

# Ultra™ Enterprise™ 450 Product Notes

---



THE NETWORK IS THE COMPUTER™

**Sun Microsystems Computer Company**

A Sun Microsystems, Inc. Business  
2550 Garcia Avenue  
Mountain View, CA 94043 USA  
415 960-1300 fax 415 969-9131

Part No.: 805-2320-14  
Revision A, June 1998

Copyright 1998 Sun Microsystems, Inc. 2550 Garcia Avenue, Mountain View, California 94043-1100 U.S.A. All rights reserved.

This product or document is protected by copyright and distributed under licenses restricting its use, copying, distribution, and decompilation. No part of this product or document may be reproduced in any form by any means without prior written authorization of Sun and its licensors, if any. Third-party software, including font technology, is copyrighted and licensed from Sun suppliers.

Parts of the product may be derived from Berkeley BSD systems, licensed from the University of California. UNIX is a registered trademark in the U.S. and other countries, exclusively licensed through X/Open Company, Ltd.

Sun, Sun Microsystems, the Sun logo, Solaris, Solaris Desktop, Ultra Enterprise, OpenBoot, OpenWindows, Solstice AdminSuite, Solstice Backup, Solstice DiskSuite, Solstice SyMON, SunSwift, SunVTS, JumpStart, and Ultra are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States and in other countries. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the United States and in other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

The OPEN LOOK and Sun™ Graphical User Interface was developed by Sun Microsystems, Inc. for its users and licensees. Sun acknowledges the pioneering efforts of Xerox in researching and developing the concept of visual or graphical user interfaces for the computer industry. Sun holds a non-exclusive license from Xerox to the Xerox Graphical User Interface, which license also covers Sun's licensees who implement OPEN LOOK GUIs and otherwise comply with Sun's written license agreements.

**RESTRICTED RIGHTS:** Use, duplication, or disclosure by the U.S. Government is subject to restrictions of FAR 52.227-14(g)(2)(6/87) and FAR 52.227-19(6/87), or DFAR 252.227-7015(b)(6/95) and DFAR 227.7202-3(a).

DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID.

---

Copyright 1998 Sun Microsystems, Inc., 2550 Garcia Avenue, Mountain View, Californie 94043-1100 Etatis-Unis. Tous droits réservés.

Ce produit ou document est protégé par un copyright et distribué avec des licences qui en restreignent l'utilisation, la copie, la distribution, et la décompilation. Aucune partie de ce produit ou document ne peut être reproduite sous aucune forme, par quelque moyen que ce soit, sans l'autorisation préalable et écrite de Sun et de ses bailleurs de licence, s'il y en a. Le logiciel détenu par des tiers, et qui comprend la technologie relative aux polices de caractères, est protégé par un copyright et licencié par des fournisseurs de Sun.

Des parties de ce produit pourront être dérivées des systèmes Berkeley BSD licenciés par l'Université de Californie. UNIX est une marque déposée aux Etats-Unis et dans d'autres pays et licenciée exclusivement par X/Open Company, Ltd.

Sun, Sun Microsystems, le logo Sun, Solaris, Solaris Desktop, Ultra Enterprise, OpenBoot, OpenWindows, Solstice AdminSuite, Solstice Backup, Solstice DiskSuite, Solstice SyMON, SunSwift, SunVTS, et Ultra sont des marques déposées ou enregistrées de Sun Microsystems, Inc. aux Etats-Unis et dans d'autres pays. Toutes les marques SPARC, utilisées sous licence, sont des marques déposées ou enregistrées de SPARC International, Inc. aux Etats-Unis et dans d'autres pays. Les produits portant les marques SPARC sont basés sur une architecture développée par Sun Microsystems, Inc.

L'interface d'utilisation graphique OPEN LOOK et Sun™ a été développée par Sun Microsystems, Inc. pour ses utilisateurs et licenciés. Sun reconnaît les efforts de pionniers de Xerox pour la recherche et le développement du concept des interfaces d'utilisation visuelle ou graphique pour l'industrie de l'informatique. Sun détient une licence non exclusive de Xerox sur l'interface d'utilisation graphique Xerox, cette licence couvrant également les licenciés de Sun qui mettent en place l'interface d'utilisation graphique OPEN LOOK et qui en outre se conforment aux licences écrites de Sun.

CETTE PUBLICATION EST FOURNIE "EN L'ETAT" ET AUCUNE GARANTIE, EXPRESSE OU IMPLICITE, N'EST ACCORDEE, Y COMPRIS DES GARANTIES CONCERNANT LA VALEUR MARCHANDE, L'APTITUDE DE LA PUBLICATION A REPENDRE A UNE UTILISATION PARTICULIERE, OU LE FAIT QU'ELLE NE SOIT PAS CONTREFAISANTE DE PRODUIT DE TIERS. CE DENI DE GARANTIE NE S'APPLIQUERAIT PAS, DANS LA MESURE OU IL SERAIT TENU JURIDIQUEMENT NUL ET NON AVENU.



Please  
Recycle



Adobe PostScript

# Ultra Enterprise 450 Product Notes

---

---

## Determining Your Power Supply Needs

The minimum configuration of the Ultra™ Enterprise™ 450 server includes one power supply, which provides sufficient power for maximum memory, 10 PCI cards, four internal disks, an optional tape drive, and up to three CPU modules.

If you plan to add internal options to your server, you should consider installing a second power supply before adding such options, or be sure to calculate your system's power requirements before installing such options.

Here are some simple guidelines to use as an alternative to calculating system power requirements. If your system configuration meets or exceeds any of these conditions, you need a second power supply:

- Any system configuration that requires redundant power
- Any system configuration with more than four internal disk drives
- Any system configuration with more than three CPU modules

If there is any doubt about whether the system requires a second power supply, you are strongly urged to calculate the system's total power requirements (see the *Ultra Enterprise 450 Server Owner's Guide*) or to simply install a second power supply before adding additional internal components.

---

# System Software Requirements

The Ultra Enterprise 450 server requires Solaris™ 2.5.1 Hardware: 4/97 or a subsequent compatible Solaris release. To verify that the proper version of the operating system is installed on your Ultra Enterprise 450 server, examine the file `/etc/release`. The file should contain the text “Solaris 2.5.1 Hardware: 4/97” or identify a subsequent compatible Solaris release.

---

# Power Interlock

The Ultra Enterprise 450 server features a power interlock safety mechanism. Removing either of the system side panels activates the system power interlock switches. This safety mechanism prevents DC voltages from reaching any internal component when either side panel is removed and the AC power switch is left on. Do not remove either side panel while the system is running. Doing so will cause the system to power off abruptly.

---

# Main Logic Board Jumpers

The following supersedes the information presented on pages 72 and 73 of the *Ultra Enterprise 450 Server Owner's Guide* concerning main logic board jumpers:

- The clock mode select jumper (J2701) is no longer used on Ultra Enterprise 450 servers. No shunt should be installed on jumper J2701. The main logic board is hardwired to provide the correct clock mode for UltraSPARC II CPU modules.
- On page 73, the table describing the settings for the three flash PROM jumpers is incorrect. The corrected table appears below.

---

Jumper	Shunt on Pins 1 + 2 Selects	Shunt on Pins 2 + 3 Selects	Default Shunt on Pins	Signal Controlled
J3102	Flash PROM	Not To Be Used	1 + 2	FLASH PROM SEL
J3103	Write Protect	Write Enable	2 + 3	FLASH PROM PROG ENABLE
J5501	High Half Booting	Normal Booting	2 + 3	XOR LOGIC SET

---

---

## SPARCstorage MultiPack Units

A compatibility issue exists between the Ultra Enterprise 450 server's embedded or expansion PCI SCSI host bus adapters (HBAs) and the use of newer SPARCstorage MultiPack (SMP) units that may contain UltraSCSI (Fast-20) capable drives. The HBAs available on Ultra Enterprise 450 servers default to use UltraSCSI operation when UltraSCSI devices are present. However, SPARCstorage MultiPack units (both 6- and 12-drive versions) do not support UltraSCSI operation. Attempting to use such a configuration can lead to reduced SCSI bus performance and potential system panic.

**Workaround:** Prior to using this configuration, disable the UltraSCSI mode for each controller instance to which a SMP is attached. Refer to the `pci(4)`, `glm(7D)`, and `isp(7D)` man pages for details.

---

**Note** – An alternative workaround method involving a global SCSI option change through `/etc/system` would result in loss of UltraSCSI mode on internal system disk backplanes.

---

This issue does not exist with SPARCstorage MultiPack 2 systems, which are UltraSCSI capable.

---

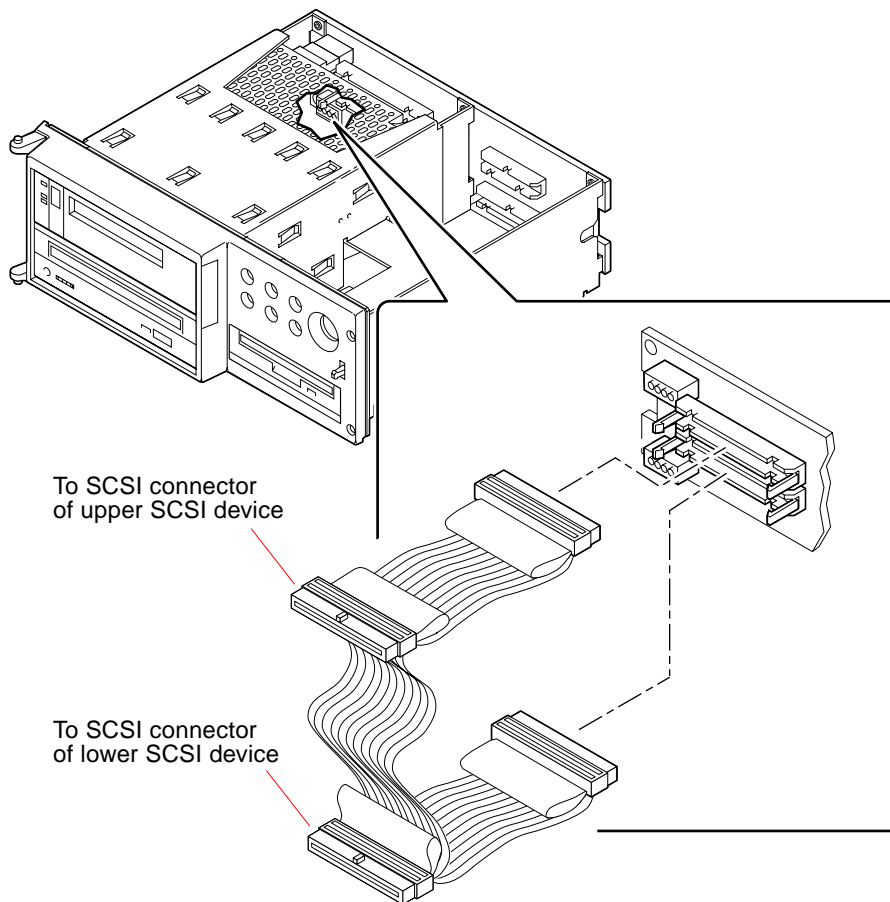
## Upper Blower Assembly

The upper blower assembly (part number 540-3023) is present in certain Ultra Enterprise 450 configurations only. Most configurations do not include this part; however, the procedures contained in the *Ultra Enterprise 450 Server Owner's Guide* and *ShowMe How Multimedia* application assume that this part is present. For any procedure that involves removal of the main logic board, the instructions say to disconnect the upper blower assembly from the main logic board before removing the board. If your system does not include an upper blower assembly, you can safely ignore this step.

---

## SCSI Drive Data Cable

The *Ultra Enterprise 450 Server Owner's Guide* and *ShowMe How Multimedia* application incorrectly show how to install the SCSI drive data cable in the removable media assembly. Procedures documented in both show that the connectors at each end of the cable should be connected to the SCSI devices, and the two connectors in the middle of the cable should attach to the removable media backplane. These procedures are incorrect. The correct way to install the cable is with the two free ends of the cable connected to the removable media backplane, as shown below.



Please refer to this illustration when performing the following procedures in the *Ultra Enterprise 450 Server Owner's Guide* and the corresponding procedures in the *ShowMe How Multimedia* application:

- “How to Remove the Removable Media Backplane”—page 157
- “How to Install the Removable Media Backplane”—page 161
- “How to Remove a CD-ROM Drive or Tape Drive”—page 188
- “How to Install a CD-ROM Drive or Tape Drive”—page 192
- “How to Remove the SCSI Drive Data Cable”—page 267
- “How to Install the SCSI Drive Data Cable”—page 270

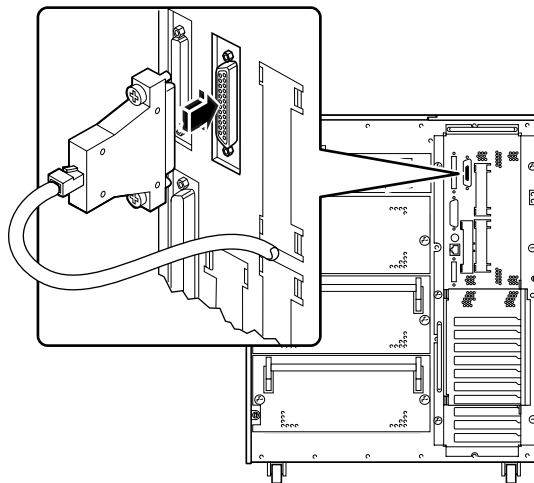
---

**Note** – There is no adverse effect on system operation or performance if the cable is installed according to the original instructions in the *Ultra Enterprise 450 Server Owner's Guide* and *ShowMe How Multimedia* application. However, the cable is easier to install, and less prone to damage during installation, if you install it as shown in these Product Notes.

---

## Attaching an Alphanumeric Terminal

The illustration on page 21 of the *Ultra Enterprise 450 Server Owner's Guide* incorrectly identifies the location of the serial port connector on the server's back panel. The correct location is shown below.



---

## Removing the NVRAM Module



---

**Caution** – Before removing or installing an NVRAM module on the main logic board, be sure to disconnect the board from its power connector. Failure to do so could corrupt the information stored in the NVRAM module and adversely affect operation of the system. To disconnect the main logic board from its power connector, loosen the captive screws that secure the board to the system rear panel, and pull the handles at the rear of the board until the board is fully disengaged from its power connector.

---

---

## Rackmounting the Ultra Enterprise 450 Server

An optional rackmounting kit is available for installing an Ultra Enterprise 450 server into a EIA standard 19-inch rack. For additional details, contact your Sun™ authorized sales representative.

Rackmount placement information for the Ultra Enterprise 450 server is available through the Web at:

<http://docs.sun.com>

Click on “Storage & Peripherals” in the Hardware section and open the *Rackmount Placement Matrix*.

---

**Note** – Before installing the Ultra Enterprise 450 server in a Sun Enterprise Expansion Cabinet, be sure to remove the kick plate at the bottom rear of the cabinet. Removing the kick plate allows two Ultra Enterprise 450 servers to fit inside the cabinet. For additional details, see the documentation supplied with the Sun Enterprise Expansion Cabinet.

---

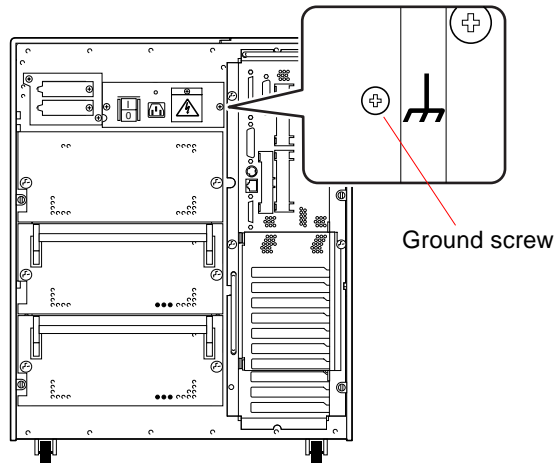


---

# Connecting Rackmounted Peripherals

When connecting a desktide Ultra Enterprise 450 server to any rackmounted peripheral, be sure to connect an appropriate grounding strap between the server and the rack enclosure. This strap prevents ground loops between the two systems and guards against possible data loss.

A grounding strap is typically provided with the rack enclosure. Attach one end of the strap to the designated ground point on your rack enclosure, according to the instructions provided with the enclosure. Attach the other end to the ground screw on the Ultra Enterprise 450 server, as shown below. Be sure to tighten the ground screw completely to ensure a good connection.



---

**Caution** – The ground screw on the Ultra Enterprise 450 server is a critical component for providing protection against electrical hazard in the event of a system power fault. Failure to replace and completely tighten the ground screw could result in a hazardous condition.

---

---

# Power Supply Memory Latch Function

The Ultra Enterprise 450 power supply has a memory latch function that allows the power supply to “remember” its last power on/off state in response to a power outage or removal of the AC power cord. This feature allows the power supply to resume operation automatically once power is restored. It also enables hot-swapping of power supplies.

Under some circumstances, this feature can be misdiagnosed as a power supply failure. If you remove a power supply from a system that is powered off and attempt a hot-plug installation into a system that is powered on, the power supply will remain in the Off state. This should not be interpreted as a power supply failure. To activate the power supply, simply turn the front panel keyswitch from the Power-On position to the Diagnostics position, and then back to the Power-On position. Alternatively, you may press the Power-On key on a Sun Type-5 keyboard attached to the system.