to the new one. The appropriate nameplate to use depends on the type of UPA graphics card(s) you install in your Sun Ultra 450 workstation.

Examine the nameplate on your old workstation to see if the nameplate was either Creator3D or Elite3D. Use the corresponding Sun Ultra 450 nameplate supplied with your upgrade. If you still do not know which card you have installed, the following table lists the UPA graphics card names, and the corresponding nameplate for your new workstation.

UPA Graphics Card	Single or Double Buffered	Nameplate
Creator3D series 3	Double	ULTRA 450 Creator3D
Elite3D m6	Double	ULTRA 450 Elite3D

Attaching the Nameplate to Your System

Note – The following procedure does not apply to any system that is shipped without a Sun logo or nameplate.

1. **Select the appropriate nameplate for the workstation.**

   See the previous section “Transferring UPA Graphics Cards” to select the appropriate nameplate.

2. **Peel the adhesive backing off the rear of the nameplate.**
3. **Align the keys on the rear of the nameplate with the slots in the nameplate mount on the removable media assembly door.**
4. **Press the new nameplate firmly into position on the removable media assembly door.**

Attaching Your Sun Monitor to Your Workstation

For information about installing your Sun monitor, consult the *Sun Ultra 450 Workstation Owner’s Guide* or the *Sun Ultra 450 Workstation Hardware Setup Instructions*.

Powering On Your Upgraded System

The procedure for powering on your system for the first time depends on the operating system you are using. Since your system is connected to a network, the network environment may require some advance preparation before you turn on your system.

Do not power on your system until you have notified your system administrator and have received permission to proceed. If you must act as your own system administrator, see the documentation that accompanies your operating system software.

Return Material Procedure

Once you have completed the upgrade procedure, you must return your old system unit to Sun Microsystems.

Be sure to remove and keep any SBus cards or extra memory modules before returning the system. You need only return the original memory modules that were factory-installed inside your system unit; do not return any memory module that you purchased as a separate option.

If your old system included a Sun Type-4 keyboard, you must return the keyboard with the system unit.

To return your old equipment to Sun Microsystems:

1. **Disconnect any cables that may still be attached to the system unit.**
2. **Pack the system unit (and keyboard, if necessary) in appropriate packing materials.**

   Use the system's original packing materials or the Sun Ultra 450 materials, if possible. Be sure that the unit is secure and well padded inside its shipping carton.
3. **Follow the instructions in the** *Sun Upgrades RMA Letter* **to return the equipment to Sun Microsystems.**

   You have completed the upgrade procedure. If you encounter any difficulties with your new server, call the Sun Response Center or your authorized service provider.