Ultra™ Enterprise™ *x*000 to Sun™ Enterprise™ *x*500 Systems Upgrade Guide

THE NETWORK IS THE COMPUTER™

Sun Microsystems Computer Company
A Sun Microsystems, Inc. Business
901 San Antonio Road
Palo Alto, CA 94303-4900 USA
1 650 960-1300 fax 1 650 969-9131

Part No.805-4988-10
Revision A, May 1998

Send comments about this document to: smcc-docs@sun.com

Copyright 1998 Sun Microsystems, Inc., 901 San Antonio Road, Palo Alto, California 94043-4900 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, AnswerBook, SunDocs, Solaris, Ultra, and Enterprise are trademarks, registered trademarks, or service marks of Sun Microsystems, Inc. in the U.S. and other countries. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the U.S. and 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.

XPM library, Copyright 1990-93 GROUPE BULL
Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of GROUPE BULL not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. GROUPE BULL makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

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., 901 San Antonio Road, Palo Alto, Californie 94043-4900 Etats-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, AnswerBook, SunDocs, Solaris, Ultra, et Enterprise sont des marques de fabrique ou des marques déposées, ou marques de service, de Sun Microsystems, Inc. aux Etats-Unis et dans d'autres pays. Toutes les marques SPARC sont utilisées sous licence et sont des marques de fabrique ou des marques déposées 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.

Bibliothèque XPM, Copyright 1990-93 GROUPE BULL. L'utilisation, la copie, la modification et la distribution de ce logiciel et de sa documentation à quelque fin que ce soit sont autorisées à titre gracieux, à condition que la mention du copyright ci-dessus apparaisse dans tous les exemplaires, que cette mention et cette autorisation apparaissent sur la documentation associée et que l'utilisation du nom du GROUPE BULL à des fins publicitaires ou de distribution soit soumise dans tous les cas à une autorisation préalable et écrite. Le GROUPE BULL ne donne aucune garantie relative à l'aptitude du logiciel à répondre à une utilisation particulière. Le logiciel est fourni en l'état, sans garantie explicite ou implicite.

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 REPONDRE 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

Contents

1. Ultra Enterprise x000 Server Family Upgrades 1

1.1 Related Documents 1

1.2 Preparing Your System 2

1.3 New and Exchangeable Parts 4

2. Upgrade Procedures 2-1

2.1 Ultra Enterprise 3000 2-1

2.1.1 Upgrading to a Sun Enterprise 3500 2-1

2.1.2 Upgrading to a Sun Enterprise 4500 or 5500 2-2

2.2 Ultra Enterprise 4000 or 5000 2-3

2.2.1 Upgrading to a Sun Enterprise 6500 2-3

CHAPTER 1

Ultra Enterprise x000 Server Family Upgrades

This document provides upgrade information for Ultra™ Enterprise™ *x00*0 systems to Sun Enterprise *x*500 systems.

- From Ultra Enterprise 3000 to Sun Enterprise 3500—page 2-1
- From Ultra Enterprise 3000 to Sun Enterprise 4500 or 5500—page 2-2
- From Ultra Enterprise 4000/5000 to Sun Enterprise 6500—page 2-3

The procedure for each of these upgrades includes:

1. Prepare your system for upgrade.
2. Exchange items that will not be reused in the upgraded system for new parts.
3. Once the upgrade parts are received, install new and reusable parts as appropriate.

1.1 Related Documents

During the upgrade process, refer to the documents in TABLE 1-1 for information on removal and installation of components.:

TABLE 1-1 Related Documents

Document	Part Number
Ultra Enterprise 3000 System Installation Guide	802-6050
Ultra Enterprise 3000 System Manual	802-6051
Sun Enterprise 3500 System Installation Guide	805-2629

TABLE 1-1 Related Documents

Document	Part Number
Sun Enterprise 3500 System Reference Manual	805-2630
Ultra Enterprise 6000/5000/4000 Systems Installation Guide	802-3844
Ultra Enterprise 6000/5000/4000 Systems Manual	802-3845
Sun Enterprise 6500/5500/4500 Systems Installation Guide	805-2631
Sun Enterprise 6500/5500/4500 Systems Manual	805-2632

1.2 Preparing Your System

Caution – Before powering-off your system, halt the operating system using the appropriate commands. Failure to do so can cause the loss of disk drive data. For more information, refer to the *Solaris Handbook for SMCC Peripherals* that corresponds to your operating system.

1. **Power-off the server.**
   - For Enterprise 3000 systems, refer to Chapter 11, “Powering Off and On,” in the *Ultra Enterprise 3000 System Manual*
   - For Enterprise 4000 / 5000 systems, refer to Chapter 12, “Powering Off and On,” in the *Ultra Enterprise 6000/5000/4000 Systems Manual*
2. **Remove the reusable parts listed in** TABLE 1-2 **(for Enterprise 3000 systems) or** TABLE 1-3 **(for Enterprise 4000/5000 systems) from your Ultra Enterprise server.**

   Refer to the referenced sections in your system manual for detailed procedures.

   The following items should receive special consideration during the upgrade, as migration will cause the system to run at the slower speed of the gigaplane or CPU MHz. Migrate these parts only if the slower speed is to be maintained.

Note – You may mix old and new boards in your upgraded server. The gigaplane will run at the speed of the slowest board. A flash PROM may be required: Enterprise x500 servers require PROM version 3.2.14 or later. See “CPU Modules” in the following list for more information on PROM versions.

1. CPU modules

   336 MHz, 250 MHz and 167 MHz modules are supported. However, if you are migrating a 167 MHz module, you will need to ensure that your PROM version is 3.2.14 or higher.

   To determine what PROM version is on your system, use POST (power-on self-test). If the version listed is earlier than 3.2.14, you can download a patch for the PROM level upgrade at URL: **`http://sunsolve.sun.com/`**, or contact your Sun service provider. For further information on POST and PROM version upgrades, refer to the *Sun Enterprise 6x00/5x00/4x00/3x00 Systems Flash PROM Programming Guide*, part number 802-5579.

2. CPU/Memory board

   An upgrade exists for the 2600 CPU/Memory board. Please contact your Sun sales representative for information.

3. SBus I/O board

4. Graphics I/O board

Note – Hard disks in the Ultra Enterprise 3000 server *cannot* migrate to the Sun Enterprise 3500 Server.

TABLE 1-2 List of Reusable Parts for 3000 Systems

Reusable Part	Reuse in E3500	Reuse in 4500/5500	Removal procedure in *Ultra Enterprise 3000 System Manual*
SIMMs	Yes	Yes	Section 3.4
Peripheral power supply/AC	Yes	No	Section 6.3
Power/cooling module (PCM)	Yes	Yes	Section 6.4
Auxiliary Fan Tray Assembly	Yes	No	Section 6.4
Tape drive	Yes	Yes	Section 7.2
CPU/Memory board[1]	Yes	Yes	Section 3.4
CPU Modules[1]	Yes	Yes	Section 3.4
SBus I/O board[1]	Yes	Yes	Section 4.5
Graphics I/O board[1]	Yes	Yes	Section 4.5

1. Migrate these parts ONLY if the slower speed of the Gigaplane or CPU MHz is to be maintained.

TABLE 1-3 List of Reusable Parts for 4000/5000 Systems

Reusable Part	Use in E6500	Removal procedure in *Ultra Enterprise 6000/5000/4000 Systems Manual*
SIMMs	Yes	Section 3.4
Power/cooling module (PCM)	Yes	Section 7.4
Tape drive	Yes	Section 8.1
Disk board	Yes	Section 5.5
Peripheral power supply	Yes	Section 7.3
CPU/Memory board[1]	Yes	Section 3.4
CPU Modules[1]	Yes	Section 3.4
SBus I/O board[1]	Yes	Section 4.5
Graphics I/O board[1]	Yes	Section 4.5

1. Migrate these parts ONLY if the slower speed of the Gigaplane or CPU MHz is to be maintained.

3. **Remove the TOD NVRAM from the clock board in the Ultra Enterprise server.**

   Refer to Chapter 5, "Clock Board," in the *Ultra Enterprise 3000 System Manual* or Chapter 6, "Clock Board," in the *Ultra Enterprise 6000/5000/4000 Systems Manual.*

1.3 New and Exchangeable Parts

The upgrade package includes items that are to be exchanged as well as several new items. Exchanged items include:

- System enclosure or chassis
- System boards
- Power supplies
- Sun CD-ROM player
- Power/Cooling modules (PCM)

It is the customers responsibility to ensure that returned equipment is packaged adequately to prevent damage and expedite shipping.

1. **Pack the returnable parts in appropriate shipping boxes.**
2. **Label the boxes "Box 1 of *n*," "Box 2 of *n*," and so forth, where *n* is the total number of boxes shipped.**

TABLE 1-4 Parts List - Exchange and New

Old Parts Returned	New Parts for 3000 upgrade to 3500	New Parts for 3000 upgrade to 4500/5500	New Parts for 4000/5000 upgrade to 6500
Chassis (3000 or 4000) Rack and Chassis (5000)	Chassis	Chassis (4500), Rack and Chassis (5500)	Rack and Chassis
Clock board	Clock+ Board	Clock+ Board	Clock+ Board
Fan Tray Assembly (beneath disk drives)	Fan Tray Assembly (beneath disk drives)		
Sun CD	Sun CD	Sun CD	
	(1) Filler Panels for PCM's		(4) Filler Panels for PCM's
Peripheral power supplies (3000)		(1) Peripheral power supply (1) Power/Cooling Module (PCM)	
Fan Tray		(4) PCM Filler Panel	
			(8) Load boards

3. **Attach the Return Materials Authorization(RMA) label to Box 1 of *n*.**

   The RMA label is contained in the Sun Enterprise X500 Server Family system upgrade kit.

CHAPTER 2

Upgrade Procedures

2.1 Ultra Enterprise 3000

The Ultra Enterprise 3000 can be upgraded to a Sun Enterprise 3500, 4500, or 5500.

2.1.1 Upgrading to a Sun Enterprise 3500

Once you have completed the procedure in Section 1.2 “Preparing Your System”, remove the parts listed in TABLE 1-4 and return them to Sun Microsystems, Inc. for exchange using the procedure in Section 1.3 “New and Exchangeable Parts.”

The following items require special consideration. For more detailed information, refer to Appendix D, “Rules for System Configuration,” in the *Sun Enterprise 3500 Systems Reference Manual*:

- Filler boards are required in every unpopulated board slot in the Sun Enterprise 4500 server.
- PCM filler panels are required for every unpopulated PCM slot.
- One PCM is required for every two installed boards.
- The PCM must be adjacent to the installed boards.

2.1.1.1 Installing Parts in the 3500 System

1. **Unpack and prepare the new Sun Enterprise 3500 server.**

   Refer to the *Sun Enterprise 3500 System Installation Guide*.

2. **Install all new parts that were exchanged.**

   Refer to the *Sun Enterprise 3500 System Installation Guide*.

3. **Install the TOD NVRAM into the new clock+ board in the Sun Enterprise 3500 server.**

   Refer to Chapter 5, "Clock+ Board," in the *Sun Enterprise 3500 System Reference Manual.*

4. **Install the parts to be reused from TABLE 1-2 in the Sun Enterprise 3500 server.**

   Refer to the referenced sections in the *Sun Enterprise 3500 System Reference Manual* for instructions on installing these parts.

5. **Cable the Sun Enterprise 3500 server.**

   Refer to Chapter 2, "Cabling the System," in the *Sun Enterprise 3500 System Installation Guide* and connect the cables.

6. **Power on the Sun Enterprise 4500 or 5500 server.**

   Refer to Chapter 3, "Powering the System On and Off," in the *Sun Enterprise 3500 Systems Reference Manual* to complete the upgrade.

2.1.2 Upgrading to a Sun Enterprise 4500 or 5500

Once you have completed the procedure in Section 1.2 "Preparing Your System", remove the parts listed in TABLE 1-4 and return them to Sun Microsystems, Inc. for exchange using the procedure in Section 1.3 "New and Exchangeable Parts."

The following items require special consideration. For more detailed information, refer to Appendix D, "Rules for System Configuration," in the *Sun Enterprise 6500/5500/4500 Systems Reference Manual*

- Filler boards are required in every unpopulated board slot in the Sun Enterprise 4500 server.
- PCM filler panels are required for every unpopulated PCM slot.
- One PCM is required for every two installed boards.
- The PCM must be adjacent to the installed boards.

2.1.2.1 Installing Parts in the 4500 or 5500 System

1. **Unpack and prepare the new Sun Enterprise 4500 or 5500 server.**

   Refer to the *Sun Enterprise 6500/5500/4500 Systems Installation Guide*.

2. **Install all new parts that were exchanged.**

   Refer to the *Sun Enterprise 6500/5500/4500 Systems Installation Guide*.

3. **Install the TOD NVRAM into the new clock+ board in the Sun Enterprise 4500 or 5500 server.**

   Refer to Chapter 6, “Clock+ Board,” in the *Sun Enterprise 6500/5500/4500 Systems Manual.*

4. **Install the parts to be reused from TABLE 1-2 in the Sun Enterprise 4500 or 5500 server.**

   Refer to the referenced sections in the *Sun Enterprise 6500/5500/4500 Systems Manual* for instructions on installing these parts.

5. **Cable the Sun Enterprise 4500 or 5500 server.**

   Refer to Chapter 2, “Cabling the System,” in the *Sun Enterprise 6500/5500/4500 Systems Installation Guide* and connect the cables.

6. **Power on the Sun Enterprise 4500 or 5500 server.**

   Refer to Chapter 3, “Powering the System On and Off,” in the *Sun Enterprise 6500/5500/4500 Systems Reference Manual* to complete the upgrade.

2.2 Ultra Enterprise 4000 or 5000

An Ultra Enterprise 4000 or 5000 can be upgraded to Sun Enterprise 6500 using the procedures that follow.

2.2.1 Upgrading to a Sun Enterprise 6500

Once you have completed the procedure in Section 1.2 “Preparing Your System, remove the parts listed in TABLE 1-4 and return them to Sun Microsystems, Inc. for exchange using the procedure in Section 1.3 “New and Exchangeable Parts.

The following items require special consideration. For more detailed information, refer to Appendix D, “Rules for System Configuration,” in the *Sun Enterprise 6500/5500/4500 Systems Manual*:

- Load boards are required in every unpopulated board slot in the Sun Enterprise 6500 server.
- PCM filler panels are required for every unpopulated PCM slot.
- One PCM is required for every two installed boards.
- The PCM must be adjacent to the installed boards.
- Disk boards must be installed only in slots 14 and 15.
- When only one Disk board is installed, it must be in slot 15.

2.2.1.1 Installing Parts in the 6500 System

1. **Unpack and prepare the new Sun Enterprise 6500 server.**

   Refer to the *Sun Enterprise 6500/5500/4500 Systems Installation Guide*

2. **Install all new parts that were exchanged.**

   Refer to the *Sun Enterprise 6500/5500/4500 Systems Installation Guide*.

3. **Install the TOD NVRAM into the new clock+ board in the Sun Enterprise 6500 server.**

   Refer to Chapter 6, "Clock+ Board," in the *Sun Enterprise 6500/5500/4500 Systems Manual*.

4. **Install the reusable parts, listed in TABLE 1-3 in the Sun Enterprise 6500 server.**

   Refer to the referenced sections in the *Sun Enterprise 6500/5500/4500 Systems Manual* for instructions on installing these parts.

5. **Cable the Sun Enterprise 6500 server.**

   Refer to Chapter 2, "Cabling the System," in the *Sun Enterprise 6500/5500/4500 Systems Installation Guide* and connect the cables.

6. **Power on the Sun Enterprise 6500 server.**

   Refer to Chapter 3, "Powering the System On and Off," in the *Sun Enterprise 6500/5500/4500 Systems Installation Guide* to complete the upgrade.