Sun StorEdge™ 6320 System 1.1 Installation Guide

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Part No. 816-7878-11
Oct 2003, Revision A

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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 StorEdge 6320 system.

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.

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

On – Applies AC power to the system.

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 StorEdge 6320 system.

Placement of a Sun Product

Caution – Do not block or cover the openings of your Sun StorEdge 6320 system. 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 6320 Name 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 the Sun StorEdge 6320 system 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.

Class 1 Laser Product
Luokan 1 Laserlaite
Klasse 1 Laser Apparat
Laser Klasse 1

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.

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

MARCHE – Met le système sous tension alternative.

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 6320 Name 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
Luokan 1 Laserlaite
Klasse 1 Laser Apparat
Laser Klasse 1

CD-ROM

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.

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

Ein – Das System wird mit Wechselstrom versorgt.

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 Stromversorgungsystem 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 6320 Name 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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CD-ROM

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.

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

Encendido – Proporciona alimentación de CA al sistema.

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 unidades Sun StorEdge 6320 Name 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.

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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.

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Preface

The *Sun StorEdge™ 6320 System 1.0 Installation Guide* provides procedures for installing the Sun StorEdge™ 6320 System. The 6320 Systems are shipped installed in their cabinet. This guide describes how to complete the initial setup of the system, power the system on and off, and connect the system to the data hosts on the Storage Area Network (SAN) and the management console on the Local Area Network (LAN).

Only a qualified service provider should perform the tasks in this guide.

Caution – You must read and understand the *Sun StorEdge 6320 Regulatory and Safety Compliance Manual* or the Chapter "Safety Agency Compliance Statements on page iii" before beginning any procedure in this guide.

How This Guide Is Organized

Chapter 1 contains an introduction to the 6320 System.

Chapter 2 describes planning for the installation, safety, how to install the 6320 System cabinet and powering on the system.

Chapter 3 describes how to connect a LAN and hosts on the SAN.

Chapter 4 provides steps to complete the initial Configuration Utility Menu.

Chapter 5 steps you through the initial configuration parameters using the web-based Configuration Services.

Chapter 6 describes how to initialize the Sun StorEdge Remote Response service.

Appendix A describes how to add a second cabinet to the Sun StorEdge 6320 systems.

Appendix B describes how to remotely power the systems on and off.

Appendix C contains the physical specifications of the system.

Appendix D provides information on installing software on hosts.

Appendix E provides steps to change the default configuration to add initiators for additional security or change the default RAID-5 configuration to another RAID level.

Using UNIX Commands

This document does not contain information about 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™ software 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	Read Chapter 6 in the *User's Guide*. These are called *class* options. You *must* be superuser to do this.
	Command-line variable; replace with a real name or value	To delete a file, type `rm` *filename*.

Shell Prompts

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

6320 System Documentation

The following is a list of documents related to the Sun StorEdge 6320 system. For any document number with *nn* as a suffix, use the most current document.

Subject	Title	Part Number
Late-breaking news	• *Sun StorEdge 6320 System 1.0 Release Notes*	816-7880-*nn*
Sun StorEdge 6320 system preparation	• *Sun StorEdge 6320 System 1.0 Site Preparation Guide* • *Sun StorEdge 6320 System Regulatory and Safety Compliance Manual*	816-7877-*nn* 816-7876-*nn*
System installation and initial configuration	• *Sun StorEdge 6320 System 1.1 Installation Guide*	816-7878-*nn*
Configuration	• *Sun StorEdge Configuration Service Online Help*	NA
Software installation from CD	• *Sun StorEdge 6000 Family Host Installation Software Guide*	817-1739-*nn*
System Reference	• *Sun StorEdge 6320 System 1.0 Reference and Service Manual*	816-7879-*nn*
System Diagnostics	• *Storage Automated Diagnostics Environment Online Help* • *Storage Automated Diagnostics Environment 2.2 User's Guide, System Edition*	NA 817-0192-*nn*

Related Documentation

The following documents provide detailed information, if needed, about system components.

Product	Title	Part Number
San Foundation Software	• *Sun StorEdge SAN Foundation 4.2 Configuration Guide*	817-1245-*nn*
Traffic Manager Software	• *Sun StorEdge Traffic Manager Software Installation and Configuration Guide*	816-1420-*nn*
	• *Sun StorEdge Traffic Manager 3.0 Installation and User's Guide for Microsoft Windows 2000 and Windows NT Operating Systems*	817-0830-*nn*
	• *Sun StorEdge Traffic Manager 3.0 Installation and User's Guide for IBM AIX Operating System*	817-0832-*nn*
	• *Sun StorEdge Traffic Manager 3.0 Installation and User's Guide for Hewlett Packard HP-UX Operating System*	817-0834-*nn*
Sun StorEdge network Fibre Channel switch-8 and switch-16	• *Sun StorEdge Network FC Switch-8 and Switch-16 Release Notes*	816-0842-*nn*
	• *Sun StorEdge Network FC Switch-8 and Switch-16 Installation and Configuration Guide*	816-0830-*nn*
	• *Sun StorEdge Network FC Switch-8 and Switch-16 Best Practices Manual*	816-2688-*nn*
	• *Sun StorEdge Network FC Switch-8 and Switch-16 Operations Guide*	816-1986-*nn*
	• *Sun StorEdge Network FC Switch-8 and Switch-16 Field Troubleshooting Guide*	816-0252-*nn*
SANbox™ switch management using SANsurfer®	• *SANbox-8/16 Segmented Loop Switch Management User's Manual*	875-3060-*nn*
	• *SANbox-8 Segmented Loop Fibre Channel Switch Installer's/ User's Manual*	875-1881-*nn*
	• *SANbox-16 Segmented Loop Fibre Channel Switch Installer's/ User's Manual*	875-3059-*nn*
Expansion cabinet	• *Sun StorEdge Expansion Cabinet Installation and Service Manual*	805-3067-*nn*
Storage Service Processor	• *Sun V100 Server User's guide*	806-5980-*nn*
	• *Netra X1 Server User's Guide*	806-5980-*nn*
Solaris Operating Environment	• *Solaris Handbook for Sun Peripherals*	816-4468-*nn*

Accessing Sun Documentation Online

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

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

For Sun StorEdge 6320 System documentation, go to:

`http://www.sun.com/products-n-solutions/hardware/docs/Network_Storage_Solutions/Midrange/6320/index.html`

Contacting Sun Technical Support

If you have technical questions about this product that are not answered in this guide, go to:

`http://www.sun.com/service/contacting`

Sun Welcomes Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. You can submit your comments by going to:

`http://www.sun.com/hwdocs/feedback`

Please include the title and part number of this document with your feedback:

Sun StorEdge 6320 System 1.1 Installation Guide part number 816-7878-*nn*.

CHAPTER 1

Understanding the Sun StorEdge 6320 System

The Sun StorEdge 6320 System offers a complete storage solution with a modular architecture and integrated system-wide manageability.

The Sun StorEDGE 6320 System scales incrementally from 500 gigabytes (GB) to 45 terabytes (TB) of storage while balancing capacity and performance.

For a review of the system's features and benefits, refer to:

http://www.sun.com/storage/midrange/6000/6300/6320/

This guide describes the components and features of the Sun StorEdge 6320 System that you will handle and be involved with during installation. It does not discuss the aspects of the installation and configuration that you do not need to perform at this point. This chapter provides the following overviews:

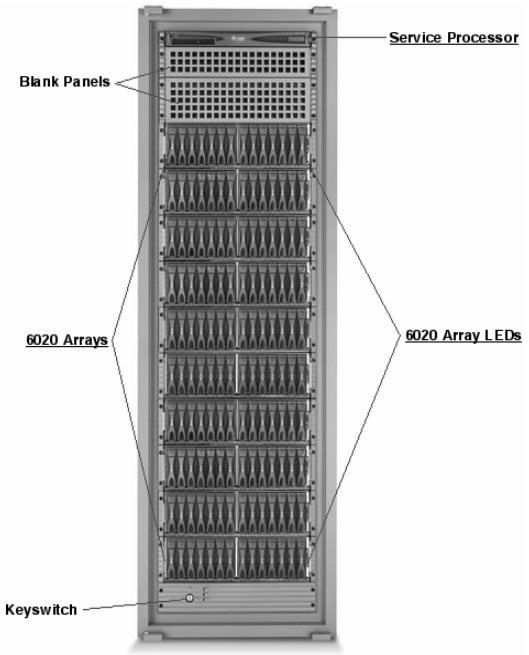
- "Hardware Overview" on page 1-2
- "Software Overview" on page 1-6

1.1 Hardware Overview

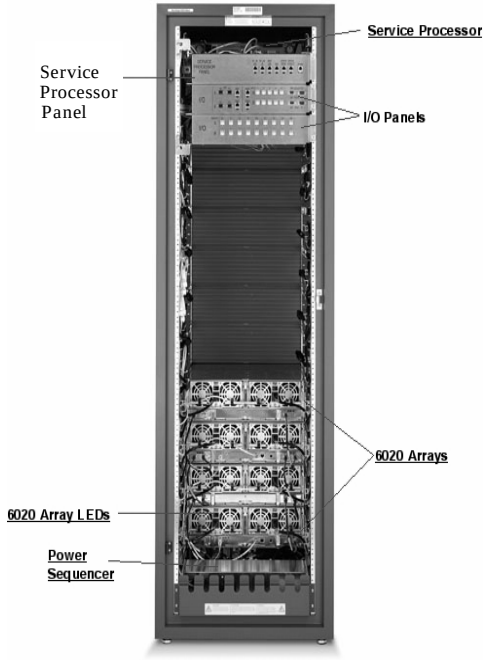
The main hardware components of the Sun StorEDGE 6320 System you should be familiar with include:

- Sun StorEdge 6320 System Cabinet
- Service Processor Panel
- Storage Service Processor
- Storage Arrays

1.1.1 Sun StorEDGE 6320 System Cabinet

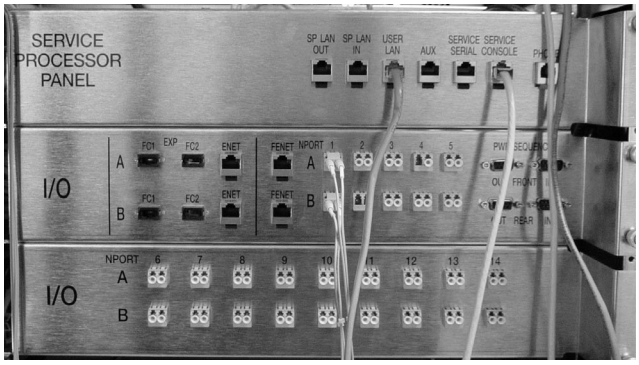


From the front of the 6320 cabinet, you can view the LEDs for the Storage Service Processor (SSP) and the system arrays. Whenever any LEDs are yellow or red, check the logs and reports in the diagnostic software, Storage Automated Diagnostic Environment Software.



From the rear of the 6320 cabinet, you can access the Storage Service Panel for cabling the Storage Area Network (SAN) and Local Area Network (LAN) to the 6320 System. You can also access the 6020 Array field replaceable units (FRUs) such as power and cooling units and the Array Controllers.

1.1.2 Service Processor Panel



The Service Processor Panel simplifies the cabling to the 6320 System. You can connect your cables to these accessible panel connections rather than to individual components of the system.

In Chapter 2 you will learn how to connect to the panel based on your system's configuration.

1.1.3 Service Processor

The Service Processor (SP) is a management host residing in the cabinet. The Service Processor manages the administrative tasks of the 6320 System outside of the data path of the SAN.

The Service Processor is cabled to the Storage Service Panel, allowing for easy serial and Local Area Network (LAN) connections. Normally you will not need to directly connect to the SP.

1.1.4 Storage Arrays

The Sun StorEDGE 6320 System uses 6020 arrays as storage modules. The arrays can have a master and an alternate master controller with expansion units. The array accepts 1- and 2-Gbit/sec Fibre Channel connectivity from data hosts. Extensive reliability, availability, and serviceability (RAS) features include redundant components, notification of failed components, and the ability to replace components while the unit is online.

The administrative paths in the array are completely independent of the SAN data path for ensuring reliability, security, serviceability, and ease of use. The Ethernet-based administrative path enables centralized configuration and monitoring of large numbers of array configurations, providing storage to multiple application servers.

Each disk drive has system area information that is mirrored across all fourteen drives for redundancy so that data can be recovered from the other functional drives.

1.1.5 Understanding RAID Levels

The 6320 System supports RAID-5 (default), RAID-0, and RAID-1

***R**edundant **A**rray of **I**ndependent **D**isks* (RAID) systems provide significant storage by making the data on many small disks readily available to file servers, hosts, or the network as a single array.

Data throughput and availability are dependent on the storage system architecture, how the data is stored within the array (RAID level), and the application's use of the data.

RAID systems use two or more drives in combination for fault tolerance and performance.

The supported RAID levels are:

- **RAID-0:** Provides *data striping* across multiple disks but no redundancy. This improves performance but does not deliver fault tolerance.
- **RAID-1:** Provides disk mirroring whereby all data is copied onto two separated disks.
- **RAID-5:** Default level provides data striping at the byte level and also stripe error correction (parity checking) information. This results in excellent performance and good fault tolerance. Parity checking specifies that when the RAID controller writes information onto the disks, it also writes redundant information called parity bits. Should a disk fail, the parity information enables the RAID controller to recreate the lost information as it is requested. Since the parity information is spread across multiple disks, only a percentage of the disks is used for parity information, which improves the efficiency of available storage space.

1.2 Software Overview

This section describes the following software used in the Sun StorEdge 6320 System :

- Sun StorEDGE 6320 System Management Software
- Data host software
- External management host software
- Other supported software

Note – Supported software is available for download from:
http://wwws.sun.com/software/download/
Also, the Sun StoreEdge 6000 Family Host Installation Software CD contains the following software for the 6320 System:
- Sun StorEdge SAN Foundation Kit
- Storage Automated Diagnostic Environment
- Sun StorEdge Remote Configuration CLI (Solaris only)

1.2.1 Sun StorEDGE 6320 System Management Software

TABLE 1-1 describes the Web-based configuration and management software that is already installed on the Service Processor of Sun StorEDGE 6320 Systems.

TABLE 1-1 System Management Software on the Sun StorEdge 6320 System

Software	Description
Sun StorEdge Configuration Service Software	Sun StorEdge Configuration Service software delivers a centralized, web-based management platform which provides configuration, control, and asset information services. Configuration Service software enables you to manage the Sun StorEDGE 6320 System and 6020 arrays in a storage area network environment. **Key Benefits** • Configure and manage storage trays, pools, and volumes • Create and manage initiator groups and initiators • Administer storage Service Processor features such as passwords, user e-mail notification, date, network settings, and other items • View logs, reports, and overall array health
Storage Automated Diagnostic Environment Software - for 6320 System diagnostics	The installed version of the Storage Automated Diagnostic Environment Software is a diagnostic monitoring tool for the 6320 System. It can be configured to monitor on a 24-hour basis, collecting information that enhances the reliability, availability, and serviceability of the 6320 System. **Benefits** • A Web-based user interface for monitoring and diagnostics • Remote notification • Secure Socket Layer (SSL) encryption to protect transmitted information

1.2.2 Data Host Software

This section describes the software that you install on data hosts. The information is listed in the following two tables:

- TABLE 1-2 describes the software for data hosts.
- TABLE 1-3 contains lists the data host software by Operating System.

TABLE 1-2 contains lists the data host software by Operating System.

TABLE 1-2 Supported Data Host Software

Software	Supported Software
Sun StorEdge SAN Foundation Software - Solaris Hosts	This software incorporates kernel drivers and utilities that enable Solaris data hosts to connect to, monitor, and transfer data on a SAN. Install the software on Solaris data hosts.
Sun StorEdge Traffic Manager Software - Non-Solaris Hosts	This software incorporates kernel drivers and utilities that enable non-Solaris data hosts to connect to, monitor, and transfer data on a SAN. Install the software on non-Solaris data hosts.
Storage Automated Diagnostic Environment Software - Device Edition (optional)	The Storage Automated Diagnostic Environment Software - Device Edition resides on SAN devices to assist for measuring the online health and diagnostic monitoring tool of the SAN.

TABLE 1-3 contains lists the data host software by Operating System

TABLE 1-3 Data Host Software by Operating System

Software	Supported Software
Solaris	Sun StorEdge SAN Foundation. Storage Automated Diagnostic Environment Software - Client Edition
Microsoft Windows NT	Sun StorEdge Traffic Manager for NT
Microsoft Windows 2000 Server and Advanced Server	Sun StorEdge Traffic Manager for Windows 2000 and Advanced Server Storage Automated Diagnostic Environment Software - Client Edition
IBM AIX	Sun StorEdge Traffic Manager for AIX Storage Automated Diagnostic Environment Software - Client Edition
HP-UX	Sun StorEdge Traffic Manager for HP-UX Storage Automated Diagnostic Environment Software - Client Edition
Red Hat Linux 7.2	(Single-path support only) Storage Automated Diagnostic Environment Software - Client Edition

1.2.3 External Management Host Software

TABLE 1-4 shows the software that can installed on external management hosts to work with the Sun StorEdge 6320 System.

TABLE 1-4 External Management Host Software

Software	Description
Sun StorEdge 6000 CLI packages	For remote configuration from a command line interface, install a Sun StorEdge 6000 CLI package for Solaris, AIX, HP-UX, Linux, or Windows. This thin-scripting client software provides access to storage array configuration and management services through a CLI client on an external host. **Supported Operating Systems** • Solaris - Sun StorEdge 6000 CLI package for Solaris (optional) • AIX - Sun StorEdge 6000 CLI Package for AIX • Red Hat Linux - Sun StorEdge 6000 CLI Package for Linux • HP-UX - Sun StorEdge 6000 CLI Package for HP-UX • Windows 2000 Advanced Server - Sun StorEdge 6000 CLI Package for Windows
Storage Automated Diagnostic Environment Software - Device Edition	The Storage Automated Diagnostic Environment Software client edition resides on SAN devices to assist for measuring the online health and diagnostic monitoring tool of the SAN.

1.2.4 Other Supported Software

TABLE 1-5 lists other software supported by the 6320 System. Refer to the software documentation for installation instructions.

.

TABLE 1-5 Other Supported Software for the Sun StorEdge 6320 System

Software	Description
Other Supported Software	•Sun StorEdge Enterprise Storage Manager •Sun StorEdge Availability Suite •Sun StorEdge Performance Suite •Sun StorEdge Utilization Suite Software •Sun StorEdge Resource Manager software suite •Sun Cluster™ •Sun StorEdge Enterprise Backup •VERITAS VxVM •VERITAS Volume Manager with DMP •VERITAS NetBackup •VERITAS File System •VERITAS Cluster Server 1

CHAPTER 2

Installing the Sun StorEdge 6320 System

This chapter provides the information that you will need to set up your 6320 System hardware and cabling. Additionally, this chapter cites areas that you will want to consider before actually setting up the 6320 System and then beginning the initial configuration.

This chapter includes the following:

- "Planning the Installation" on page 2
- "Connectivity Worksheet" on page 2
- "Installation Checklist" on page 3
- "Safety" on page 4
- "Installing the System Cabinet" on page 6
- "Unpacking the System" on page 6
- "Moving and Placing the System" on page 7
- "Adjusting the Leveling Pads" on page 9
- "Installing the Stabilizer Legs" on page 7
- "Installing the Floor-Mounting Brackets" on page 10
- "Accessories Kit Packing List" on page 12
- "Connecting the Expansion Cabinet" on page 13
- "Powering On the System" on page 13
- "Powering On Locally" on page 13
- "Required Tools" on page 14
- "Preparing the System for Local Power" on page 15
- "Connecting the Grounding Cable" on page 16
- "Connecting the Power Cables" on page 17
- "Powering On the System for Local Power-On" on page 20
- "Powering Off Sequence" on page 22

2.1 Planning the Installation

Before beginning the installation, prepare the site and gather the information that you will need.

2.1.1 Connectivity Worksheet

Use this worksheet to preplan the Ethernet connections.

Caution – The 6320 System uses IP addresses 174.30.0.x, 74.40.0.x, and 10.0.0.x for internal operation. Do not otherwise use these IP addresses for the 6320 System.

TABLE 2-1 Connectivity Information Worksheet

Component	Information
Host name	
Host IP address	
Subnet mask	
Domain name	
Name server (DNS)	
Gateway IP address	
E-mail notification address	

2.1.2 Installation Checklist

This checklist gives a high-level view of the activities that you will perform for both the hardware and software aspects of your installation.

TABLE 2-2 Installation Checklist

Hardware
1. Unpack the system.
2. Move and place the system.
3. Secure the system leveling pads and stabilizer legs, or mount it to the floor.
4. Connect an expansion cabinet (if necessary).
5. Connect all cabling.
6. Power on the system.
Software
1. Establish initial network connectivity with the Install Utility script. Verify connection to the LAN using a Ping command.
2. Verify volumes on the hosts before changing default configuration. - Log In to the Web-based configuration software. - Select the Administration tab. - Click through the default displays so that you can identify the volumes you want to associate with the HBAs. - Logout of the software.
3. Open the CLI client to access the HBAs and verify that the Volumes are ready to be secured.
4. Complete the Configuration - Fill in the Admin screens. - Delete to change the default RAID-5 pools. - Create a volume and add it to the volume group. - Create an initiator group. - Create an initiator to add to the group. - Select Reports to verify the volume and initiator.
5. Initialize remote response service (if appropriate).

2.2 Safety

You must install the Sun StorEdge 6320 system in accordance with the local safety codes and regulations. The following sections contain additional safety information for the local facility:

- "Handling Precautions" on page 2-4
- "Secure Installation Requirements" on page 2-5
- "Ventilation" on page 2-5

2.2.1 Handling Precautions

Caution – A fully configured Sun StorEdge 6320 System cabinet weighs in excess of 1400 pounds (635 kg). Ensure that all surfaces this system will move over can withstand this load.

Additionally, the 6320 chassis is top heavy, even when you order the base configuration only. Keep this in mind when moving the system.

The 6320 System cabinet has wheels. You should have two to three people available, one to push the system off the pallet onto the ramp, and the others to resist the cabinet from rolling away. Make sure there is adequate space in front of the system to assure that it will not roll into anything.

Next, you will need both people to push the cabinet up the ramp to a raised floor computer room. Move the cabinet slowly and make sure the floor is free from objects and cables.

2.2.2 Secure Installation Requirements

To minimize personnel injury in the event of a seismic occurrence, you must securely fasten the cabinet to a rigid structure extending from the floor to the ceiling or walls of the room in which you situate the cabinet.

Install the cabinet on a level surface. There are adjustable nonskid pads at each corner of the cabinet base. You should extend these pads when the cabinet is installed to prevent the it from rolling. *Do not use these pads to level the cabinet.*

2.2.3 Ventilation

Air cools the 6320 System cabinet from front to back. Air enters at the front, circulates through the system, and is expelled at both the top and bottom back of the cabinet.

Caution – Do not block or cover the openings of the 6320 System. Furthermore, do not place it near a radiator or heat register.

2.3 Installing the System Cabinet

The 6320 System cabinet is shipped with all of the associated cables, including:

- Two power sequencer assemblies
- Four floor-mounting brackets
- Two stabilizer legs

The floor-mounting brackets enable you to bolt the cabinet to the floor. If you do not install the floor-mounting brackets, then you must install the stabilizer legs. The stabilizer legs are extended to prevent the cabinet from tipping over when field-replaceable units (FRUs) are installed, removed, or serviced.

2.3.1 Required Tools

You will need the following tools for the installation:

- Leveling wrench (shipped with the system)
- 7/16-inch ratchet wrench
- 1/2-inch ratchet wrench

2.3.2 Unpacking the System

If the 6320 System is already unpacked, proceed to Section 2.3.3, “Moving and Placing the System” on page 2-7.

1. **Inspect all shipping containers for evidence of physical damage.**

   If a shipping carton is damaged, request that the carrier’s agent be present when the carton is opened. Keep the contents and packing material for the agent’s inspection.

Caution – Use two or more people to unpack and set up the cabinet.

Only one side of the shipping carton top is labeled:

RAMPS ATTACH THIS SIDE

This indicates that you will slide the cabinet off of the pallet from this side. First, you must attach the white velcro straps on the ramp to the matching strap on the pallet.

2. **Verify the items you receive against the shipping list.**
3. **Reassemble the packing materials and save them for future use.**

2.3.3 Moving and Placing the System

Measure cabling distances to assure that the supplied cable is adequate.

The grounding cable for the cabinet is 6.5 feet (~2 meters) long. The procedure for connecting the grounding cable is described in detail in Section 2.6.4, “Connecting the Grounding Cable” on page 2-16.

Refer to the product specifications in Appendix C when you are determining where to place the cabinet.

Caution – Never lift the cabinet by the cosmetic panel surfaces or pull it from the back. Use two or more people to move the cabinet safely: one in front to control the movement and one behind. Push the middle section of the cabinet to prevent it from tipping over.

Note – To stabilize the system, you *must* follow the steps in either Section 2.3.4, “Installing the Stabilizer Legs” on page 2-7 *and* Section 2.3.5, “Adjusting the Leveling Pads” on page 2-9 *or* Section 2.3.6, “Installing the Floor-Mounting Brackets” on page 2-10.

2.3.4 Installing the Stabilizer Legs

To attach the system to the floor, skip to Section 2.3.6, “Installing the Floor-Mounting Brackets” on page 2-10.

The stabilizer legs help prevent the expansion cabinet from tipping over when FRUs are serviced in the expansion cabinet. The stabilizer legs must be properly installed and set to be effective.

Caution – Always extend the stabilizer legs before attempting to install new FRUs or to service FRUs in the expansion cabinet.

1. **Loosen the securing screw on the right stabilizer leg (**FIGURE 2-1**).**

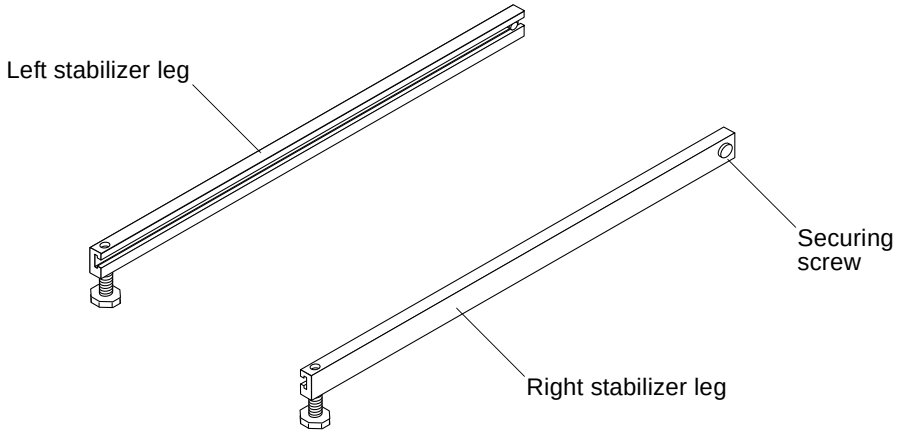


FIGURE 2-1 Stabilizer Legs

2. **Slide the right stabilizer leg over the three mounting screws at the bottom of the expansion cabinet (**FIGURE 2-2**) and fully extend it.**

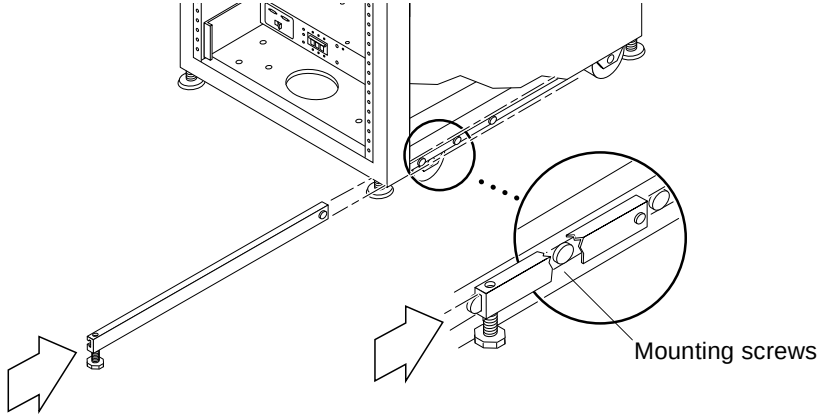


FIGURE 2-2 Installing the Right Stabilizer Leg

3. **Tighten the securing screw.**

   This prevents the stabilizer leg from falling off the mounting screws when it is extended.

4. **Repeat Step 1 through Step 3 for the left stabilizer leg.**

5. **Use the leveling wrench to adjust the feet on both stabilizer legs so that they touch the floor (**FIGURE 2-3**).**

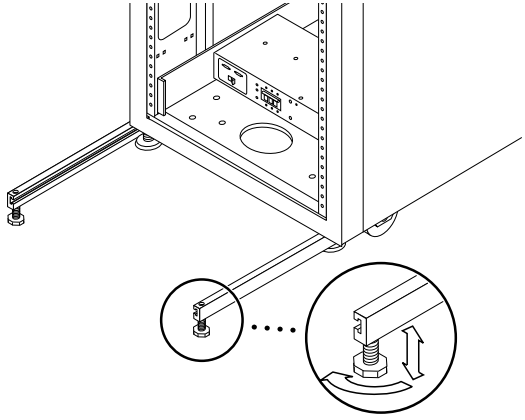


FIGURE 2-3 Adjusting the Leveling Pads on the Stabilizer Leg

6. **Slide both stabilizer legs under the expansion cabinet.**
7. **Resecure the leveling wrench inside the expansion cabinet.**
8. **Close the door.**

2.3.5 Adjusting the Leveling Pads

Caution – Unless you are using the floor mounting brackets, the four leveling pads must be lowered to the floor for the cabinet to meet Underwriters Laboratories' physical stability requirements.

The leveling pads (screws) are located at each corner of the base of the cabinet (FIGURE 2-4).

1. **Open the back door of the system cabinet.**
2. **Remove the leveling wrench by unlocking the plastic strap that holds it to the inside of the frame, near the top of the cabinet.**

   Do not cut the strap. Press the plastic tab to unlock the strap around the wrench, and then slide part of the strap through the lock to loosen the wrench.

3. **Adjust the four leveling pads on the cabinet frame using the leveling wrench.**

   Ensure that the four pads press against the floor so that the cabinet does not move or rock in any direction.

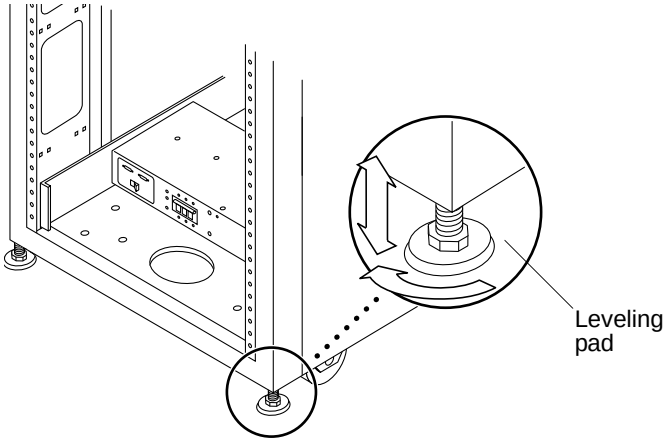


FIGURE 2-4 Leveling Pads

4. **Replace the leveling wrench into its plastic strap and tighten the strap.**
5. **Continue with Section 2.3.4, "Installing the Stabilizer Legs" on page 2-7 to help prevent the system from tipping over when FRUs are serviced in the system.**

2.3.6 Installing the Floor-Mounting Brackets

Skip this section if you have installed the stabilizer legs and adjusted the leveling pads.

Use the four floor-mounting brackets to attach the expansion cabinet to the floor. The bolts to secure the floor-mounting brackets are not included.

Caution – Do not bolt the floor-mounting brackets to the deck plating of a raised (computer-room) floor, because *this would result in an unstable mount*.

Note – If you are installing the floor-mounting brackets over previously installed threaded rods, loosely install the floor-mounting brackets to the rods and then to the expansion cabinet.

1. **Remove the three mounting screws on the bottom right side at the front and the three mounting screws on the bottom right side of the back of the expansion cabinet (**FIGURE 2-5**).**

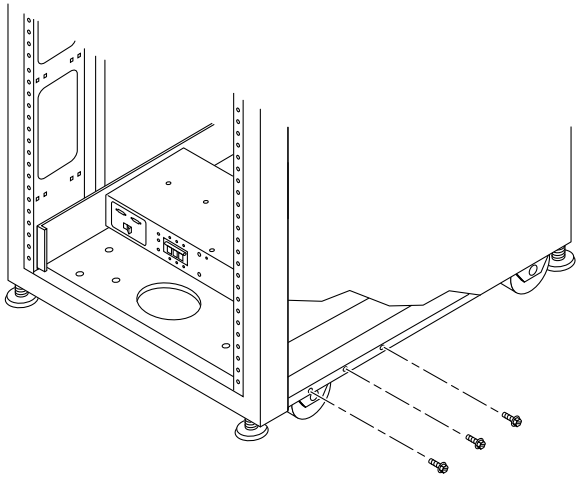


FIGURE 2-5 Removing the Bottom Right Front Mounting Screws

2. **Using a 7/16-inch wrench, attach the right floor-mounting brackets to the front and back of the expansion cabinet (**FIGURE 2-6**) with the six mounting screws just removed.**

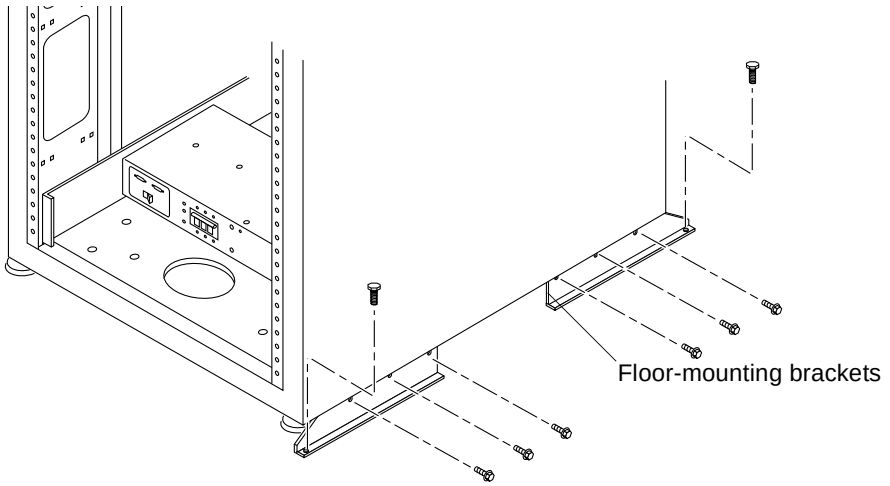


FIGURE 2-6 Attaching the Floor-mounting Brackets

3. **Bolt the right floor-mounting brackets to the floor.**
4. **Repeat Step 1 through Step 3 for the left floor-mounting brackets.**

2.4 Accessories Kit Packing List

Verify the packing list against of the contents of the Accessories Kit as follows:

TABLE 2-3 Accessories Kit Packing List

Quantity	Description	Part Number
1	SSRR Global Telco Adpt Kit	370-4900-xx
1	Mid3, USB FlashDisk	370-5773-xx
3	Asy, Cbl, Shld, TP-Enet, RJ45-RJ45	530-2093-xx
1	Adap, 25P, Sub-D, RJ45, Female	530-2889-xx
3	Assy, Cbl, Shld, RJ45-RJ, 6M	530-2991-xx
1	Adap, 9P, DSub, 8Pos, RJ45, Female	530-3100-xx
1	Cbl, USB, 1M, A Male-B Male	530-3208-xx
2	Asy, SE6100, Cable, Loop, 0.5M	530-3211-xx
2	Cbl, 15M, FC, LC-LC, MM, 1.6 Plenum	537-1043-xx
1	Sun Generic Safety Doc	816-7190-xx
1	Mnl, Sh, Maserati Start Here Gde	816-7875-xx
1	Mnl, RN, Online Doc, 6300 Series	835-0499-xx

Additionally, power cables are shipped with the system, as described in TABLE 2-4.

2.5 Connecting the Expansion Cabinet

If you have an expansion cabinet, perform the steps in Appendix A before connecting power.

Note – You must connect a expansion cabinet before connecting power to the master cabinet.

2.6 Powering On the System

This section contains the following sections on setting either local or remote power:

- Section 2.6.3, “Preparing the System for Local Power” on page 2-15
- Section 2.6.4, “Connecting the Grounding Cable” on page 2-16
- Section 2.6.5, “Connecting the Power Cables” on page 2-17
- Section 2.7, “Powering On the System for Local Power-On” on page 2-20
- Section 2.8, “Powering Off Sequence” on page 2-22

2.6.1 Powering On Locally

You can power on the system in either of two methods:

- Local power on—powering on the system at the system.
- Remote power on—powering on the system either locally or remotely. Use the remote power on option if you want Sun Microsystems to monitor the system using Sun StorEdge Remote Response (SSRR).

This section describes powering the system on and off locally. To power the system on or off remotely, refer to Section 6.1, “Remote Response Service Initialization” on page 6-2.

Caution – Never move expansion cabinets when the system power is on. Excessive movement can cause catastrophic disk drive failure. Always power the system off and, if necessary, disconnect it from the power source and the host before moving it.

The FRUs in TABLE 2-4 are required to perform the tasks in this chapter:

TABLE 2-4 Power Cable—FRU List

FRU Description	Part Number	Quantity
Power cable for 72 in. (~183 cm) Sun StorEdge Cabinet (US), L6-30P	595-4881.*xx*	2
Power cable for 72 in. (~183 cm) Sun StorEdge Cabinet (International), IEC 309	595-4882.*xx*	2
6.5 feet (~2 meters) grounding cable (shipped with the system)	530-1619-01	1

2.6.2 Required Tools

The following tools are required to perform the tasks in this chapter:

- Keys for key switch (shipped with the system)
- Phillips screwdriver

2.6.3 Preparing the System for Local Power

Note – The position of the key switch does not matter for local power-on and power-off operations.

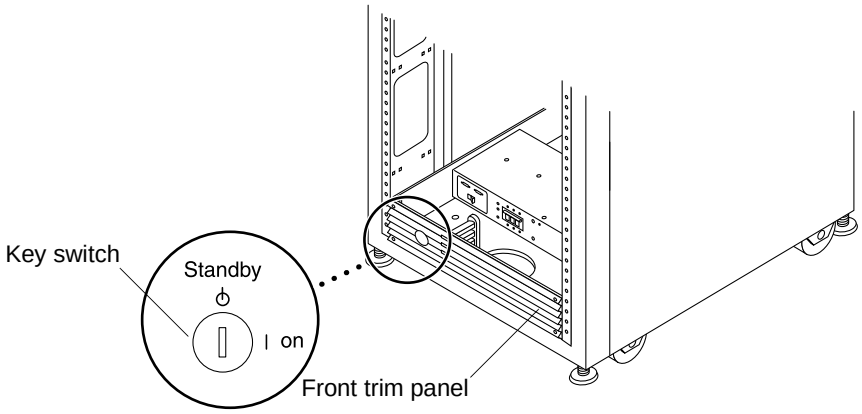


FIGURE 2-7 Location of Key Switch on Bottom Front Panel

1. **Open the front and back doors of the system.**
2. **Loosen the four screws on the front trim panel and remove it.**

   Set the panel aside.
3. **Proceed to Section 2.6.4, “Connecting the Grounding Cable” on page 2-16.**

2.6.4 Connecting the Grounding Cable

The grounding cable must be connected to either a grounding post or something attached to a grounding post. The system is designed to work with single-phase power systems that have a grounded neutral conductor.

1. **Locate the 6.5 feet (~2 meters) grounding cable in the accessories kit.**
2. **Attach one end of the grounding cable to the front power sequencer on the 6320 cabinet (**FIGURE 2-8**).**
3. **Attach the other end of the grounding cable to either an external grounding post or something attached to a grounding post.**

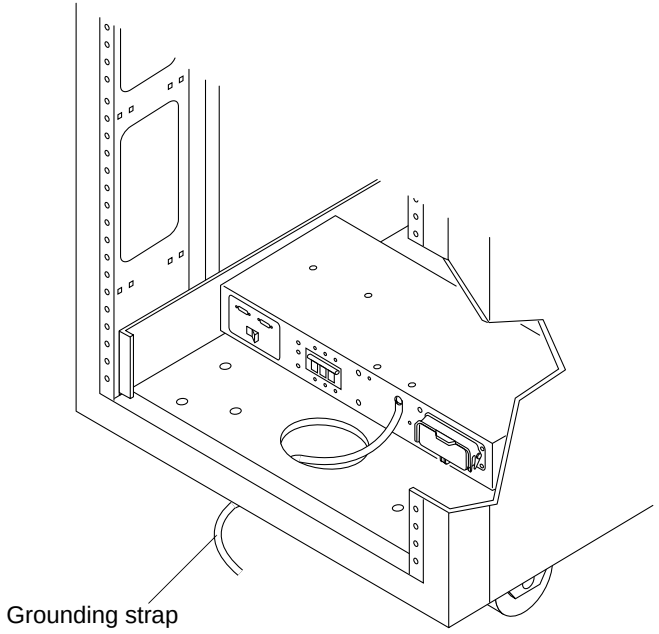


FIGURE 2-8 Attaching the Grounding Strap to the Front Power Sequencer

2.6.5 Connecting the Power Cables

Caution – The expansion cabinet is designed to work with single-phase power systems that have a grounded neutral conductor. To reduce the risk of electric shock, do not connect the expansion cabinet to any other type of power system.

1. **Verify that each AC power sequencer circuit breaker is in the Off position and that the Local/Off/Remote switch is in the Local position on each power sequencer (**FIGURE 2-9**).**

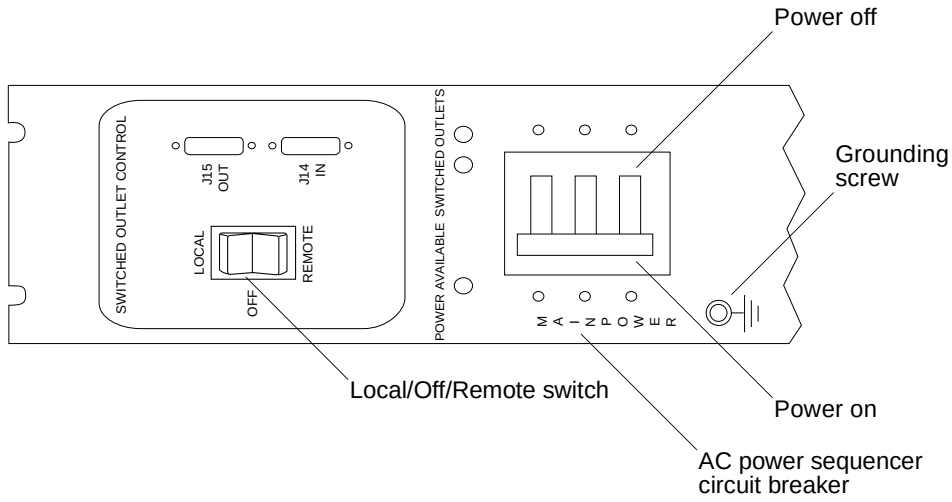


FIGURE 2-9 Power Sequencer Control Panel

2. **Verify that the stated rating matches the AC input voltage to the system (**TABLE 2-5 **and** TABLE 2-6**).**

   Check the electrical ratings label on the serial number label attached to the power sequencer.

TABLE 2-5 Voltage Requirements for Maximum Operating Voltage and Frequency Ranges

Voltage and Frequency Range	Requirement
AC voltage rating	200 to 240 VAC
AC voltage range	180 to 264 VAC
Frequency range	47 to 63 Hz

TABLE 2-6 Current Requirements at Nominal Line Voltage for a Storage System in Maximum Configuration

Nominal and Maximum Voltage and Current	Requirement
Nominal AC input voltage rating single phase	200 to 240 VAC
Maximum current requirement	24A at 240 VAC
Maximum current per power sequencer outlet	32A

3. **Connect the female end of one power cable to the rear power sequencer connector. Connect the female end of the other power cable to the front power sequencer connector (**FIGURE 2-10**).**

   a. **Flip open the cover latch to access the connectors.**

   b. **Route the power cable directly through the opening in the cabinet base.**

4. **Pull the latch cover over the power cables to secure them to the power sockets.**

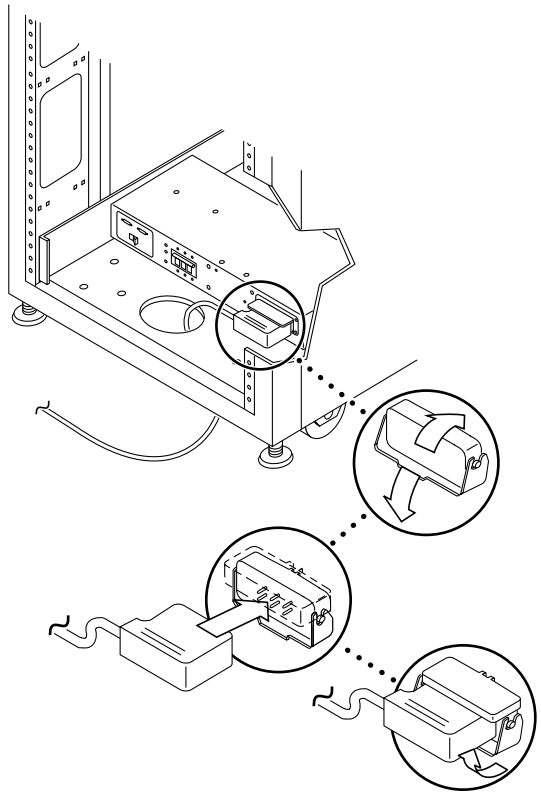


FIGURE 2-10 Connecting the Power Cables

5. Connect the other end of the power cables to a grounded outlet.

The following connector types are provided on the power cable:

- NEMA L6-30P for 200–240 V North American operation
- 32A, single-phase, IEC 309 connector for 220–240 V international operation

Caution – To reduce the risk of electric shock, strictly observe all Caution and Note statements.

Note – If the appropriate mating receptacle is unavailable, the connector can be removed from the cable and the cable can then be permanently connected to a dedicated branch circuit by a qualified electrician. Check local electrical codes for proper installation requirements.

2.7 Powering On the System for Local Power-On

Caution – To avoid damage to internal circuits, do not connect or disconnect any cable while the FRU associated with the cable is powered on.

1. **Open the front and back doors if they are closed.**
2. **Remove the front trim panel of the system and set it aside (if you have not already done so).**
3. **At the bottom front and bottom rear of the cabinet, press the AC power sequencer circuit breakers to Off (**FIGURE 2-11**).**

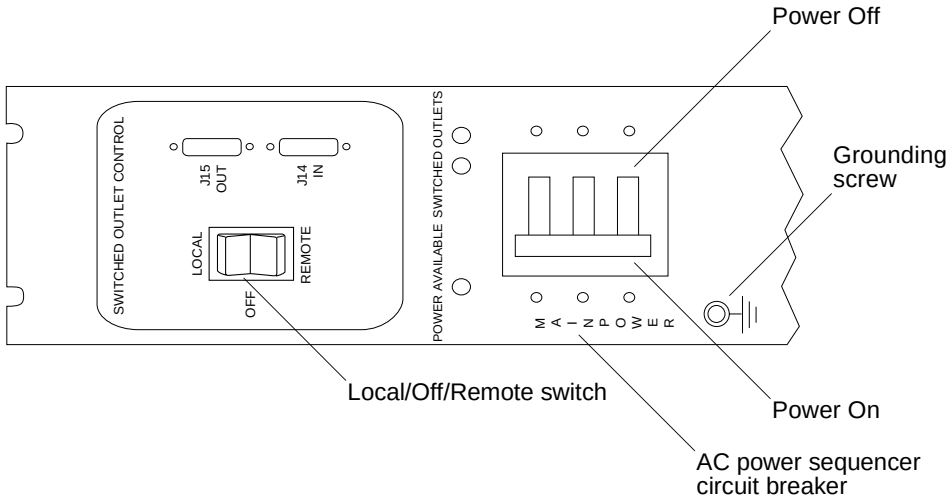


FIGURE 2-11 AC Power Sequencer Control Panel

4. **Verify that the AC power cable of the expansion cabinet is connected to the correct AC outlet.**

Caution – Do not disconnect the AC power cable from the outlet when working on or in the expansion cabinet. This connection provides a grounding path that prevents damage from electrostatic discharge.

5. **At the bottom front and bottom rear of the expansion cabinet, press the Local/Off/Remote switch to Local (**FIGURE 2-11**).**

6. **At the bottom front and bottom rear of the expansion cabinet, press the AC power sequencer circuit breakers to On (**FIGURE 2-11**).**

Note – The Storage Service Processor and Storage Service Processor Accessory Tray are already powered on because they are connected to the unswitched power outlets.

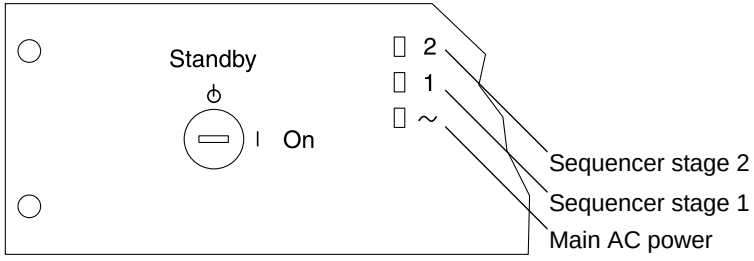


FIGURE 2-12 Front Sequencer Status Lights

The three power indicators on the front panel show the status of the front power sequencer (FIGURE 2-12). The main AC power light emitting diode (LED) illuminates when power is applied to the expansion cabinet. The LED for sequencer stage 1 illuminates next, followed by the LED for sequencer stage 2.

To check the status of the rear power sequencer, open the back door of the expansion cabinet and look for the three green LEDs.

7. **Verify that all the components have only green LEDs illuminated.**

8. **Verify that the power to the system is turned on.**

9. **Check the AC Power Sequencer Control Panel:**
   - If one Switched Outlet LED is lit but the other is not, check the status of the power sequencer for the unilluminated LED.
   - If some FRUs have power and others do not, check the power-on switch on the FRUs that do not have power.

2.8 Powering Off Sequence

Before you power off the expansion cabinet, you must halt any input/output (I/O) between the host system(s) and the expansion cabinet.

Depending on the type of host system(s) and the software running on the host system, you might need to:

- Exit the operating environment.
- Take the host system offline from the 6320 System.

Caution – Failure to stop I/O between host system(s) and the expansion cabinet can result in the loss of data.

Follow these steps to power off the 6320 System:

1. **Open the front door, if necessary.**
2. **Loosen the four screws on the front trim panel and remove the panel.**

   Set the panel aside.
3. **At the bottom front and bottom rear of the system, press the AC power sequencer circuit breakers to Off (**FIGURE 2-11**).**

Caution – To stop all AC power input to the expansion cabinet, you must disconnect the power cables to *both* power sequencers.

CHAPTER 3

Connecting the Sun StorEdge 6320 System

As noted in Chapter 1, you connect your cables to the Storage Access Panel rather than to individual components of the system.

Install cables for the following connections:

- Serial Connections - connect to the Serial Console port
- LAN - connect to USER LAN
- Phone - connect to PHONE for Sun StorEdge Remote Response (SSRR) Service
- Host connections - See Connecting Hosts to the 6320 System
- Expansion Cabinets - See Appendix A
- Remote Power - As desired

3.1 Connecting Hosts to the 6320 System

Connecting redundant cables from the data hosts depends on the Fibre Channel switch configuration of your system. Sun supports the following configurations:

- 2 Sun-installed internal FC switches
- 2 External FC switches
- No switch (direct attach)

FIGURE 3-1 Connecting Hosts - Two Sun-Installed Internal Switches

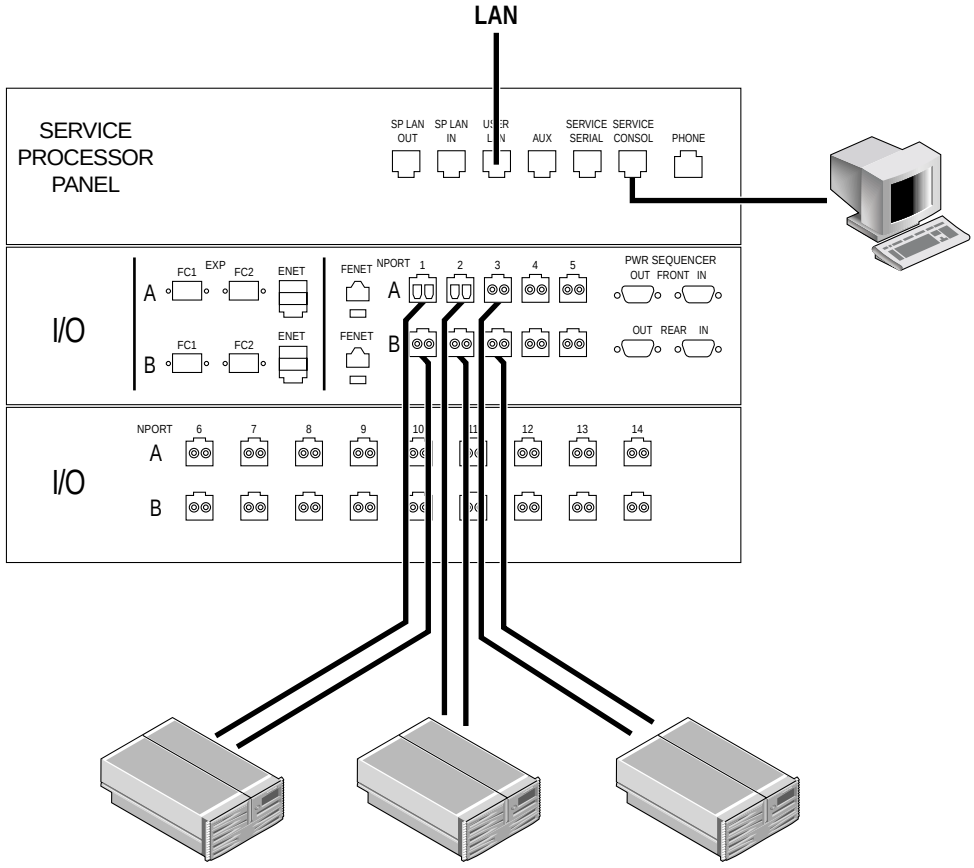


FIGURE 3-2 Connecting Hosts - Two External Switches

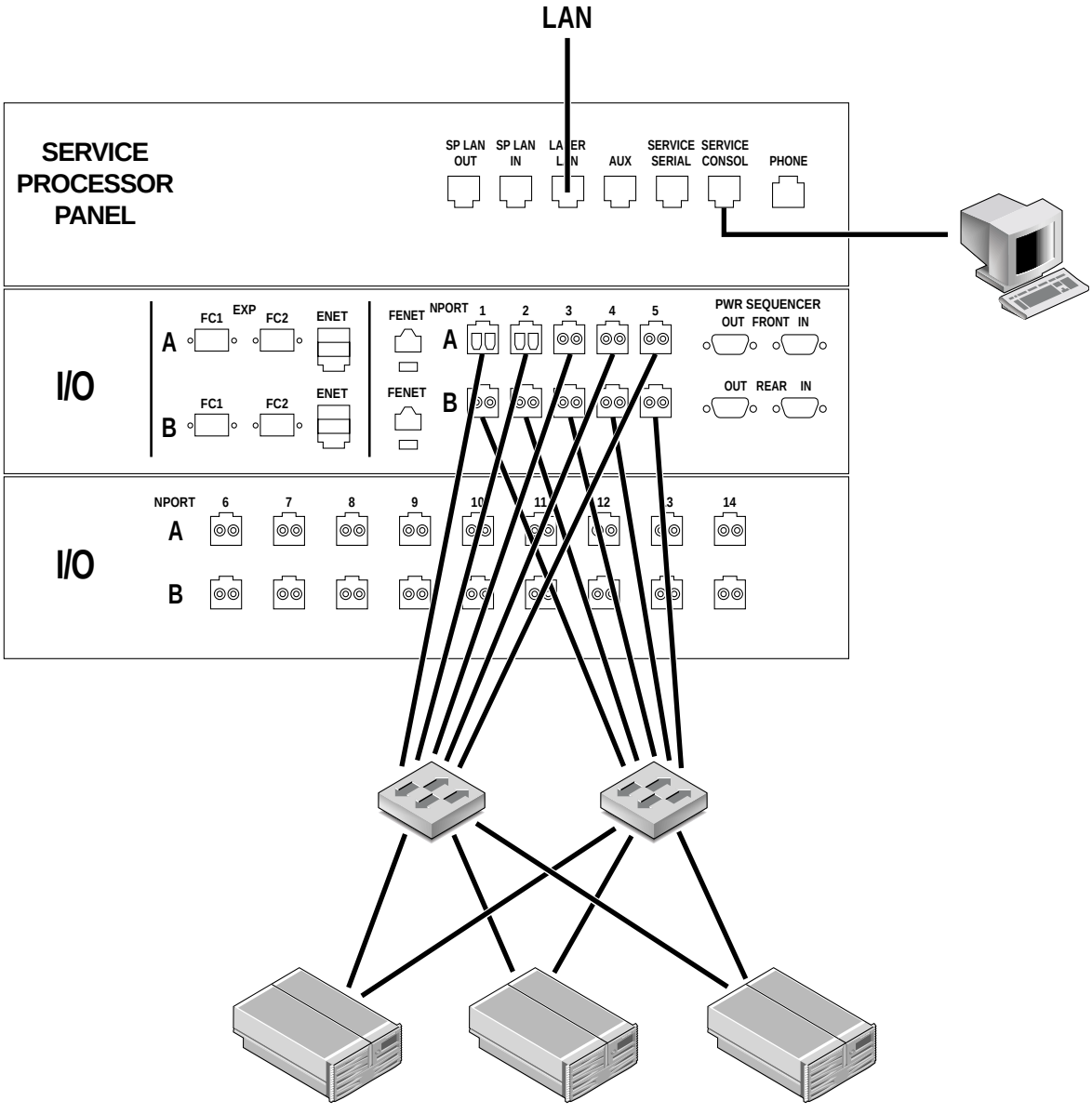
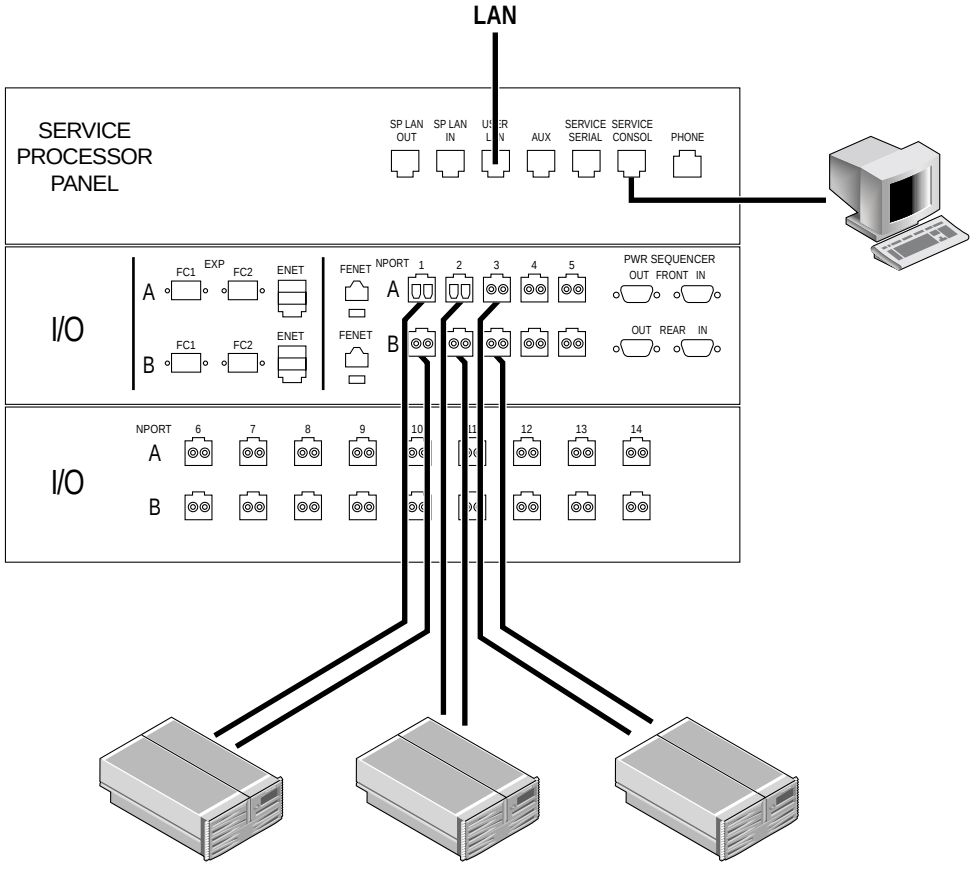


FIGURE 3-3 Connecting Hosts - Direct Connect.



For direct connect (switchless), you make the same connections as you do for internal switches.

3.2 Establishing a Serial Connection

1. **Open the Accessory Kit that cam with your system**
2. **Locate the following FRUs:**

TABLE 3-1 Serial Connection—FRU List

Quantity	Description	Part Number
1	Adap, 25P, Sub-D, RJ45, Female	530-2889-xx
3	Assy, Cbl, Shld, RJ45, 6M	530-2991-xx
1	Adap, 9P, DSub, 8Pos, RJ45, Female	530-3100-xx

3. **Assemble the RJ45 cable with the adapter that fits either the DB9 or DB25 serial port of the laptop, terminal, or Solaris workstation.**
4. **Connect the serial cable between the 6320 (“Serial Console” port on the Service Processor Panel) and the workstation.**

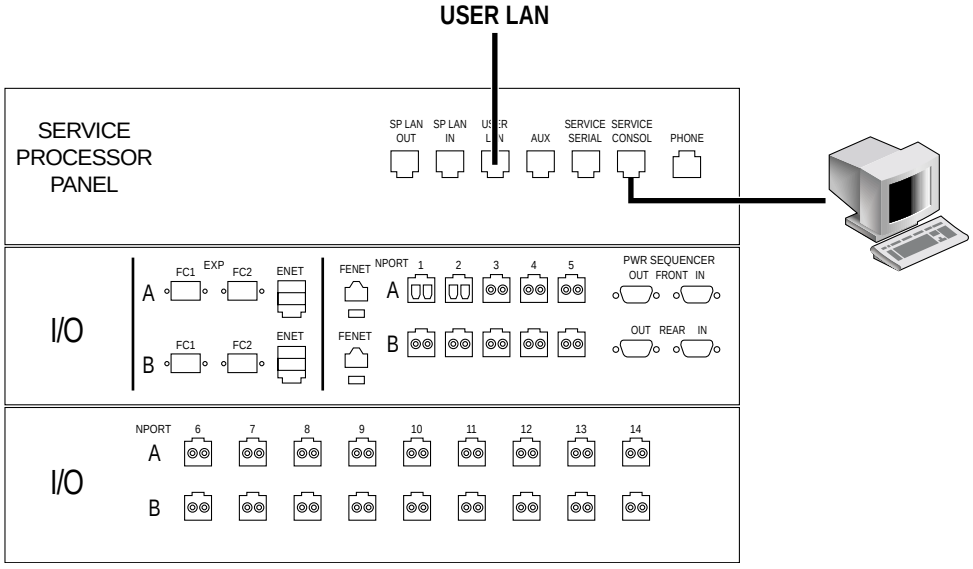


FIGURE 3-4 Connecting the Service Cable to a Laptop

5. **Configure the console settings.**

   a. **For a terminal console or a terminal emulation program, use the following settings.**

      Bits per Second: **9600**

      Data Bits: **8**

      Parity: **None**

      Stop Bits: **1**

      Flow Control: **Xon/Xoff**

   b. **On Sun workstations, connect via the serial ports using the** tip **command for the appropriate port.**

      [3]user1: **tip /dev/ttya**

      connected

      Serial port 1 corresponds to /dev/ttya and serial port 2 corresponds to /dev/ttyb.

   c. **To disconnect a Sun workstation from a serial connection, enter:**

      a ~.

      The terminal session will return to the shell.

CHAPTER **4**

Initial Configuration Utility Menu

After accessing the 6320 System through a serial connection, follow the output below for an initial configuration. You will need the information that you compiled in Section 2.1.1, “Connectivity Worksheet” on page 2-2.

Please note that the bold letters are used to designate input from the user.

```
login: rss
Password: sun1rss

Lantronix SCS400 Version B2.0/202(021016)

Type HELP at the 'ntc0: ' prompt for assistance.

ntc0: connect local port_2
Local protocol emulation 1.0 - Local Switch: <^[>.



Sun StorEdge 6320 Service Processor
```

WARNING: This is a restricted access server. If you do not have explicit permission to access this server, please disconnect immediately. Unauthorized access to this system is an actionable offense and will be prosecuted to the fullest extent of the law.

```
new_sp console login: setup
Password: !setup
Last login: Tue May 20 13:50:09 on console
May 20 13:57:32 new_sp login: ROOT LOGIN /dev/console
Tue May 20 13:57:33 GMT 2003

*******************************************
* StorEdge 6320 Initial Configuration Utility *
*******************************************
```

```
Select the operation you wish to perform:
1. Initial configuration
2. Restore previously defined configuration
3. Unconfigure
4. Enable SW support for Lights Out Operation
Your Choice: 1

*****************************************
* Initializing StorEdge 6320 Configuration *
*****************************************

Initial configuration is setting up the id
and network parameters for your StorEdge 6320.

The current hostname for this StorEdge 6320 system is new_sp.
Searching for other existing StorEdge 6320 systems on your network...
Searching for a StorEdge 6320 with hostname sp0 ...
Searching for a StorEdge 6320 with hostname sp1 ...
Searching for a StorEdge 6320 with hostname sp2 ...
Searching for a StorEdge 6320 with hostname sp3 ...
Searching for a StorEdge 6320 with hostname sp4 ...
Searching for a StorEdge 6320 with hostname sp5 ...
Searching for a StorEdge 6320 with hostname sp6 ...
Searching for a StorEdge 6320 with hostname sp7 ...
No other StorEdge 6320 systems are currently configured on your
network.
```

Note – If you have more than one Sun StorEdge 6320 system and they are connected together for combined Sun StorEdge Remote Response Unit management through a common telephone line, assignment of a unique service storage processor ID from 0 to 7 is required.

```
Please enter the StorEdge 6320 Id.
A valid value is a digit between 0 and 7.
Your Choice: 0
Network Settings:
--------------------
Do you wish to use DHCP or Fixed Network Addresses?
1. DHCP
2. Fixed
Your Choice: 2
Please enter the IP Address for the StorEdge 6320: 10.1.10.7
Please enter the Gateway Address for the StorEdge 6320: 10.1.10.1
Please enter the Network Mask for the StorEdge 6320: 255.255.255.0
Please enter the Nameserver IP Address for the StorEdge 6320: 10.2.2.8
Please enter the Nameserver Domain for the StorEdge 6320:
netstorage.ebay
```

```
************************************************************
System Settings
-----------------
StorEdge 6320 Id: 0
Network Settings
------------------
Network Type: Fixed
StorEdge IP Address: 10.1.1.7
StorEdge Gateway Address: 10.1.1.1
StorEdge Network Mask: 255.255.255.0
StorEdge NameServer Address: 10.2.2.8
StorEdge Domain Name: netstorage.ebay

************************************************************
Are all of the above settings correct? (Y/N) y
****************************************
* Performing StorEdge 6320 Configuration *
****************************************

Running step 1 of 8...
Updating SP network settings...
Successfully Completed.

Running step 2 of 8...
Setting hostname and host files...
Successfully Completed.

Running step 3 of 8...
Updating firewall configuration...
NOTE: Successful execution of this operation takes several minutes!
Please be patient...
.............................................................
```

Note – This step takes approximately 15 minutes.

```
Return Code (0): Successful completion

Running step 4 of 8...
Updating default route...
Successfully Completed.

Running step 5 of 8...
Updating file resolv.conf...
Successfully Completed.

Running step 6 of 8...
Restarting sendmail...
Successfully Completed.
```

```
Running step 7 of 8...
Restarting se6000...
Requesting WBEM And Tomcat Services To Be Restarted
Please Wait...
WBEM And Tomcat Services Have Been Restarted
Successfully Completed.

Running step 8 of 8...
Updating NTC configuration...
NOTE: Successful execution of this operation takes several minutes!
Please be patient...
......
Return Code (0): Successful completion
The NTC Configuration was successful. The NTC will be reinitialized
in less than two minutes. Please press "Enter" when prompted in order
to proceed with configuration, then log off. Disconnect from the NTC,
and wait approximately two minutes before reconnecting. If the
following network verification is successful, you may begin other
configuration tasks.
Successfully Completed.
Press enter to continue....
%Error: Duplicate IP address - not added.
%Error: Duplicate IP address - not added.
%Error: Duplicate IP address - not added.
%Error: Duplicate IP address - not added.
%Error: Duplicate IP address - not added.
%Error: Duplicate IP address - not added.
%Error: Duplicate IP address - not added.
%Error: Duplicate IP address - not added.
```

Note – These messages are expected as part of the system configuration and should be considered part of a successful installation. The NTC will reboot automatically. Wait several minutes before proceeding with the following additional steps.

```
login: rss
Password: sun1rss

Lantronix SCS400 Version B2.0/202(021016)

Type HELP at the 'ntc0: ' prompt for assistance.

ntc0: connect local port_2
Local protocol emulation 1.0 - Local Switch: <^[>.
```

```
****************************************
* Testing StorEdge 6320 Network Settings *
****************************************

Please enter an IP Address for another host on your network
to enable validation of your network settings: 10.1.10.100
Using the ping command to test your network settings.
Please wait...
Ping successful, your firewall is configured.

se6000configure Successfully Completed.

Sun StorEdge 6320 Service Processor

WARNING: This is a restricted access server. If you do not have
explicit permission to access this server, please disconnect
immediately. Unauthorized access to this system is an actionable
offense and will be prosecuted to the fullest extent of the law.
```

Note – This completes the Initial Configuration Utility Menu.

4.1 Logging In to the Web-Based Tools

After you complete the initial configuration script, you will use the Web-based Configuration Service User Interface (UI) to complete the configuration

After you log in, you can access each page of the UI by clicking the labeled tab:

- Array Management
- Jobs
- Storage Access
- Administration

Click the Help link in the right upper corner to display the online help.

TABLE 4-1 contains the valid port numbers when logging in with the UI.

TABLE 4-1 Port Numbers

	HTTP Port	HTTPS Port (secure)
Sun StorEdge Configuration Service	9080	9443
Storage Automated Diagnostic Environment	7654	7443

If you have successfully installed the software, perform the following procedures to log in to the software using a web browser.

▼ To Log In to Configuration Service

1. **Open Netscape Navigator, version 4.79 or later.**
2. **Type one of the following URLs in the URL text field.**

Note – *ip_address* is the IP address of the Service Processor (Service Console port) where the software is installed. You assigned the IP address while running the installation script.

- For a non-SSL HTTP server:

```
http://ip_address:9080/
```

where `9080` is the default port number for the software.

Note – If you are concerned about password security, use the secure sockets layer (SSL) version of the hypertext transport protocol (HTTP) universal resource locator (URL).

- For an SSL HTTP server:

```
https://ip_address:9443/
```

where `9443` is the default port number for the software.

3. **Log in as follows:**
   - **For the Sun StorEdge 6320:**

```
User Name: admin
Password: !admin
```

4. **Click the Log In button.**

▼ To Log Out of the UI

- **Click Log Out from any page in the UI.**

Note – The connection closes automatically if there is no activity for 30 minutes.

CHAPTER 5

Setting the Default Configuration

In this section you will use the Configuration Service user interface (UI) to set the initial system information and implement the default RAID-5 configuration. You must first configure the system defaults even if you want to change them.

In Appendix E you will verify the default configuration and learn how to customize it.

Click the Help button at the top of Configuration Services screens for more help with screens and fields.

5.1 Setting the Defaults

This section allows you to provide system information and to implement the default settings.

5.1.1 Logging Into the System

1. **Open a Web browser and in the URL Internet address field enter:**
   - **https** instead of http for a secure session
   - IP address of the 6320 System,
   - the secured port number for Configuration Services.

   https://*ip_address*:cs_*port_number*

   Example: **https://10.1.1.12:9443**

1. Login as “**admin**,” password is “**!admin**.”

FIGURE 5-1 Administration Login

5.1.2 Describing the System

1. **Provide a description** for your system in the Property Value field.
2. Click **Save**. The display refreshes with the newly entered description.

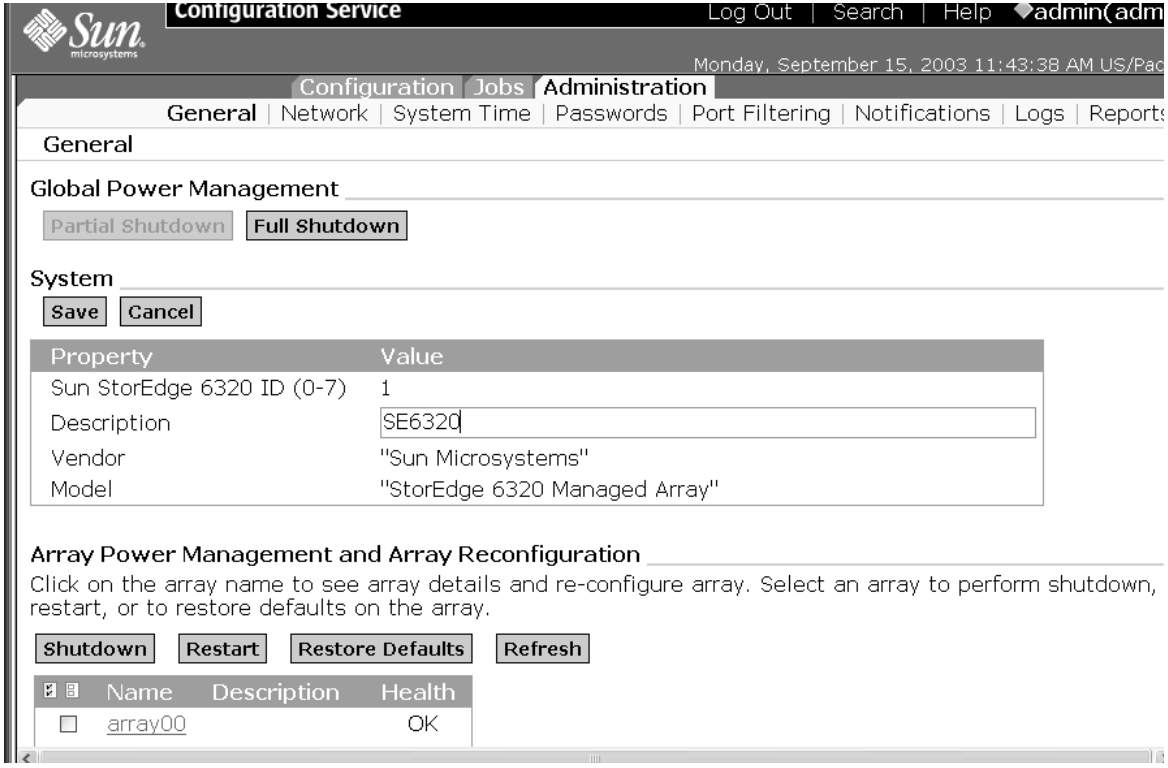


FIGURE 5-2 Entering a System Description

5.1.3 Changing the Time Zone

1. **Click the Administration tab**.
2. Click **System Time**.
3. Click **Change time zon**e, as necessary.
4. **Select the appropriate Time zone offset for your location**; for example, New York is five hours behind GMT, thus select GMT-5.
5. Click **Save**.

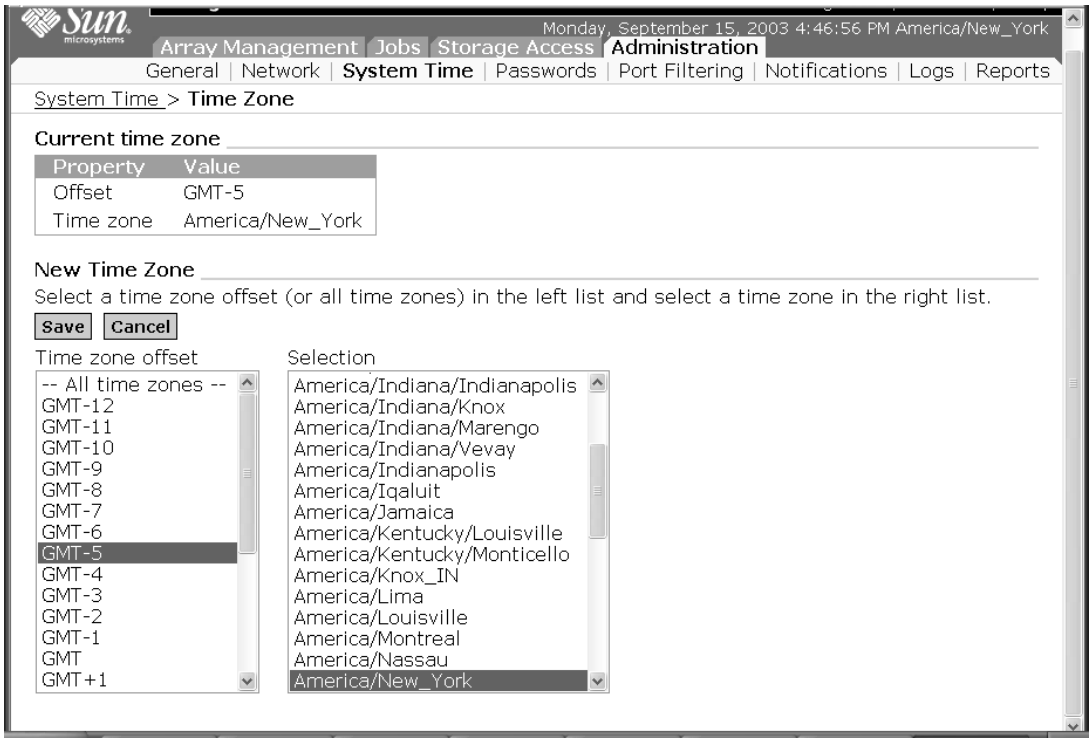


FIGURE 5-3 Changing the Time Zone

5.1.4 Changing the System Time

1. **Click the Administration tab**.
2. Click **System Time**.
3. **Change the System Time**, as necessary.

   You can use a Network Time Protocol (NTP) server to provide this information if one is available.

4. Click **Save.**

.

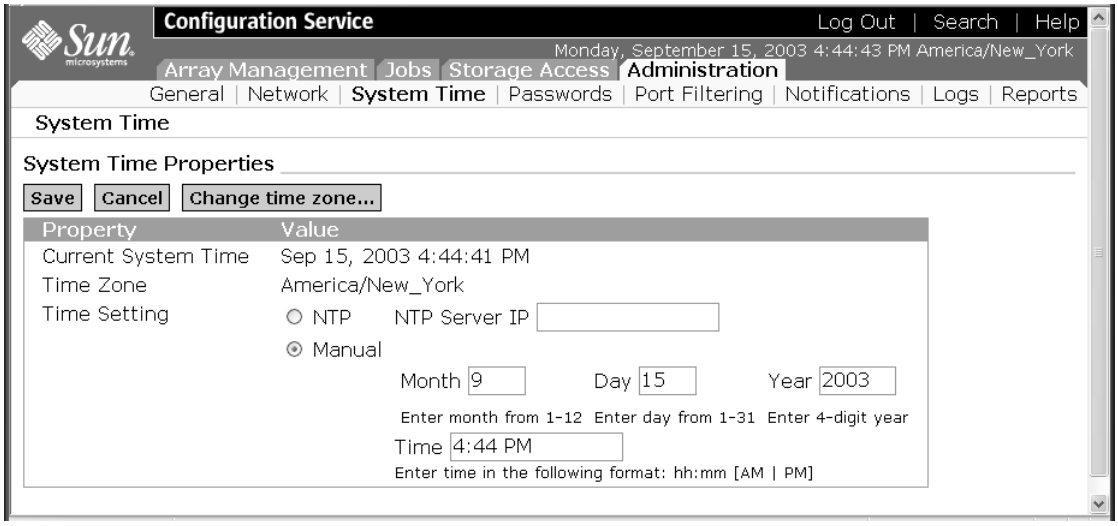


FIGURE 5-4 Changing the System Time

5.2 Creating Volumes

1. Log in as “**storage**” with the password “**!storage**.”

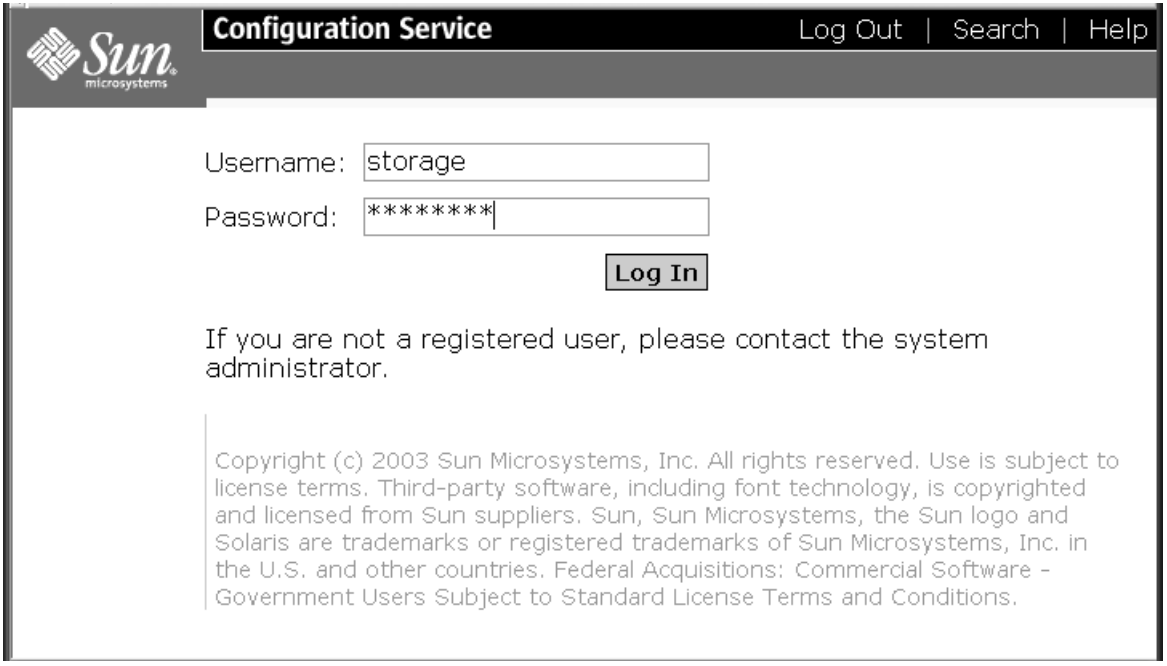


FIGURE 5-5 Storage Login

2. **Select Array Management → Individual Configuration → "Manage Volumes** then click on **Create**...

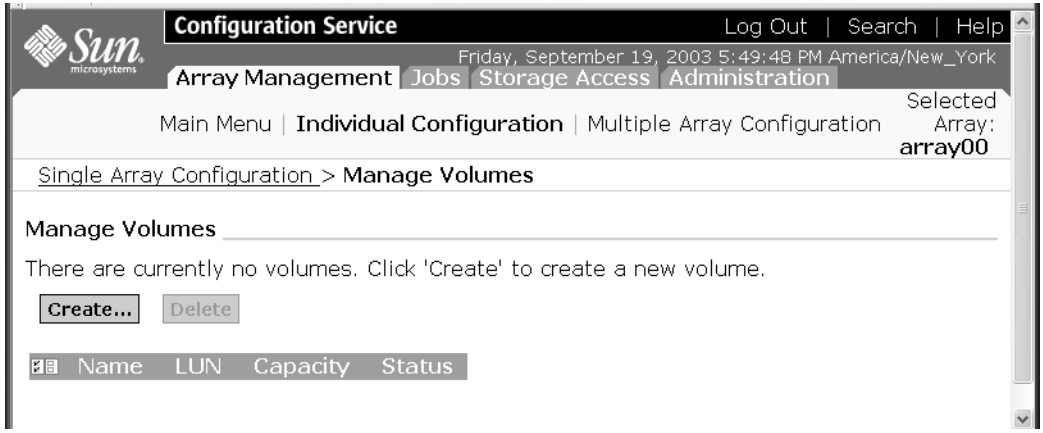


FIGURE 5-6 Manage Volumes - Create

3. Provide a **Name** of the new volume and **select a pool** in which this volume will be created.

Note – Consider using a common naming convention. For example, “t0p0v0” will indicate the volume's physical location (Tray 0, Pool 0, Volume 0).

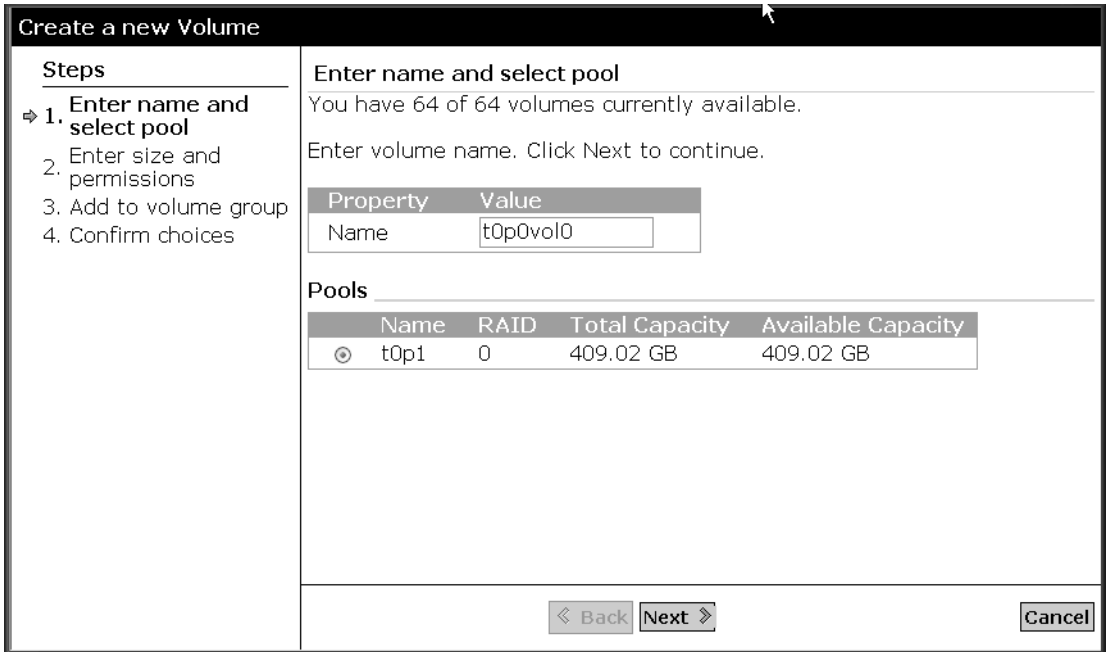


FIGURE 5-7 Create New Volume Wizard - 1

4. Enter the **Requested Size** of the volume (in MB or GB).

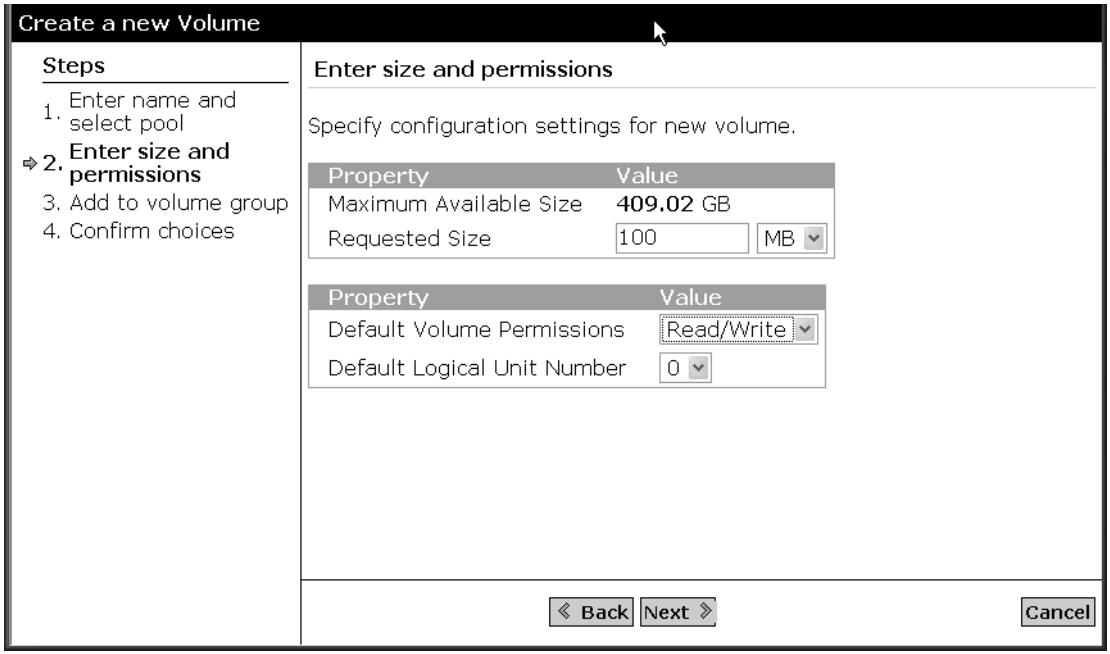


FIGURE 5-8 Create New Volume Wizard - 2

5. **Select the Default Volume Permissions**. Default volume permissions must be set to NONE for Volume Group Permissions to be the effective permissions.
6. Select a **Logical Unit Number** (Volume).
7. Click **Next**. The Add Volume to Group display appears.

8. Click **Next**. The Confirm Choices display appears.

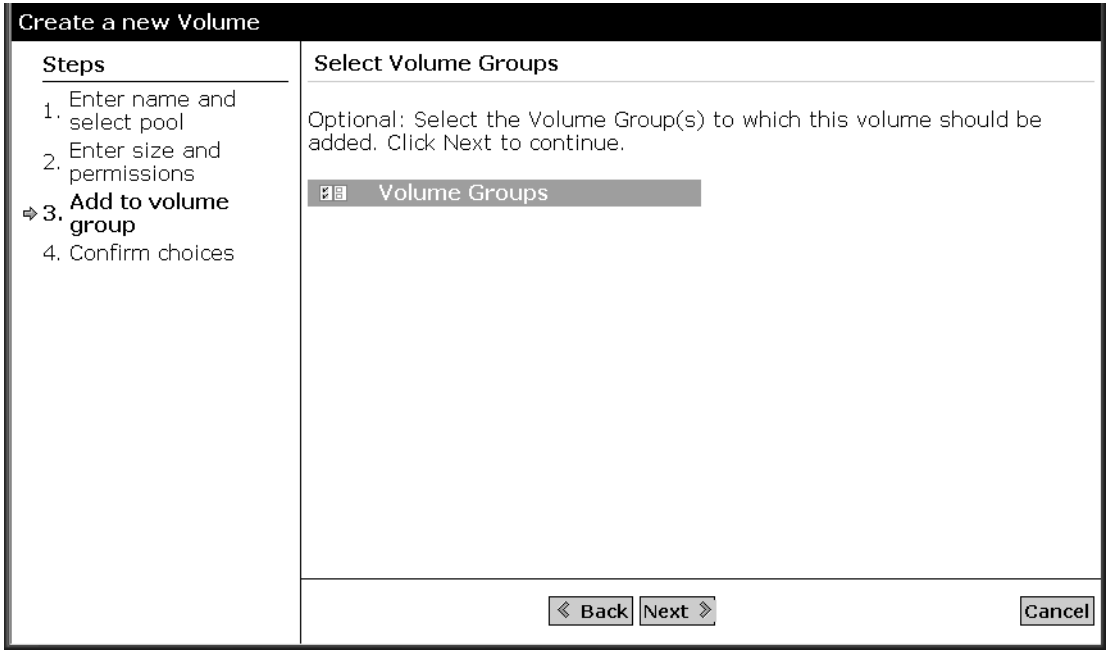


FIGURE 5-9 Create New Volume Wizard - 3

9. Review all selections for accuracy and then click **Confirm**.

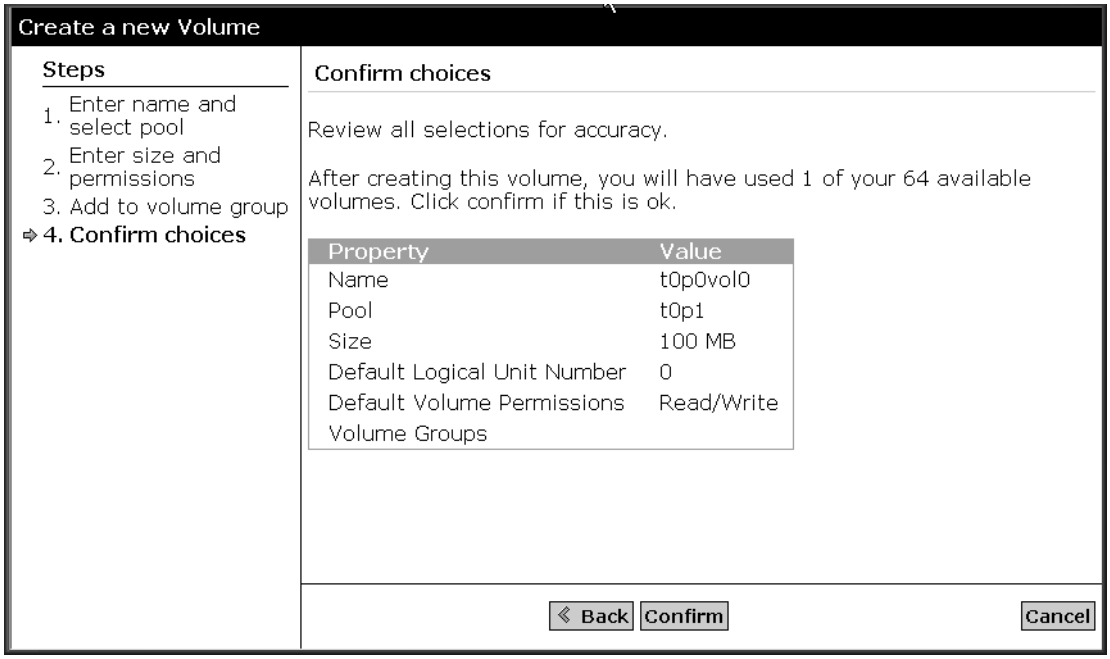


FIGURE 5-10 Create New Volume Wizard - 4

10. Once confirmed, the status of this job can be found under the **Jobs** tab. Repeat as necessary to create the desired number of volumes up to 64 per 6320 array configuration.

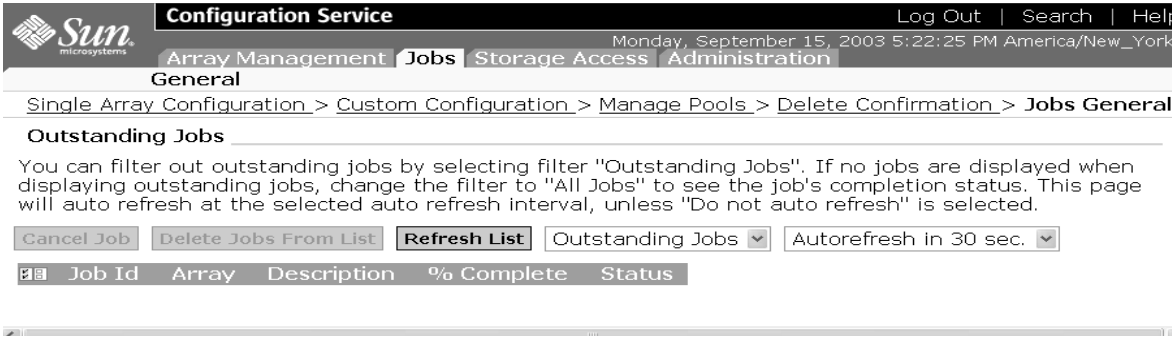


FIGURE 5-11 Outstanding Jobs

11. Verify the status of this new volumes (**Administration** → **Reports**).

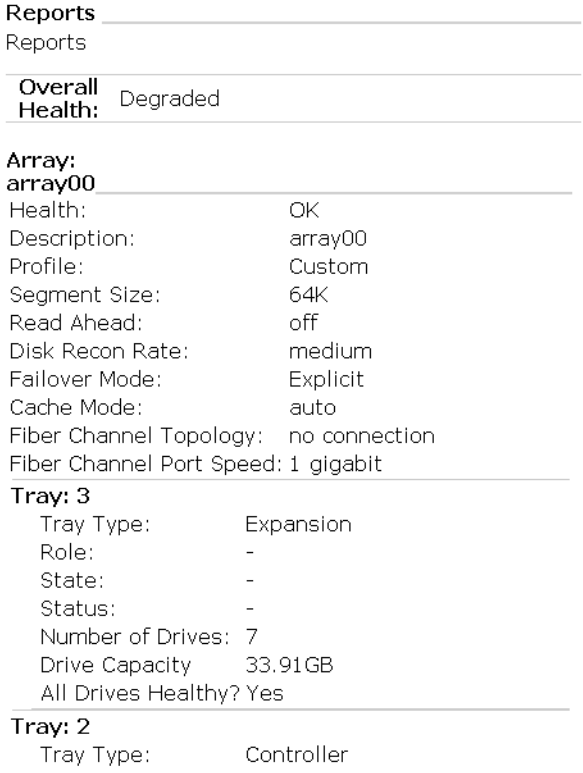


FIGURE 5-12 Administration Reports

If you need to customize the configuration or to add additional security with initiators, refer to Appendix E.

CHAPTER 6

Initializing the Sun StorEdge Remote Response Service

The Sun StorEdge Remote Response (SSRR) service option sends alerts from the 6320 system to the Sun Service Center.

The Storage Service Processor continually monitors the messages sent to the system log by the software and firmware in the system subsystems. If a message is determined to contain an event that requires an alert, the modem on the Network Terminal Concentrator is invoked and the message is sent as an alert to the Sun Service Center.

Note – Up to eight Sun StorEdge 6320 systems can be connected together in a chain to share a single phone line for communication with the Sun Service Center and support teams. See Section 6.2, “Shared Remote Response Telephone Line” on page 6-4 for a description of how to chain Sun StorEdge 6320 systems together.

No tools are required to perform the tasks in this chapter.

This chapter contains the following sections:

- Section 6.1, “Remote Response Service Initialization” on page 6-2
- Section 6.2, “Shared Remote Response Telephone Line” on page 6-4

6.1 Remote Response Service Initialization

Perform the initialization procedure for the Sun StorEdge Remote Response service after system is powered on.

Before beginning the initialization process, connect an analog telephone line dedicated to the Sun StorEdge Remote Response service. The telephone line must have both dial-out and dial-in capability.

Plug the dedicated telephone line into the PHONE jack on the Service Processor Panel of the base cabinet service panel.

Gather the following information for the initialization telephone call. You should retain this information for future reference.

Requirement	Information
Company name	
Site address	
Site state or province	
Site country	
Site name of the person to contact at the site	
Telephone number of the person to contact at the site	
Telephone number of the dedicated analog telephone line	
Information about the configuration of the system at the site. For example, is there a console installed with a firewall between the console and the system?	
Are there additional Sun StorEdge 6320 systems sharing the dedicated phone line?	
How is the storage configured?	
How many and what type of hosts will be connected to the Sun StorEdge 6320 system?	
Serial numbers of all Sun StorEdge 6320 systems at the site.	

Contact the Sun Service Center and ask for Sun StorEdge Remote Response Installation Service to initiate a turn-on for the remote response service, assist the Sun Service Center with the turn-on, and verify that the service is initiated.

6.2 Shared Remote Response Telephone Line

The Sun StorEdge Remote Response allows up to eight Sun StorEdge 6320 systems to be connected together to share a single telephone line to communicate with the Sun Service Center and support teams.

To connect more than one Sun StorEdge 6320 system together for remote response management through a single telephone line, a chain of Sun StorEdge 6320 systems is built by connecting the SP LAN OUT port of each Sun StorEdge 6320 system of each Sun StorEdge 6320 system's service panel to the SP LAN IN port on the adjacent Sun StorEdge 6320 system service panel. The first Sun StorEdge 6320 system in the chain has nothing connected to the SP LAN OUT port on its service panel and the last Sun StorEdge 6320 system in the chain has nothing connected to the SP LAN IN port on its service panel.

In addition, during the initial configuration of each Sun StorEdge 6320 system, a unique Sun StorEdge 6320 system ID must be assigned to each system. One of the systems (preferably the system with the phone line connected) must be assigned a Sun StorEdge 6320 system ID of 0. The Sun StorEdge 6320 System ID is assigned during the initialization procedure of the system described in Chapter 6.1.

APPENDIX **A**

Connecting a Second System Cabinet

To connect a second cabinet to a Sun StorEdge 6320 system, perform the steps in this Appendix.

The FRUs in TABLE A-1 are required to perform the tasks in this Appendix:

TABLE A-1 Connecting Cables to the Second Cabinet—FRU List

FRU Description	Part Number	Quantity
ASSY, CABL, FIBOP, LC-SC, 15 meter Fibre Channel cable	537-1034-01	1
Power cable for 72 in. (185 cm) Sun StorEdge Expansion Cabinet (US), L6-30P	595-4881	2
Power cable for 72 in. (185 cm) Sun StorEdge Expansion Cabinet (International), IEC 309	595-4882	2
78.74 in. (2-meter) grounding strap (in the kit shipped with the system)	530-1619-01	1
393.7 in. (10-meter) base cabinet service panel to expansion cabinet service panel	537-1060-01	2
393.7 in. (10-meter) expansion cabinet DB-9 to DB-9 power cable	530-3210-01	2
36 in. (92.5-cm) service processor USB connection to USB Relay (See Note)	530-3208-01	1

Note – If remote power on and power off will be used, the Storage Service Processor USB connection to the USB Relay cable must be connected. See Appendix B for the procedure to connect the power cable.

This Appendix contains the following sections:

- Section A.1 “Connecting an Expansion Cabinet to a Base Cabinet with Internal Switches” on page A-2
- Section A.2 “Connecting an Expansion Cabinet to a Base Cabinet with External Switches” on page A-6

A.1 Connecting an Expansion Cabinet to a Base Cabinet with Internal Switches

If you purchased a Sun StorEdge 6320 system with Sun-installed internal switches and an expansion cabinet, the following instructions describe how to connect the expansion cabinet.

A.1.1 Connecting the Fibre Channel Cables

In the Sun StorEdge 6320 system, the 16 Port Fibre Channel switch connects the controller of each 6020 array to I/O connections on the Service Panel in the base cabinet. This cabling is completed before the system is shipped to the customer.

In a Sun StorEdge 6320 system that has the expansion cabinet installed, the expansion cabinet has the controller of each of the Sun StorEdge 6020 arrays cabled to the I/O connections on the expansion cabinet Service Panel. Before the expansion cabinet is shipped to the customer, this cable is attached to all Sun StorEdge 6020 arrays that are installed in the expansion cabinet.

The Service Panels are bolted to the back of the system base and expansion cabinets.

FIGURE A-2 shows the Sun StorEdge 6320 System Service Panel.

FIGURE A-2 shows 6320 systems with internal FC switches and the Fibre Channel cable connections from the I/O Exp FC1 and FC2 ports on the Service Panel on the base cabinet to the I/O Exp FC1 and FC2 ports on the expansion cabinet.

FIGURE A-2 also shows the connections for the configuration of two controllers for two Sun StorEdge 6020 arrays (2x2 configuration). Other supported configurations are:

- Two controllers for four Sun StorEdge 6020 arrays (2x4 configuration)
- Two controllers for six Sun StorEdge 6020 arrays (2x6 configuration)

FIGURE A-3 shows 6320 systems with internal FC switches and the Fibre Channel cable connections from the I/O Exp FC1 and FC2 ports on the Service Panel on the base cabinet to the I/O Exp FC1 and FC2 ports on the expansion cabinet.

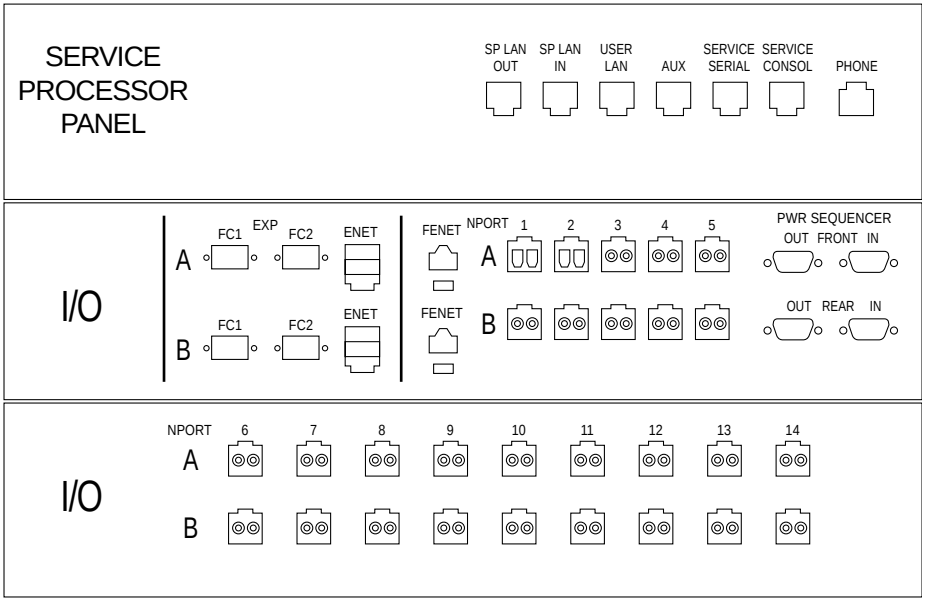


FIGURE A-1 Sun StorEdge 6320 System Service Panel

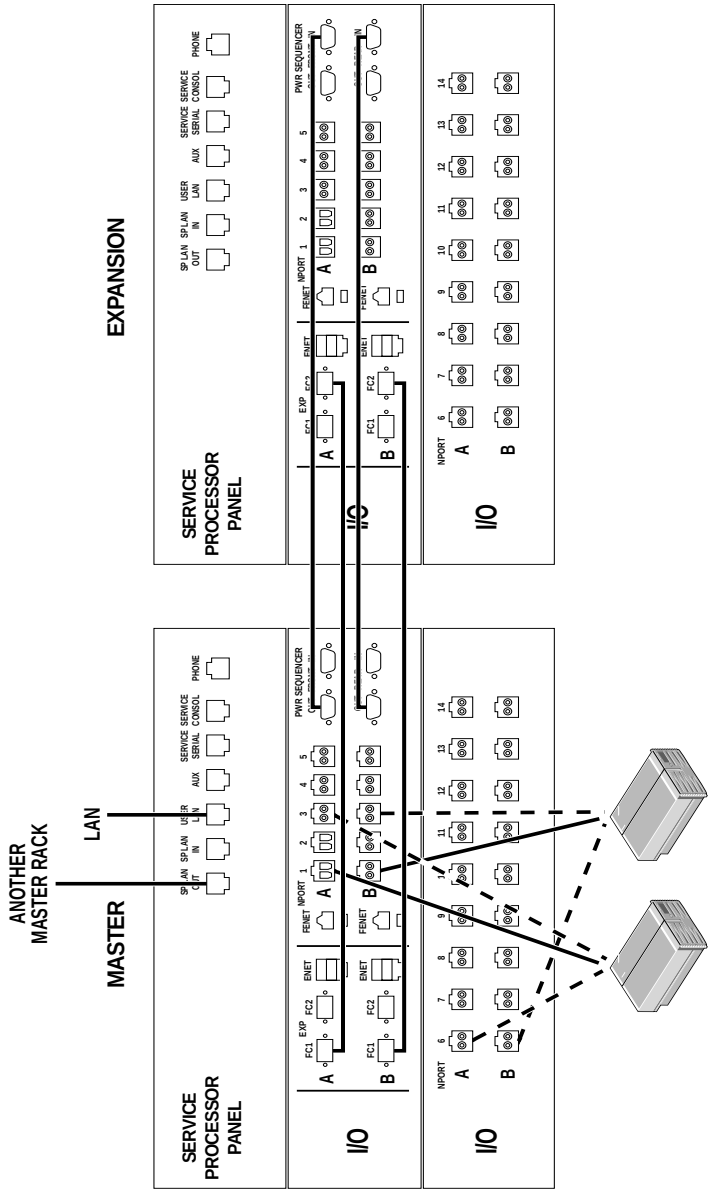


FIGURE A-2 Expansion Cabinet Cabling (with Internal FC Switches)

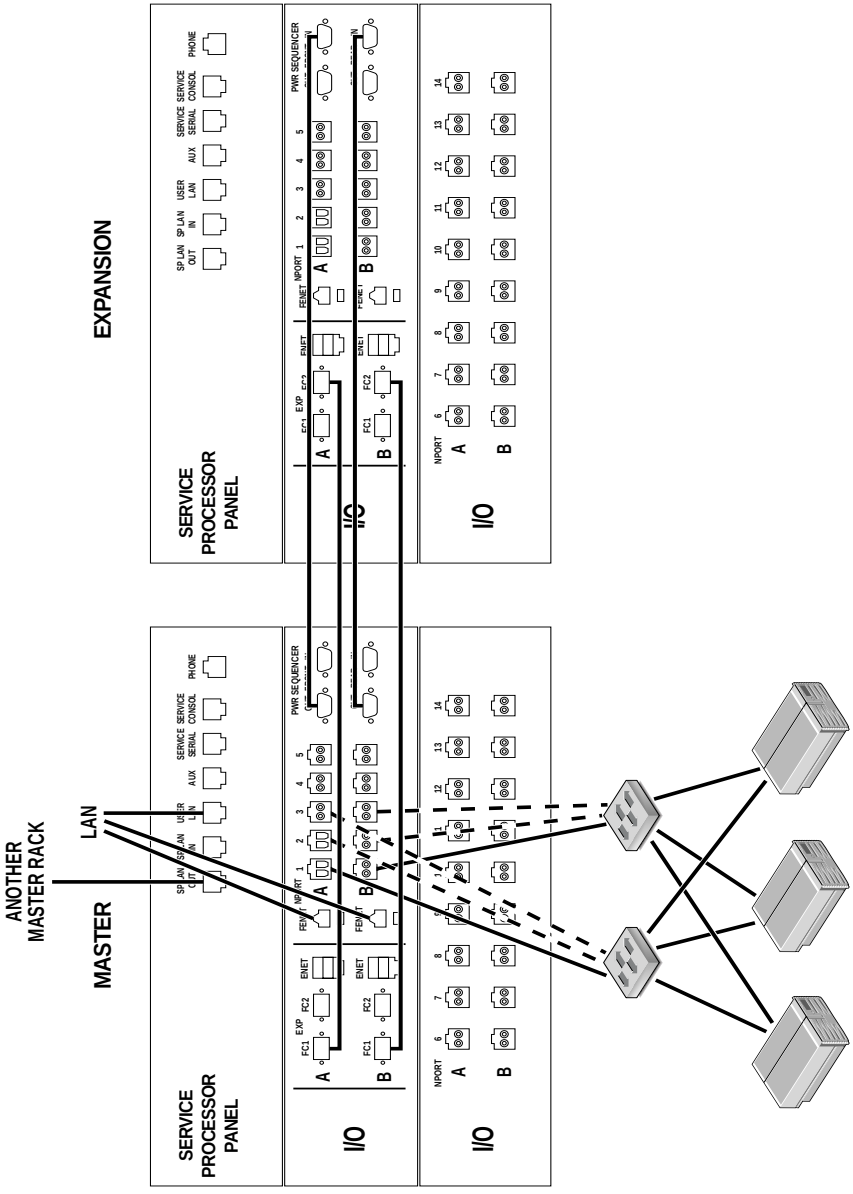


FIGURE A-3 Expansion Cabinet Cabling (with External FC Switches)

A.1.2 Connecting the Ethernet Cable

In a two-cabinet configuration, the Ethernet hubs in both cabinets must be interconnected. The 10-meter, shielded, Ethernet crossover cable connects into either port 12 or port 24 of the hub in the base cabinet. The other end of the 10-meter, shielded, Ethernet crossover cable connects into either port 12 or port 24 of the Ethernet hub in the expansion cabinet.

A.2 Connecting an Expansion Cabinet to a Base Cabinet with External Switches

If you purchased a Sun StorEdge 6320 system to use with external switches and an expansion cabinet (FIGURE A-3), the procedure for connecting the expansion cabinet is the same as with the Sun StorEdge 6320 system with internal switches. The difference is that the connections from the I/O ports on the Service Panel connect to the customer's switch rather than to the host.(

APPENDIX **B**

Powering On and Powering Off the System Remotely

The systems are shipped to the customer with the hardware and software necessary to support two methods of powering on:

- Local power on—powering on the system at the system.
- Remote power on—powering on the system either locally or remotely.

This Appendix describes powering on and powering off the system remotely.

When connected for remote power-on and power-off operation, the Storage Service Processor detects the presence of the remote power relay and enables two additional functions in the Sun StorEdge 6000 Family Configuration software to enable remote power on and remote power off. When these functions are enabled, the Storage Service Processor and the Storage Service Processor Accessory Tray can remain powered on and active to provide control over the remote power relay.

Caution – Do not use the partial remote power-off sequence when moving the system. You must completely power off the system before moving it.

Note – If you are installing a Sun StorEdge 6320 system with an expansion cabinet, perform the procedures in this Appendix for both cabinets.

The FRUs in TABLE B-1 are required to perform the tasks in this Appendix:

TABLE B-1 Power Cable—FRU List

FRU Description	Part Number	Quantity
Power cable for 72 in. (185 cm) Sun StorEdge Expansion Cabinet (US), L6-30P	595-4881	2
Power cable for 72 in. (185 cm) Sun StorEdge Expansion Cabinet (International), IEC 309	595-4882	2
78.74 in. (2-meter) grounding strap (in the kit shipped with the system)	530-1619-01	1
393.7 in (10-meter) expansion cabinet DB-9 to base cabinet DB-9 cable (if needed)	530-3210-01	2

The following tools are required to perform the tasks in this Appendix:

- Keys for key switch (in the kit shipped with the system)
- Phillips screwdriver

This Appendix contains the following sections:

- Section B.1 “Preparing the System for Remote Power” on page B-2
  - Section B.1.1 “Connecting the Grounding Strap” on page B-6
  - Section B.1.2 “Connecting the Power Cables” on page B-7
- Section B.2 “Powering On the System Remotely” on page B-10
- Section B.3 “Troubleshooting the Installation” on page B-13
- Section B.4 “Powering Off the System Using the Remote Power-Off Procedure” on page B-13
- Section B.5 “Restoring the System After the Partial Remote Power-Off Procedure” on page B-20
- Section B.6 “Restoring the System After the Full Remote Power-Off Procedure” on page B-22
- Section B.7 “Reassembling the System” on page B-23

B.1 Preparing the System for Remote Power

1. **Verify that the key switches located at the bottom front of the base subsystem and any expansion cabinet are in the Standby position (**FIGURE B-1**).**

   Keys for this switch are packed in the kit that was shipped with your subsystem and any expansion cabinet. If the key switch is not in the Standby position, insert the key and turn the key switch to Standby.

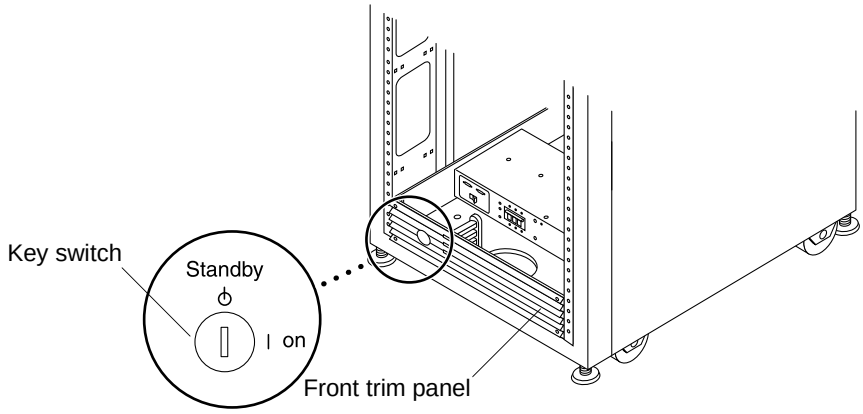


FIGURE B-1 Location of Key Switch on Bottom Front Panel (Standby Position)

2. **Open the front door and the back door of the system.**

3. **Loosen the four screws on the front trim panel and remove the panel.**

   Set the panel aside.

4. **Loosen the four screws holding right side of the Service Processor Panel and swing the panel open.**

5. **Locate the two DB-9 cables that are loosely tied off close to the relay panel on the back of the Service Processor Panel. Connect the cable labeled J14 to PP Front Seq J14 In to the FRONT SEQ J14 connection and the cable labeled J14 to PP Rear Seq J14 In to the REAR SEQ J14 connection on the back of the Service Processor Panel (**FIGURE B-2**).**

   The other ends of these cables are already connected to the front and rear power sequencers.

   These cables enable the Storage Service Processor to recognize that the system is capable of a remote power-on and power-off sequence. FIGURE B-2 shows the back of the Base Cabinet Service Processor Panel and the location of the FRONT SEQ J14 and REAR SEQ J14 connections.

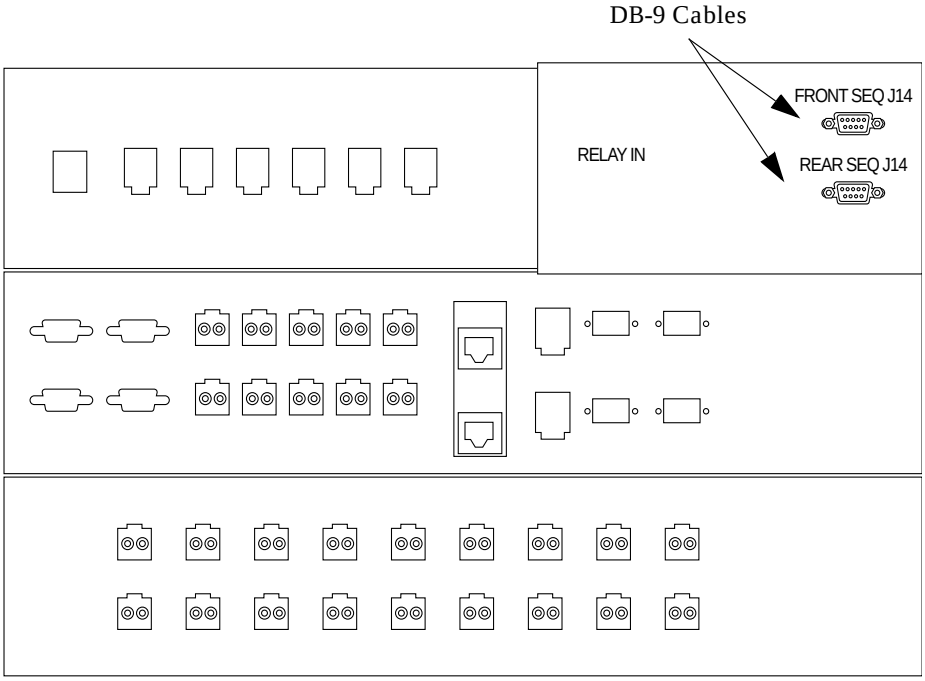


FIGURE B-2 Connections for the Front and Rear Power Sequencers on the Rear of the Service Processor Panel (Base Cabinet)

6. **Close the Service Processor Panel and tighten the four screws.**

7. **If an expansion cabinet is included in the system, use the two 393.7-inch (10-meter) DB-9 to DB-9 expansion cabinet cables to connect the power sequencer control cables between the power sequencer out-jacks on the front of the base Storage Service Panel to the power sequencer in-jacks on the front of the expansion cabinet Storage Service Panel for both the front and rear power sequencers**

   The cables are in the kit that was shipped with the system.

   This connection allows the expansion cabinet to power on or power off when the base cabinet is powered on or powered off.

   The power input and output jacks on the Storage Service Panel are shown in FIGURE B-3.

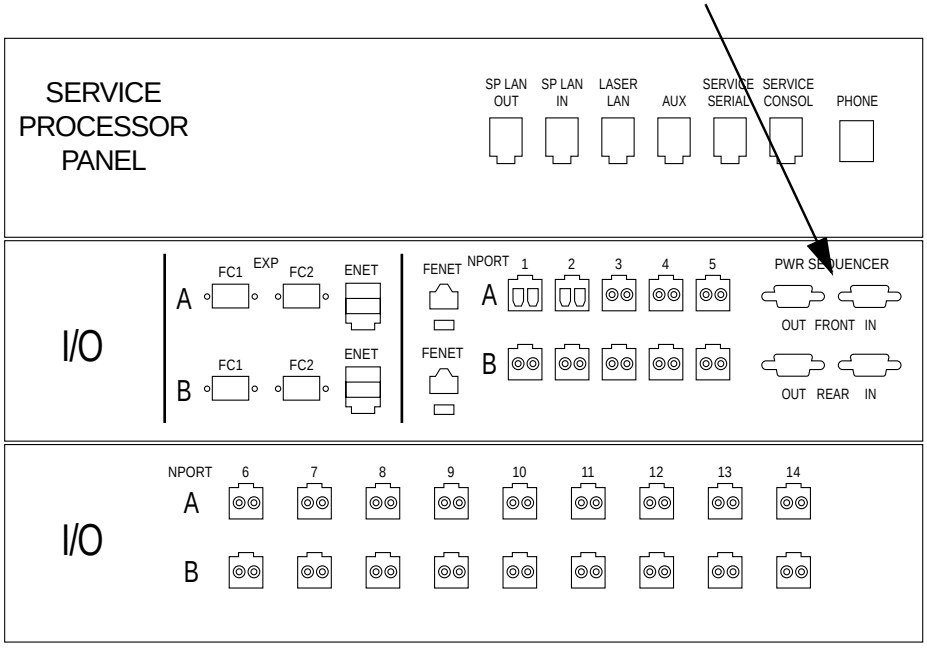


FIGURE B-3 Service Panel Power Sequencer Jacks

B.1.1 Connecting the Grounding Strap

The grounding conductor must be connected to either of the following:

- Earth at service equipment
- Supply transformer or motor-generator set (if supplied by a separately derived system)

The outlets in the vicinity of the unit must be of the grounding type, and the grounding conductors for these outlets must be connected to earth ground.

1. **Locate the 78.74-inch (2-meter) grounding strap from the kit that was shipped with your subsystem.**
2. **Attach one end of the grounding strap to the power sequencer on the server cabinet or on a cabinet that is grounded nearest to the subsystem.**
3. **Attach the other end of the grounding strap to the front power sequencer in the subsystem (**FIGURE B-4**).**

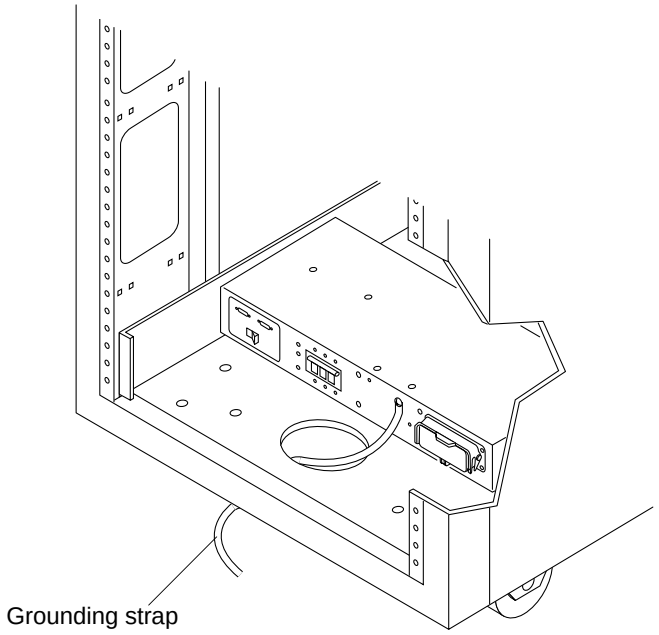


FIGURE B-4 Attaching the Grounding Strap to the Front Power Sequencer

Note – If you are installing a system with an expansion cabinet, do not attach the grounding strap from the expansion cabinet to the base cabinet—use a different grounding point for the expansion cabinet.

B.1.2 Connecting the Power Cables

Caution – The subsystem is designed to work with single-phase power systems that have a grounded neutral conductor. To reduce the risk of electric shock, do not connect the subsystem to any other type of power system.

1. **Verify that each AC power sequencer circuit breaker is in the Off position and that the Local/Off/Remote switch is in the Remote position on each power sequencer (**FIGURE B-5**).**

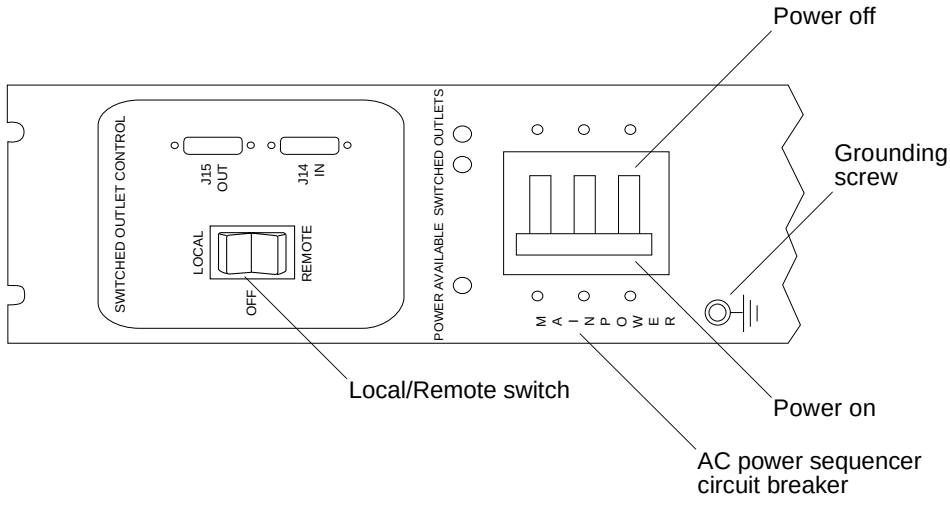


FIGURE B-5 AC Power Sequencer Control Panel

2. **Verify that the stated rating matches the AC input voltage to the system (**TABLE B-2 **and** TABLE B-3**).**

   Check the electrical ratings label on the serial number label attached to the power sequencer.

TABLE B-2 Voltage Requirements for Maximum Operating Voltage and Frequency Ranges

Voltage and Frequency Range	Requirement
AC voltage rating	200 to 240 VAC
AC voltage range	180 to 264 VAC
Frequency range	47 to 63 Hz

TABLE B-3 Current Requirements at Nominal Line Voltage for a System in Maximum Configuration

Nominal and Maximum Voltage and Current	Requirement
Nominal AC input voltage rating single phase	200 to 240 VAC
Maximum current requirement	24A at 240 VAC
Maximum current per power sequencer outlet	32A

3. **Connect the square female end of one power cable to the front power sequencer and the square female end of the other power cable to the rear power sequencer connector (**FIGURE B-6**).**

   a. **Flip open the cover latch to access the connectors.**

   b. **Route the power cables directly through the opening in the subsystem base.**

4. **Pull the latch cover over the power cables to secure them to the power sockets.**

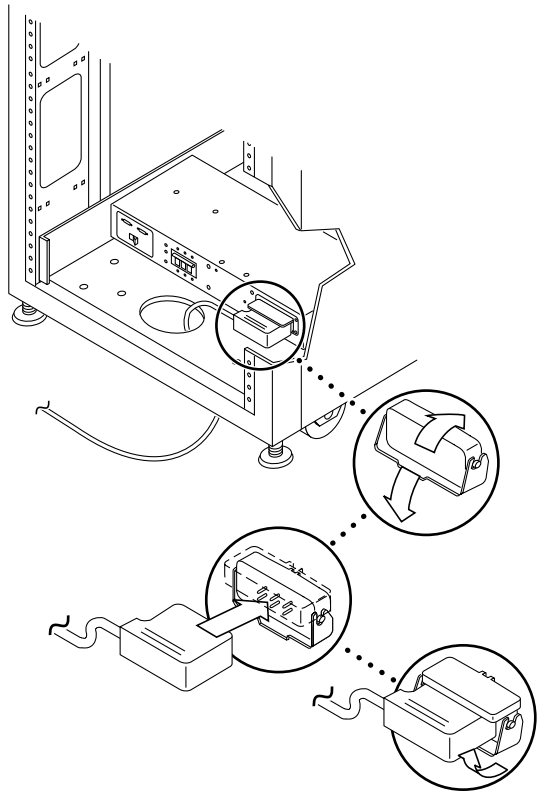


FIGURE B-6 Connecting the Power Cables

5. Connect the other end of the power cables to a grounded outlet.

The following connector types are provided on the power cable:

- NEMA L6-30P for 200–240 V North American operation
- 32A, single-phase, IEC 309 connector for 220–240 V international operation

Caution – To reduce the risk of electric shock, strictly observe all Caution and Note statements.

Note – If the appropriate mating receptacle is not available, the connector can be removed from the cable and the cable can then be permanently connected to a dedicated branch circuit by a qualified electrician. Check local electrical codes for proper installation requirements.

B.2 Powering On the System Remotely

Note – If you are powering on a Sun StorEdge 6320 system with the expansion cabinet attached, perform the power-on sequence for both cabinets.

Caution – To avoid damage to internal circuits, do not connect or disconnect any cable while the FRU associated with the cable is powered on.

The following steps allow the system to be powered on remotely:

1. **Open the front door if it is not already open.**
2. **Remove the front trim panel from the system and set it aside if you have not already done so.**
3. **Verify that the key switches located at the bottom front of the base subsystem and any expansion cabinet are in the Standby position (**FIGURE B-7**).**

   Keys for this switch are packed in the kit that was shipped with your subsystem and any expansion cabinet. If the key switch is not in the Standby position, insert the key and turn the key switch to Standby.

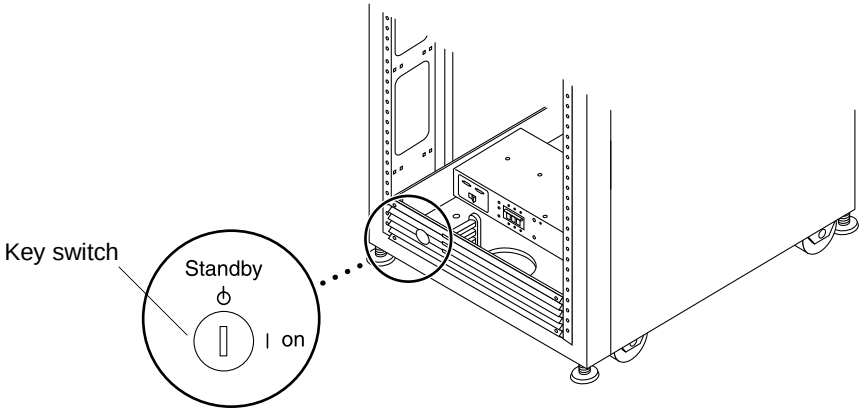


FIGURE B-7 Location of Key Switch on Bottom Front Panel

4. **At the bottom front and bottom back of the base subsystem and any expansion cabinet, press the AC power sequencer circuit breakers to Off.**

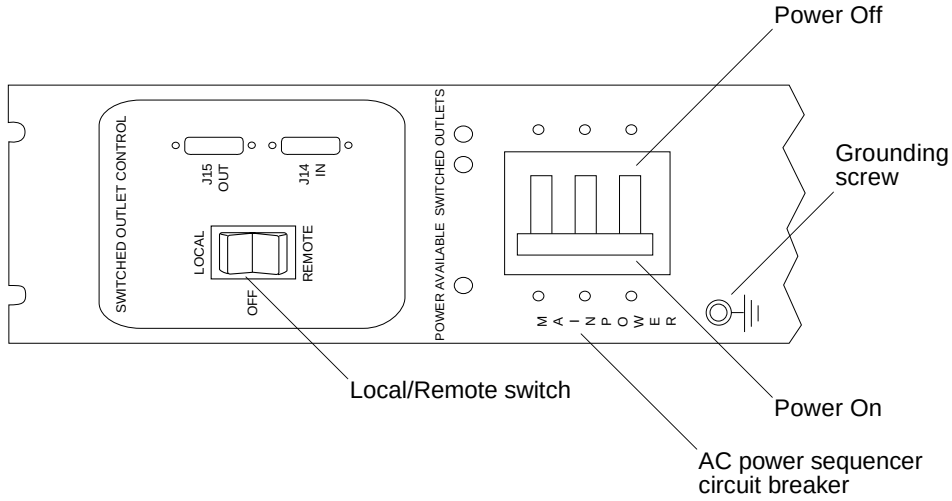


FIGURE B-8 AC Power Sequencer Control Panel

5. **Verify that the AC power cables of the subsystem and any expansion cabinet are connected to the correct AC outlets.**

Caution – Do not disconnect the AC power cable from the outlet while working on or in the subsystem. This connection provides a grounding path that prevents damage from electrostatic discharge.

Caution – Never move a subsystem when system power is on or when the remote power-off procedure is used. Excessive movement can cause catastrophic disk drive failure. Always power the system off completely before you move it.

6. **At the bottom front and bottom back of the subsystem on the base cabinet and any expansion cabinet, press the Local/Off/Remote switch to Remote (**FIGURE B-8**).**

7. **At the bottom front and bottom back of the base system cabinet, press the AC power sequencer circuit breakers to On (**FIGURE B-8**).**

   On the base system cabinet, the Storage Service Processor, Storage Service Processor accessory tray, Network Terminal Concentrator (NTC), Firewall/Router, and the Ethernet Hub will be powered up because they are connected to the unswitched power outlets.

8. **Verify that the key switches in the base cabinet and any expansion cabinet are still in the Standby position as in Step 3.**

The three power status indicators on the front panel show the status of the front power sequencer. The main AC power light emitting-diode (LED) illuminates when power is applied to the subsystem. The LED for sequencer stage 1 illuminates next, followed by the LED for sequencer stage 2.

Note – The front panel power sequencer bottom LED illuminates only when the AC power sequencer circuit breakers for the front power supply are on.

Note – To check the status of the back power sequencer, open the back door of the subsystem and look for the three green LEDs.

All components of the system power on in an optimal state.

9. **Verify that all the components have only green LEDs illuminated.**

   If LEDs are illuminated other than the green ones or if LEDs are not illuminated, see Section B.3 “Troubleshooting the Installation” on page B-13 to troubleshoot any component that is not powered on.

   The system is now operating and supports the remote power-on procedure.

10. **Bring the host system back online if necessary.**

    If the host system is not online, you might have to enter a software command to bring the host system online so that the host system will recognize the subsystem.

    For more information, see the software documentation for your host system.

    If you are not going to power off the system at this time, see Section B.7 “Reassembling the System” on page B-23.

B.3 Troubleshooting the Installation

Use this list as a guide for isolating common installation problems.

- Verify that all power and data cables are properly installed and in the right locations.
- Verify that all Fibre Channel connections, cable adapters, and Gigabit Interface Converters (GBICs) are installed and secure.
- Verify that the power to the system is turned on.
- Check the AC Power Sequencer Control Panel:
  - If the Switched Outlets LEDs are not illuminated, check the position of the key switch
  - If one Switched Outlet LED is illuminated but the other is not, check the status of the power sequencer for the LED not illuminated
  - If some FRUs have power and others do not, check the power-on switch on the FRUs that do not have power

See the *Sun StorEdge 6320 Reference and Service Manual* and *Storage Automated Diagnostic Environment User's Guide* for a description of the procedures to perform fault detection and isolation.

B.4 Powering Off the System Using the Remote Power-Off Procedure

Before you power off the subsystem, you must halt any I/O between the host system(s) and the subsystem.

Depending upon the type of host system(s) and the software running on the host system(s), you might need to:

- Exit the operating environment
- Take the host system off line

Refer to the following documents for specific instructions:

- *Solaris Handbook for Sun Peripherals*
- System administration guides that correspond to your operating system
- Documentation that came with your host system(s)

Caution – Failure to stop I/O between host system(s) and the subsystem can result in the loss of data.

B.4.1 Powering off the System Remotely

Follow these steps to remotely power off the Sun StorEdge 6320 systems:

1. **Connect to the Configuration Service software on the Service Processor with a web browser:**
   - For a non-secure HTTP server connection, enter:

```
http://hostname:9080/
```

   - For a secure HTTPS server connection, enter:

```
https://hostname:9443/
```

   where *hostname* is the IP address of the Service Processor or external host where the software is installed.

   Configuration Service displays the Login page.

2. **Log in as** `admin` **and enter the password.**

   The software displays the Administration General page as shown in FIGURE B-11.

3. **Click on Partial Shutdown as shown in** FIGURE B-9**.**

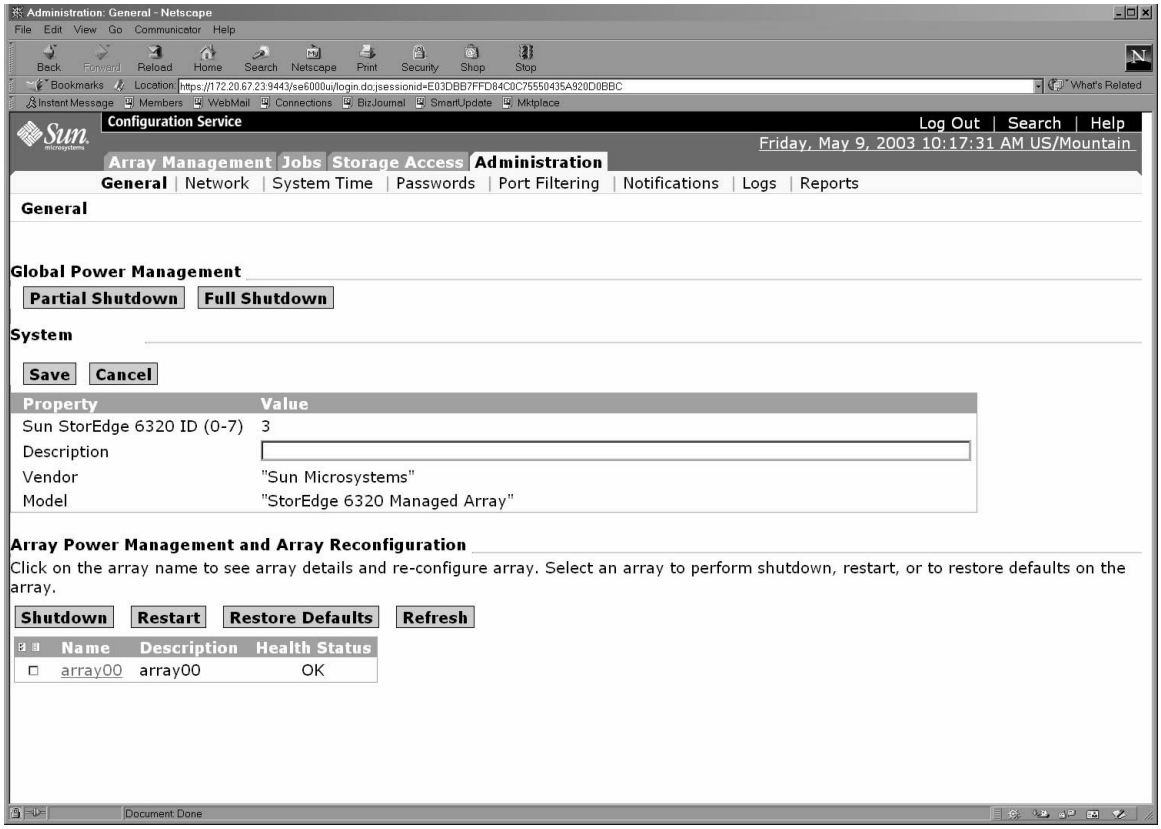


FIGURE B-9 Administration General Partial Shutdown Page

4. **The Partial Shutdown Confirmation page appears as shown in** FIGURE B-10**. Confirm the partial shutdown.**

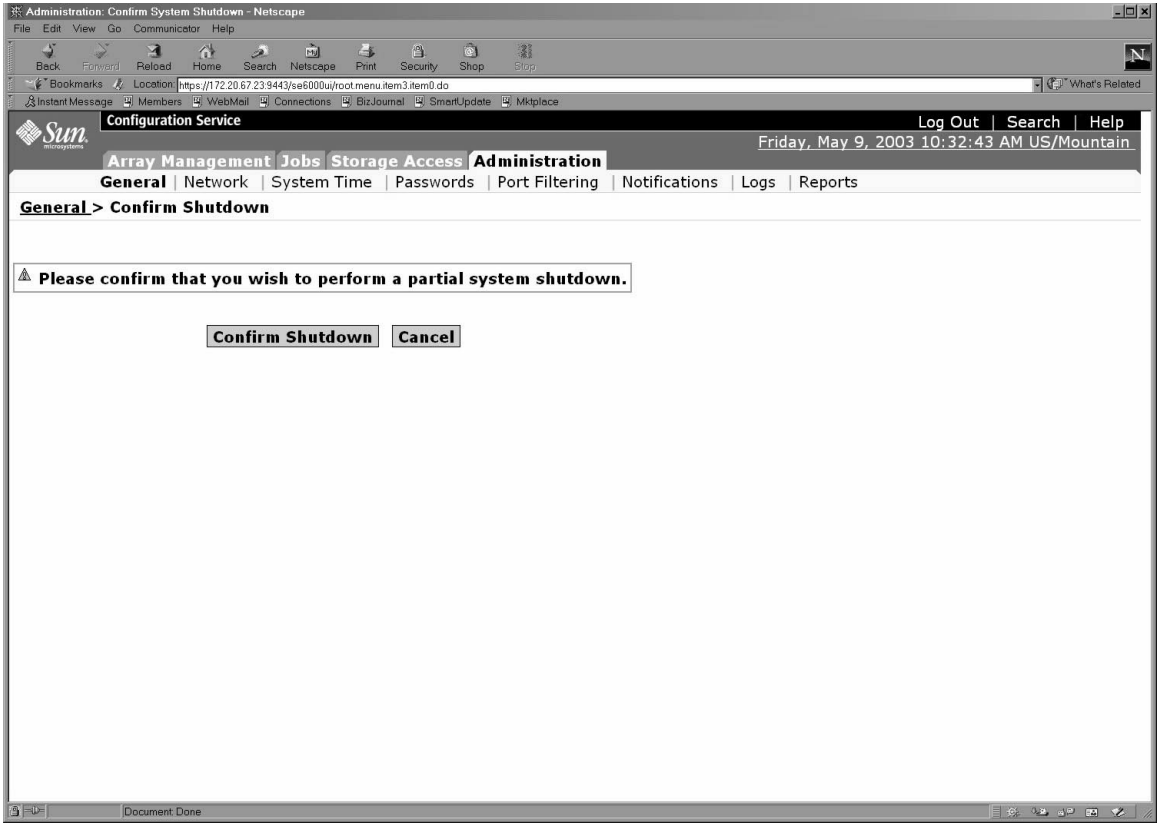


FIGURE B-10 Partial Shutdown Confirm Shutdown Page

This selection produces the following results in the base cabinet and any expansion cabinets:

- The Storage Service Processor is still powered up (base cabinet only).
- The Storage Service Processor Accessory tray is still powered up (base cabinet only).
- All Sun StorEdge 6320 arrays are powered off completely.
- All Power Sequencers have only the Power Available LED illuminated.

5. **To stop all AC power input to the subsystem, see the procedures in Section B.4.2 “Powering Off the System Completely” on page B-17.**

B.4.2 Powering Off the System Completely

To completely power off the system, use the following steps:

1. **Connect to the Configuration Service software on the Service Processor with a web browser:**

   - For a non-secure HTTP server connection, enter:

   ```
   http://hostname:9080/
   ```

   - For a secure HTTPS server connection, enter:

   ```
   https://hostname:9443/
   ```

   where *hostname* is the IP address of the Service Processor or external host where the software is installed.

   Configuration Service displays the Login page.

2. **Log in as** `admin` **and enter the password.**

   The software displays the Administration General page as shown in FIGURE B-11.

3. **Click Full Shutdown.**

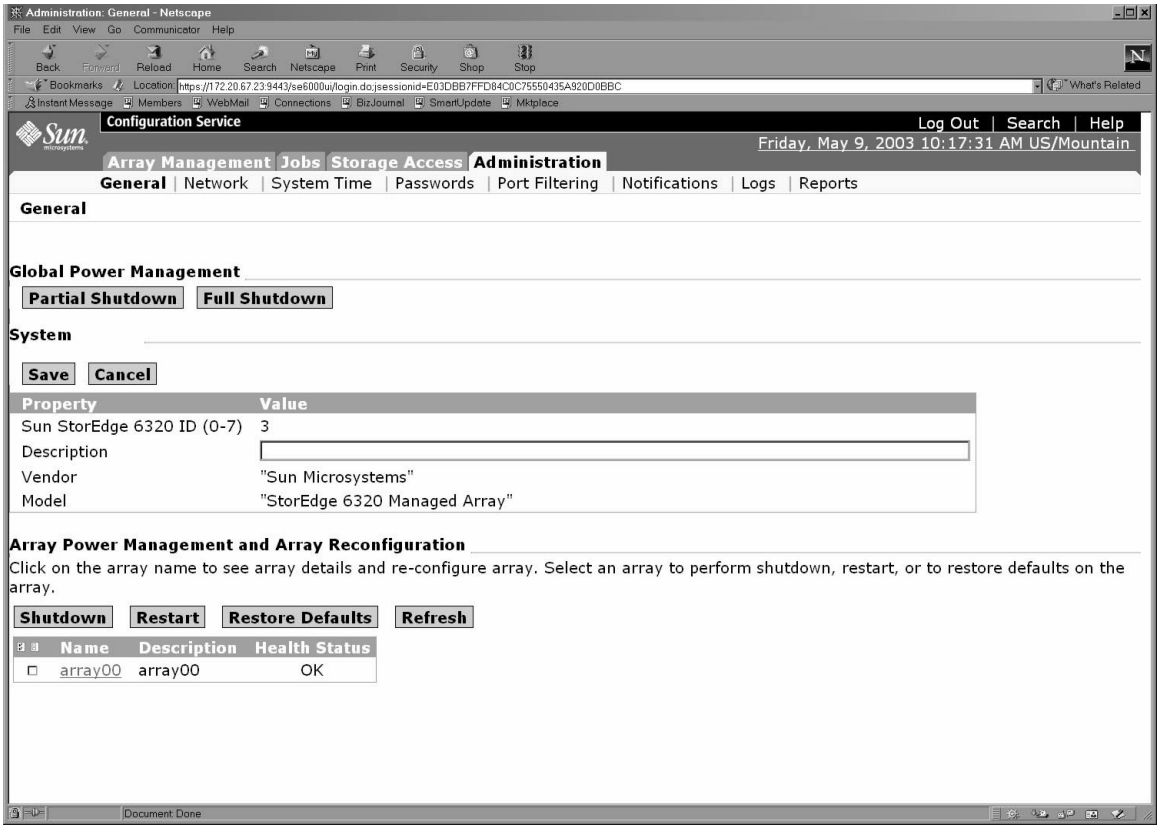


FIGURE B-11 Administration General Full Shutdown Page

The Full Shutdown Confirmation page is displayed as shown in FIGURE B-12.

4. **Confirm the full system shutdown.**

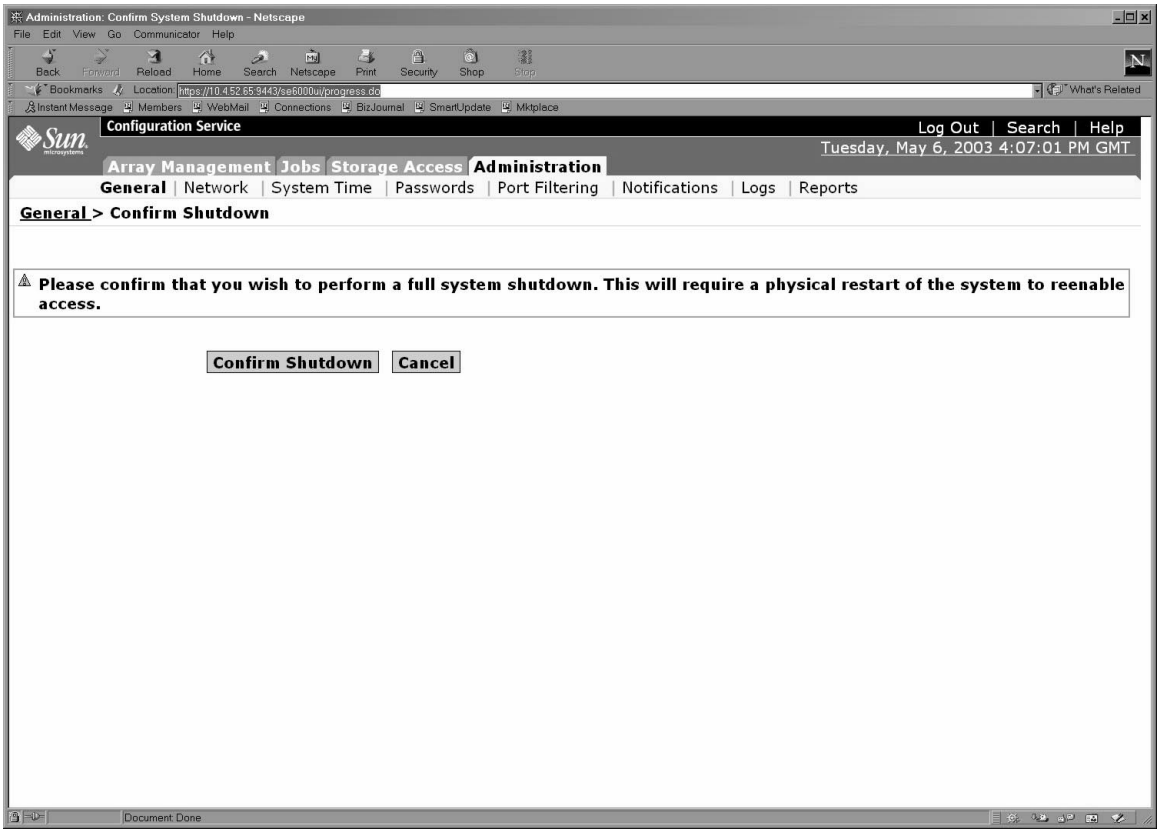


FIGURE B-12 Full Shutdown Confirmation Page

This selection produces the following results in the base cabinet and any expansion cabinet:

- The Storage Service Processor is powered down and under control of Lights Out Management (LOM).
- The Storage Service Processor Accessory Tray is still powered up.
- The Sun StorEdge 6020 array drives have spun down.
- The Sun StorEdge 6020 array controller cards are powered down and off.
- The Sun StorEdge 6020 array trays have the green LED illuminated indicating the tray has power.
- The loop cards have the green LED illuminated indicating the loop cards have power.
- The PCU fans are on.
- The PCUs have the blue LEDs illuminated meaning it is safe to remove them.

- All Power Sequencers have all three green LEDs illuminated meaning power is present.

5. **Remove the front trim panel and set it aside.**
6. **At the bottom front and bottom back of any expansion cabinet, press the AC power sequencer circuit breakers to Off.**

   This turns off all power to the expansion cabinet.
7. **At the bottom front and bottom back of the base cabinet, press the AC power sequencer circuit breakers to Off.**

   This turns off all power to the base cabinet.
8. **If you are servicing FRUs that are not power sequencers or are not moving the system, leave the power cables connected to ensure a proper grounding path for electrostatic discharge.**

B.5 Restoring the System After the Partial Remote Power-Off Procedure

If the system has been powered off using the partial remote power-off procedure, you must use the following procedure to restore power to the system.

1. **Connect to the Configuration Service software on the Service Processor with a web browser:**
   - For a non-secure HTTP server connection, enter:

```
http://hostname:9080/
```

   - For a secure HTTPS server connection, enter:

```
https://hostname:9443/
```

   where *hostname* is the IP address of the Service Processor or external host where the software is installed.

   Configuration Service displays the Login page.
2. **Log in as** `admin` **and enter the password.**

The software displays the Administration General page as shown in FIGURE B-11.

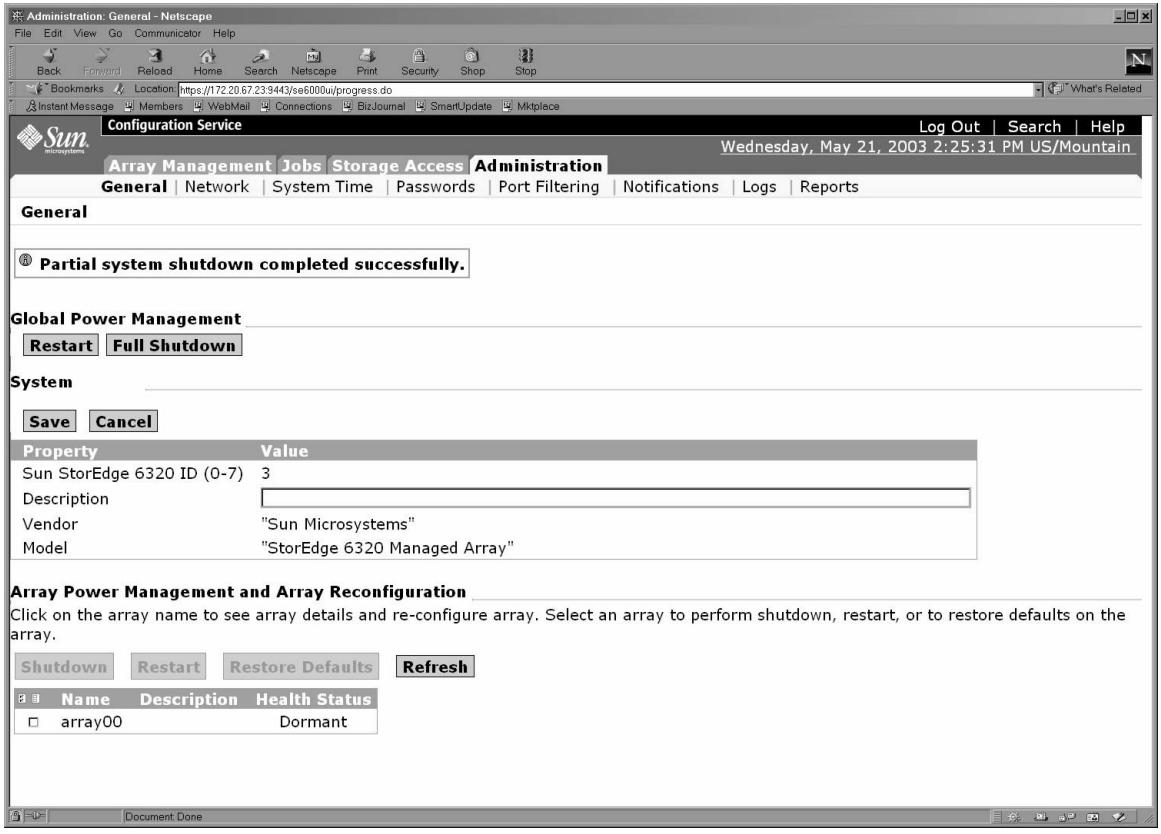


FIGURE B-13 Administration General—Power Restart Page

3. **Click Restart to power up the Sun StorEdge 6320 system.**

   This selection activates the power sequencers in the base cabinet and any expansion cabinets and causes the storage components to power up. The Switched Outlets LEDs are illuminated. This restart may take some time.

   The system is now ready for operation.

B.6 Restoring the System After the Full Remote Power-Off Procedure

If the system has been powered off using the full remote power-off procedure, you must go the system and perform the following steps:

1. **Open the front door and back door if they are not already open.**
2. **Remove the front trim panel from the system and set it aside if you have not already done so.**
3. **Verify that the key switches located at the bottom front of the base subsystem and any expansion cabinet are in the Standby position.**
4. **At the bottom front and bottom back of the base subsystem and any expansion cabinet, press the AC power sequencer circuit breakers to Off.**
5. **Verify that the AC power cables of the subsystem and any expansion cabinet are connected to the correct AC outlets.**
6. **At the bottom front and bottom back of the subsystem on the base cabinet and any expansion cabinet, press the Local/Off/Remote switch to Remote.**
7. **At the bottom front and bottom back of the base system cabinet, press the AC power sequencer circuit breakers to On.**

   The three power status indicators on the front panel show the status of the front power sequencer. The main AC power light emitting-diode (LED) illuminates when power is applied to the subsystem. The LED for sequencer stage 1 illuminates next, followed by the LED for sequencer stage 2.

Note – The front panel power sequencer bottom LED illuminates only when the AC power sequencer circuit breakers for the front power supply are on.

Note – To check the status of the back power sequencer, open the back door of the subsystem and look for the three green LEDs.

---

8. **Wait approximately one minute after the AC power sequencer circuit breakers are pressed on and at the back of the system, locate the power on and off switch for the Storage Service Processor and press the switch off, then on.**

   All components of the system power on in an optimal state.

9. **Verify that all the components have only green LEDs illuminated.**

   If LEDs except green are illuminated or if no LEDs are illuminated, see Section B.3 “Troubleshooting the Installation” on page B-13 to troubleshoot any component that is not powered on.

   The system is now operating and supports the remote power-on procedure.

B.7 Reassembling the System

1. **Replace and tighten the screws to secure the front trim panel to the subsystem.**

Note – If you are routing cables under the floor, route the cables between the bottom panel and the kick panel.

---

2. **Close all open doors to the system.**

APPENDIX **C**

Product Specifications

This appendix contains the following sections:

- Section C.1 “Physical Characteristics” on page C-1
- Section C.2 “Physical Specifications” on page C-2
- Section C.3 “Power Sequencer Electrical Specifications” on page C-3
- Section C.4 “Environmental Requirements” on page C-3

C.1 Physical Characteristics

The physical characteristics of the Sun StorEdge 6320 systems are as follows:

- Internal dimensions conform to EIA RS-310C standard (RETMA) for 19-inch (482 millimeter) cabinets. Universal mounting holes are used with 10-32UNF tapped holes in all locations. The nominal rack opening is 17.875 inches (454 millimeter).
- A vertical panel opening of 36 rack units (RUs) minimum is provided to accommodate various rack-mountable FRUs. One RU is equal to 1.75 inches (44.45 millimeter).
- Overall system height with cosmetic panels is 75 inches (191 cm) maximum.

Caution – Make no mechanical or electrical modifications to this system. Sun Microsystems is not responsible for the regulatory compliance if the system is modified.

C.2 Physical Specifications

TABLE C-1 Storage System Physical Specifications

Subsystem	Height	Width	Depth	Weight
Sun StorEdge 6320 system single cabinet	75 in. 109.5 cm	23.9 in. 60.7 cm	37 in. 94 cm	1465 lb. 665 kg
Sun StorEdge 6320 system with expansion cabinet	75 in. 109.5 cm	47.8 in. 122 cm	37 in. 94 cm	2895 lb. 1660 kg
Note: The values given in this table are for the maximum hardware configuration available including the Sun StorEdge expansion cabinet in the Sun StorEdge 6320 systems.				

The power cords are 15 feet (4.6 meters) long.

C.3 Power Sequencer Electrical Specifications

TABLE C-2 Power Sequencer Electrical Specifications

Parameter	Value(s)
AC voltage rating	200 to 240 VAC
AC voltage range	180 to 264 VAC
Frequency range	47 to 63 Hz
Current at 240 VAC	32A
Power consumption, maximum Sun StorEdge 6320 system Sun StorEdge 6320 system with expansion cabinet	 4.2kW 8.4kW

C.4 Environmental Requirements

The operating environment requirements in TABLE C-3 are the limits to which the systems are tested to ensure that they meet all functional requirements. The recommended operating environment is the optimum condition in TABLE C-4.

TABLE C-3 Operating Environment Requirements

Parameter	Operating	Non operating
Temperature	41°F to 95°F (5°C to 35°C) non-condensing	-41°F to 149°F (-40°C to 65°C) non-condensing

TABLE C-3 Operating Environment Requirements *(Continued)*

Parameter	Operating	Non operating
Relative Humidity (RH)	10% to 90% RH, non-condensing 27°C maximum wet bulb	93% RH, no-condensing 38°C maximum wet bulb
Altitude	10,000 feet (approximately 3Km)	40,000 feet (approximately 12Km)
Environment	Avoid temperature extremes and keep the work area clean. Maintain the operating conditions described. The system should be in a computer room environment, which should provide secure access to computers and stored information, and provide control over environmental factors such as temperature, humidity, and airborne dust. A computer room installation can also help protect equipment from fire, flood, or other danger originating in the building.	

TABLE C-4 Optimum Ambient Environmental Operating Conditions

Environmental Factor	Ambient Temperature Range	Ambient Relative Humidity
Operating	70°F to 73.5°F (21°C to 23°C)	45% to 50%

APPENDIX **D**

Installing the Software on the Hosts

This chapter explains how to install software on the data hosts:

- Sun StorEdge 6000 CLI package
- Sun StorEdge SAN Foundation Software -Solaris
- Sun StorEdge Traffic Manager (non-Solaris)

D.1 Installing the CLI Client on Hosts

The 6320 System provides the Web-based Configuration Service software installed on the Service Processor (Solaris-only). You access this tool with a web browser.

If you need to configure the 6320 System from an external management host, the Sun StorEdge 6320 System provides a thin-scripting client for CLI commands. The supported operating systems of the hosts are listed in TABLE D-1.

TABLE D-1 Supported Host Operating Systems

• Solaris
• AIX
• Red Hat Linux
• HP-UX
• Windows 2000 Advanced Server

D.1.1 To Install the CLI Client Software

Download and install the CLI client software on the management host for the supported Operating Systems.

1. **Install the software as superuser (root).**

   If aliases exist in the superuser environment or profile, the software installation and configuration might have unexpected results. Remove any aliases created for the environment (for example, `cp="cp -i"`) before you install or configure the software.

   For the Korn shell: `# unalias -a`

   For the C shell:`> unalias *`

2. **From the host where you want to install the software, open a browser window to** `http://www.sun.com`

3. **From the home page, under On this Site, click on Product & Services**

4. **Under Product & Services, click on Storage**

5. **Under Hardware Storage, click on Midrange Storage**

6. **Click on Sun StorEdge 6320 System**

7. **Click on Sun Storage 6000 Family Software Download.**

8. **Click on** `Download` **to access the download screen for all operating systems.**

9. **Log in with your customer user name and password.**

TABLE D-2 CLI Client Software

Operating System	Software	File
Solaris 8 & 9	Sun StorEdge[TM] 6000 Family Host Installation Software for Solaris	SE6X20_host_sw.tar.Z
AIX	Sun StorEdge 6000 CLI Package for AIX	aix_README.txt aix_se6x20.tar
HP-UX	Sun StorEdge 6000 CLI Package for HP-UX	hpux_README.txt, hpux_se6x20.tar
Red Hat Linux 7.2	Sun StorEdge 6000 CLI Package for Linux	linux_README.txt inux_se6x20.tar
Windows 2000 Advanced Server SP2	Sun StorEdge 6000 CLI Package for Windows	win_README.txt, win_Disk1.zip

The README file contains the latest installation instructions for the client. The Solaris README file is available once you download and untar the software.

10. **For Solaris, AIX, HP-UX, and Linux, download the package**:

    a. Click the file to download.

11. **The web browser prompts you to download the file. (Download to any directory except** /opt**).**

12. **Save the** SE6X20_host_sw.tar.Z **package to a temporary working directory after you download it.**

    # **cp SE6X20_host_sw.tar.Z /***directory*

    where */directory* is a directory name in which to copy the package.

13. **Change to the temporary directory.**

    # **cd /***directory*

14. **Uncompress the** SE6X20_host_sw.tar.Z **file.**

    uncompress SE6X20_host_sw.tar.Z

    b. Extract the contents by entering:

    tar -xvf SE6X20_host_sw.tar

Note – Note: If checksum errors occur while using platform-specific tar, use the GNU version of tar.

---

15. **For Solaris, run the** install.sh **script and select the** Remote Configuration CLI **option.**

    Refer to the Sun Storedge 6000 Family Host Installation Software Guide for more information.

16. **For AIX, HP-UX, and Linux**:

    c. Verify that you have write permissions in /opt**.**

    d. Sign on as root**.**

    e. Install the package by entering:

    ./se6x20_install

    f. Read the licensing agreement and answer the licensing question.

    If you accept the licensing agreement, the software installs in /opt/se6x20 on the host.

    g. Add /opt/se6x20/bin **to your path.**

h. Enter `/opt/se6x20/cli/bin/sscs` **at the command line.**

For more information, see the `sscs`(1M) man page.

17. For Windows 2000, the general steps to install the package are:

a. Unzip Disk1.zip using any zip program that supports Windows.

b. Save the unzipped folder to any directory.

c. Double click setup.exe**.**

d. Read the licensing agreement and answer the licensing question.

If you accept the licensing agreement, the software installs on the host.

e. Open the Command Prompt (From the Start menu, click Programs -> Accessories -> Command Prompt).

f. Add c:\Program Files\Sun Microsystems\SSCS•in **to your command prompt path.**

path c:\Program Files\Sun Microsystems\SSCS•in

g. You can now enter SSCS **CLI commands in the Command Prompt.**

D.2 Specific Operations for Linux

This section provides specific information for the Linux Operating System.

D.2.1 Setting Up Storage Access Permissions to storage on the 6020 Array

Sun StorEdge 6020 arrays support LUN masking by associating access permissions between a set of volumes in a volume group, and a set of initiators (WWNs) in an initiator group.

For example, create volume_01 on the 6020 Array (the array name is array00). Additionally, you have a Red Hat Linux 7.2 server with a WWN.

Create the volume with the default access permission set to “None.” Give your server “read/write” access permissions to the volume.

Following these steps to set up LUN masking using the StorEdge 6020 Management Software Command Level Interface (CLI), also known as sscs.

1. Create the Initiator within the StorEdge 6020 Array

   # sscs create -a array00 initiator 2100001234567890

2. Create an Initiator Group within the StorEdge 6020 Array

   # sscs create -a array00 initgroup linuxhosts

3. Add the Initiator to the Initiator Group

   # sscs add -a array00 -i 2100001234567890 initgroup linuxhosts

4. Create the Volume Group for the Volume to allow access to the Initiator

   # sscs create -a array00 volgroup linuxvolumes

5. Add the preexisting Volume to the Volume Group

   # sscs add -a array00 -v volume_01 volgroup linuxvolumes

6. Associate the Initiator Group to the Volume Group with Read/Write permissions.

   # sscs modify -a array00 -i linuxhosts -P readwrite volgroup linuxvolumes

D.3 Sun StorEdge Traffic Manager (non-Solaris)

Install the Sun StorEdge Traffic Manager on non-Solaris data hosts. For more information, refer to Sun StorEdge Traffic Manager 3.0 Installation and User's Guide.

You can download the Sun StorEdge Traffic Manager from:

http://www.sun.com/storage/san

Go to the section on the Sun StorEdge Traffic Manager.

APPENDIX **E**

Sample Custom Configuration

In Chapter 5 you provided the initial system information and configured the default settings.

This section provides info to:

- Change from a default RAID-5 setting, if needed. If you do not want to use the default RAID-5 configuration, you must delete the RAID-5 pool before configuring the system for RAID-1 or RAID-0 configuration.
- Create Initiators to add security to the data host connections.

Before changing the configuration, you must view the volumes from a connected host.

Before creating initiators, you must locate available FC HBA paths and locate the appropriate HBAs and port WWNs that you will add to the initiator group profile before you customize the configuration.

E.1 Verifying the Volumes

Before changing the configuration, you must confirm that the new storage configuration is visible from the connected hosts.

Open a terminal console from one of the connected hosts and verify that appropriate volumes are visible.

Example: Enter the format command for a Solaris host:

#**format**

Searching for disks...done

Review the format report and verify that you see volumes.

E.2 Determining HBA WWNs

Before beginning to configure initiator groups, you must:

- Verify that software is installed on the data hosts
- Locate available FC HBA paths
- Locate the appropriate HBAs and port WWNs that you will add to the initiator group profile

The 6320 System supports San Foundation software for Solaris hosts and Traffic Manager software for non-Solaris hosts

The follwing shows an example of determining the HBA Port WWN using Sun StorEdge SAN 4.2 or later software on a Solaris host. The SAN 4.2 environment includes packages, patches, and firmware to allow the Sun HBA to access Sun storage.

1. At a terminal console, **enter the following**:

```
#luxadm qlgc
Found Path to 7 FC100/P, ISP2200, ISP23xx Devices

Opening Device: /devices/pci@8,600000/SUNW,qlc@2/fp@0,0:devctl
Detected FCode Version: ISP2200 FC-AL Host Adapter Driver: 1.14 01/11/20

Opening Device: /devices/pci@9,700000/SUNW,qlc@2/fp@0,0:devctl
Detected FCode Version: ISP2200 FC-AL Host Adapter Driver: 1.13 01/03/05

Opening Device: /devices/pci@9,700000/SUNW,qlc@3/fp@0,0:devctl
Detected FCode Version: ISP2200 FC-AL Host Adapter Driver: 1.13 01/03/05

Opening Device: /devices/pci@9,700000/SUNW,qlc@4/fp@0,0:devctl
Detected FCode Version: ISP2200 FC-AL Host Adapter Driver: 1.13 01/03/05

Opening Device: /devices/pci@9,600000/SUNW,qlc@2/fp@0,0:devctl


Detected FCode Version: ISP2200 FC-AL Host Adapter Driver: 1.13 01/03/05
Opening Device: /devices/pci@9,600000/SUNW,qlc@1/fp@0,0:devctl
Detected FCode Version: ISP2312 FC-AL Host Adapter Driver: 1.13.08 04/10/02
Opening Device: /devices/pci@9,600000/SUNW,qlc@1,1/fp@0,0:devctl
Detected FCode Version: ISP2312 FC-AL Host Adapter Driver: 1.13.08 04/10/02
Complete
```

2. Use the command “luxadm -e” to find each WWN. The HBA will be described as “unknown.” **Record each WWN** for the next step.

 # luxadm -e dump_map /devices/pci@9,600000/SUNW,qlc@1/fp@0,0:devctl

Pos	Port_ID	Hard_Addr	Port	WWN Node	WWN Type
0	10500	0	20030003ba27ca6e	10000003ba27ca6e	0x0 (Disk device)
1	10000	0	210000e08b0ae877	200000e08b0ae877	0x1f (Unknown Type,Host Bus Adapter)

 # luxadm -e dump_map /devices/pci@9,600000/SUNW,qlc@1,1/fp@0,0:devctl

Pos	Port_ID	Hard_Addr	Port	WWN Node	WWN Type
0	10600	0	20030003ba27d1ee	10000003ba27d1ee	0x0 (Disk device)
1	10000	0	210100e08b2ae877	200100e08b2ae877	0x1f (Unknown Type,Host Bus Adapter)

3. Locate the WWN-to-controller mapping to verify that the controller number is configured and connected.

 # cfgadm -al

Ap_Id	Type	Receptacle	Occupant	Condition
SBa	cpu/mem	connected	unconfigured	ok
SBb	cpu/mem	connected	unconfigured	ok
SBc	cpu/mem	connected	configured	ok
SBc::cpu0	cpu	connected	configured	ok
SBc::cpu1	cpu	connected	configured	ok
SBc::memory	memory	connected	configured	ok
SBd	cpu/mem	connected	configured	ok
SBd::cpu0	cpu	connected	configured	ok
SBd::cpu1	cpu	connected	configured	ok
SBd::memory	memory	connected	configured	ok
c0 scsi-bus		connected	configured	unknown
c0::dsk/c0t6d0	CD-ROM	connected	configured	unknown
c1	fc-private	connected	configured	unknown
c1::21000004cf83d9ed disk		connected	configured	unknown
c1::21000004cf83df64 disk		connected	configured	unknown
c1::21000004cf83e02a disk		connected	configured	unknown
c1::21000004cf83e05e disk		connected	configured	unknown
c1::21000004cf83e242 disk		connected	configured	unknown
c1::21000004cf83e317 disk		connected	configured	unknown
c1::21000004cf83e518 disk		connected	configured	unknown
c1::21000004cf83e65d disk		connected	configured	unknown
c1::21000004cf83e75c disk		connected	configured	unknown
c1::21000004cf83e777 disk		connected	configured	unknown
c1::21000004cf83e7bc disk		connected	configured	unknown
c1::21000004cf83eb0d disk		connected	configured	unknown
c1::508002000016beb9 ESI		connected	configured	unknown
c2	fc	connected	unconfigured	unknown
c3	fc	connected	unconfigured	unknown
c4	fc	connected	unconfigured	unknown
c5	fc	connected	unconfigured	unknown
c6	fc-fabric	connected	configured	unknown
c6::20030003ba27ca6e disk		connected	configured	unknown

c7	fc-fabric	connected	configured	unknown
c7::20030003ba27d1eedisk		connected	configured	unknown
pcisch0:hpc1_slot0unknown		empty	unconfigured	unknown
pcisch0:hpc1_slot1unknown		empty	unconfigured	unknown
pcisch0:hpc1_slot2unknown		empty	unconfigured	unknown
pcisch0:hpc1_slot3pci-pci/hp		connected	configured	ok
pcisch2:hpc2_slot4scsi/hp		connected	configured	ok
pcisch2:hpc2_slot5 scsi/hp		connected	configured	ok
pcisch2:hpc2_slot6 scsi/hp		connected	configured	ok
pcisch3:hpc0_slot7 scsi/hp		connected	configured	ok
pcisch3:hpc0_slot8 mult/hp		connected	configured	ok
usb0/1 unknown		empty	unconfigured	ok
usb0/2 unknown		empty	unconfigured	ok
usb0/ unknown		empty	unconfigured	ok
usb0/4 unknown		empty	unconfigured	ok

E.3 Running the Custom Configuration

This section provides the Configuration Service software UI displays that you need to configure your 6320 System for a RAID-1 (or RAID-0) configuration.

The procedures here will guide you through:

- Managing Pools (i.e., deleting existing pools such as RAID-5, as configured by default)
- Creating a New Array Profile and Pools
- Creating Initiator Groups
- Creating Initiators
- Creating Volumes
- Creating Volume Groups

Some of these procedures are optional, depending on your intentions. This section will configure all noted areas.

E.3.1 Logging Into the System

1. **Open a Web browser and in the URL Internet address field enter:**
   - **https** instead of http for a secure session
   - IP address of the 6320 System,
   - the secured port number for Configuration Services.

   https://*ip_address*:cs_*port_number*

   Example: **https://10.1.1.12:9443**

E.3.2 Deleting Existing Pools

The 6320 System default configuration is comprised of a fully configured tray – either 6 or 13 RAID-5 drives and one standby drive. If you need to customize your environment for another RAID level, first delete the default RAID-5 pool.

E.3.3 To access the storage environment

To access the storage environment, first log in as a Storage user.

1. Log out of the Administration environment first. Click **Log Out** in the upper right corner of the GUI.
2. Enter the following default information in the URL Internet address field:

   Username: **storage**

   Password: **!storage**
3. Click **Log In**. The Array Management Main Menu appears.

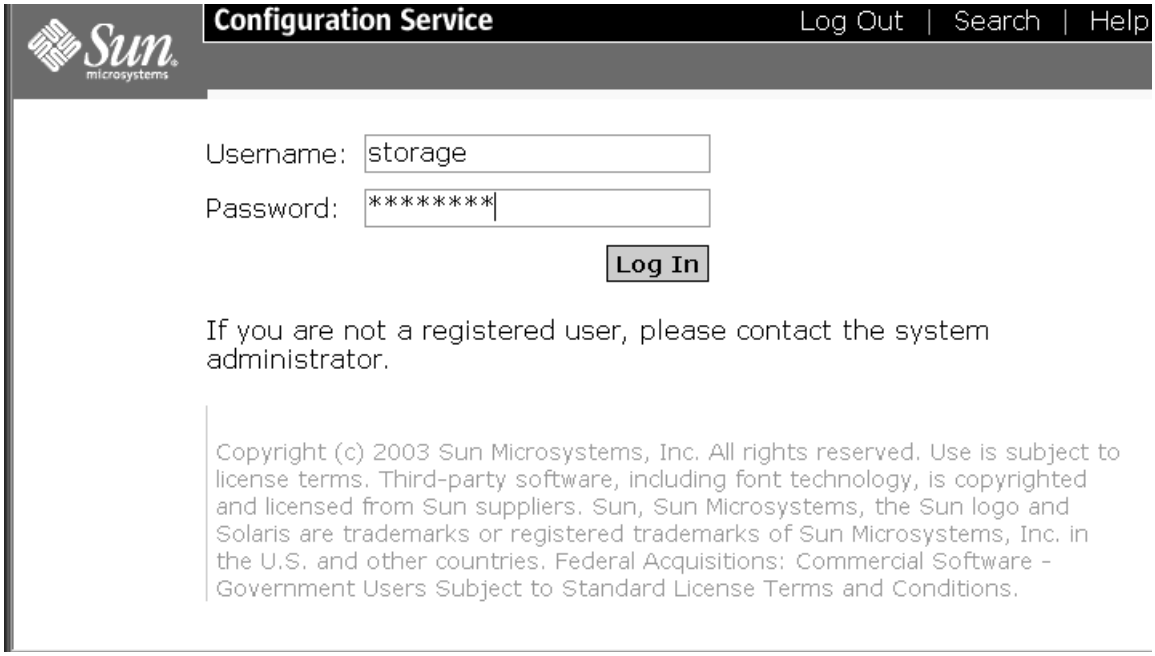


FIGURE E-1 Logging into the Storage Environment

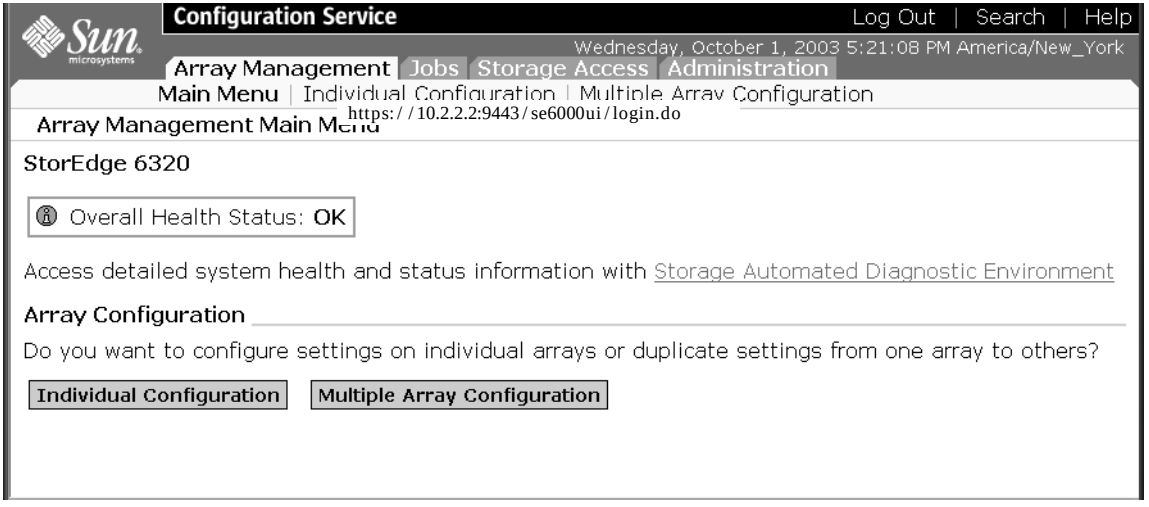


FIGURE E-2 Array Management Main Menu

4. Click **Individual Configuration**.

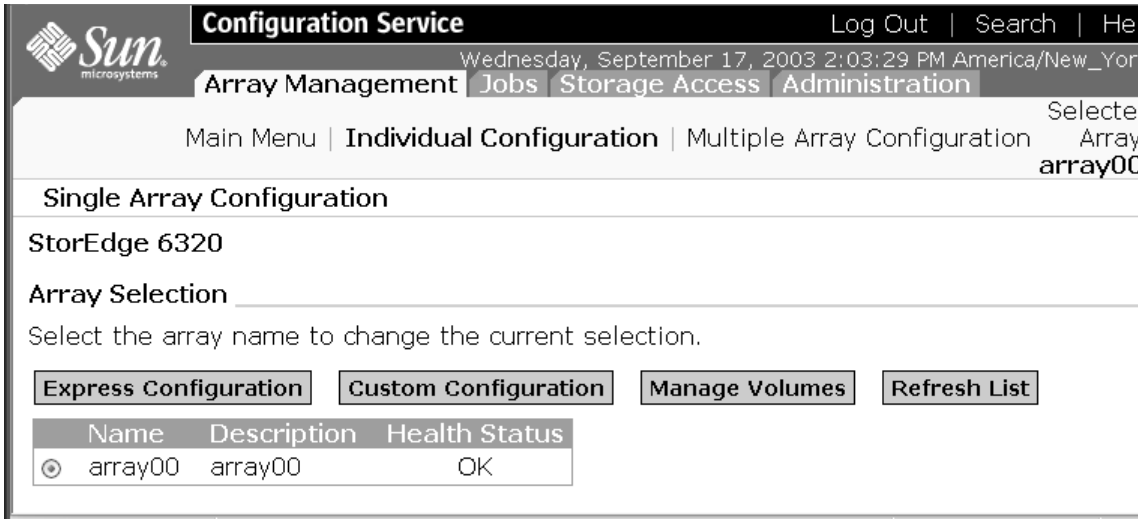


FIGURE E-3 Single Array Configuration

E.3.4 Changing Array Profiles

Under Array Details, Configuration Service provides several options for administrators to change default settings for each 6020 array. To get a detailed description of each value, see Section 3.2 in the "Sun StorEdge 6320 System 1.0 Reference and Service Manual."

Use the following information while creating new array profiles and pools.

TABLE E-1 Array and Pool Terms

Pools: Defines a RAID level and a hot spare configuration for a collection of disk drives.
Volumes: Assumes the RAID configuration of the pool in which they are contained.
Default volume permissions define access to the volume by ANY hosts. **Read/Write**: All hosts with access to the system can read / write to the volume.
None: The volume is hidden from all hosts.
Volume Groups: An arbitrary collection of volumes that allows the management of many volumes at once, instead of one at a time. Default volume permissions must be set to NONE for volume group permissions to be the effective permissions.
Initiator Groups: Allows the administrator to organize the HBAs (initiators) into groups that allows the management of many initiators at once, instead of one at a time.

The two values that need to be reviewed during a new installation are:

1. Fail Over Mode [Implicit, Explicit, None]

To select the correct option for Fail Over Mode, determine the method of load balancing and auto failover that will be used on the host. If the customer will be using Solaris / MPxIO or STMS for Windows, AIX, or HPUX, then this setting should be “Explicit.” For Veritas DMP environments, select “Implicit.”

To enable MPxIO/STMS on the host, set “mpxio-disable=no” in the /kernel/drv/scsi_vhci.conf and reboot.

2. Segment Size [64KB (default), 4KB, 8KB, 16KB, 32KB]

Segment size is application specific and should be selected to match the application profile. Changing this variable later will require pools and volumes to be destroyed and recreated.

It is recommended that all other values should remain constant.

You can also select “Express Configuration” instead of “Custom Configuration.” Please refer to section 5.1, “Creating New Array Profile and Pools with Express Configuration” to follow the Express Configuration steps.

E.3.4.1 Creating New Array Profiles with the Express Configuration Option

1. Select **Array Management** → **Individual Configuration** → **Express Configuration**.
2. Click on **Change Profile**. The Change Array Profile Wizard appears.

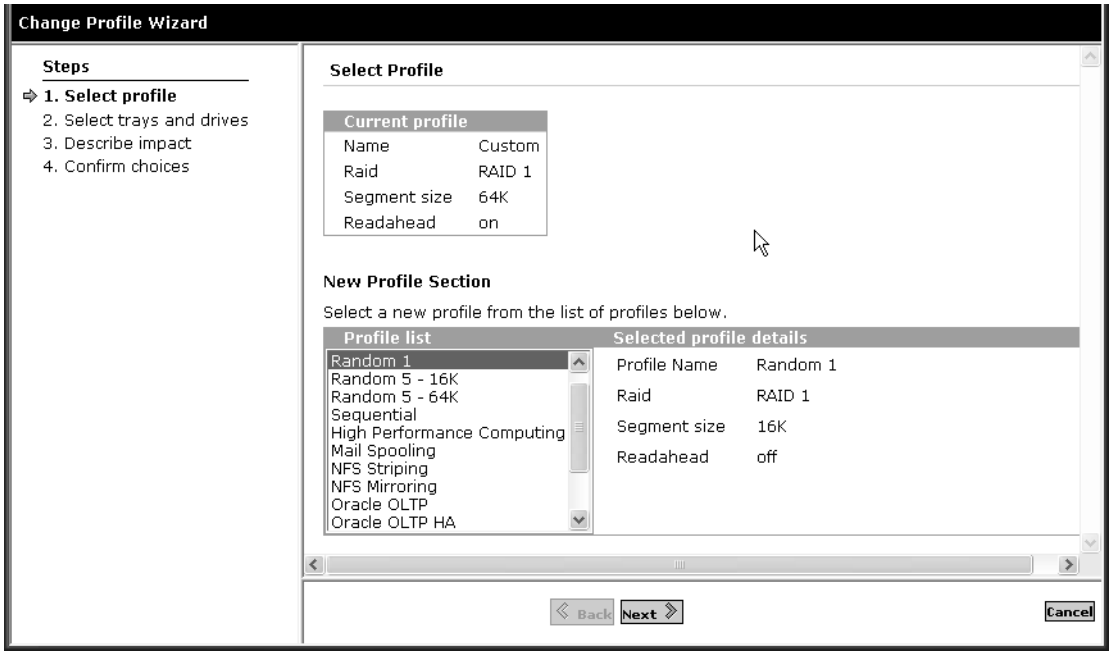


FIGURE E-4 Change Profile Wizard - Select Profile

3. Select a **new desired profile** from the list that contains several predefined array profiles. Click **Next**. The Select Trays and Drives display appears.

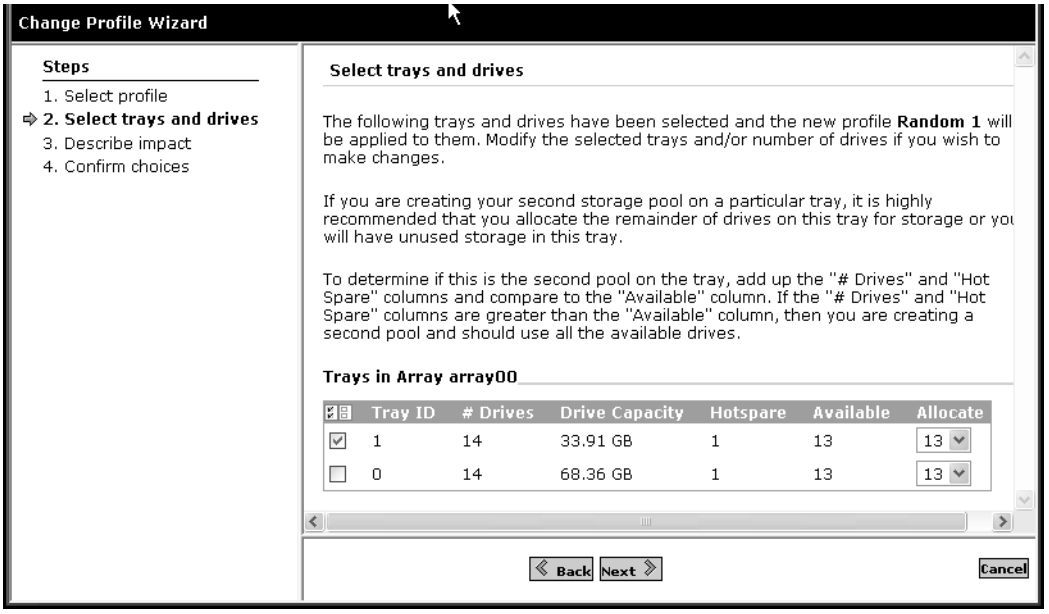


FIGURE E-5 Select Trays and Drives

4. **Deselect the trays you do not want** configured with your new array profile. Click **Next**. The Change Profile Impact display appears.

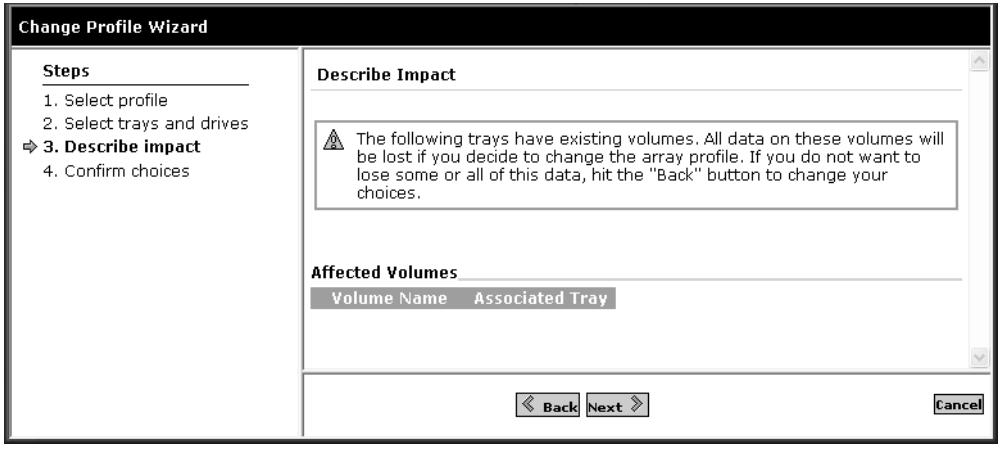


FIGURE E-6 Change Profile Impact

5. **Review all affected volumes** by this array profile change. Click **Next**. The Confirm Choices display appears.

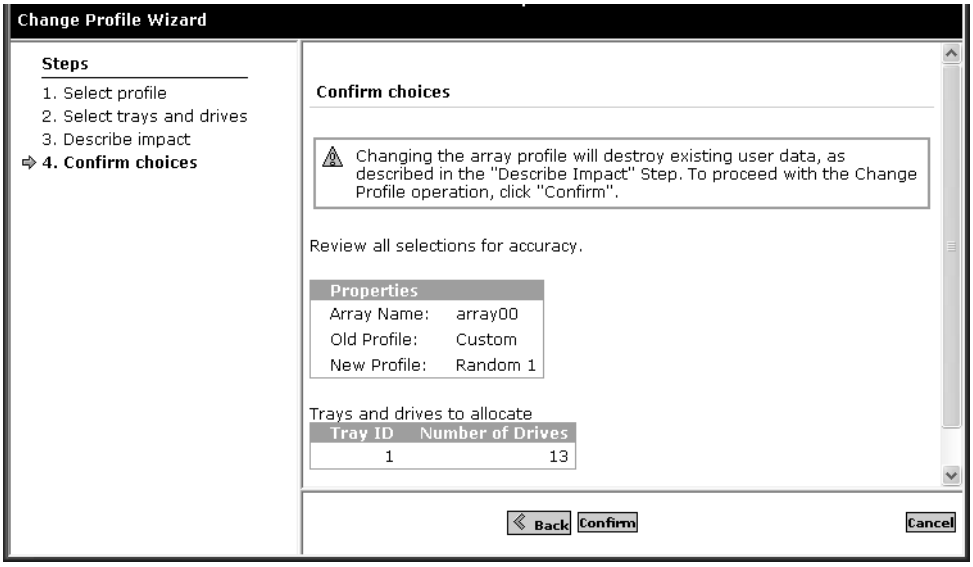


FIGURE E-7 Confirm Choices

6. **Review your settings** and click on **Confirm** if everything is correct. Otherwise, click Back and make the appropriate changes.

E.3.5 Managing Pools

1. Click **Custom Configuration**. The Custom Configuration display appears.

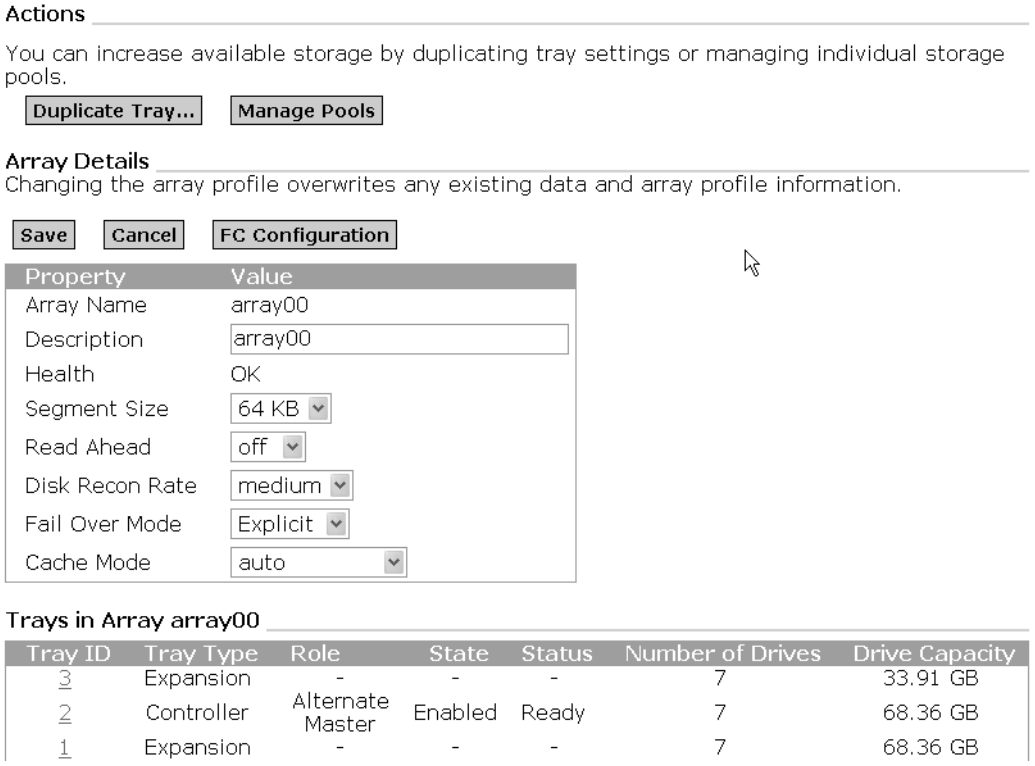


FIGURE E-8 Custom Configuration

2. Click **Manage Pools**. The Manage Pools display appears.

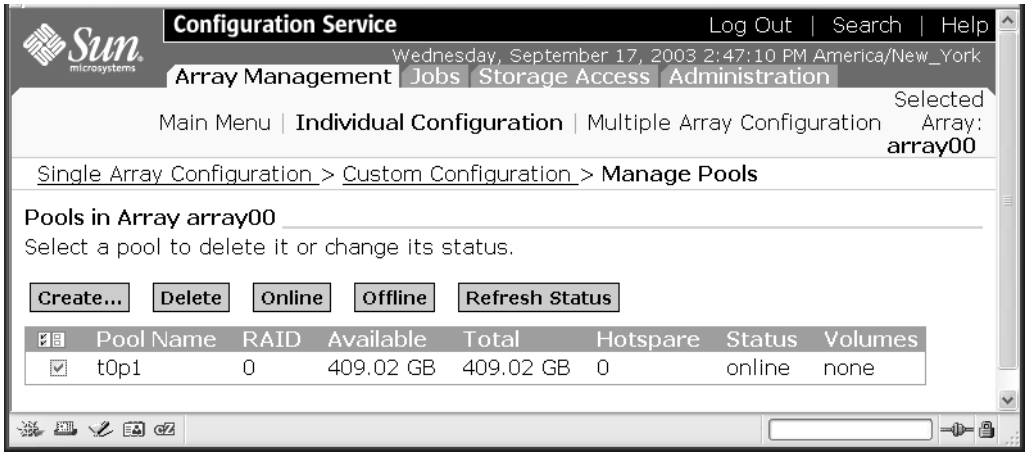


FIGURE E-9 Manage Pools

3. **Select the pool** you want to delete and click **Delete**. The Confirm Pool Delete Operation display appears.

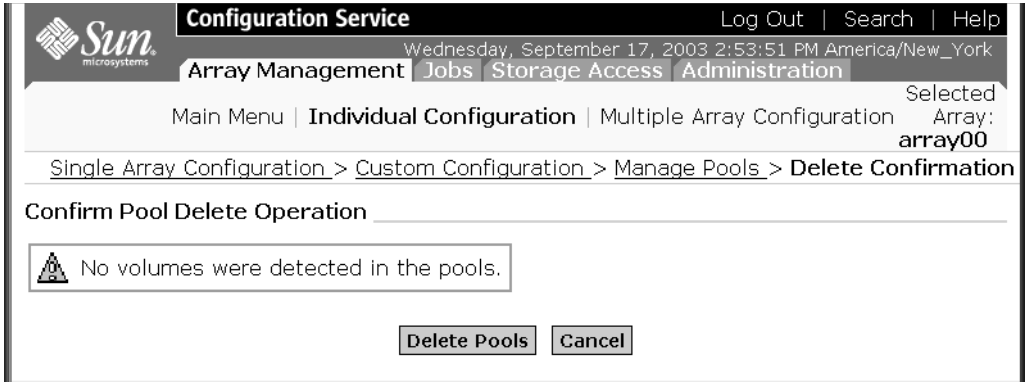


FIGURE E-10 Confirm Pool Deletion Operation

4. Click **Delete Pools** to complete the deletion. The Mail Notification display appears.

E.3.6 Mail Notification

1. **Enter an E-mail address** to where you would like a notification of the pool deletion to be sent.

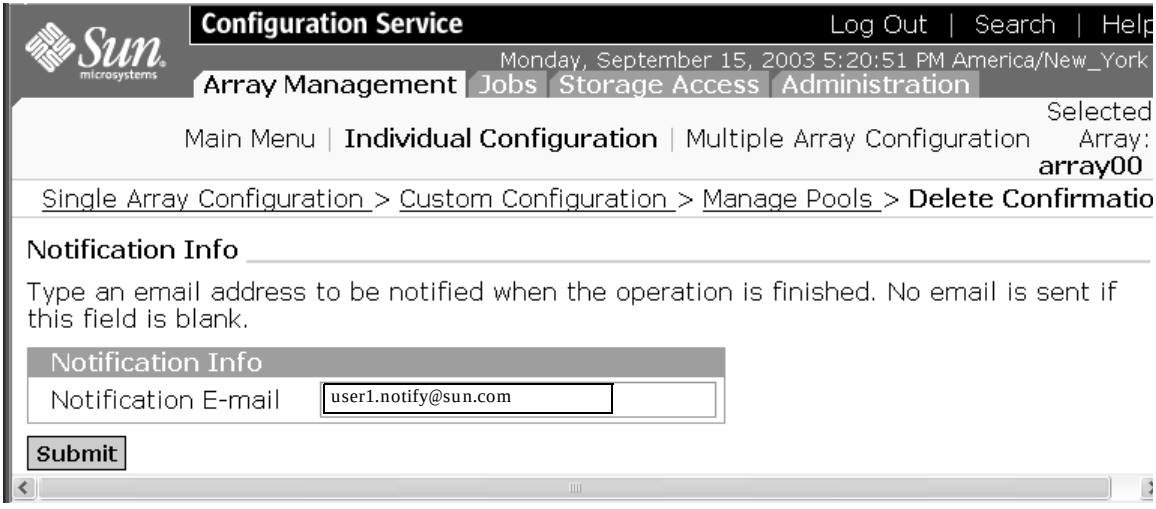


FIGURE E-11 Mail Notification

2. Click **Submit**. The Outstanding Jobs display appears.

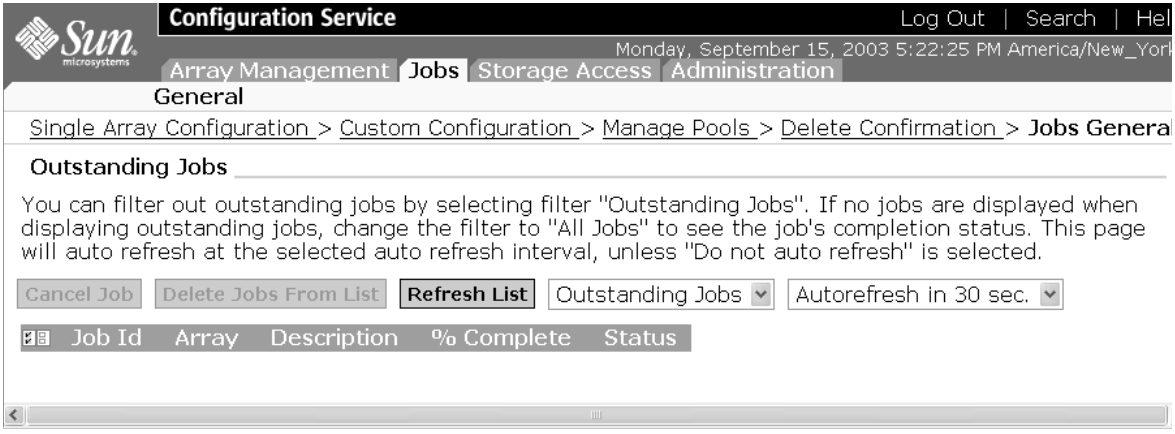


FIGURE E-12 Outstanding Jobs

3. Click the Array **Management tab**. The Main Menu appears.

E.3.7 Creating New Pools

This section describes creating new pools in a RAID-1 environment.

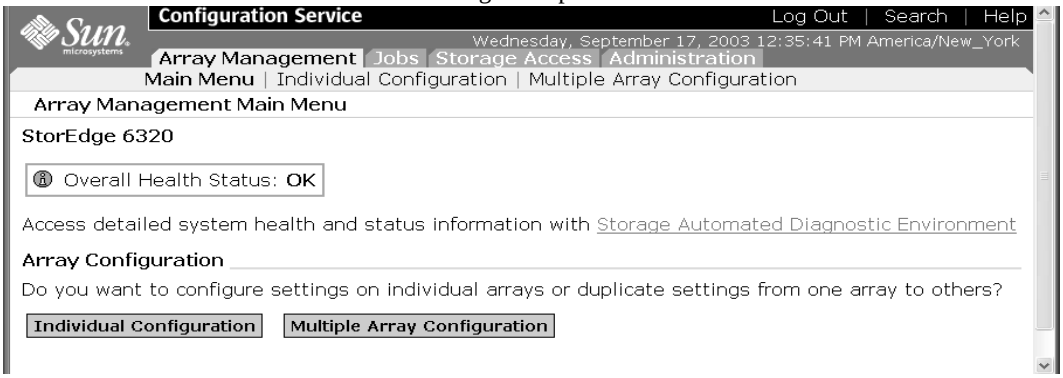


FIGURE E-13 Array Management Main Menu

1. Click **Individual Configuration**. The Single Array Configuration display appears with the Custom Configuration option.

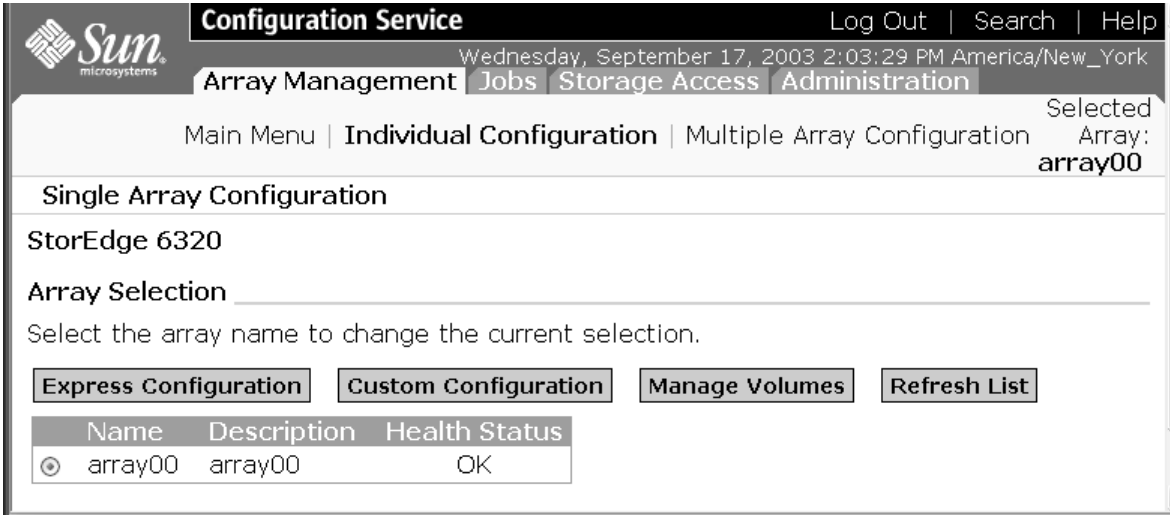


FIGURE E-14 Single Array Configuration

2. Click **Custom Configuration**. The Custom Configuration display appears.

   You can select Express Configuration, if you prefer; however, the procedures presented here follow the Custom Configuration script.

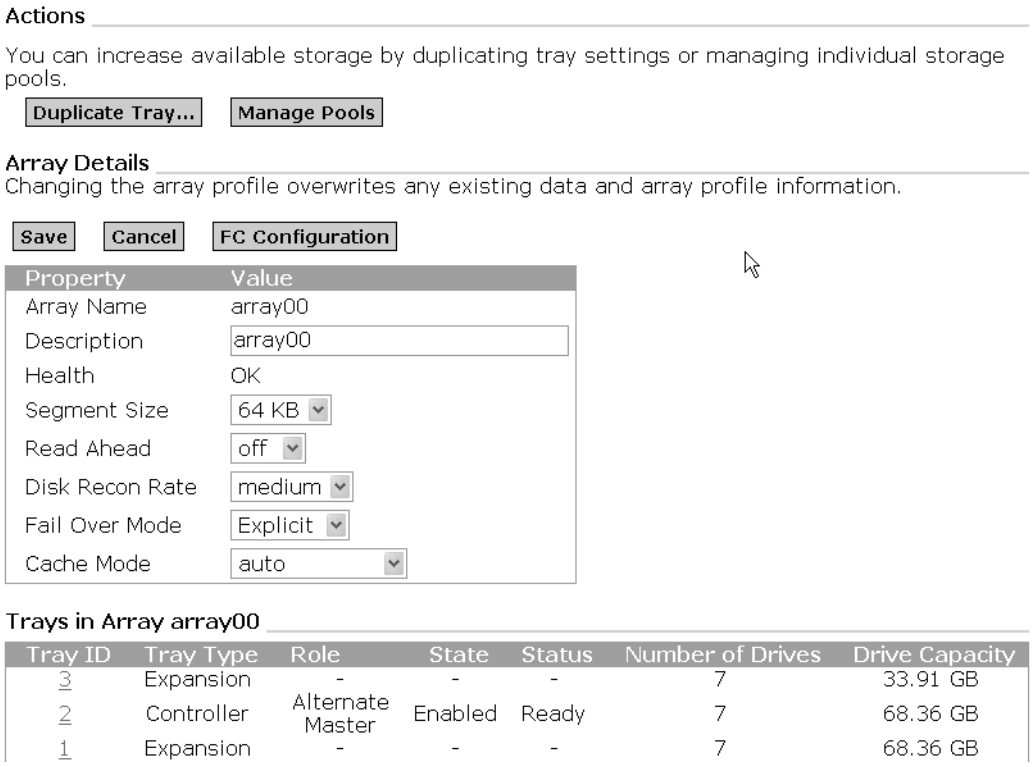


FIGURE E-15 Custom Configuration

3. Click **FC Configuration**. The Fibre Channel Configuration display appears.

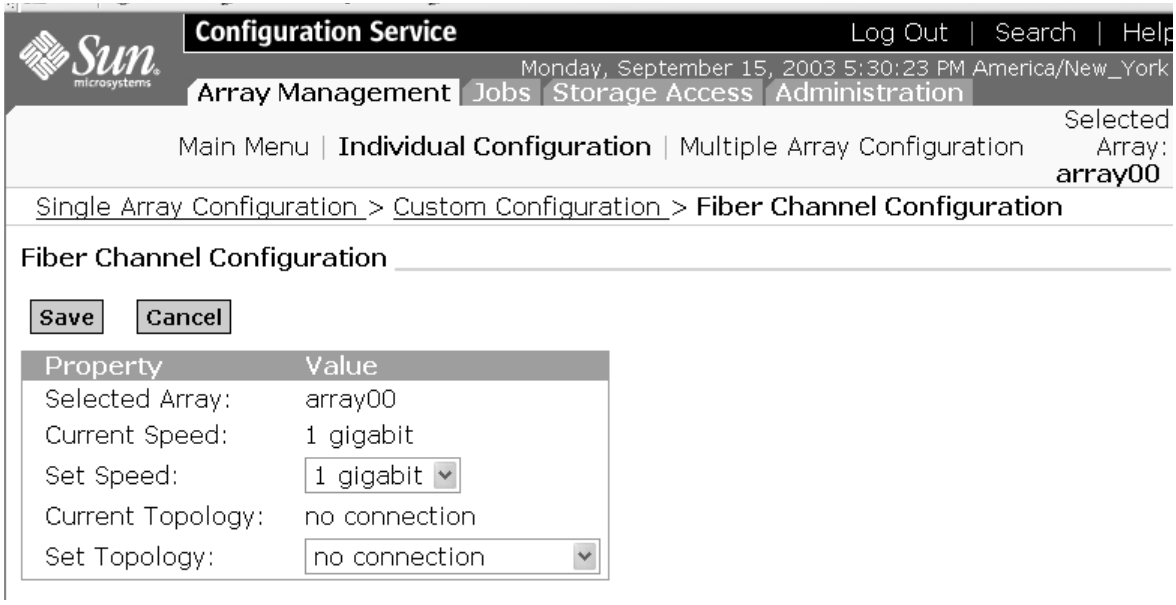


FIGURE E-16 Fibre Channel Configuration

4. **Make the appropriate changes** for your environment, then click **Save**.

Following are descriptions of the Fibre Channel Configuration fields:

Parameter	Value	Description
Selected Array	Array description	Shows the user defined array description.
Current Speed	1 Gigabit	Shows the current connection speed of the FC port on the back of the array.
Set Speed	1 Gigabit 2 Megabit	Allows you to set the connection speed of the FC port on the back of the array.
Current Topology	auto fabric loop fabric point-to-point no connection	Shows the current topology connection type of the FC port on the back of the array.
Set Topology	auto fabric loop fabric point-to-point no connection	Allows you to set the current topology connection type of the FC port on the back of the array.

5. **Return to the Single Array Configuration** display.

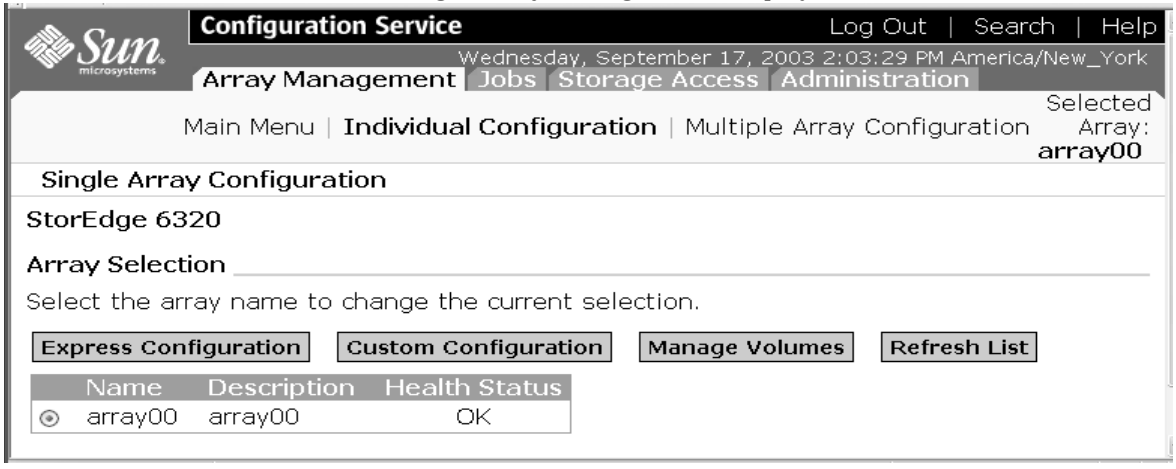


FIGURE E-17 Single Array Configuration

6. Click **Custom Configuration**. The Custom Configuration display appears.

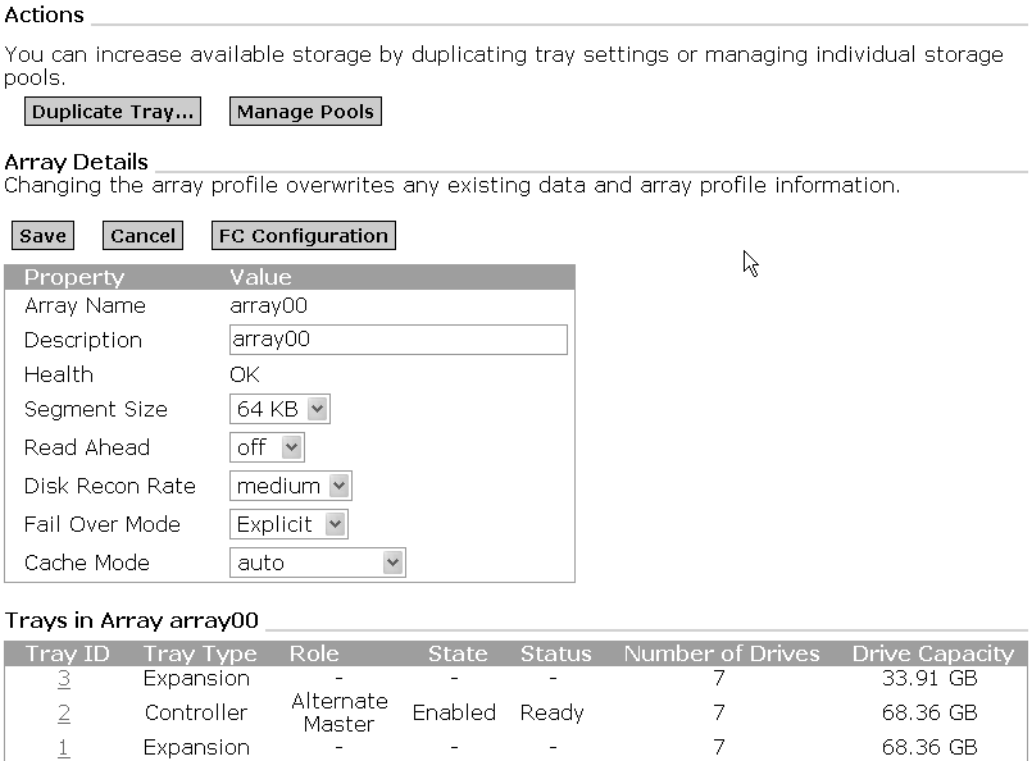


FIGURE E-18 Custom Configuration

7. Click **Manage Pools**. The Manage Pools display appears.

Following are the Custom Configuration field descriptions:

Parameter	Value	Description
Array Name	Predefined	Unique name assigned to each array in the 6320 System.
Description	User defined	An arbitrary name that you assign to the array.
Health	OK DOWN ERROR DEGRADED UNKNOWN	Shows the current Health Status: OK specifies that the array is in good health. DOWN specifies that the array is not currently operational. ERROR specifies that the array is not operating properly. DEGRADED specifies that something is happening with the array that has affected its status; or, StorADE is disabled and cannot determine the status.
Segment Size	4 KB 8 KB 16 KB 32 KB 64 KB	Shows the size of read or write operations in kilobytes to a single drive within a pool. Generally, smaller segment sizes work better for random input/output (I/O), and larger segment sizes work better for sequential I/O.
Read Ahead	On Off	Shows whether the array controller performs read-ahead operations. Generally, read ahead benefits sequential I/O operations.
Disk Recon Rate	Low Medium High	Shows how quickly the array reconstructs data after a drive failure. Faster reconstruction leads to slower access to existing data, and slower reconstruction leads to faster access.
Failover Mode	Explicit LUN failover Implicit LUN failover	Explicit LUN failover is the failover mechanism controlled by the host. Implicit LUN failover is the failover mechanism controlled by the array itself.
Cache Mode	Auto Write-behind Write-through None	Auto is the default setting. Write-behind acknowledges a write operation when the data reaches the cache. Write-through acknowledges a write operation when the data reaches the volume. None selects no caching of read or write operations.

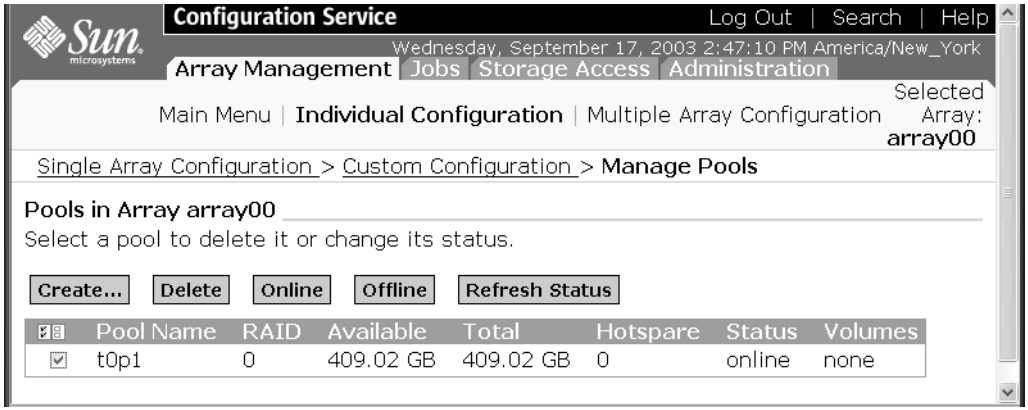


FIGURE E-19 Manage Pools

8. Click **Create** to launch the Create New Pool Wizard.

E.3.8 New Pool Wizard

1. **Select the tray** in which you want to create a new pool, then click **Next**. The Settings for Pool display appears.

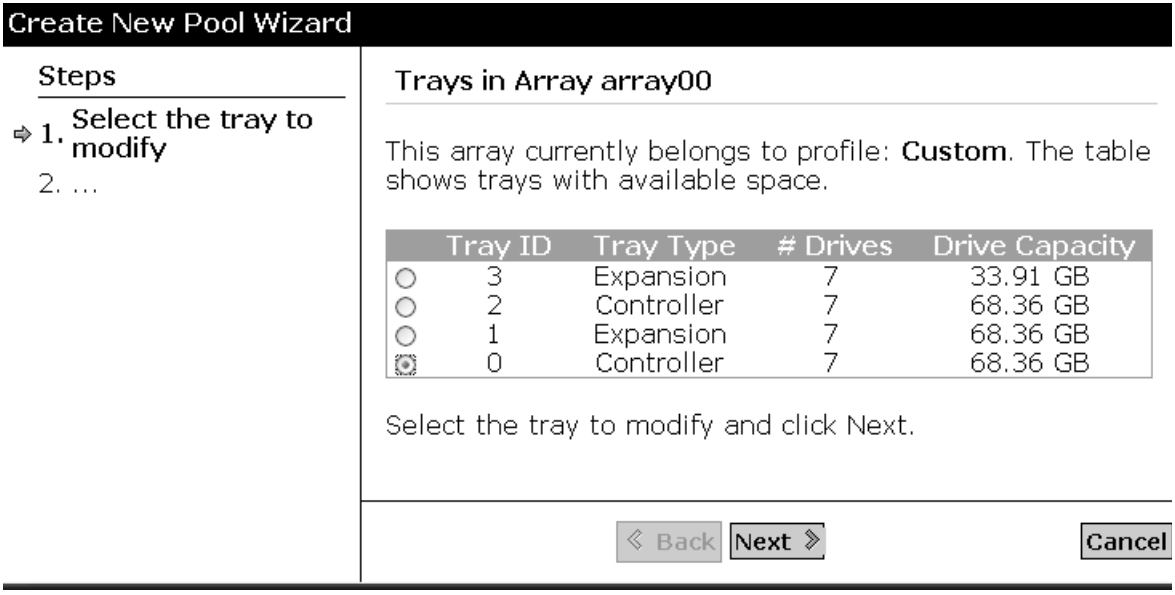


FIGURE E-20 Create New Pool Wizard - 1

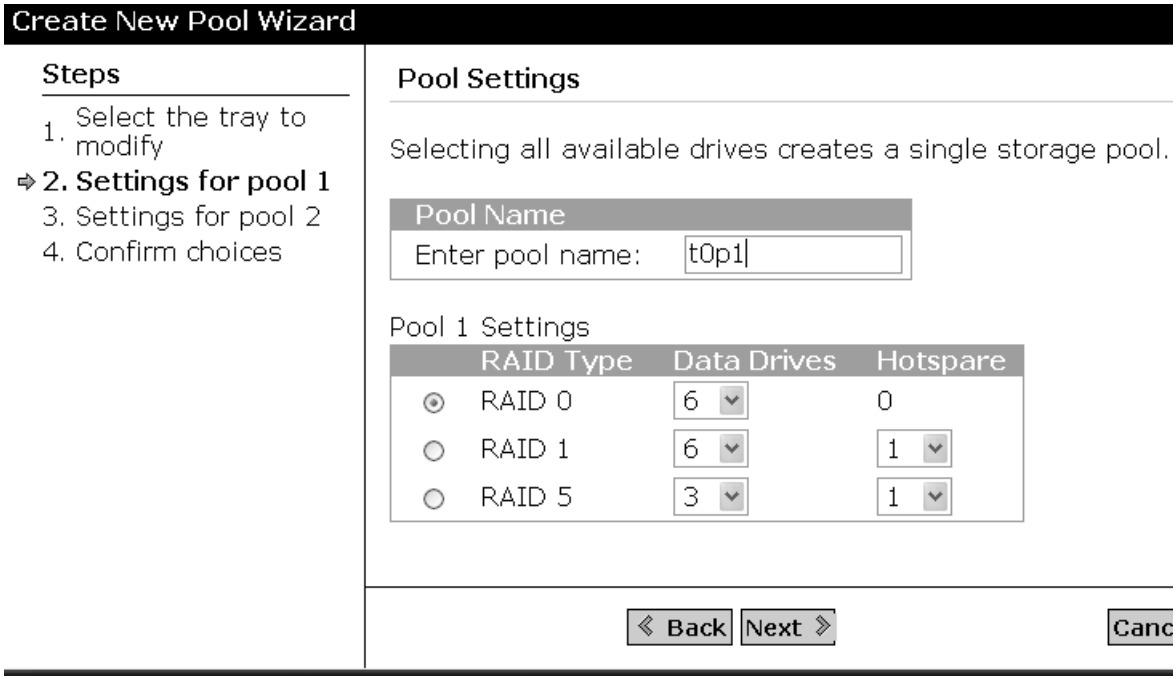


FIGURE E-21 Settings for Pool 1

2. **Enter a Pool Name**. You should use a conventional naming scheme, such as t0p1 (where the selected tray is Tray 1 and the pool is Pool 2), since the trays and pools numbering scheme begins at 0.
3. **Select the desired RAID level** and the appropriate number of **data drives** and **hotspares**.
4. Click **Next**. The Settings for Pool 2 display appears.

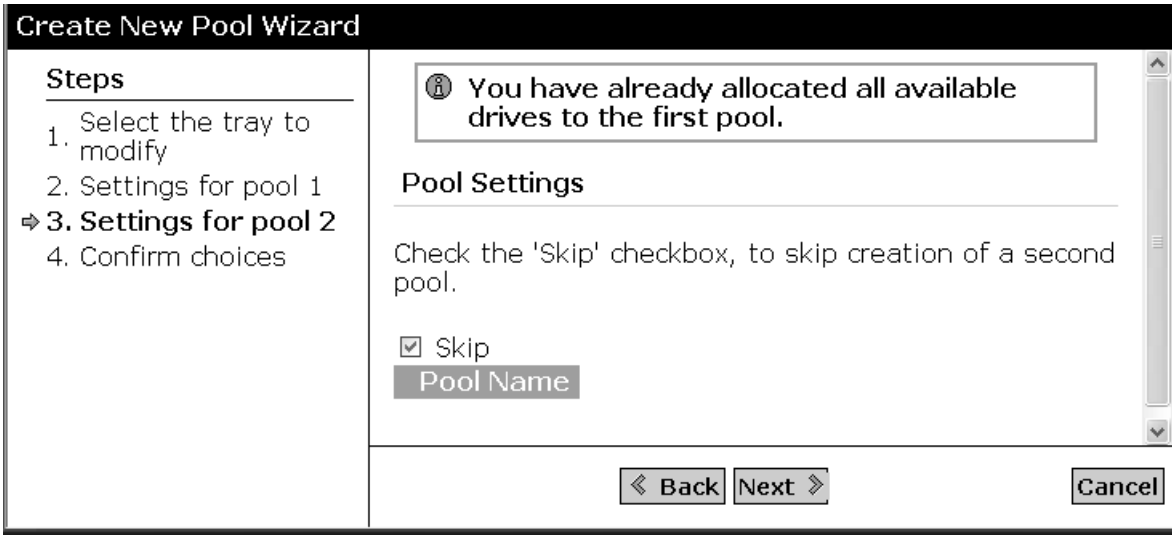


FIGURE E-22 Settings for Pool 2

5. Enter the settings for another pool, if necessary; otherwise, if you have assigned a single RAID set to the entire tray, click Skip.

6. Then click **Next**, the Confirm Choices display appears.

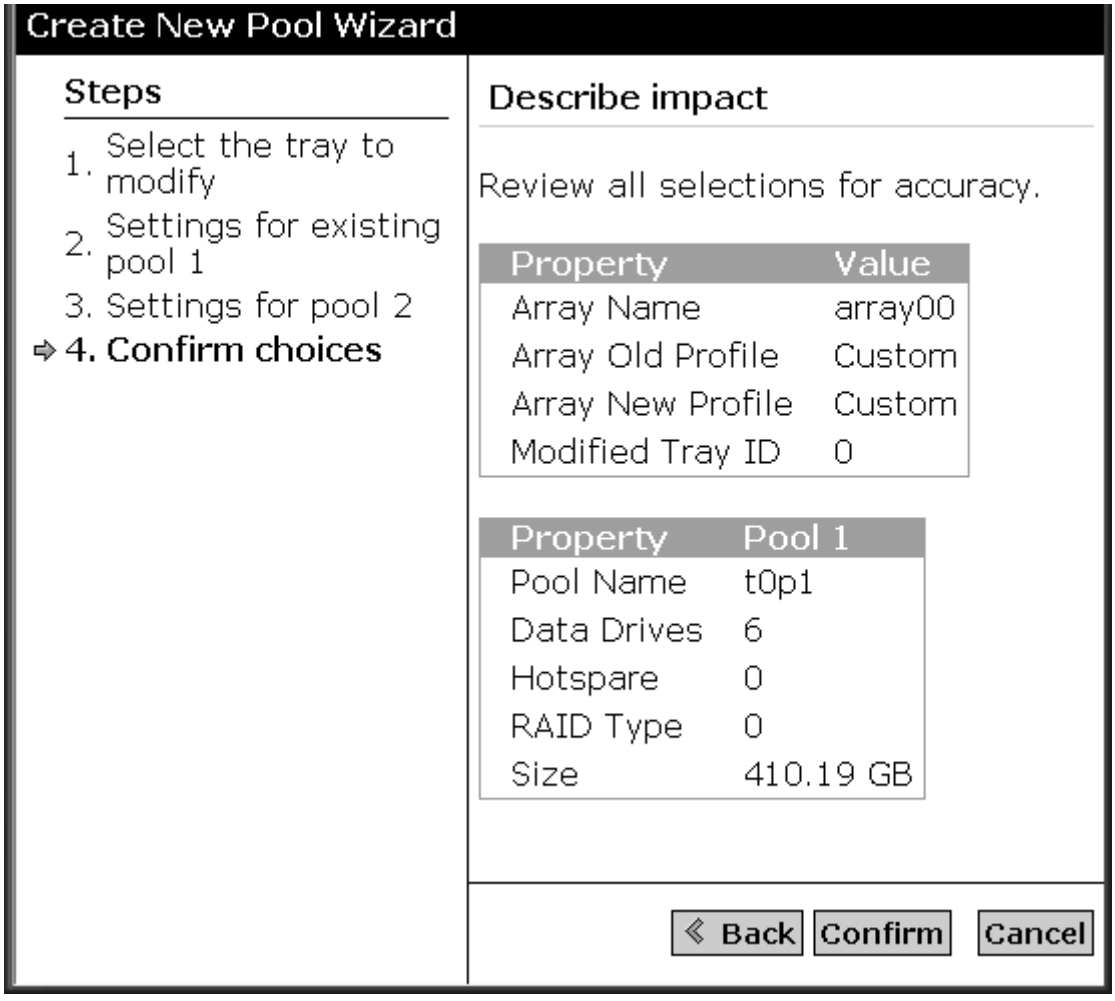


FIGURE E-23 Confirm Choices

7. Click **Confirm** if your choices are correct. Click Back and make the appropriate changes, if necessary.

E.3.9 Mail Notification

1. **Enter an E-mail address** to where you would like a notification of the pool creation to be sent.

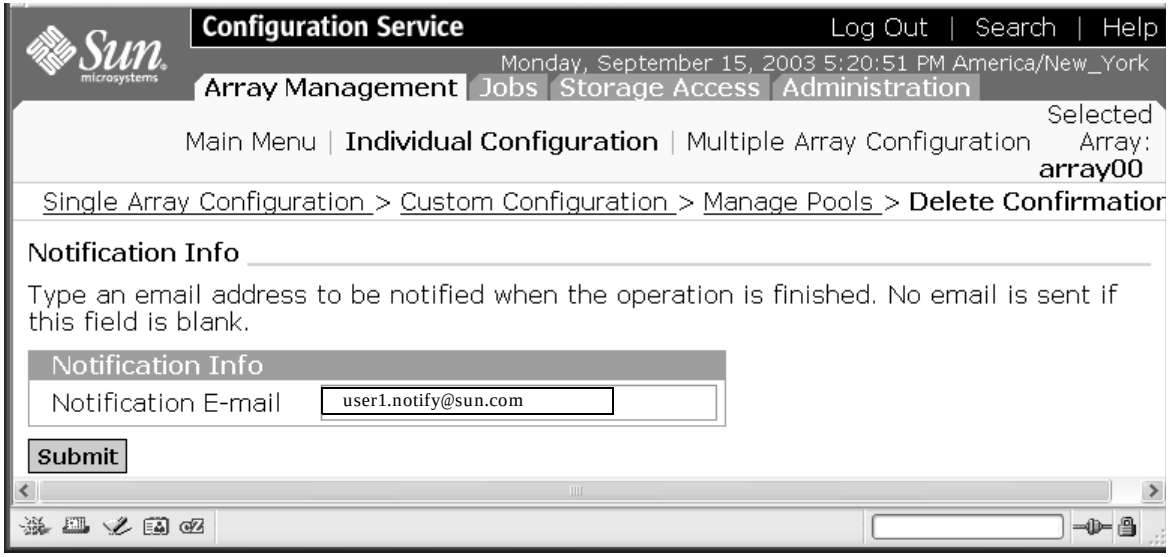


FIGURE E-24 Mail Notification

2. Click **Submit**, the Outstanding Jobs display appears.

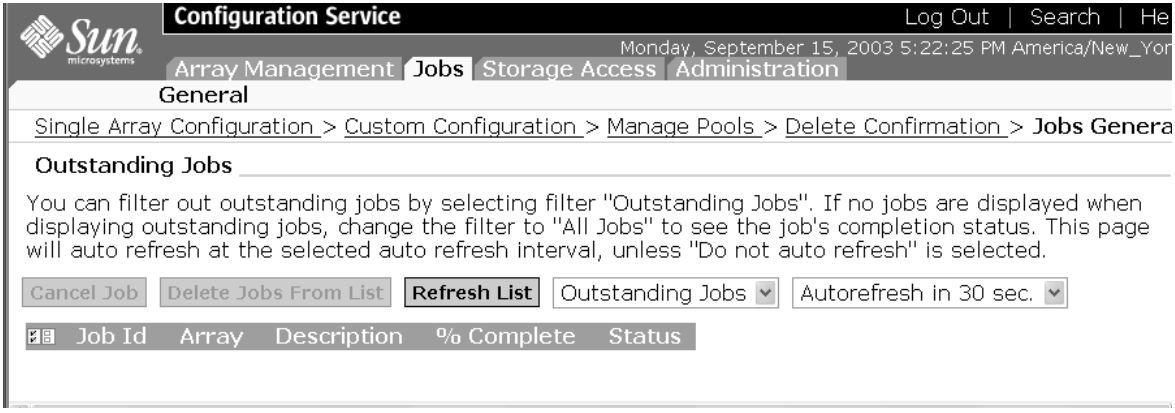


FIGURE E-25 Outstanding Jobs

3. Click the Array **Management tab**. The Main Menu appears.

E.3.10 Creating Initiator Groups

1. **Select the Storage Access tab**.

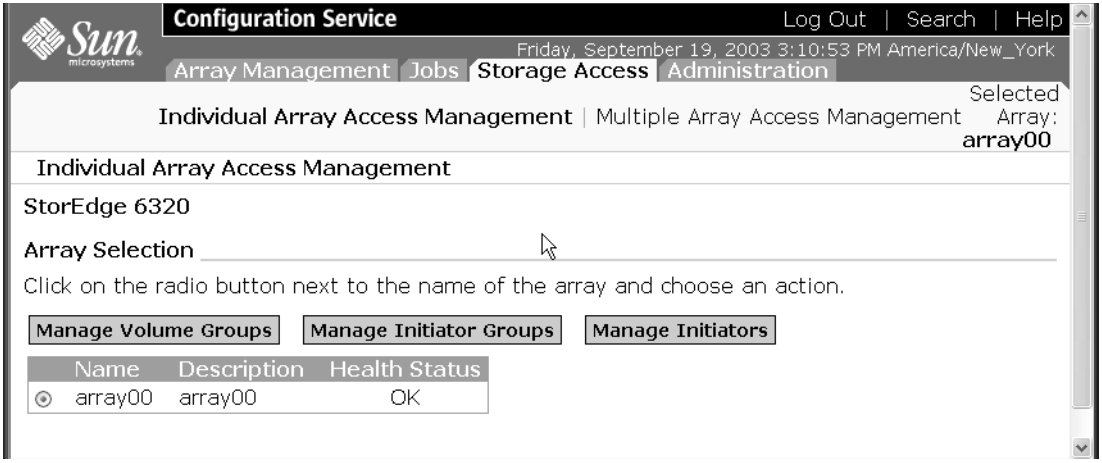


FIGURE E-26 Manage Initiator Groups

2. Click **Manage Initiator Groups**. The Create Initiator Groups display appears.

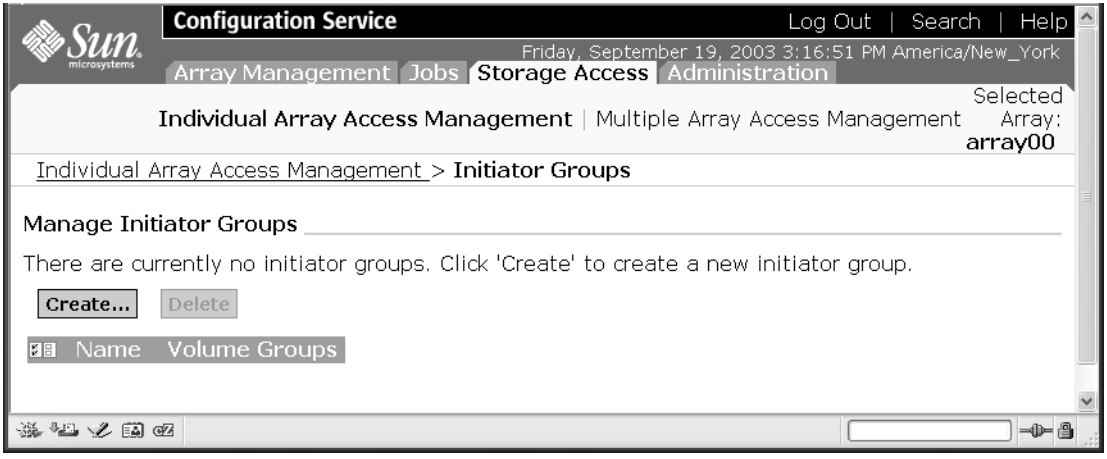


FIGURE E-27 Manage Initiator Groups - Create

3. Click **Create**. The New Initiator Group display appears.

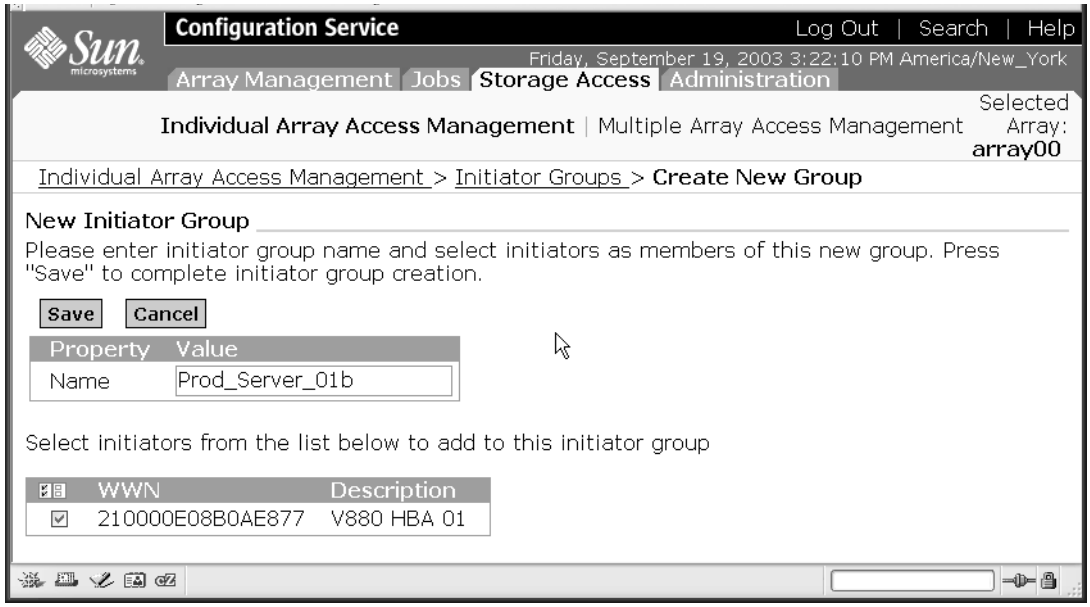


FIGURE E-28 New Initiator Group

4. **Enter the name of a new initiator group** using up to 15 characters.

5. Click **Save**.

6. Repeat as necessary to add additional initiator groups, then click **Cancel**.

You should think of initiators as an HBA group to allow data access. Initiator groups usually represent the server and its associated HBAs. Therefore, use a logical naming convention that makes sense. For example, the name “Prod_server_01” is logical since it follows the “hostname” “instance” convention. This describes which collection of HBAs (initiators) belong to a server. On the other hand, a naming convention such as initgrp01 provides no detail and would be difficult to interpret.

E.3.11 Create Initiators

1. **Select the Storage Access tab**.

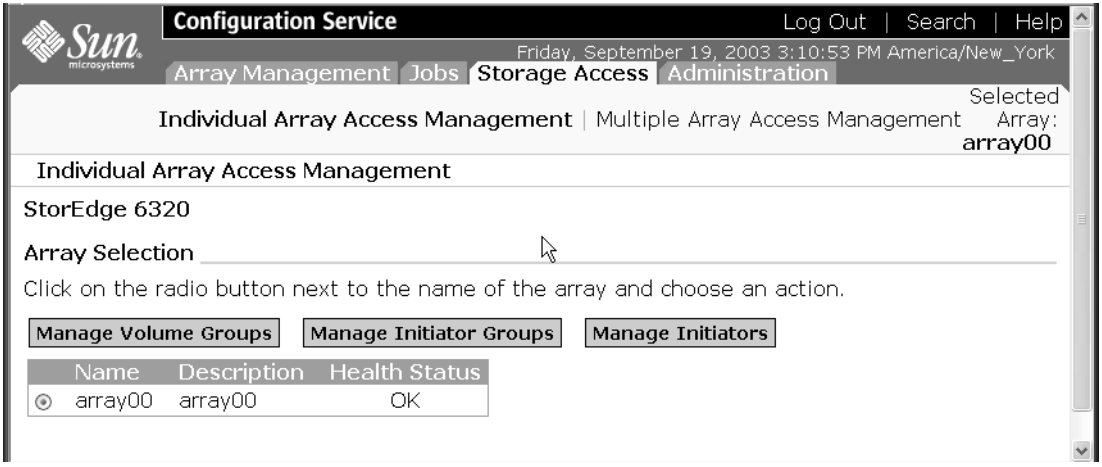


FIGURE E-29 Manage Initiators

2. Click **Manage Initiators**. The Manage Initiators display appears.

FIGURE E-30 Manage Initiators

3. Click **Create**. The New Initiator display appears.

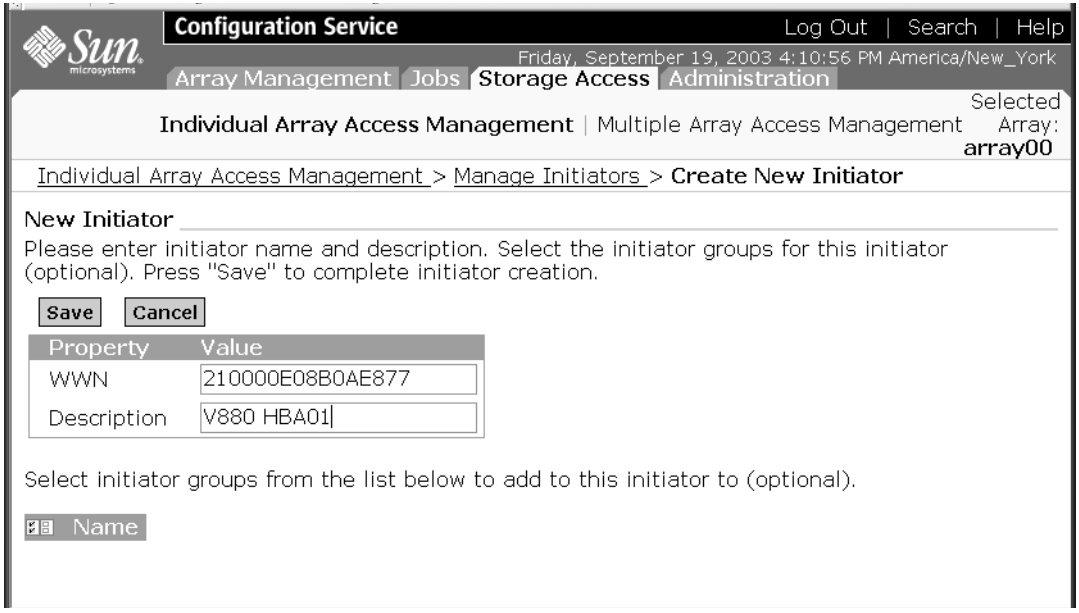


FIGURE E-31 New Initiator

4. **Enter a Port WWN** (refer to Section E.2 “Determining HBA WWNs) for the new initiator using up to 16 characters.
5. **Provide a description** for the new initiator group.
6. **Associate the initiator with an initiator group**.
7. Click **Save**.
8. Repeat as necessary to add additional initiators, then click **Cancel**.

E.3.12 Creating Volumes

1. **Select the Array Management tab**. The Array Management Main Menu display appears.

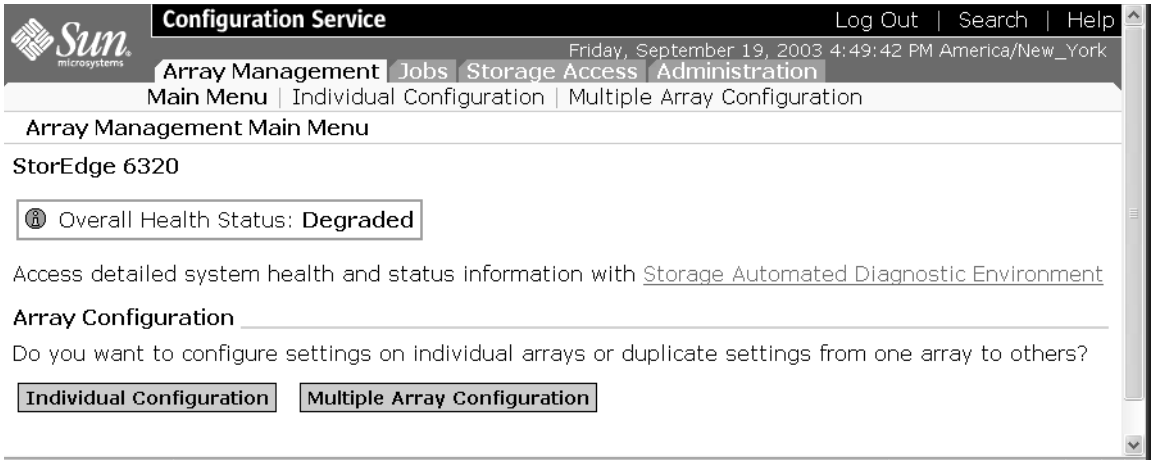


FIGURE E-32 Array Management Main Menu

2. Click **Individual Configuration**. The Manage Volumes display appears.

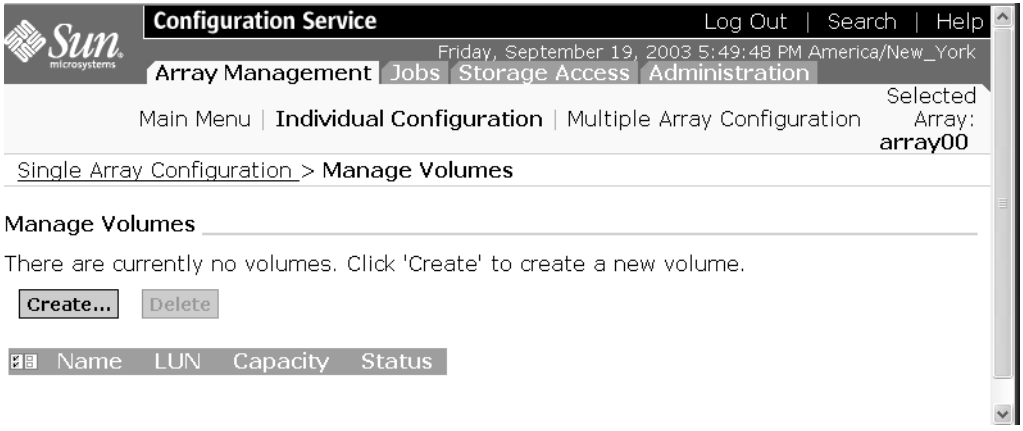


FIGURE E-33 Manage Volumes - Create

3. Click **Create**. The Create New Volume wizard appears.

E.3.13 Create New Volume Wizard

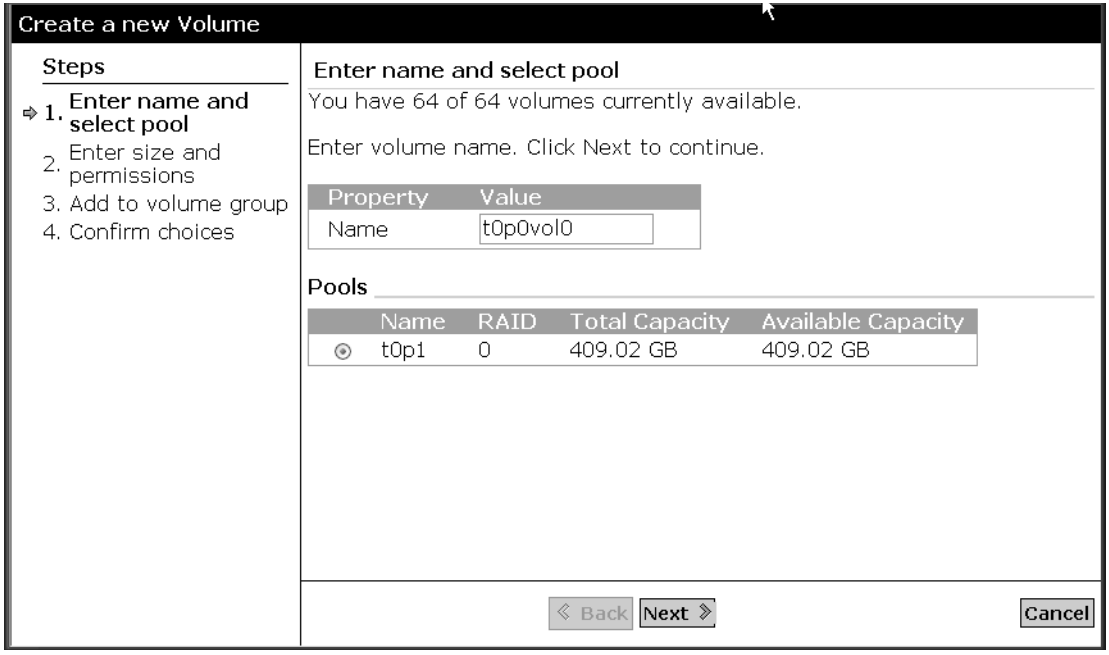


FIGURE E-34 Enter Name and Select Pool

1. **Enter the volume name**.

Again, use a logical naming convention to indicate the volume's physical location. (For example, use t0p0vol0 to denote Tray 0, Pool 0, and Volume 0.)

2. Click **Next**. The Enter Size and Permissions display appears.

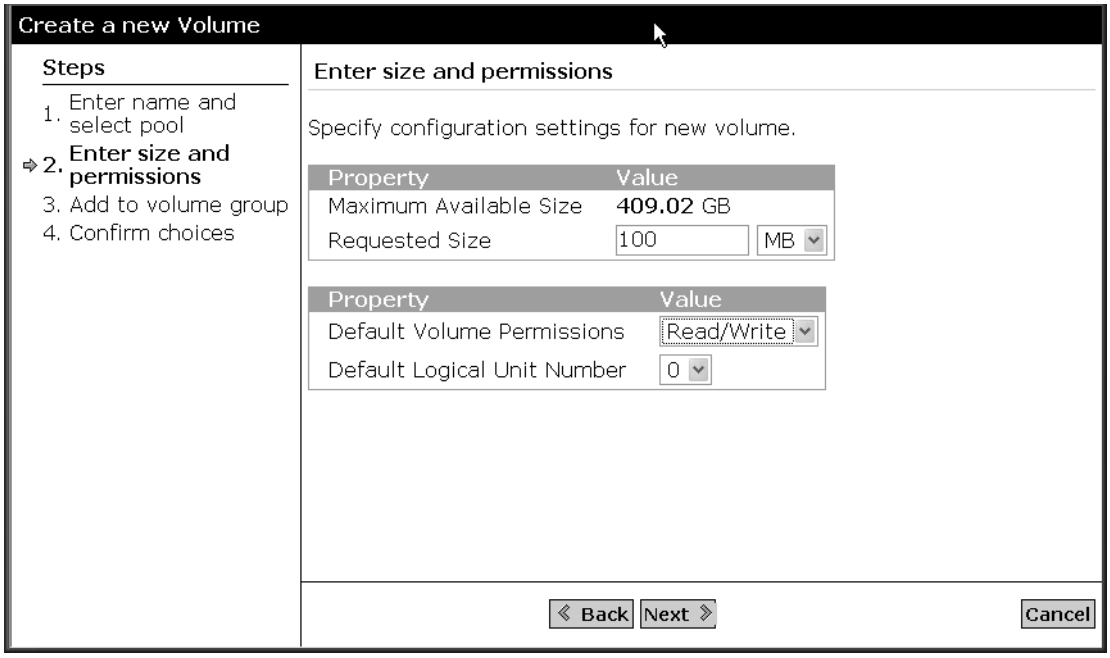


FIGURE E-35 Enter Size and Permissions

3. **Enter the Requested Size** of the new volume in MB or GB.
4. **Select the Default Volume Permissions**. Default volume permissions must be set to NONE for Volume Group Permissions to be the effective permissions.
5. Click **Next**. The Add Volume to Group display appears.

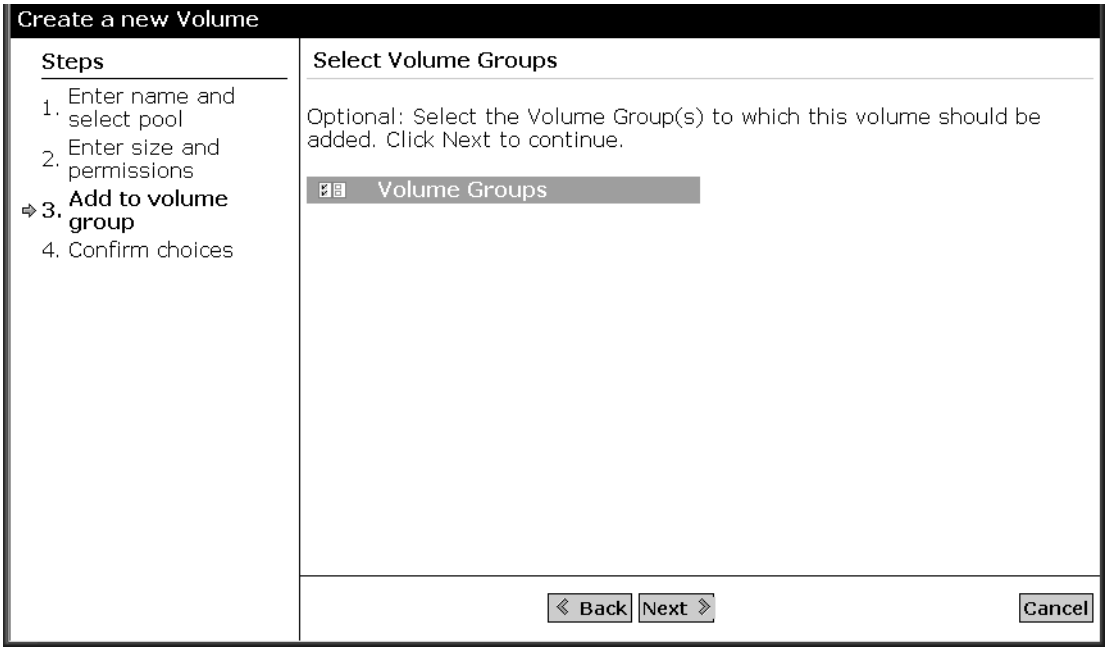


FIGURE E-36 Add Volume to Group

6. **Select the volume groups** to which this volume should be added. Click Next if there are no groups present. The Confirm Choices display appears.

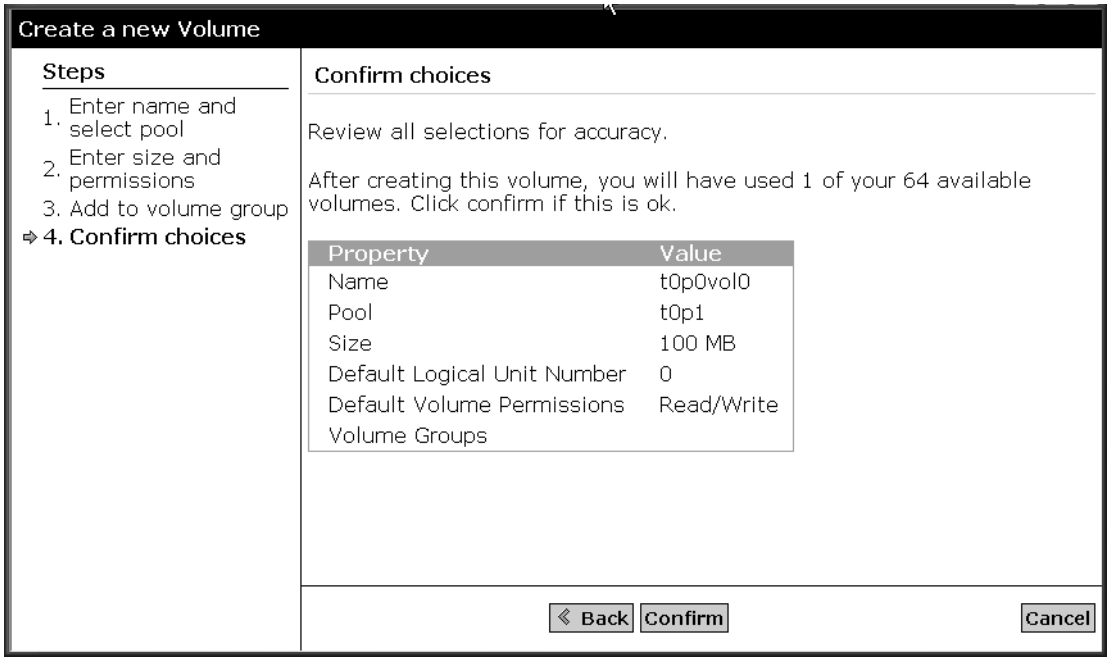


FIGURE E-37 Confirm Choices

7. **Review your selections** for accuracy and click **Confirm**; click Back if you want to make changes. The Mail Notification display appears.

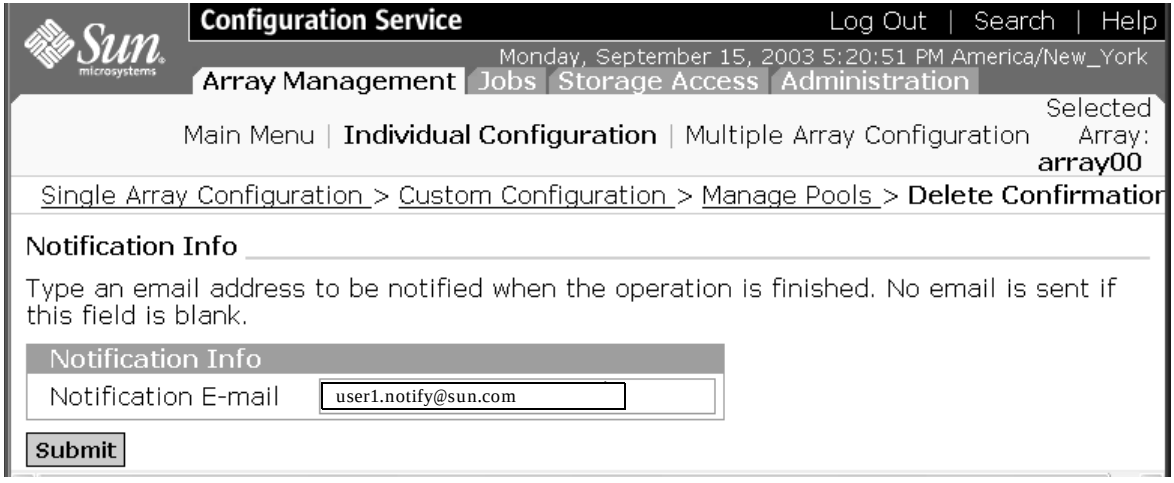


FIGURE E-38 Mail Notification

8. **Enter an E-mail address** to where you would like a notification of the volume creation to be sent.

9. Click **Submit.** The Outstanding Jobs display appears.

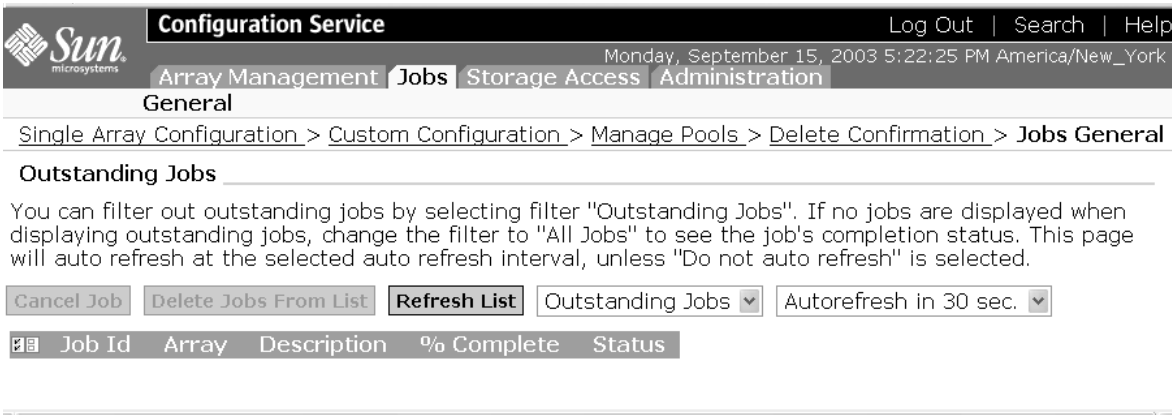


FIGURE E-39 Outstanding Jobs

10. Repeat these steps to create additional volumes, as necessary.

11. Click **Administration** → **Reports** to verify the status of the new volume(s).

E.3.14 Creating Volume Groups

1. **Click the Storage Access tab**. The Individual Array Access Management display appears.

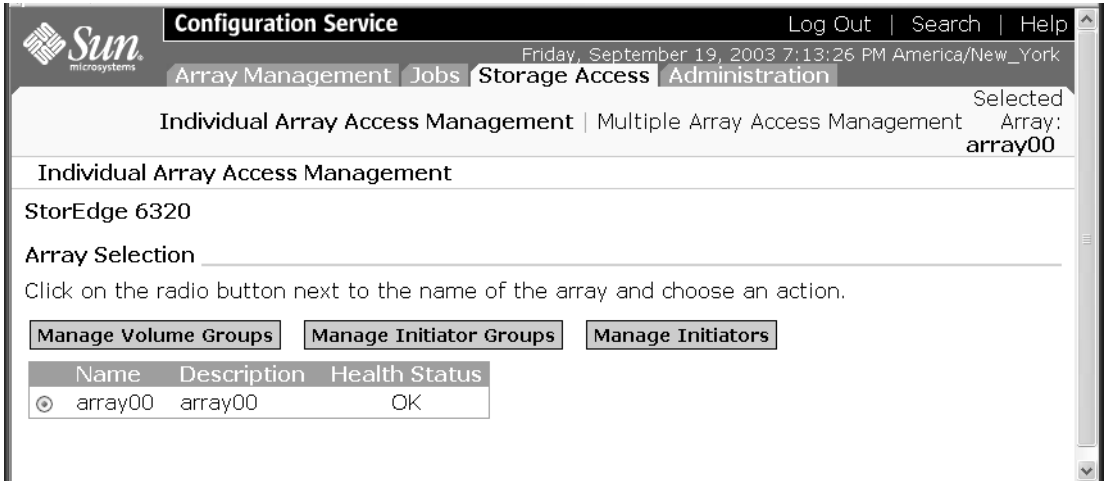


FIGURE E-40 Individual Array Access Management

2. Click **Manage Volume Groups**. The Manage Volume Groups Wizard display appears.

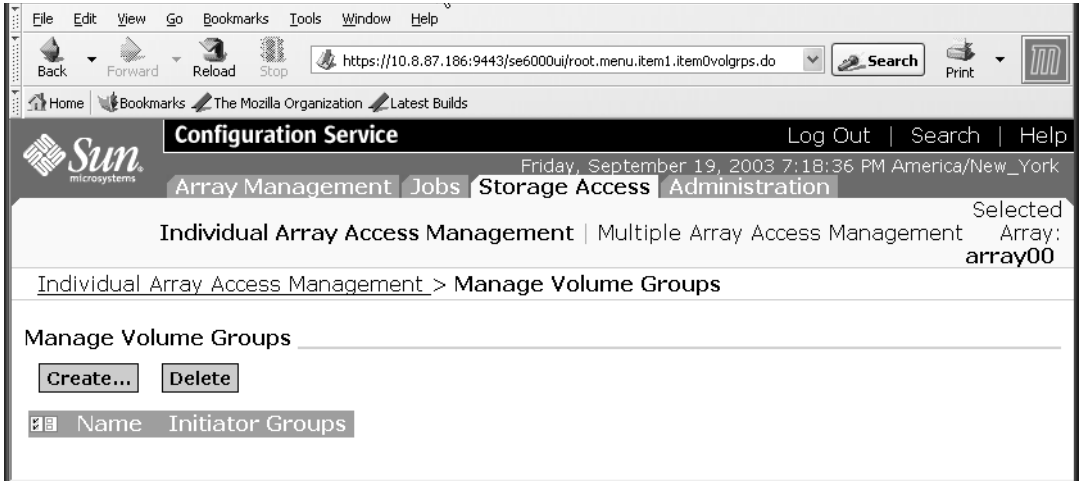


FIGURE E-41 Manage Volume Groups - Create

3. Click **Create**. The Create New Volume Group display appears.

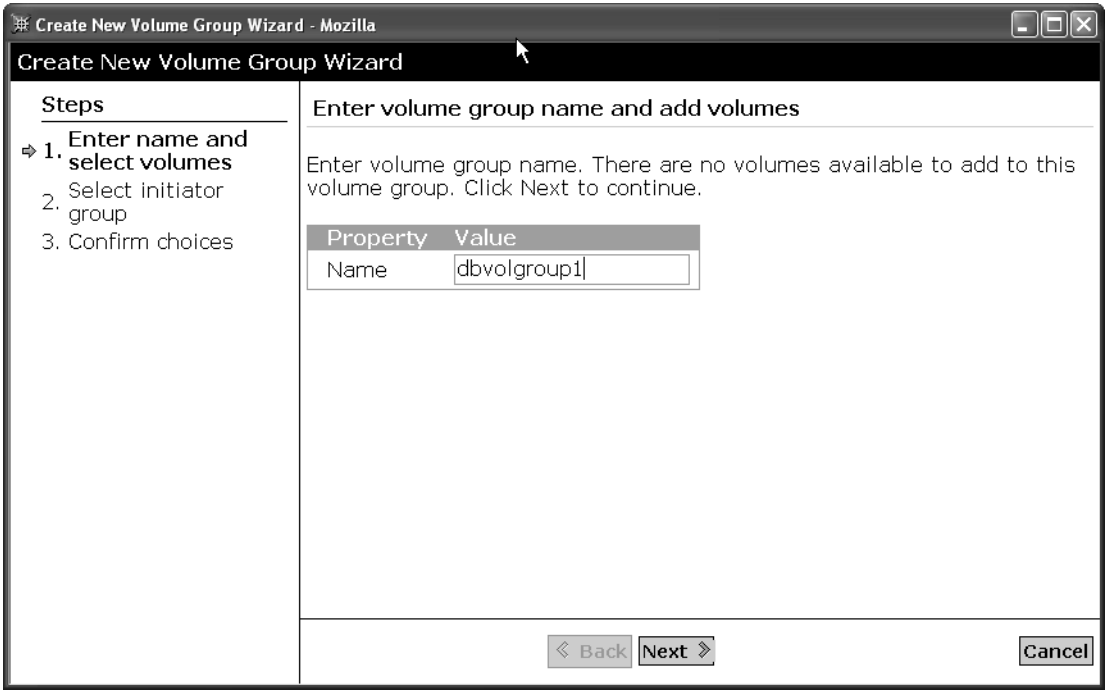


FIGURE E-42 Enter Name and Select Volumes

4. **Enter an appropriate Volume Group Name**.
5. Click **Next**. The Select Initiator Group display appears.

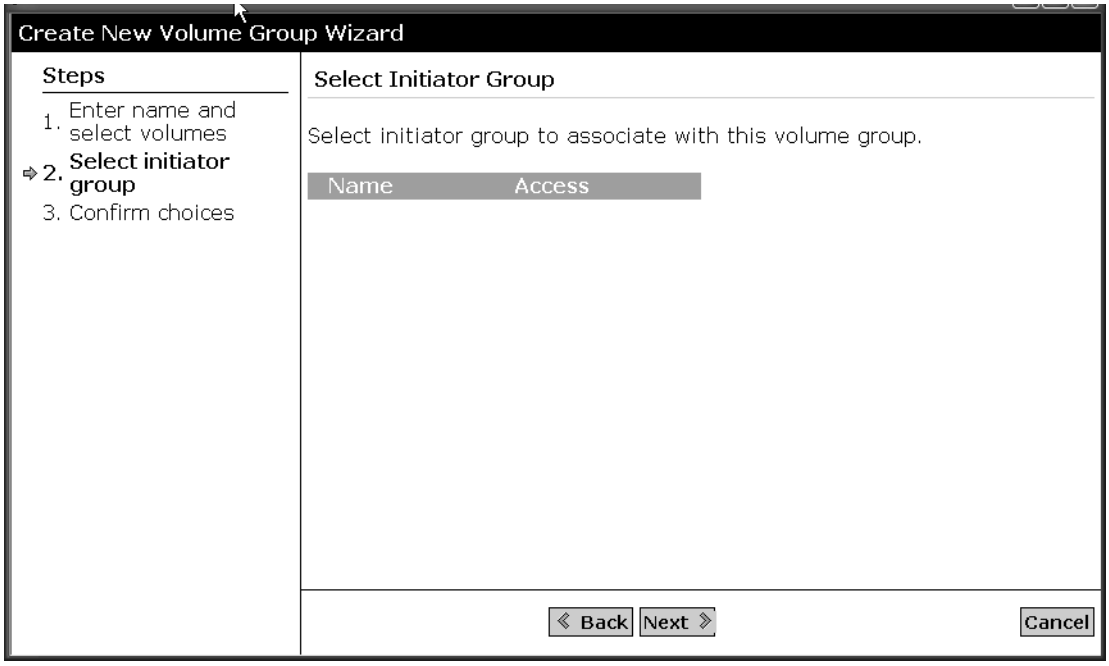


FIGURE E-43 Select Initiator Group

6. **Select an Initiator Group** to associate with this volume group.
7. Click **Next**. The Confirm Choices display appears.

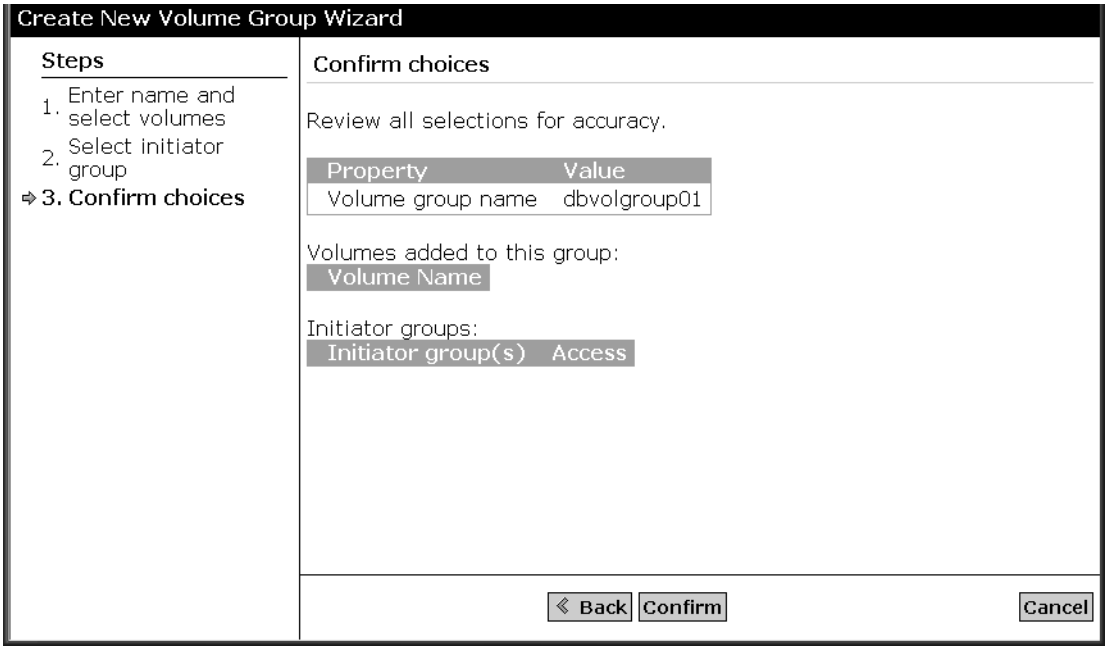


FIGURE E-44 Confirm Choices

8. **Review your selections** for accuracy and click **Confirm**; click Back if you want to make changes.

Volume Group creation takes awhile; be patient.

9. Click **Administration** → **Reports** to verify the status of the new volume group.

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