Sun StorEdge™ A1000 and D1000 Installation, Operations, and Service Manual

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Regulatory Compliance Statements

Your Sun product is marked to indicate its compliance class:

- Federal Communications Commission (FCC) — USA
- Industry Canada Equipment Standard for Digital Equipment (ICES-003) — Canada
- Voluntary Control Council for Interference (VCCI) — Japan
- Bureau of Standards Metrology and Inspection (BSMI) — Taiwan

Please read the appropriate section that corresponds to the marking on your Sun product before attempting to install the product.

FCC Class A Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Shielded Cables: Connections between the workstation and peripherals must be made using shielded cables to comply with FCC radio frequency emission limits. Networking connections can be made using unshielded twisted-pair (UTP) cables.

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

FCC Class B Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: 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/television 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. Networking connections can be made using unshielded twisted pair (UTP) cables.

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

ICES-003 Class A Notice - Avis NMB-003, Classe A

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

ICES-003 Class B Notice - Avis NMB-003, Classe B

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

VCCI 基準について

クラス A VCCI 基準について

クラス A VCCI の表示があるワークステーションおよびオプション製品は、クラス A 情報技術装置です。これらの製品には、下記の項目が該当します。

> この装置は、情報処理装置等電波障害自主規制協議会 (VCCI) の基準に基づくクラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

クラス B VCCI 基準について

クラス B VCCI の表示 が あるワークステーションおよびオプション製品は、クラス B 情報技術装置です。これらの製品には、下記の項目が該当します。

> この装置は、情報処理装置等電波障害自主規制協議会 (VCCI) の基準に基づくクラス B 情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをしてください。

BSMI Class A Notice

The following statement is applicable to products shipped to Taiwan and marked as Class A on the product compliance label.

警告使用者：
這是甲類的資訊產品，在居住的環境中使用
時，可能會造成射頻 干擾，在這種情況下，
使用者 會被要求採取某些適當的對策。

NOTE: Include the following BMSI DoC mark when requested to do so by Compliance Engineering. Otherwise, remove this paragraph and graphic.

Declaration of Conformity

Compliance ID: 1630

Product Name: Sun StorEdge A1000,Tabletop; Sun StorEdge D1000,Tabletop

This product has been tested and complies with:

EMC

USA - FCC Class B

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) This equipment may not cause harmful interference.
2) This equipment must accept any interference that may cause undesired operation.

European Union

This equipment complies with the following requirements of the EMC Directive 89/336/EEC:

EN55022 / CISPR22	(1985)	Class B
EN50082-1		IEC801-2 (1991) 4 kV (Direct), 8 kV (Air)
		IEC801-3 (1984)3 V/m
		IEC801-4 (1988)1.0 kV Power Lines, 0.5 kV Signal Lines
EN61000-3-2/IEC1000-3-2(1994)		Pass

Safety

This equipment complies with the following requirements of Low Voltage Directive 73/23/EEC:

EC Type Examination Certificates:

EN60950/IEC950

EN60950 w/ Nordic Deviations

Supplementary Information:

This product was tested and complies with all the requirements for the CE Mark.

/ S /   / S /

Dennis P. Symanski   DATE   John Shades   DATE

Manager, Product Compliance   Quality Assurance Manager

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Safety Agency Compliance Statements

Read this section before beginning any procedure. The following text provides safety precautions to follow when installing a Sun Microsystems product.

Safety Precautions

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

- Follow all cautions and instructions marked on the equipment.
- Ensure that the voltage and frequency of your power source match 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 may appear in this book:

Caution – There is a risk of personal injury and equipment damage. Follow the instructions.

Caution – Hot surface. Avoid contact. Surfaces are hot and may cause personal injury if touched.

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

On – Applies AC power to the system.

Depending on the type of power switch your device has, one of the following symbols may be used:

Off – Removes AC power from the system.

Standby – The On/Standby switch is in the standby position.

Modifications to Equipment

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

Placement of a Sun Product

Caution – Do not block or cover the openings of your Sun product. Never place a Sun product near a radiator or heat register. Failure to follow these guidelines can cause overheating and affect the reliability of your Sun product.

Caution – The workplace-dependent noise level defined in DIN 45 635 Part 1000 must be 70Db(A) or less.

SELV Compliance

Safety status of I/O connections comply to SELV requirements.

Power Cord Connection

Caution – Sun products are designed to work with single-phase power systems having a grounded neutral conductor. To reduce the risk of electric 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.

Caution – 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.

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

The following caution applies only to devices with a Standby power switch:

Caution – The power switch of this product functions as a standby type device only. The power cord serves as the primary disconnect device for the system. Be sure to plug the power cord into a grounded power outlet that is nearby the system and is readily accessible. Do not connect the power cord when the power supply has been removed from the system chassis.

Lithium Battery

Caution – On Sun CPU boards, there is a lithium battery molded into the real-time clock, SGS No. MK48T59Y, MK48TXXB-XX, MK48T18-XXXPCZ, M48T59W-XXXPCZ, or MK48T08. Batteries are not customer replaceable parts. They may explode if mishandled. Do not dispose of the battery in fire. Do not disassemble it or attempt to recharge it.

Battery Pack

Caution – There is a sealed lead acid battery in Sun StorEdge A1000 units. Portable Energy Products No. TLC02V50. There is danger of explosion if the battery pack is mishandled or incorrectly replaced. Replace only with the same type of Sun Microsystems battery pack. Do not disassemble it or attempt to recharge it outside the system. Do not dispose of the battery in fire. Dispose of the battery properly in accordance with local regulations.

System Unit Cover

You must remove the cover of your Sun computer system unit to add cards, memory, or internal storage devices. Be sure to replace the top cover before powering on your computer system.

Caution – Do not operate Sun products without the top cover in place. Failure to take this precaution may result in personal injury and system damage.

Laser Compliance Notice

Sun products that use laser technology comply with Class 1 laser requirements.

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Class 1 Laser Product
Luokan 1 Laserlaite
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CD-ROM

⚠ **Caution –** Use of controls, adjustments, or the performance of procedures other than those specified herein may result in hazardous radiation exposure.

GOST-R Certification Mark
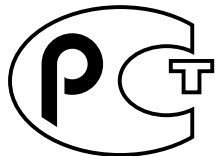
Conformité aux normes de sécurité

Lisez attentivement la section suivante avant de commencer la procédure. Le document ci-dessous présente les consignes de sécurité à respecter au cours de l'installation d'un produit Sun Microsystems.

Mesures de sécurité

Pour votre protection, observez les mesures de sécurité suivantes lors de l'installation de l'équipement:

- Observez tous les avertissements et consignes indiqués sur l'équipement.

- Assurez-vous que la tension et la fréquence de votre source d'alimentation électrique correspondent à la tension et à la fréquence indiquées sur l'étiquette de la tension électrique nominale du matériel.

- N'insérez en aucun cas un objet quelconque dans les orifices de l'équipement. Des tensions potentiellement dangereuses risquent d'être présentes dans l'équipement. Tout objet étranger conducteur risque de produire un court-circuit pouvant présenter un risque d'incendie ou de décharge électrique, ou susceptible d'endommager le matériel.

Symboles

Les symboles suivants peuvent figurer dans cet ouvrage :

⚠ **Attention –** Vous risquez d'endommager le matériel ou de vous blesser. Observez les consignes indiquées.

♨ **Attention –** Surface brûlante. Evitez tout contact. Ces surfaces sont brûlantes. Vous risquez de vous blesser si vous les touchez.

⚡ **Attention –** Tensions dangereuses. Pour réduire les risques de décharge électrique et de danger physique, observez les consignes indiquées.

| **MARCHE –** Met le système sous tension alternative.

Selon le type d'interrupteur marche/arrêt dont votre appareil est équipé, l'un des symboles suivants sera utilisé :

○ **ARRET –** Met le système hors tension alternative.

⏻ **VEILLEUSE –** L'interrupteur Marche/Veille est sur la position de veille.

Modifications de l'équipement

N'apportez aucune modification mécanique ou électrique à l'équipement. Sun Microsystems décline toute responsabilité quant à la non-conformité éventuelle d'un produit Sun modifié.

Positionnement d'un produit Sun

Attention – N'obstruez ni ne recouvrez les orifices de votre produit Sun. N'installez jamais un produit Sun près d'un radiateur ou d'une source de chaleur. Si vous ne respectez pas ces consignes, votre produit Sun risque de surchauffer et son fonctionnement en sera altéré.

Attention – Le niveau de bruit inhérent à l'environnement de travail, tel qu'il est défini par la norme DIN 45 635 - section 1000, doit être inférieur ou égal à 70Db(A).

Conformité aux normes SELV

Le niveau de sécurité des connexions E/S est conforme aux normes SELV.

Raccordement à la source d'alimentation électrique

Attention – Les produits Sun sont conçus pour fonctionner avec des systèmes d'alimentation électrique monophasés avec prise de terre. Pour réduire les risques de décharge électrique, ne branchez jamais les produits Sun sur une source d'alimentation d'un autre type. Contactez le gérant de votre bâtiment ou un électricien agréé si vous avez le moindre doute quant au type d'alimentation fourni dans votre bâtiment.

Attention – Tous les cordons d'alimentation n'ont pas la même intensité nominale. Les cordons d'alimentation à usage domestique ne sont pas protégés contre les surtensions et ne sont pas conçus pour être utilisés avec des ordinateurs. N'utilisez jamais de cordon d'alimentation à usage domestique avec les produits Sun.

Attention – Votre produit Sun est livré avec un cordon d'alimentation avec raccord à la terre (triphasé). Pour réduire les risques de décharge électrique, branchez toujours ce cordon sur une source d'alimentation mise à la terre.

L'avertissement suivant s'applique uniquement aux systèmes équipés d'un interrupteur Veille :

Attention – .L'interrupteur d'alimentation de ce produit fonctionne uniquement comme un dispositif de mise en veille. Le cordon d'alimentation constitue le moyen principal de déconnexion de l'alimentation pour le système. Assurez-vous de le brancher dans une prise d'alimentation mise à la terre près du système et facile d'accès. Ne le branchez pas lorsque l'alimentation électrique ne se trouve pas dans le châssis du système.

Pile au lithium

Attention – Sur les cartes UC Sun, une batterie au lithium a été moulée dans l'horloge temps réel, de type SGS nº MK48T59Y, MK48TXXB-XX, MK48T18-XXXPCZ, M48T59W-XXXPCZ ou MK48T08. Cette batterie ne doit pas être remplacée par le client. Elle risque d'exploser en cas de mauvaise manipulation. Ne la jetez pas au feu. Ne la démontez pas et ne tentez pas de la recharger.

Bloc-batterie

⚠ **Attention –** Les unités Sun StorEdge A1000 contiennent une batterie étanche au plomb. Produits énergétiques portatifs nº TLC02V50. Il existe un risque d'explosion si ce bloc batterie est manipulé ou installé de façon incorrecte. Ne le remplacez que par un bloc batterie Sun Microsystems du même type. Ne le démontez pas et n'essayez pas de le recharger hors du système. Ne le jetez pas au feu. Mettez-le au rebut conformément aux réglementations locales en vigueur.

Couvercle du système

Pour ajouter des cartes, de la mémoire ou des unités de stockage internes, vous devez démonter le couvercle de votre système Sun. N'oubliez pas de le remettre en place avant de mettre le système sous tension.

⚠ **Attention –** Ne travaillez jamais avec un produit Sun dont le couvercle n'est pas installé. Si vous ne respectez pas cette consigne, vous risquez de vous blesser ou d'endommager le système.

Avis de conformité des appareils laser

Les produits Sun faisant appel à la technologie laser sont conformes aux normes de sécurité des appareils laser de classe 1.

Class 1 Laser Product
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⚠ **Attention –** .L'utilisation de contrôles et de réglages ou l'application de procédures autres que ceux spécifiés dans le présent document peuvent entraîner une exposition à des radiations dangereuses.

Notice de qualité GOST-R
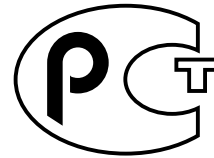
Einhaltung sicherheitsbehördlicher Vorschriften

Lesen Sie diesen Abschnitt sorgfältig durch, bevor Sie mit dem Arbeitsablauf beginnen. Der folgende Text beschreibt Sicherheitsmaßnahmen, die bei der Installation von Sun-Produkten zu beachten sind.

Sicherheitsmaßnahmen

Zu Ihrem eigenen Schutz sollten Sie die folgenden Sicherheitsmaßnahmen bei der Installation befolgen :

- Befolgen Sie alle auf die Geräte aufgedruckten Anweisungen und Warnhinweise.
- Beachten Sie die Geräteaufschrift, um sicherzustellen, daß Netzspannung und -frequenz mit der Gerätespannung und -frequenz übereinstimmen.
- Führen Sie niemals Gegenstände in die Geräteöffnungen ein. Es könnten elektrische Spannungsfelder vorhanden sein. Leitende Fremdkörper können Kurzschlüsse, Feuer und elektrische Schläge verursachen oder Ihr Gerät beschädigen.

Symbole

Die folgenden Symbole werden in diesem Handbuch verwendet:

Achtung – Es besteht die Gefahr der Verletzung und der Beschädigung des Geräts. Befolgen Sie die Anweisungen.

Achtung – Heiße Oberfläche. Vermeiden Sie jede Berührung. Diese Oberflächen sind sehr heiß und können Verbrennungen verursachen.

Achtung – Elektrisches Spannungsfeld vorhanden. Befolgen Sie die Anweisungen, um elektrische Schläge und Verletzungen zu vermeiden.

Ein – Das System wird mit Wechselstrom versorgt.

Abhängig von der Art des Stromschalters Ihres Gerätes wird eventuell eines der folgenden Symbole verwendet:

Aus– Das System wird nicht mehr mit Wechselstrom versorgt.

Wartezustand – (Der Ein-/Standby-Schalter befindet sich in der Standby-Position.

Modifikationen des Geräts

Nehmen Sie keine elektrischen oder mechanischen Gerätemodifikationen vor. Sun Microsystems ist für die Einhaltung der Sicherheitsvorschriften von modifizierten Sun-Produkten nicht haftbar.

Aufstellung von Sun-Geräten

Achtung – Geräteöffnungen Ihres Sun-Produkts dürfen nicht blockiert oder abgedeckt werden. Sun-Geräte sollten niemals in der Nähe von Heizkörpern oder Heißluftklappen aufgestellt werden. Nichtbeachtung dieser Richtlinien können Überhitzung verursachen und die Zuverlässigkeit Ihres Sun-Geräts beeinträchtigen.

Achtung – Der Geräuschpegel, definiert nach DIN 45 635 Part 1000, darf am Arbeitsplatz 70dB(A) nicht überschreiten.

SELV-Richtlinien

Alle Ein-/Ausgänge erfüllen die SELV-Anforderungen.

Netzanschlußkabel

Achtung – Sun-Geräte benötigen ein einphasiges Stromversorgungssystem mit eingebautem Erdleiter. Schließen Sie Sun-Geräte nie an ein anderes Stromversorgungssystem an, um elektrische Schläge zu vermeiden. Falls Sie die Spezifikationen der Gebäudestromversorgung nicht kennen, sollten Sie den Gebäudeverwalter oder einen qualifizierten Elektriker konsultieren.

Achtung – Nicht alle Netzanschlußkabel besitzen die gleiche Stromleitung. Normale Verlängerungskabel besitzen keinen Überspannungsschutz und sind nicht für den Gebrauch mit Computersystemen geeignet. Benutzen Sie keine Haushaltverlängerungskabel für Sun-Geräte.

Achtung – Ihr Sun-Gerät wurde mit einem geerdeten (dreiadrigen) Netzanschlußkabel geliefert. Stecken Sie dieses Kabel immer nur in eine geerdete Netzsteckdose, um Kurzschlüsse zu vermeiden.

Der folgende Hinweis bezieht sich nur auf Geräte mit Standby-Stromschalter:

Achtung – Der Stromschalter dieses Produkts funktioniert nur als Standby-Gerät. Das Netzanschlußkabel dient als Hauptabschaltgerät für das System. Stellen Sie sicher, daß Sie das Netzanschlußkabel in den geerdeten Stromausgang in der Nähe des Systems einstecken. Schließen Sie das Netzanschlußkabel nicht an, wenn die Stromzufuhr vom Systemgehäuse entfernt wurde.

Lithium-Batterie

Achtung – CPU-Karten von Sun verfügen über eine Echtzeituhr mit integrierter Lithiumbatterie, Teile-Nr. MK48T59Y, MK48TXXB-XX, MK48T18-XXXPCZ, M48T59W-XXXPCZ oder MK48T08. Batterien sollten nicht vom Kunden ausgetauscht werden. Sie können bei falscher Handhabung explodieren. Entsorgen Sie die Batterien nicht im Feuer. Entfernen Sie sie nicht und versuchen Sie auch nicht, sie wiederaufzuladen.

Batterien

Achtung – Die Geräte Sun StorEdge A1000 enthalten auslaufsichere Bleiakkumulatoren, Produkt-Nr. TLC02V50 für portable Stromversorgung. Wenn die Batterien nicht richtig gehandhabt oder ausgetauscht werden, besteht Explosionsgefahr. Tauschen Sie Batterien nur gegen Batterien gleichen Typs von Sun Microsystems aus. Versuchen Sie nicht, die Batterien zu entfernen oder außerhalb des Geräts wiederaufzuladen. Entsorgen Sie die Batterien nicht im Feuer. Entsorgen Sie die Batterien ordnungsgemäß entsprechend den vor Ort geltenden Vorschriften.

Abdeckung des Systems

Sie müssen die Abdeckung des Sun-Computersystems entfernen, um Karten, Speicher oder interne Speichergeräte hinzuzufügen. Stellen Sie sicher, daß Sie die Abdeckung wieder einsetzen, bevor Sie den Computer einschalten.

Achtung – Sun-Geräte dürfen nicht ohne Abdeckung in Gebrauch genommen werden. Nichtbeachtung dieses Warnhinweises kann Verletzungen oder Systembeschädigungen zur Folge haben.

Laserrichtlinien

Alle Sun-Produkte, die Lasertechnologie nutzen, erfüllen die Laserrichtlinien der Klasse 1.

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Laser Klasse 1

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⚠️ **Achtung –** Die Verwendung von anderen Steuerungen und Einstellungen oder die Durchführung von Arbeitsabläufen, die von den hier beschriebenen abweichen, können gefährliche Strahlungen zur Folge haben.

Verbandsmarke GOST-R
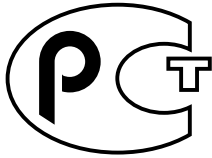
Normativas de seguridad

Lea esta sección antes de llevar a cabo cualquier procedimiento. El texto que aparece a continuación explica las medidas de seguridad que deben tomarse durante la instalación de un producto Sun Microsystems.

Medidas de seguridad

Por su propia seguridad, tome las medidas de seguridad siguientes al instalar el equipo:

■ Siga todas los avisos y las instrucciones que aparecen impresas en el equipo.

■ Cerciórese de que el voltaje y la frecuencia de la fuente de alimentación coinciden con el voltaje y frecuencia indicados en la etiqueta de clasificación eléctrica del equipo.

■ No introduzca objetos de ningún tipo a través de las aberturas del equipo. Dentro pueden darse voltajes peligrosos. Los objetos conductores extraños podrían producir un cortocircuito y, en consecuencia, fuego, descargas eléctricas o daños en el equipo.

Símbolos

Los símbolos siguientes pueden aparecer en este manual:

⚠️ **Precaución –** Existe el riesgo de que se produzcan lesiones personales y daños en el equipo. Siga las instrucciones.

⚠️ **Precaución –** Superficie caliente. Evite todo contacto. Las superficies están calientes y pueden causar lesiones personales si se tocan.

⚠️ **Precaución –** Riesgo de voltajes peligrosos. Para reducir el riesgo de descargas eléctricas y de daños en la salud de las personas, siga las instrucciones.

| **Encendido –** Proporciona alimentación de CA al sistema.

Según el tipo de interruptor de alimentación del que disponga el dispositivo, se utilizará uno de los símbolos siguientes:

◯ **Apagado –** Corta la alimentación de CA del sistema.

⏻ **Espera –** El interruptor de encendido/espera está en la posición de espera.

Modificaciones en el equipo

No realice modificaciones mecánicas ni eléctricas en el equipo. Sun Microsystems no se hará responsable del cumplimiento de las normas en el caso de un producto Sun que ha sido modificado.

Lugar y colocación de un producto Sun

⚠️ **Precaución –** No obstruya ni tape las rejillas del producto Sun. Nunca coloque un producto Sun cerca de radiadores o fuentes de calor. El incumplimiento de estas directrices puede causar un recalentamiento y repercutir en la fiabilidad del producto Sun.

⚠️ **Precaución –** El nivel de ruido en el lugar de trabajo, definido en el apartado 1000 de DIN 45 635, debe ser 70 Db (A) o inferior.

Cumplimiento de las normas SELV

Las condiciones de seguridad de las conexiones de E/S cumplen las normas SELV.

Conexión del cable de alimentación

Precaución – Los productos Sun han sido diseñados para funcionar con sistemas de alimentación monofásicos que tengan un conductor neutral a tierra. Para reducir el riesgo de descargas eléctricas, no enchufe ningún producto Sun a otro tipo de sistema de alimentación. Si no está seguro del tipo de alimentación del que se dispone en el edificio, póngase en contacto con el encargado de las instalaciones o con un electricista cualificado.

Precaución – No todos los cables de alimentación tienen la misma clasificación de corriente. Los cables de prolongación domésticos no ofrecen protección frente a sobrecargas y no están diseñados para ser utilizados con sistemas informáticos. No utilice cables de prolongación domésticos con el producto Sun.

Precaución – El producto Sun se suministra con un cable de alimentación (de tres hilos) con conexión a tierra. Para reducir el riesgo de descargas eléctricas, enchufe siempre el cable a una toma de corriente con conexión a tierra.

La precaución siguiente sólo se aplica a aquellos dispositivos que posean un interruptor de alimentación de espera:

Precaución – El interruptor de alimentación del producto funciona como dispositivo de espera solamente. El cable de alimentación actúa como el dispositivo de desconexión primario del sistema. Cerciórese de enchufar el cable de alimentación a una toma de corriente con conexión a tierra situada cerca del sistema y a la que se pueda acceder con facilidad. No conecte el cable de alimentación cuando se haya quitado la fuente de alimentación del bastidor del sistema.

Batería de litio

Precaución – En la placa CPU de los productos Sun, hay una batería de litio incorporada en el reloj en tiempo real, SGS núm. MK48T59Y, MK48TXXB-XX, MK48T18-XXXPCZ, M48T59W-XXXPCZ o MK48T08. Los usuarios no deben cambiar las baterías. Podrían estallar si no se utilizan adecuadamente. No arroje la batería al fuego. No la desmonte ni intente recargarla.

Paquete de baterías

Precaución – Las unidadesSun StorEdge A1000 contienen una batería de plomo sellada, Productos eléctricos portátiles núm. TLC02V50. Existe el riesgo de explosión si el paquete de baterías no se utiliza correctamente o se sustituye de forma incorrecta. Sustitúyalo sólo por el mismo tipo de paquete de baterías de Sun Microsystems. No lo desmote o intente recargarlo fuera del sistema. No arroje la batería al fuego. Deshágase de las baterías correctamente siguiendo las normas locales vigentes.

Cubierta de la unidad del sistema

Debe retirar la cubierta de la unidad del sistema informático Sun para añadir tarjetas, memoria o dispositivos de almacenamiento internos. Asegúrese de volver a colocar la cubierta superior antes de encender el equipo.

⚠ **Precaución –** No ponga en funcionamiento los productos Sun sin que la cubierta superior se encuentre instalada. De lo contrario, podrían producirse lesiones personales o daños en el sistema.

Aviso de cumplimiento de las normas para láser

Los productos Sun que utilizan tecnología láser cumplen los requisitos para láser de Clase 1.
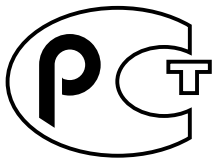
```
Class 1 Laser Product
Luokan 1 Laserlaite
Klasse 1 Laser Apparat
Laser Klasse 1
```

CD-ROM

⚠ **Precaución –** La utilización de controles, ajustes o la realización de los procedimientos distintos a los especificados en el presente documento podrían provocar la exposición a radiaciones peligrosas.

Certificación GOST-R

Nordic Lithium Battery Cautions

Norge

⚠ **ADVARSEL –** Litiumbatteri — Eksplosjonsfare.Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten. Brukt batteri returneres apparatleverandøren.

Sverige

⚠ **VARNING –** Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

Danmark

⚠ **ADVARSEL! –** Litiumbatteri — Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

Suomi

⚠ **VAROITUS –** Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

Contents

xx   Sun StorEdge A1000 and D1000 Installation, Operations, and Service Manual • November 2002

Preface

The *Sun™ StorEdge™ A1000 and D1000 Installation, Operations, and Service Manual* provides installation and configuration information and service procedures to customers and service personnel for the Sun StorEdge A1000 and D1000 systems. These instructions are designed for an experienced system administrator.

Using UNIX Commands

This document might 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 this information:

- *Solaris Handbook for Sun Peripherals*
- AnswerBook2™ online documentation for the Solaris™ operating environment
- Other software documentation that you received with your system

Typographic Conventions

Typeface[*]	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. Replace command-line variables with real names or values.	Read Chapter 6 in the *User's Guide*. These are called *class* options. You *must* be superuser to do this. To delete a file, type `rm` *filename*.

* The settings on your browser might differ from these settings.

Shell Prompts

Shell	Prompt
C shell	*machine-name*`%`
C shell superuser	*machine-name*`#`
Bourne shell and Korn shell	`$`
Bourne shell and Korn shell superuser	`#`

.

Related Documentation

Application	Title	Part Number
RAID Installation	*RAID Manager 6.1.1 Installation and Support Guide for Solaris*	805-4058
RAID User Guide	*RAID Manager 6.1.1 User's Guide*	805-4057
RAID Release Notes	*Sun StorEdge A1000 Product Release Notes*	805-3656
Hot-plug Instructions	*Sun StorEdge D1000 Storage Guide*	805-4013

Accessing Sun Documentation

You can view, print, or purchase a broad selection of Sun documentation, including localized versions, at:

`http://www.sun.com/documentation`

Sun Welcomes Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. You can email your comments to Sun at:

`docfeedback@sun.com`

Please include the part number (805-2624-11) of your document in the subject line of your email.

Getting Started

The Sun StorEdge A1000 and D1000 systems are made up of a chassis, dual power supplies, dual cooling canisters, the controller module and from 4 to 12 hot-pluggable, UltraSCSI hard disk drives. Both the A1000 and D1000 units may be used on the desktop.

This chapter provides instructions on how to prepare the area, connect the cables and power on the system.

SCSI Host Adapters

You must use one of two host adapter boards available from Sun, depending on your host system's requirements:

■ For SBus based hosts — SBus to differential UltraSCSI adapter, UDWIS/S Model X1065A

■ For PCI based hosts — PCI to dual differential UltraSCSI adapter, Model X6541A

Before You Begin

Make sure you do the following before you install the system:

1. **Read the Product Notes, if any, for updated product information.**

Information contained in the Product Notes may affect your installation.

2. **Prepare the site for the installation, including determining site power and sizing requirements.**

   Refer to Appendix A for power, size, and weight statistics.

3. **Halt operations and power off your host system.**

   Refer to your host system documentation for instructions on powering off the system.

4. **Install either an SBus wide intelligent UltraSCSI differential (UDWIS/S) or a PCI adapter card into your host system.**

   Refer to the documentation that shipped with the adapter card for installation instructions.

5. **Have other documents available during the installation.**

   ■ Software documents (available on the system CD)

6. **Decide which configuration to use.**

Sun StorEdge A1000 Configurations

You can use the Sun StorEdge A1000 Hardware RAID controller as a single unit connected to one or more hosts, or connect up to ten units together in a chain. For optimal performance, chain only three Sun StorEdge A1000 units together.

See FIGURE 1-1 and FIGURE 1-2.
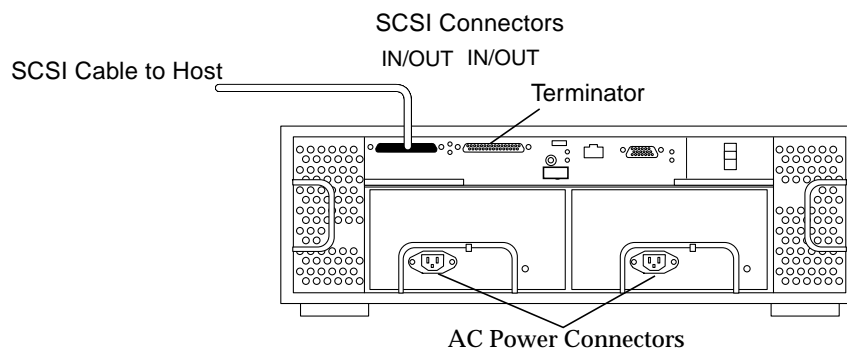
FIGURE 1-1   Single Sun StorEdge A1000 Connected to a Single Host
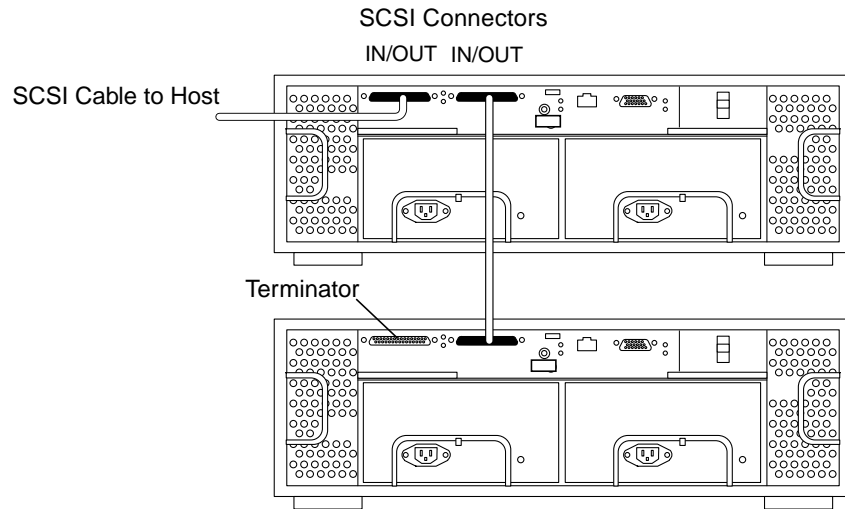
FIGURE 1-2   A Sun StorEdge A1000 in a Chained Configuration

Sun StorEdge D1000 Configurations

You can use the Sun StorEdge D1000 unit in several different configurations.

■ As a single box of disks attached to a single host (FIGURE 1-3)
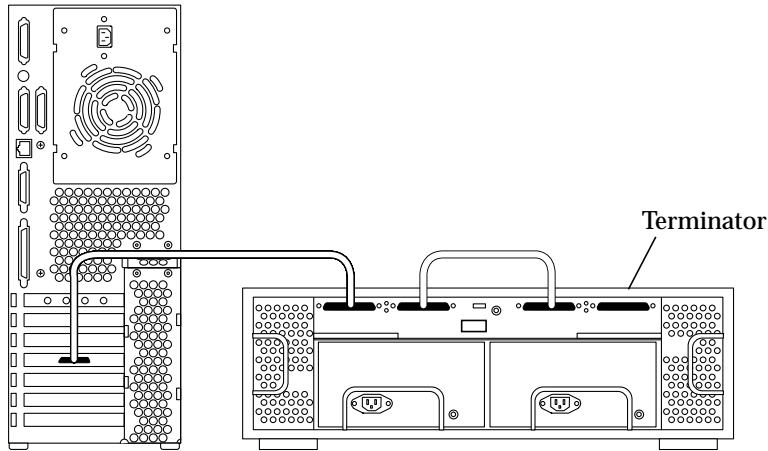
FIGURE 1-3   A Single Sun StorEdge D1000 Connected to a Single Host
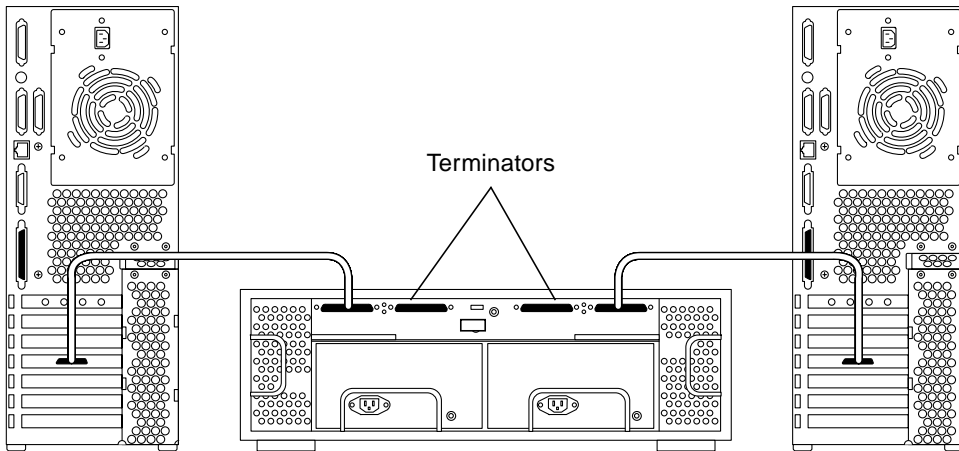
FIGURE 1-4   A Single Sun StorEdge D1000 Split Between Two Hosts

- A single unit split between two hosts, where each host has access to half the disks (FIGURE 1-4).

Preparing and Installing the System

You must perform the following tasks to prepare and install your Sun StorEdge A1000 or D1000 system.

1. **Set up your Sun StorEdge A1000 or D1000 with the mounting hardware, if any, that came with your system.**

2. **Determine which SCSI target addresses are available on your host system.**

   Refer to the *Solaris Handbook for SMCC Peripherals* available on the *Solaris AnswerBook* on-line documentation for information on how to determine which SCSI target IDs are already in use.

Installing the System

1. **Set the target addresses for your system (A1000 hardware RAID controller).**
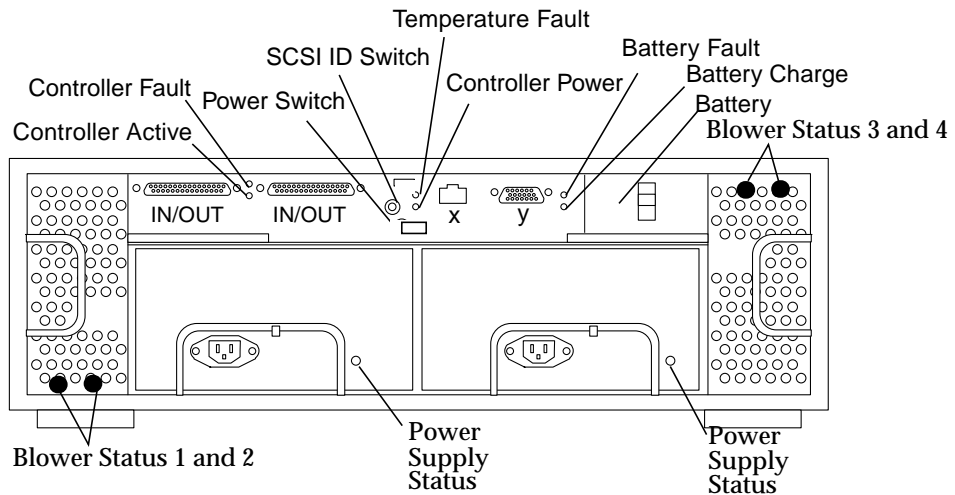
Note: x = 10Base-T Ethernet (reserved for factory or future use)
y = RS232C port (reserved for factory or future use)

FIGURE 1-5   Sun StorEdge A1000 Rear View

2. **Set the option switch (D1000).**

   See FIGURE 2-7 or FIGURE 2-8 for split box configurations.

Temperature Fault
Controller Power

Option Switch

Power Switch

Module ID   Blower Status 3and 4

IN/OUT-1   IN/OUT-1

IN/OUT -2   IN/OUT -2

Blower Status 1 and 2

Power
Supply
Status

Power
Supply
Status
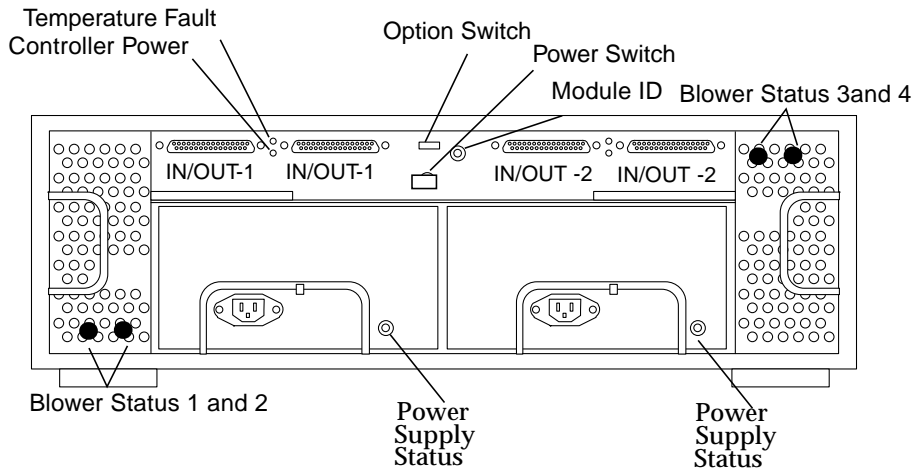
FIGURE 1-6   Sun StorEdge D1000 Rear View

3. Connect the cables and power cords.

Use only UltraSCSI cables.

4. Install one or more terminators, depending on the configuration you have chosen.

5. Turn on the power to the Sun StorEdge A1000 or D1000 system and the host system.

6. Install any additional software.

Note – For the Sun StorEdge A1000 you must use RAID Manager 6.1.1 (or better), which comes with your unit.

Product Overview

This chapter describes the controller module and other system components, except the hard drives. For information on the drives, refer to the documents that you received with them.

System Hardware

The system comes in two basic configurations:

- A1000 unit — Hardware RAID controller based configuration
- D1000 unit — "Just a Bunch of Disks" (JBOD) configuration

Sun StorEdge A1000 Hardware RAID System

The system chassis houses several removable devices, including:

- Sun StorEdge A1000 Hardware RAID Controller Module
- Two power supplies
- Battery
- Dual cooling canisters
- Disk drives

Components at the Front of the Unit
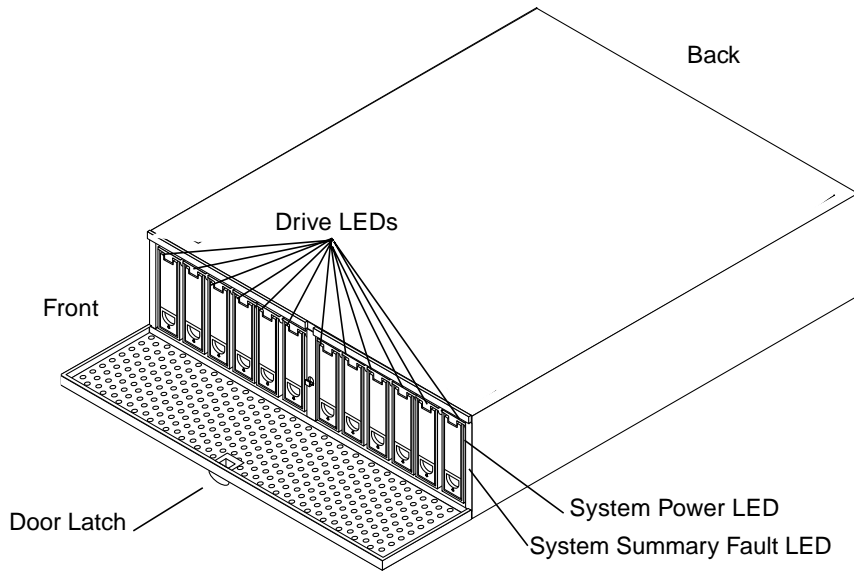
FIGURE 2-1   Sun StorEdge A1000 Front — An Example of a Twelve 1-inch Drive System

Front Door

The lockable front door opens to allow access to the hard disk drives. The door keys are in the ship kit pouch.

The system backplane for the hard disk drives can accept up to eight 1.6-inch drives or twelve 1-inch drives.

LEDs on the Front (FIGURE 2-1)

- System Power LED: lights green when the system is powered on.
- System Summary Fault LED: lights amber when a system component, such as a disk, cooling canister or a power supply, needs service.
- Each slot for a hard disk drive has a two-color LED above the disk drive. The LED:
  - Remains unlit when no drive is in the slot
  - Lights green when the drive is present but not active

- Flashes green when the drive in the slot is active
- Lights amber when the drive has been marked as failed by the A1000 controller

Components at the Back of the Unit

At the rear of the A1000 system are two power supplies, two cooling canisters with two blowers each, a battery, two 68-pin connectors for the host SCSI bus, a SCSI ID switch and a locking power switch.

Power Switch

The Sun StorEdge A1000 system has one rocker power switch to control both power supplies (FIGURE 2-3).

- Right — Momentary ON position |, either or both power supplies provide power to the system
- Center — Neutral position, when the switch is released from the ON position, the switch settles into the Neutral position and the power supplies remain on.
- Left — Standby Position, neither power supply provides power.

Caution – Turning the power switch to the Standby position does not completely cut off power to the system. AC input to each power supply is still connected to the electrical outlet until the power cord is unplugged.

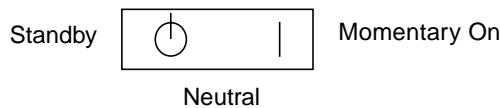Standby   ⏻ | Momentary On

Neutral

FIGURE 2-2   Power Switch

SCSI ID Switch

The A1000 configuration has one SCSI ID switch for selecting the controller SCSI target address, from 0 to 15. Different SCSI target IDs are required if you have two or more A1000 systems daisy-chained together.

Battery

The Sun StorEdge A1000 system has a data cache hold-up battery in the hardware RAID controller board. During a power outage, a properly charged battery will maintain electrical power to the controller's data cache memory for up to three days. Thus, all data stored in data cache memory will be preserved as long as the battery can sustain power to the data cache memory. The battery is self recharging with the power on and is replaceable, after a two-year life, without removing any other modules.

- The "Caution" label contains weight and length information for safe removal and and installation purposes.

- The "Battery Support Information" label contains three dates for maintenance purposes.
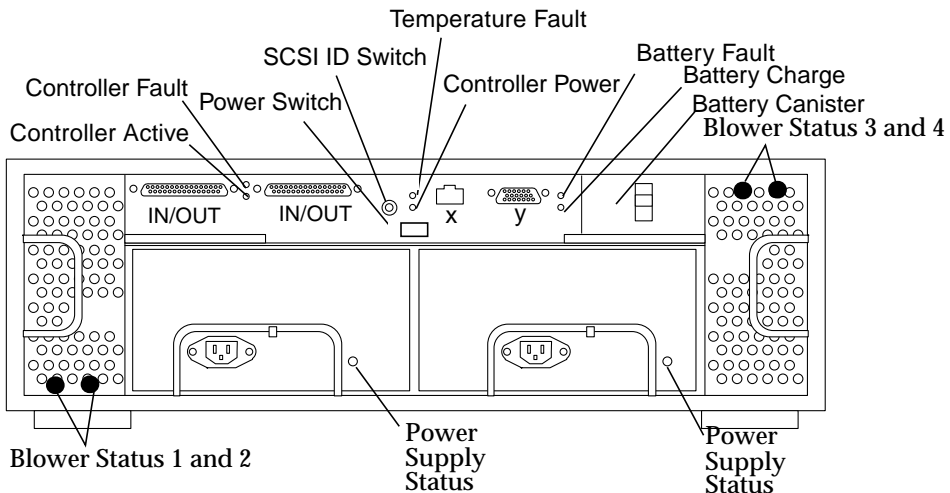
Note: x = 10Base-T Ethernet (reserved for factory or future use)
y = RS232C port (reserved for factory or future use)

FIGURE 2-3   Sun StorEdge A1000 Rear View

LEDs on the Back

- Power Supply Status, one two-color LED on each power module:
  - Lights green when the power supply is operating properly
  - Lights amber when the power supply has failed but the other power supply is operating normally, or if the power cord is unplugged
  - Off if both power supplies are not plugged in or have failed

- Cooling Canister Status, 2 two-color LEDs on each cooling canister (one for each blower):
  - lights green when the individual blower is operating properly
  - lights amber when the individual blower has failed
  - Off when the cooling canister is not inserted

The A1000 controller has 6 single-color LEDS:

- Controller Fault
  - Lights amber when a controller fault is detected
  - Off when the controller functions normally
- Controller Activity :
  - Lights green when the controller is active
  - Off when the controller is inactive
- Temperature Fault
  - Lights amber when the controller board is over normal operating temperature
  - Off when the controller temperature is normal
- Controller Power
  - Lights green when the controller board is powered on
  - Off when it receives no power
- Battery Fault
  - Lights amber when there is no battery or there is a battery fault
  - Off when the battery is fully charged
- Battery Charge:
  - Lights solid green when the battery is fast charging
  - Flashes green when the battery is in the pre-charging phase
  - Off when the battery is not charging

Power Modules

The Sun StorEdge A1000 system has two hot-pluggable and interchangeable power supplies. The two power supplies provide power to the internal components, converting incoming AC voltage to DC voltages. These are redundant power supplies—one power supply will maintain electrical power to the system if the other power supply fails. Both power supplies are removable canisters that slide into one of two slots on the back of the system. Each canister has a locking handle, a power status LED, and an AC power cord connector.

Cooling System

The Sun StorEdge A1000 system has two cooling canisters. Each contains two blowers. The cooling canisters are hot-pluggable and interchangeable.

The Sun StorEdge A1000 system can operate fully cooled with three of the four blowers functioning. If two blowers fail, the remaining two can maintain the system in a 30C environment, but the reliability of the components may be affected.

The blower speeds are variable and increase their speed to counteract unusual cooling conditions, such as one failed blower or increased internal temperature.

Caution – Do not operate the system for extended periods with one or more redundant modules not installed. The cooling system will become inefficient.

Disk Drives

For specific information about the drives installed in your system, see the separate drive documentation that comes with your system.

Disk Drive Address ID Assignments

Each drive bay is assigned an address ID. T

Sun StorEdge A1000

In a Sun StorEdge A1000, the RAID Manager software identifies the drives as follows:

- 8-drive system
  [2,0] [2,1] [2,2] [2,3] and [1,0] [1,1] [1,2] [1,3]
- 12-drive system (default)
  [2,0] [2,1] [2,2] [2,3] [2,4] [2,5] and [1,0] [1,1] [1,2] [1,3] [1,4] [1,5]

Dummy Drives

If you ordered a system with less than the maximum number of disk drives, dummy drives fill the holes for the emply slots. The dummy drives are air baffles; they allow the system to maintain maximum cooling. If any slot does not contain a disk drive, you must fill the slot with a dummy drive so the unit will cool properly.

Sun StorEdge A1000 Hardware RAID Controller Module

The Sun StorEdge A1000 hardware RAID controller module is a compact unit designed to provide high-performance disk array management services. The controller module supports dual SCSI hosts on a 16-bit SCSI-2 bus. There are 2 SCSI controllers inside the controller module that manage data distribution and storage for up to 12 disk drives. The controllers perform system status and fault detection functions as well. RAID Manager allows the user to reset the disk array in different RAID configurations.

The Sun StorEdge A1000 controller module comes with two 4MB Single Inline Memory Modules (SIMMs) for program memory and two 8MB SIMMs for data cache memory installed and two UltraSCSI connectors (68-pin) for the host connection. *Data cache memory* is a memory buffer on the controller used to support the Write Cache feature of RAID Manager, the disk array management software.

The standard configuration contains 24 MB of DRAM, upgradable to 80 MB DRAM. See "SIMM Upgrade Procedure (A1000 only)" on page 30.

Sun StorEdge A1000 Software

The firmware for your Sun StorEdge A1000 Hardware RAID Controller is installed at the factory. The RAID Manager software is shipped with your system and runs on the host system. It allows you to configure the system for RAID functionality.

The Sun StorEdge D1000 Unit

The system chassis houses several removable devices, including:

- D1000 controller interface board, providing two independent USCSI bus connections
- Dual power supplies
- Dual cooling canisters
- Disk drives

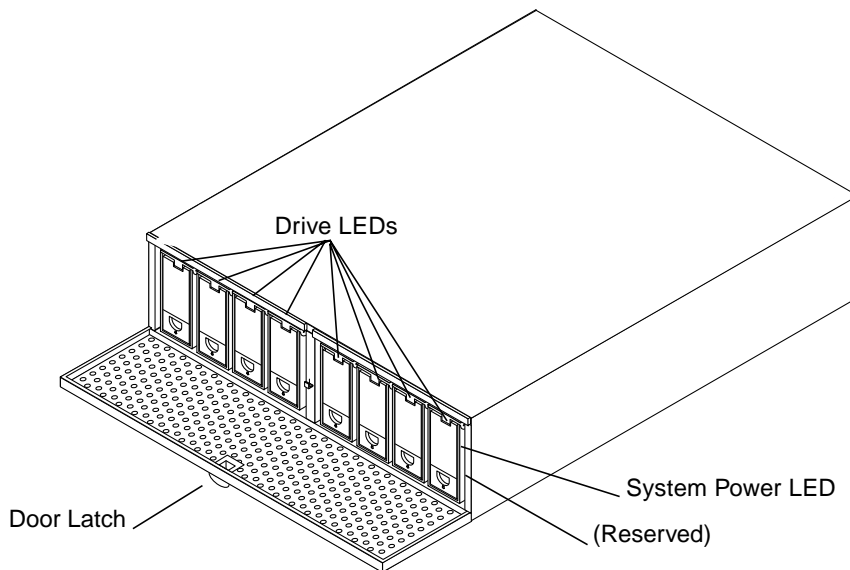## Components at the Front of the Unit

FIGURE 2-4 Sun StorEdge D1000 Front — An Example of a Eight 1.6-inch Drive System

Front Door

The lockable front door opens to allow access to the hard disk drives. The door keys are in the ship kit pouch.

The system backplane for the hard disk drives can accept up to eight 1.6-inch drives or twelve 1-inch drives.

LEDs on the Front

- System Power LED: lights green when the system is powered on.
- Each slot for a hard disk drive has a two-color LED above the disk drive. The LED:
    - Remains unlit when no drive is in the slot
    - Lights green when the drive is present but not active
    - Flashes green when the drive in the slot is active

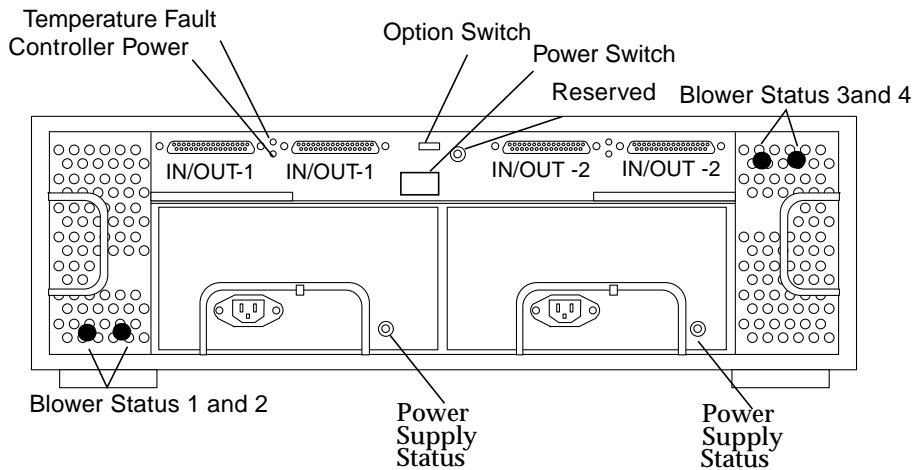# Components at the Back of the Unit

FIGURE 2-5   Sun StorEdge D1000 Rear View

At the rear of the D1000 system are two power supplies, two cooling canisters with two blowers each, four 68-pin connectors for the host SCSI buses, and a rocker power switch.

Power Switch

The Sun StorEdge D1000 system has one rocker power switch to control both power supplies (FIGURE 2-3).

- Right — Momentary ON position |, either or both power supplies provide power to the system
- Center — Neutral position, when the switch is released from the ON position, the switch settles into the Neutral position and the power supplies remain on.
- Left — Standby Position, neither power supply provides power.

Caution – Turning the power switch to the Standby position does not completely cut off power to the system. AC input to each power supply is still connected to the electrical outlet until the power cord is unplugged.

Standby   Momentary On

Neutral
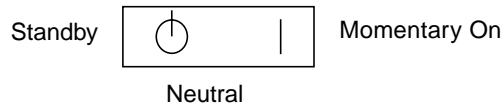
FIGURE 2-6   Power Switch

Option Switch

1. Disk Array 1 ID (FIGURE 2-7 for the 12-slot and FIGURE 2-8 for the 8-slot)
   - Up: 8–11 or 8–13 (factory default)
   - Down: 0–3 or 0–5

2. Disk Array 2 ID (FIGURE 2-7 for the 12-slot and FIGURE 2-8 for the 8-slot)
   - Up: 8–11 or 8–13
   - Down: 0–3 or 0–5 (factory default)

3. Drives Remote Start
   - Up: wait for SCSI command (factory default)
   - Down: check switch 4

4. Drives Delayed Start
   - Up: start with (12 x SCSI device ID number) seconds delay (factory default)
   - Down: start at power-on

5. Reserved (No function)

FIGURE 2-7 Sun StorEdge D1000 SCSI Disk ID Address Assignment —12-drive system

FIGURE 2-8 Sun StorEdge D1000 SCSI Disk ID Address Assignment —8-drive system

LEDs on the Back

- Power Supply Status, one two-color LED on each power module:
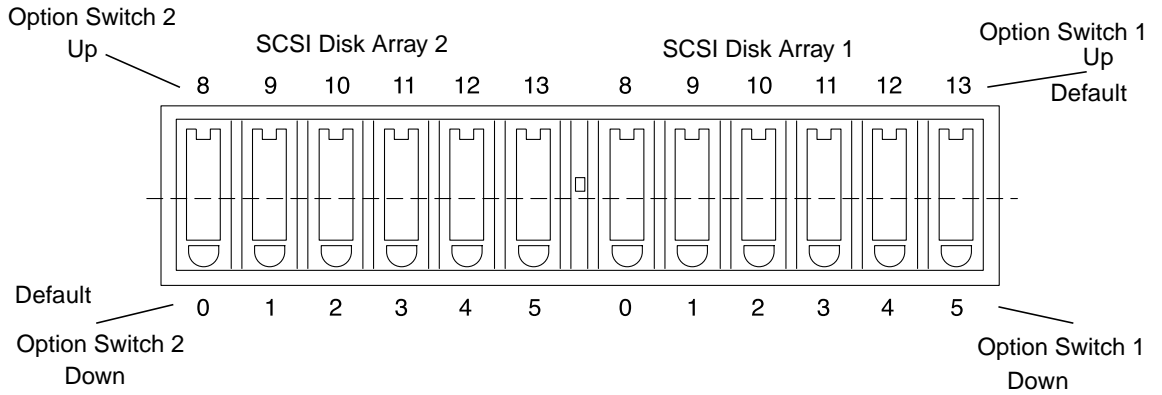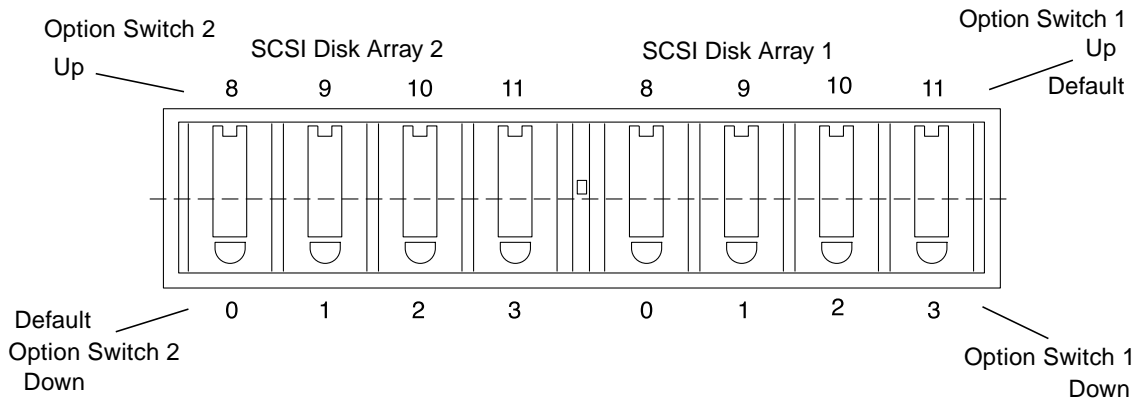   - Lights green when the power supply is operating properly
    - Lights amber when the power supply has failed but the other power supply is operating normally, or when the power cord is unplugged
    - Off if both power supplies are not plugged in or have failed
- Cooling Status, 2 two-color LEDs on each cooling canister (one for each blower):
    - lights green when the individual blower is operating properly
    - lights amber when the individual blower has failed
    - Off when the cooling canister is not inserted

The D1000 controller interface board has 2 single-color LEDS.

- The Temperature Fault LED
    - Lights amber when the board has detected a thermal fault
    - Off when the temperature is normal
- The Controller Interface BoardPower LED
    - Lights green when the controller interface board is powered on
    - Off when the controller interface board is receiving no power

Power Modules

The Sun StorEdge D1000 system has two hot-pluggable and interchangeable power supplies. Two DC power supplies in the chassis provide power to the internal components, converting incoming AC voltage to DC voltages. These are redundant power supplies—one power supply will maintain electrical power to the system if the other power supply fails. Both power supplies are removable canisters that slide into one of two slots on the back of the system. Each canister has a locking handle, a power status LED, and an AC power cord connector.

Cooling System

The Sun StorEdge D1000 system has two cooling canisters. Each contains two blowers. The cooling canisters are hot-pluggable and interchangeable.

The D1000 system can operate fully cooled with three of the four blowers functioning. If two blowers fail, the remaining two can maintain the system in a 30C environment, but the reliability of the components may be affected.

The blower speeds are variable and increase their speed to counteract unusual cooling conditions, such as one failed blower or increased internal temperature.

⚠ **Caution –** Do not operate the system for extended periods with one or more redundant modules not installed. The cooling system will become inefficient.

Disk Drives

See the documentation that comes with your system for information about the drives installed in your system.

Sun StorEdge D1000

In a Sun StorEdge D1000, the Unix File System software identifies the drives as follows:

- 8-drive system (default switch setting)
  (where `t` is the drive number)
  `cxt0dxsx, cxt1dxsx, cxt2dxsx, cxt3cxsx` and
  `cxt8dxsx, cxt9dxsx, cxt10dxsx, cxt11dxsx`

- 12-drive system (default switch setting)
  (where `t` is the drive number)
  `cxt0dxsx, cxt1dxsx, cxt2dxsx, cxt3cxsx, cxt4cxsx, cxt5cxsx` and
  `cxt8dxsx, cxt9dxsx, cxt10dxsx, cxt11dxsx, cxt12cxsx,`
  `cxt13cxsx`

Dummy Drives

If you ordered a system with less than the maximum number of disk drives, dummy drives fill the holes for the emply slots. The dummy drives are air baffles; they allow the system to maintain maximum cooling. If any slot does not contain a disk drive, you must fill the slot with a dummy drive so the unit will cool properly.

Sun StorEdge D1000 Software Considerations

The Sun StorEdge D1000 may be used as simply additional disk storage for an existing host system; it may be used in conjunction with Veritas™ VxVm in a RAID based system. See the Veritas software user's guide on your system CD. A Veritas VxVm license can be obtained from Sun.

Removing and Replacing Components

The Sun StorEdge A1000 and D1000 systems contain easy access components, some of which are hot-pluggable and some of which must be replaced with the power off.

Hot-pluggable Parts

- Hard Disk Drives
- Cooling Canisters
- Power Supplies

Replaceable with Power Off

- Sun StorEdge D1000 controller board
- Sun StorEdge A1000 controller board
- Sun StorEdge A1000 Battery
- Sun StorEdge A1000 SIMMs

Replacing Hot-Pluggable Parts

Hard Disk Drives

The Sun StorEdge A1000 or D1000 system you ordered comes configured with either 1.6-inch drives or one-inch drives. The procedure for removing and replacing the drives differs only in the software you use to control the disks. In all cases the hard disks are hot-pluggable.

▼ To Remove a Disk Drive

1. **Be sure there is no activity to the drives and prepare the software environment.**

   See the documentation that came with your software.

   - Instructions for hot plugging or unplugging a disk in the Sun StorEdge A1000 system are in RAID Manager documentation.
   - Instructions for hot plugging or unplugging a disk in the Sun StorEdge D1000 system are in Sun StorEdge D1000 Storage Guide.
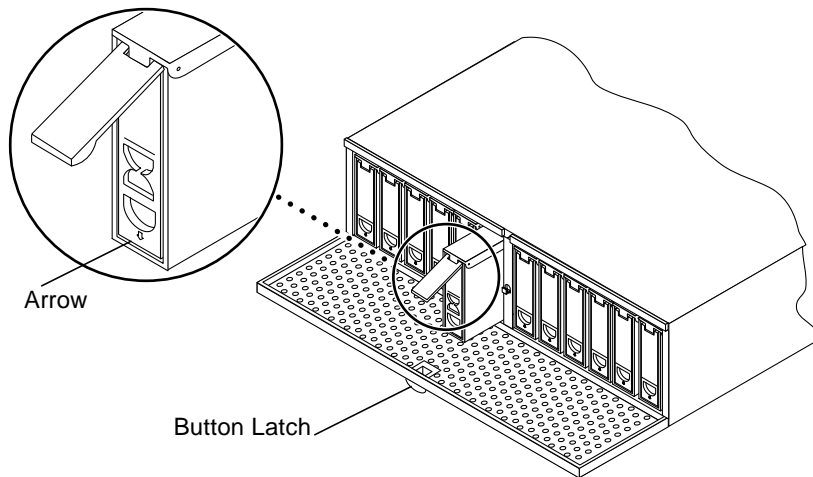

Arrow

Button Latch

FIGURE 3-1   Removing and Replacing a Disk Drive

2. **Unlock and open the door at the front of the chassis.**

   Push down the button latch at the center of the door (FIGURE 3-1).

3. **Unlatch the drive bracket handle to release it (**FIGURE 3-1**).**

   Push down in the direction of the arrow to release the latch.

4. **Pull the bracket handle out and swing it open.**

5. **Continue to pivot the disk drive bracket handle against the chassis, applying mild pressure until the drive disconnects.**

6. **Slide the drive out**

▼ To Replace a Disk Drive

1. **Hold the locking handle on the disk drive open (**FIGURE 3-1**).**

2. **Slide the replacement disk drive into the vacant slot.**

3. **Gently push the drive until the locking handle engages.**

4. **Close the locking handle handle completely, using gentle downward pressure.**

Cooling Canisters

The Sun StorEdge A1000 or D1000 comes with two cooling canisters, each of which contains two blowers. If any of the blowers fails, the LED on the back of the system lights amber, indicating which blower has failed. To replace a blower, replace the entire canister.
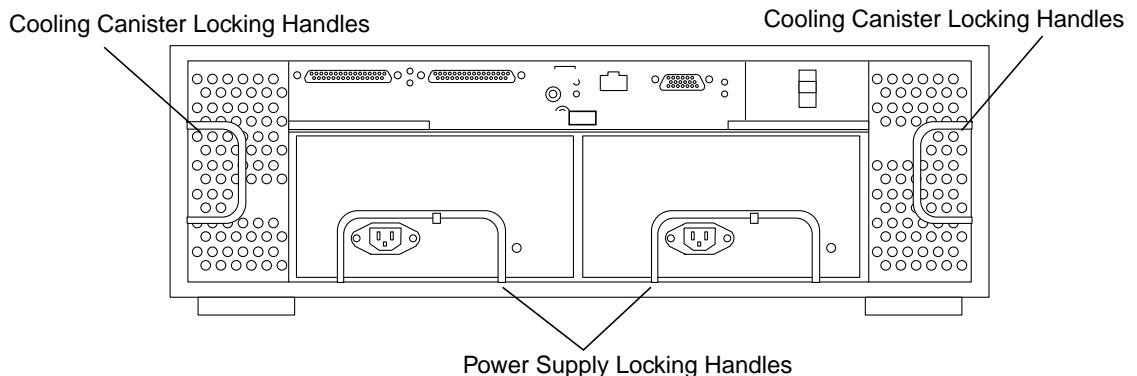

FIGURE 3-2 Rear of Sun StorEdge A1000 System

▼ To Remove and Replace a Cooling Canister

1. Release the locking handle and pull the cooling canister out (FIGURE 3-2 **and** FIGURE 3-3**).**
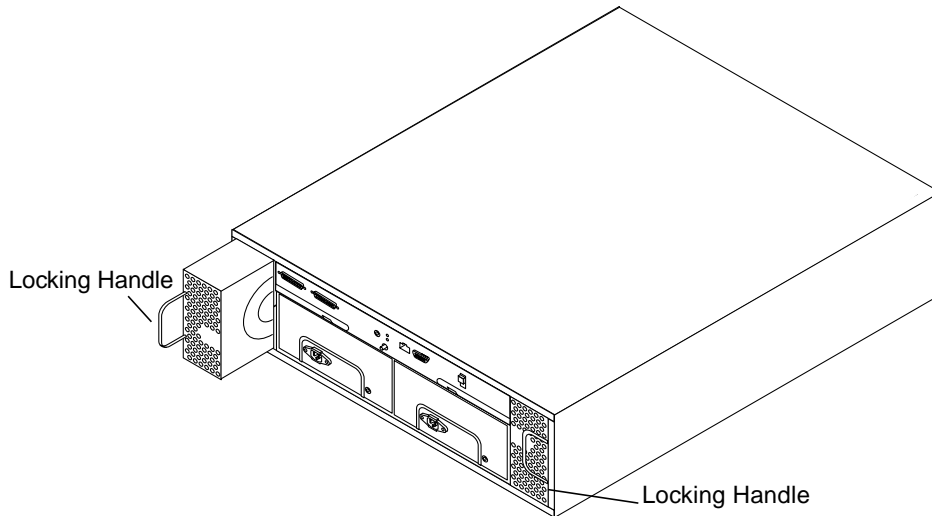

Locking Handle

Locking Handle

FIGURE 3-3 Removing and Replacing a Cooling Canister

2. Orient the new cooling canister so that the round intake holes face inward and the locking handle is on the outside edge of the canister on each side.

The locking handle should face inward when it is closed.

3. Slide the new cooling canister into the slot and push it until it engages.

The LEDs for the cooling canister light green when the connector is properly engaged.

4. Close the locking handle.

Power Supplies

The Sun StorEdge A1000 or D1000 enclosure comes with two power supplies. The LED on the power supply lights amber when the power supply fails. Although the system can run well with only one power supply, the faulty one should be replaced in case the good one goes bad. You can replace a failed or failing power supply without turning the system off.

▼ To Replace a Power Supply

1. **Disconnect the power cord from the power supply you intend to replace.**

   You cannot remove the power supply without first disconnecting the power cord. See FIGURE 3-2. and FIGURE 3-3 for the positions of the power connector and locking handle.
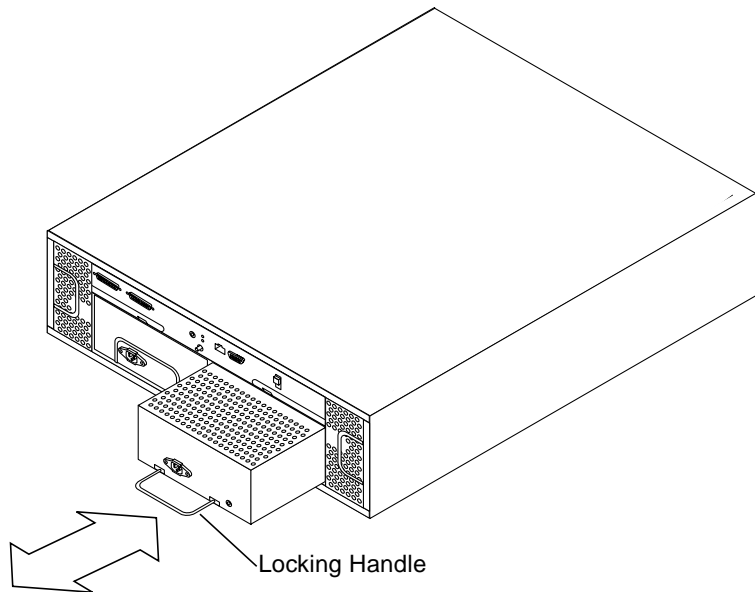

Locking Handle

FIGURE 3-4   Removing and Replacing a Power Supply

2. **Pull the locking handle down and slide the power supply out of the bay (**FIGURE 3-4**).**

3. **Slide the new power supply into the bay.**

   Small rails on the power supply base fit into cut-outs in the chassis.

4. **Push firmly until the power supply connector engages.**

5. **With the locking handle in the closed (up) position, connect the power cord.**

   The LED for the power supply should light green.

Replacing Parts with the Power Off

Controller Board

You must turn off the power to replace the controller board in either the Sun StorEdge A1000 and D1000 versions of the system.

▼ To Remove the Controller Board

⚠ **Caution –** If the Sun StorEdge D1000 array is part of a Sun StorEdge A3500 array or a Sun StorEdge A3500FC array, please refer to FIN I0670-1 for additional precautions that must be taken to ensure the proper replacement of the controller/ESM card.

1. **Stop the software communication with the Sun StorEdge A1000 or D1000 system.**

   See the documentation that came with your software.

2. **Turn off the power to the system.**

   Push the power switch to the standby position. Press the left side of the switch.

3. **Remove the SCSI cables and terminators on the controller board.**

4. **Attach an antistatic wrist strap to the exposed metal part of the chassis at the center post between the power supply bays.**

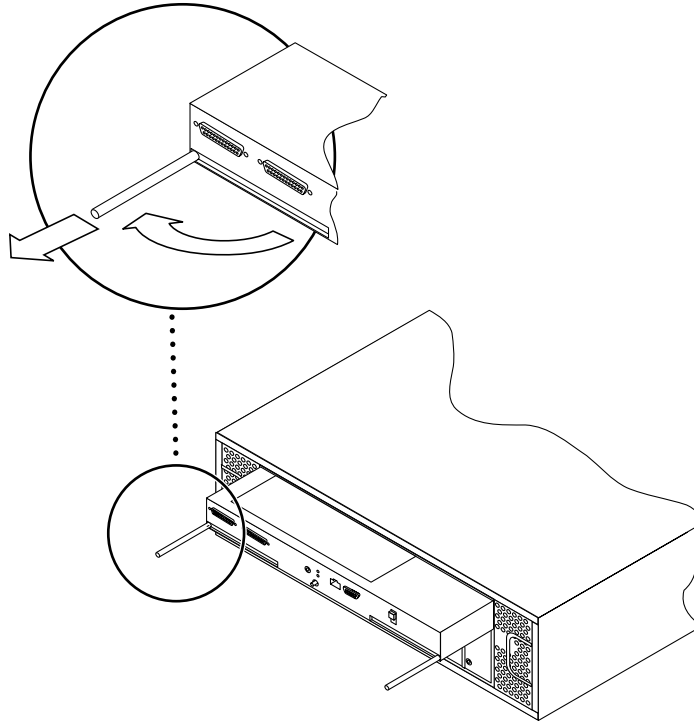**FIGURE 3-5**   Controller Board Levers

5. Slide the controller board canister out and set it on an antistatic mat.

   a. Use the levers at each side to release the controller board.

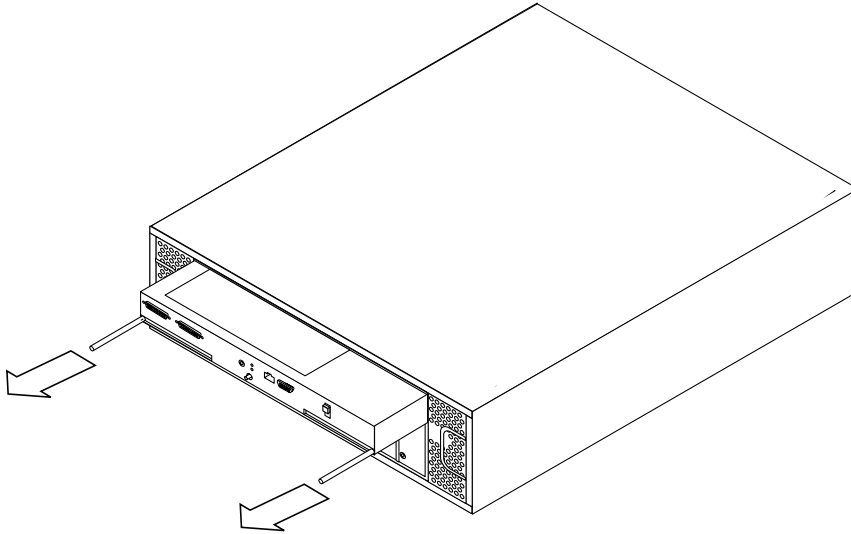   **b. Hold the levers to slide the canister out.**

FIGURE 3-6 Removing the Controller Board

▼ To Replace the Controller Board

1. **Slide the replacement controller board in its canister into the slot in the chassis.**

   The top of the canister has rails that fit into guide hooks in the chassis.

2. **Push firmly until the controller board connector engages.**

3. **Push both handles inward until they are flush with the canister.**

4. **Connect the cables and remove the antistatic strap.**

5. **Turn the power on.**

   Push the power switch to the momentary on position (right side) and then release it.

Battery (A1000 Only)

You must turn off the power to replace the battery. Note all the cautions and warnings in this chapter and the safety information at the front of the book.

▼ To Replace the Battery

Replace the battery only with the same type of Sun Microsystems battery.

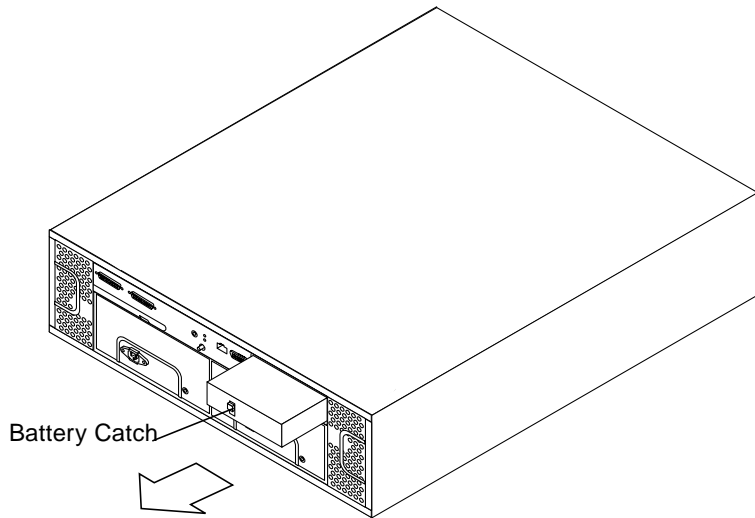1. **Locate the battery on the back of the unit. See** FIGURE 3-2**.**

2. **Push down the catch on the outside of the battery.**

3. **Pull the battery out.**

> **Caution –** There is a sealed lead acid battery in Sun StorEdge A1000 units. There is danger of explosion if the battery pack is mishandled or incorrectly replaced. Replace only with the same type of Sun Microsystems battery pack.
> Dispose of the battery properly in accordance with local regulations. Do not mishandle it, disassemble it, or attempt to recharge it outside the system. Do not dispose of the battery in fire.
>
> If the used battery is physically damaged and is leaking electrolyte gel, do not process it for recycling. Manage damaged batteries according to your local regulations, which may include management as a hazardous waste.

> **Note –** If the replacement battery arrives with return paperwork, you must fill out this paperwork and return the battery as instructed.

4. **After properly disposing of the spent battery, slide the new one into the battery port in the controller board.**

   Be sure the battery is firmly seated.

5. Set the battery age.

```
# raidutil -c cxtxd0s2 -R
```

SIMM Upgrade Procedure (A1000 only)

The following procedure provides instructions for upgrading the A1000 controller board from the factory configured 24 Mbytes to an 80 Mbyte system.

Caution – Be sure to have an antistatic wrist strap and mat ready for the SIMMs and the controller board.

1. Follow the procedure for removing the controller board from the system. See "To Remove the Controller Board."
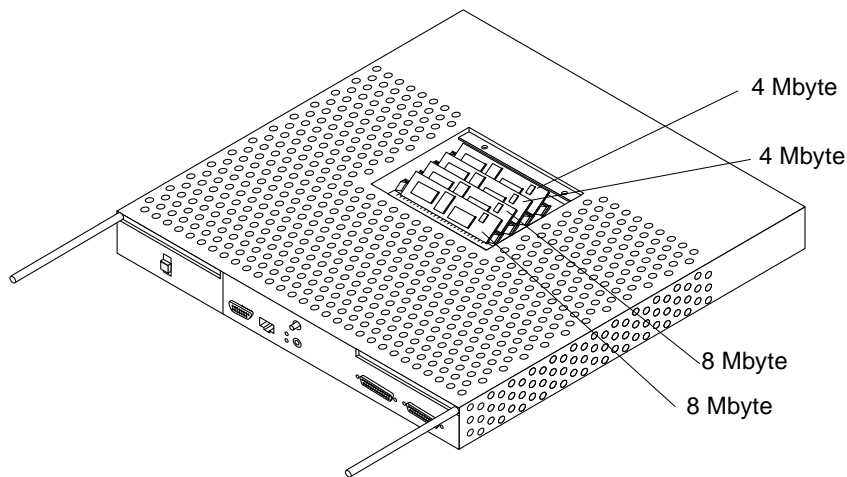

FIGURE 3-8   A1000 Controller—Fully populated with 8 Mbyte and 4 Mbyte SIMMs (factory configuration)

2. Flip the controller canister over so you can see the SIMM cover.

See the orientation of the SCSI ports.

3. Remove the two screws that hold the SIMM cover to the center of the controller canister and remove the cover.

This exposes the SIMMs (FIGURE 3-8).

4. Attach the antistatic wrist strap to your wrist and an unpainted metal part of the chassis.
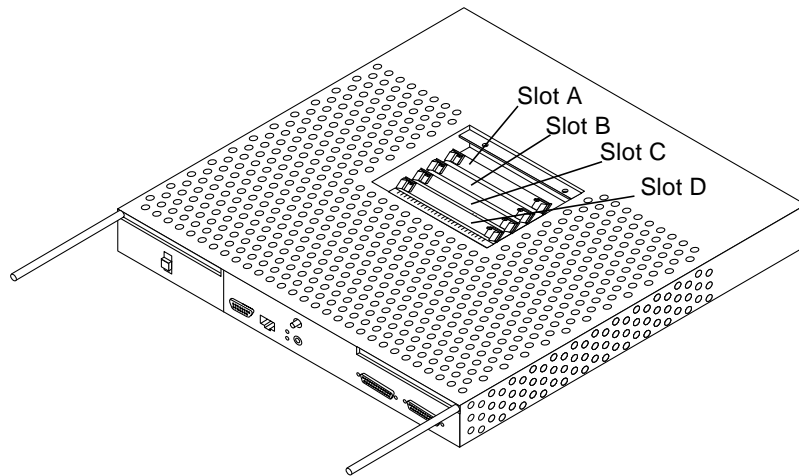

FIGURE 3-9 A1000 Controller—Empty SIMM slots

5. Remove the SIMMs and set them on an antistatic mat.

Remove the SIMMs from front to back. Press the small latch on each side of the SIMM that releases it from the slot (FIGURE 3-10).

a. Remove first two SIMMs from slot D and slot C (FIGURE 3-10) and set them aside.

These are 8 Mbyte SIMMs. You will use these SIMMs later.

b. Remove the SIMMs from slot B and slot A (FIGURE 3-9).

These are the 4 Mbyte SIMMs which you can save for use in other hardware.

4 Mbyte SIMM (ICs on front side only)
8 Mbyte SIMM (ICs on both sides)
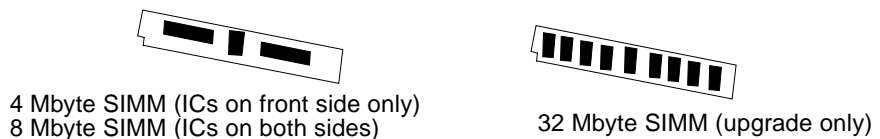
32 Mbyte SIMM (upgrade only)

FIGURE 3-10 SIMMs

6. Replace the 8 Mbyte SIMMs into slot A and slot B (FIGURE 3-9).

The SIMM is keyed and will fit only one way (notch in lower left corner) (FIGURE 3-10).

7. **Remove the two 32 Mbyte SIMMs from the antistatic packaging. Install them into slot C and slot D (**FIGURE 3-9**).**

8. **Place the part number label supplied with the upgrade kit over the barcode label near the SIMM access door.**

   The new part number label correctly identifies your controller upgrade.

9. **Remove the antistatic strap and replace the lid to the canister.**

   Secure the screws.

10. **Replace the canister into the Sun StorEdge A1000 unit. See "To Replace the Controller Board."**
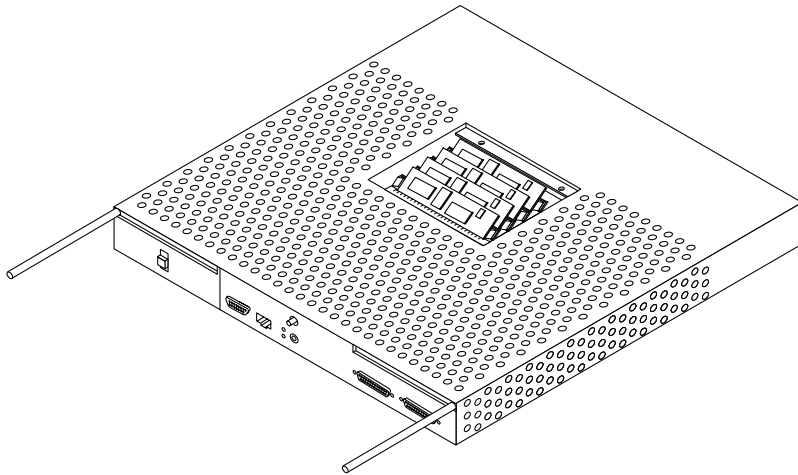

FIGURE 3-11 Sun StorEdge A1000—SIMM Upgrade

System Specifications

Physical Specifications

The outside measurements of the chassis are as follows:

- Width: 53.34 cm   (21.0 in)
- Depth: 44.7 cm   (17.6 in)
- Height: 17.78 cm   (7.0 in)
- Weight: A1000   without disk drives: 19.3 kg   (42.5 lbs)
             fully loaded: 28.4 kg   (62.5 lbs)
         D1000   without disk drives: 18.6 kg   (41.0 lbs)
             fully loaded: 27.4 kg   (60.5 lbs)

The unit's total weight depends on the number of components installed in the chassis.

Electrical Specifications

TABLE A-1   AC Power Requirements

Electrical Element	Requirement
Voltage	100 VAC to 240 VAC
Frequency	47 - 63 Hz
Idle	2.14 amps

TABLE A-1 AC Power Requirements

Electrical Element	Requirement
Max. Operating	2.6 amps
Max. Surge	22 amp peaks

[1] Typical current ratings at 240 volts AC, 60 Hz. Assumes a 0.70 power efficiency, 0.99 power factor.

Environmental Specifications

Table A-2 Environmental Requirements

Climate Control	Location	Minimum to Maximum Range
Temperature (dry bulb)	Operating	5˚C to 40˚C
	Storage	-20˚C to 60˚C
	Transit	-20˚C to 60˚C
Temperature Derating (max.)*	Operating	3.3˚C per 1000m (1.7˚F per 1000 ft) above sea level
Relative Humidity (non-condensing)	Operating	20% to 80%
	Storage	10% to 93%
	Transit	5% to 95%
Altitude (based on drives)	Operating	3 Km (100 ft) below to 3,048m (10,000 ft) above sea level
	Storage	30.5m (100 ft) below to 3,048m (10,000 ft) above sea level
	Transit	30.5m (100 ft) below to 12,000m (40,000 ft) above sea level
Heat Dissipation (maximum)	Operating	260 Watts, 1092 BTU per hour
Sound Power and Pressure	Operating	6.6 bels (power), 63.7 dBA (pressure)

* If you plan to operate the controller module at altitudes between 1000m and 3000m (3280 ft and 9850 ft), you must lower the environmental temperature 3.3˚ C (1.7˚ F) for every 1000m (3280 ft) above sea level.