Sun StorEdge™ 6920 System Release Notes

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Contents

Sun StorEdge 6920 System Release Notes 1

Installation and Configuration Notes 2

New Service Processor Panel 3

Installing a Second Sun StorEdge 6920 Expansion Cabinet 4

Connecting an Expansion Cabinet 4

▼ To Connect Base Cabinet 0 to Expansion Cabinet 1 5

▼ To Connect Base Cabinet 0 to Expansion Cabinet 1 and Expansion Cabinet 2 6

Adding Sun StorEdge T3+ Arrays to a Sun StorEdge 6920 System 10

Requirements and Limitations 10

Adding Two Sun StorEdge T3+ Array Partner Groups to a Sun StorEdge 6920 System Configuration 11

▼ To Prepare for the Installation 11

▼ To Physically Install the Arrays 13

▼ To Verify the Installation 16

Managing External Storage 19

Fibre Channel Switch Zoning Recommendation 21

I/O Stream Guard 21

Installing Patches Using the Sun Web Console 22

Installing Patches Using the Upgrade CD 41

- To Prepare to Download Software Updates 42
- To Apply the Software Updates 42

Data Host Software and Required Patches 43

Downloading the VERITAS Volume Manager ASL 45

- To Download the VERITAS Volume Manager ASL 45

Supported Array and Drive Firmware Levels 46

Supported Software and Hardware 47

Supported Web Browsers 47

Additional Supported Data Host Software 48

Supported Fibre Channel Switches and HBAs 49

Supported Languages 49

System Usage Limitations 50

Network Connection Limitations 50

Fibre Channel Port Limitations 51

Release Documentation 52

Known Issues 53

Accessing Disk Drives 53

Missing Allen Wrench 53

Data Services Platform Fan Replacement 53

Bugs 54

Configuration Management Software 54

Command–Line Interface 58

Storage Automated Diagnostic Environment 59

Internationalization 61

Other Known Issues 62

Known Documentation Issues 67
`sscs` CLI Man Page Corrections 67
Getting Started Guide Corrections 69
Online Help Issues and Corrections 70
Revised Online Help Sections 71
Service Contact Information 74

Sun StorEdge 6920 System Release Notes

This document contains important information about the Sun StorEdge™ 6920 system that was not available at the time the product documentation was published. Read this document so that you are aware of issues or requirements that can impact the installation and operation of the Sun StorEdge 6920 system.

The Release Notes consist of the following sections:

- "Installation and Configuration Notes" on page 2
- "Supported Software and Hardware" on page 47
- "System Usage Limitations" on page 50
- "Release Documentation" on page 52
- "Known Issues" on page 53
- "Bugs" on page 54
- "Service Contact Information" on page 74

Installation and Configuration Notes

This section contains important information related to the installation and configuration of the Sun StorEdge 6920 system. You must understand this information before installing and configuring the Sun StorEdge 6920 system.

Caution – Please stop all VERITAS I/O operations before installing the Sun StorEdge 6920 System Maintenance Update 1 software. The VERITAS File System (VxFS) software can experience an I/O failure if it is running during the installation.

This issue is resolved by the Sun StorEdge 6920 System Maintenance Update 1 software once it is installed.

This section contains the following topics:

- "New Service Processor Panel" on page 3
- "Installing a Second Sun StorEdge 6920 Expansion Cabinet" on page 4
- "Adding Sun StorEdge T3+ Arrays to a Sun StorEdge 6920 System" on page 10
- "Fibre Channel Switch Zoning Recommendation" on page 21
- "Data Services Platform Fan Replacement" on page 53
- "I/O Stream Guard" on page 21
- "Installing Patches Using the Upgrade CD" on page 41
- "Data Host Software and Required Patches" on page 43
- "Downloading the VERITAS Volume Manager ASL" on page 45
- "Supported Array and Drive Firmware Levels" on page 46

New Service Processor Panel

The Sun StorEdge 6920 system documentation shows the original Service Processor Panel (SPP) design, which is shown in FIGURE 1. However, all Sun StorEdge 6920 systems have been shipped with a new design as shown by the top unit of FIGURE 1.

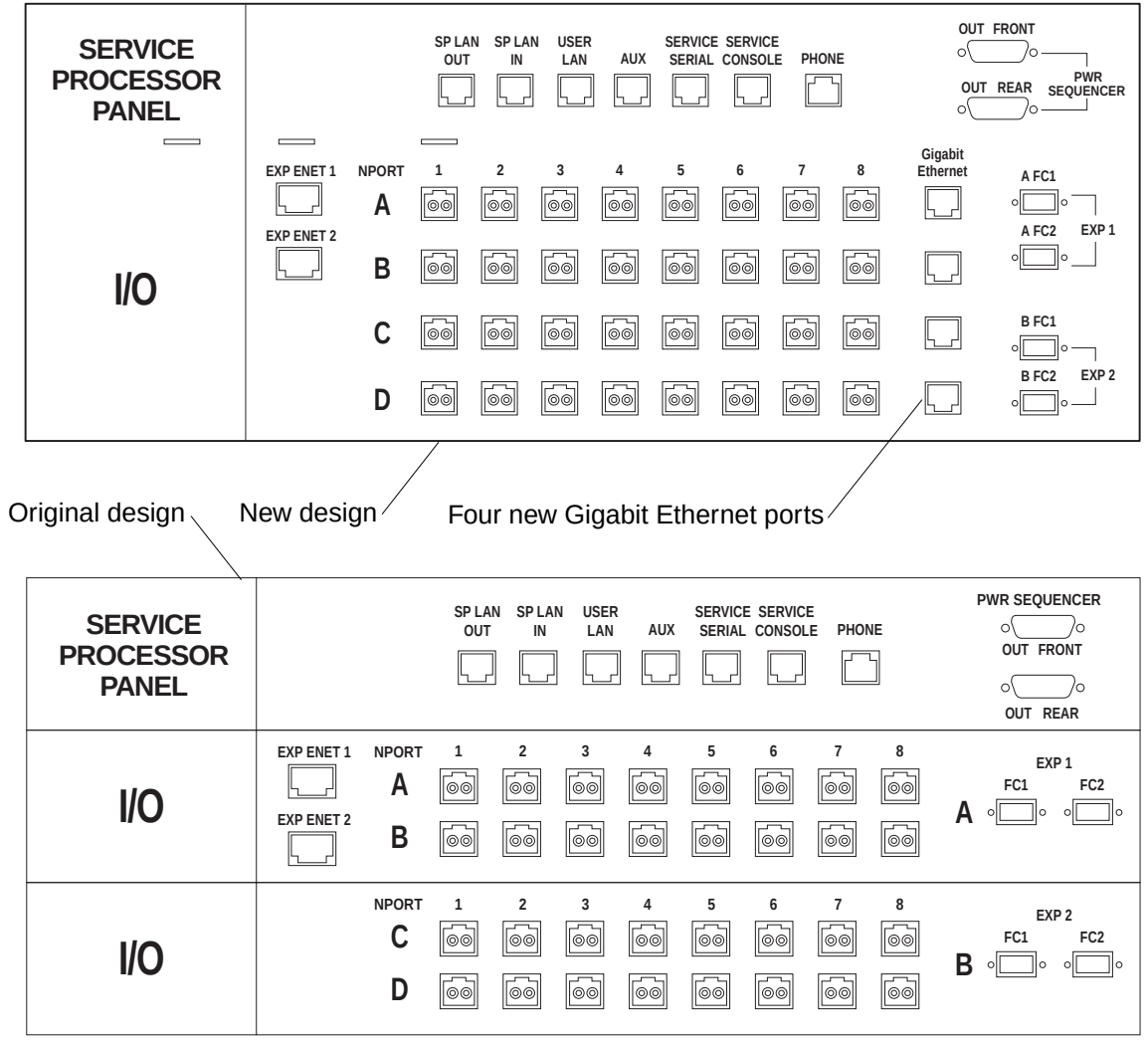


FIGURE 1 The New and Original Service Processor Panels

The following changes have been made to the new Service Processor Panel:

- Four RJ-45 ports labeled "Gigabit Ethernet" have been added to accommodate the future capability for remote data replication over the Ethernet.
- Four Sun StorEdge Expansion Cabinet connectors, EXP1 (two connectors) and EXP2 (two connectors), have been repositioned vertically and moved slightly to the right.

Installing a Second Sun StorEdge 6920 Expansion Cabinet

You can connect a maximum of two expansion cabinets to a Sun StorEdge 6920 system. The following procedure addresses both cabinets and the original and new Service Processor Panel of the Sun StorEdge 6920 system base cabinet. This procedure replaces the Connecting an Expansion Cabinet section in the *Sun StorEdge 6920 System Getting Started Guide*.

Connecting an Expansion Cabinet

The cabinets are numbered from 0 through 2:

- Base cabinet: 0
- Expansion cabinet: 1
- Expansion cabinet: 2

If you purchased a Sun StorEdge 6920 system with one or two expansion cabinets, follow the instructions in the following sections to connect the expansion cabinets to the base cabinet 0:

- "Connecting the Fibre Channel Cables" on page 5
- "Connecting the Ethernet and Power Sequencer Cables" on page 8

Caution – You must connect all expansion cabinet cabling to the base cabinet before connecting power to the base cabinet.

Connecting the Fibre Channel Cables

The Service Processor Panel of the base cabinet 0 has two sets of Fibre Channel ports (EXP 1 and EXP 2) to connect to the expansion cabinets (see FIGURE 1). The service panel of the expansion cabinet has redundant FC ports (see FIGURE 2).

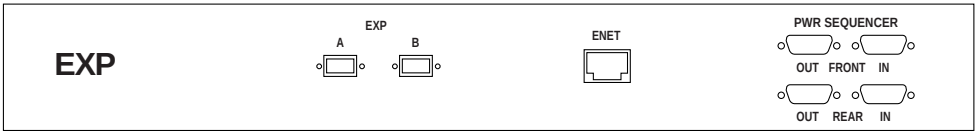


FIGURE 2 Expansion Cabinet Service Panel

▼ To Connect Base Cabinet 0 to Expansion Cabinet 1

Connect redundant Fibre Channel (FC) cables (part number 537-1060-01) as follows (see FIGURE 3):

- Connect port EXP1 A FC1 of the base cabinet 0 to port EXP A of the expansion cabinet 1 service panel
- Connect port EXP1 A FC2 of the base cabinet 0 to port EXP B of the expansion cabinet 1 service panel

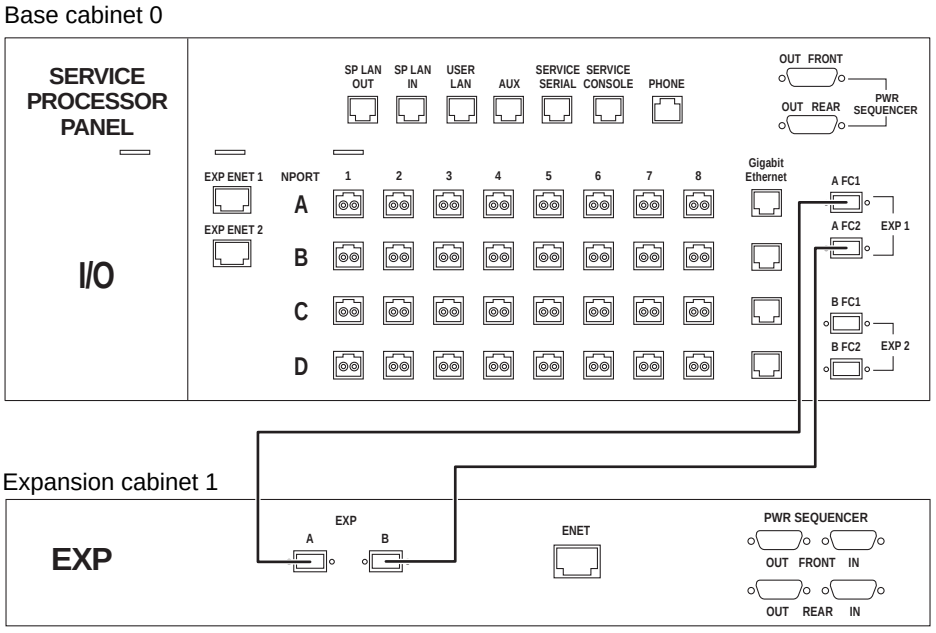


FIGURE 3 FC Cabling Between a New Service Processor Panel of the Base Cabinet 0 and Expansion Cabinet 1

▼ To Connect Base Cabinet 0 to Expansion Cabinet 1 and Expansion Cabinet 2

Connect redundant Fibre Channel (FC) cables (part number 537-1060-01) as follows (see FIGURE 4):

- Connect port EXP 1 A FC1 of the base cabinet 0 to port EXP A of the expansion cabinet 1 service panel
- Connect port EXP 1 A FC2 of the base cabinet 0 to port EXP B of the expansion cabinet 1 service panel
- Connect port EXP 2 B FC1 of the base cabinet 0 to port EXP A of the expansion cabinet 2 service panel
- Connect port EXP 2 B FC2 of the base cabinet 0 to port EXP B of the expansion cabinet 2 service panel

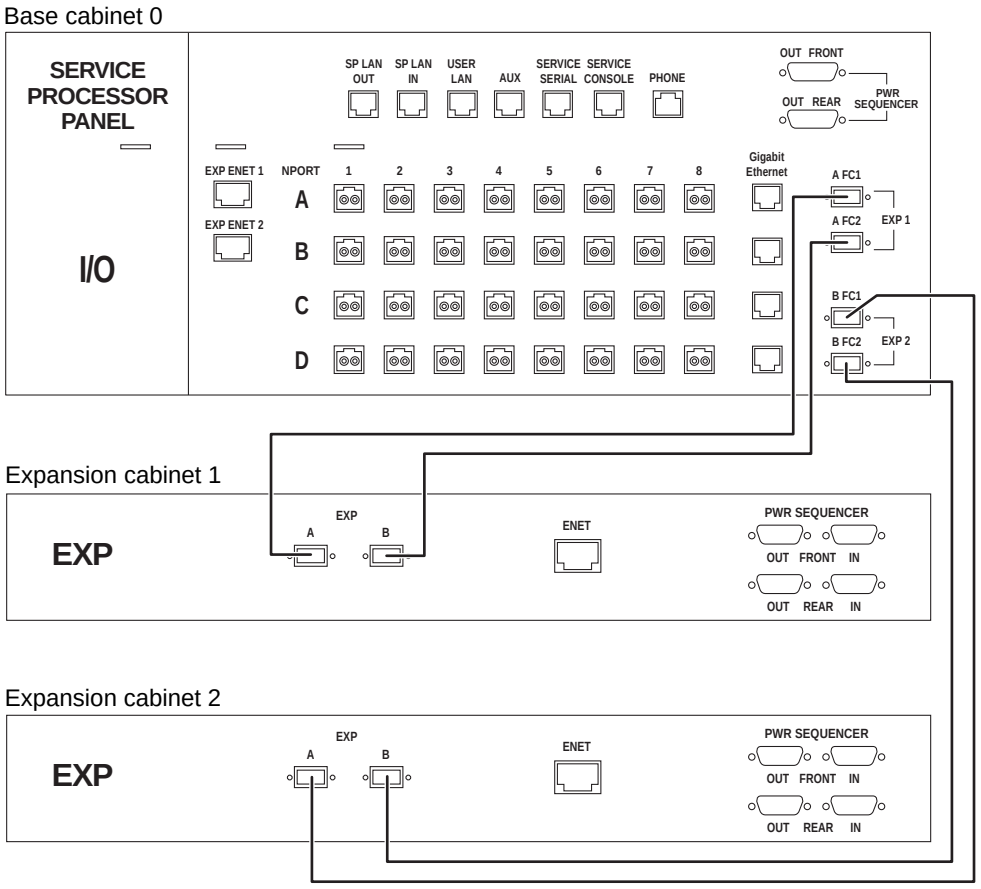


FIGURE 4 FC Cabling Between a New Service Processor Panel of the Base Cabinet 0, Expansion Cabinet 1, and Expansion Cabinet 2

Connecting the Ethernet and Power Sequencer Cables

To connect to one or two expansion cabinets, use one or two Ethernet cables (10M RJ45/RJ45 Rollover, part number 530-3138-01) as shown in FIGURE 5, or FIGURE 6.

If you are setting up the system to enable remote power management, you must also connect two or four power sequencer serial cables (part number 530-3210-01) between the base cabinet 0 and one or both expansion cabinets as shown in FIGURE 5, or FIGURE 6.

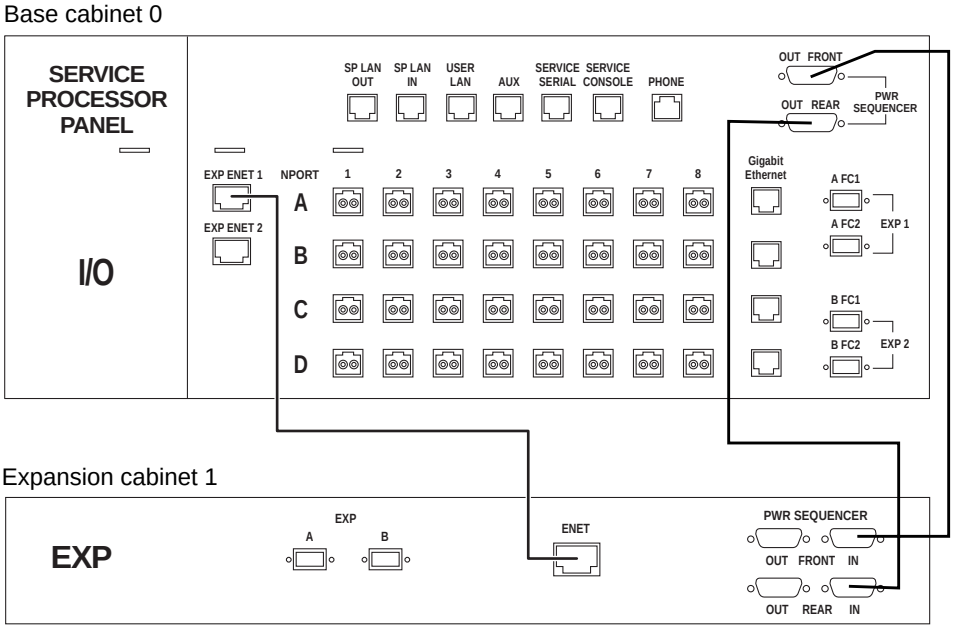


FIGURE 5 Ethernet and Power Sequencer Cabling Between a New Service Processor Panel of Base Cabinet 0 and Expansion Cabinet 1

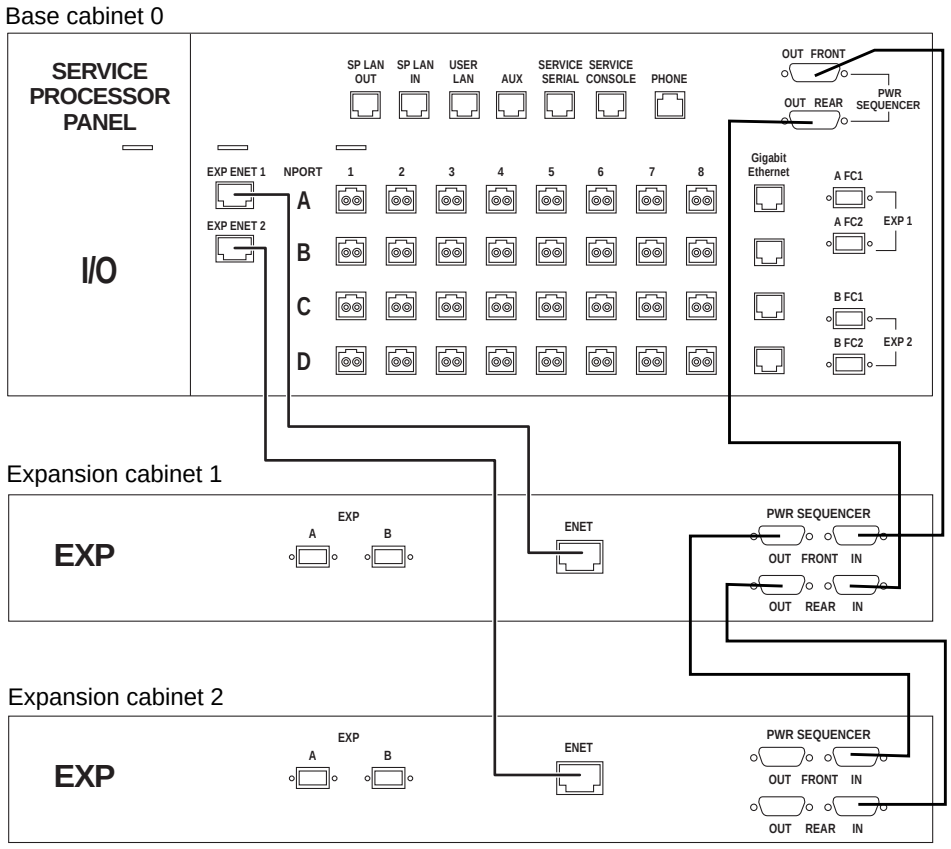


FIGURE 6 Ethernet and Power Sequencer Cabling Between a New Service Processor Panel of Base Cabinet 0, Expansion Cabinet 1, and Expansion Cabinet 2

Adding Sun StorEdge T3+ Arrays to a Sun StorEdge 6920 System

The Sun StorEdge 6920 System can accommodate the Sun StorEdge T3+ arrays if desired. This section describes the rules and limitations with supporting the Sun StorEdge T3+ arrays and gives the procedure to add them.

Caution – This process destroys data. Back up any data existing on an array before proceeding.

Requirements and Limitations

Note the following limitations when connecting Sun StorEdge T3+ arrays to a Sun StorEdge 6920 system:

- Only Sun StorEdge T3+ arrays can be added. Sun StorEdge T3 arrays are not supported.
- Sun StorEdge T3+ arrays must be added in partner groups.
- You must preset the Sun StorEdge T3+ array parameters and you must create all LUNs and volumes before attaching the array to SIO card/port locations.
- The Sun StorEdge T3+ arrays are not fully integrated with the system management software. The Sun StorEdge T3+ array must use the array level management tools, and therefore must not connect to the Sun StorEdge 6920 System Ethernet hub or the Storage Service Processor infrastructure. Thus, the Sun Storage Automated Diagnostic Environment cannot be used to perform fault isolation on the Sun StorEdge T3+ arrays.
- The Sun StorEdge T3+ arrays are subject to the same configuration restrictions as the Sun StorEdge 6020 storage modules when connecting to the Data Services Platform (DSP) -1000 as shown in TABLE 1.

TABLE 1 DSP Configuration Possibilities

Configuration	Host Ports	Array Ports
Default	1, 2, 3, 4	5, 6, 7, 8
Skewed to host	1, 2, 3, 4, 5, 6	7, 8
Skewed to array	1, 2	3, 4, 5, 6, 7, 8

Note – If a DSP-1000 is skewed towards host connections, you must remove some of the host connections to allow for the Sun StorEdge T3+ arrays.

Adding Two Sun StorEdge T3+ Array Partner Groups to a Sun StorEdge 6920 System Configuration

▼ To Prepare for the Installation

Refer to the *Sun StorEdge T3+ Array Administrator's Manual, Version 2.1 Controller Firmware*, part number 816-4770-*nn*, to perform the following steps.

1. **Log in to the Sun StorEdge T3+ array master controller through a serial or Ethernet connection.**
2. **Use the** `vol list` **command to display the names of any existing volumes.**
3. **Use the** `vol unmount` *volume-name* **command to unmount the volumes.**
4. **Use the** `vol remove` *volume-name* **command to remove all existing volumes.**
5. **Use the** `sys list` **command to view the current system parameters**
6. **Use the** `sys` **command to set the parameters to the following:**

```
t3b1:/:<1>sys list
controller         : 2.0
blocksize          : 64k
cache              : auto
mirror             : auto
mp_support         : mpxio
naca               : off
rd_ahead           : on
recon_rate         : med
sys memsize        : 128 MBytes
cache memsize      : 1024 MBytes
enable_volslice    : off
fc_topology        : auto
fc_speed           : 1Gb
disk_scrubber      : on
ondg               : befit
```

7. **Use the** `vol add` *volume-name* `data` *drive-name* `raid 5` **command to create two RAID 5 volumes; one volume for each controller U1 and U2.**
8. **Use the** `vol init` *volume-name* `data` **command to initialize the volumes.**
9. **Use the** `vol mount` *volume-name* **command to mount the volumes.**

10. **Use the `vol list` command to verify the RAID 5 volumes.**

```
t3b1:/:<2>vol list
volume            capacity raid data       standby
vol1            545.363 GB    5 u1d01-09      none
vol2            545.363 GB    5 u2d01-09      none
```

11. **Use the `port listmap` command to verify that both the master controller and alternate controller paths are correct and online.**

```
t3b1:/:<3>port listmap

port    targetid    addr_type   lun  volume     owner    access
u1p1      1          hard        0    vol1       u1       primary
u1p1      1          hard        1    vol2       u2       failover
u2p1      2          hard        0    vol1       u1       failover
u2p1      2          hard        1    vol2       u2       primary
t3b1:/:<4>port list

port   targetid    addr_type    status    host   wwn
u1p1      1        hard         online    sun    50020f23000052af
u2p1      2        hard         online    sun    50020f23000051fa
```

12. **Repeat Steps 1 through 11 for the remaining Sun StorEdge T3+ arrays.**

13. **If required, disconnect the T3+ arrays from the existing system to install them in the Sun StorEdge 6920 System.**

▼ To Physically Install the Arrays

1. **Install the Sun StorEdge T3+ array partner groups as explained in** *Sun StorEdge T3 Cabinet Installation Guide*, **806-7979-xx.**

2. **Connect the LC Fibre Channel connector end of a cable from the cable set 537-1035-01 (four cables) to the Sun StorEdge T3+ arrays and the SC Fibre Channel connector end to the DSP-1000 as shown in** FIGURE 7**.**

   a. **A Sun StorEdge T3+ array to the LC end of cable labeled "DSP to Array-02 (M)".**

   b. **Another Sun StorEdge T3+ array to the LC end of cable labeled "DSP to Array-02 (A/M)".**

   c. **Another Sun StorEdge T3+ array to the LC end of cable labeled "DSP to Array-03 (M)".**

   d. **Another Sun StorEdge T3+ array to the LC end of cable labeled "DSP to Array-03 (A/M)".**

   e. **The SC end of cable labeled "DSP to Array-02 (M)" to the DSP-1000 port 6 board 3.**

   f. **The SC end of cable labeled "DSP to Array-02 (A/M)" to the DSP-1000 port 6 board 4.**

   g. **The SC end of cable labeled "DSP to Array-03 (M)" to the DSP-1000 port 5 board 3.**

   h. **The SC end of cable labeled "DSP to Array-03 (A/M)" to the DSP-1000 port 5 board 4.**

Note – The Sun StorEdge T3+ arrays are not connected to the Sun StorEdge 6920 System Ethernet/Storage Service Processor infrastructure. They use an independent Ethernet.

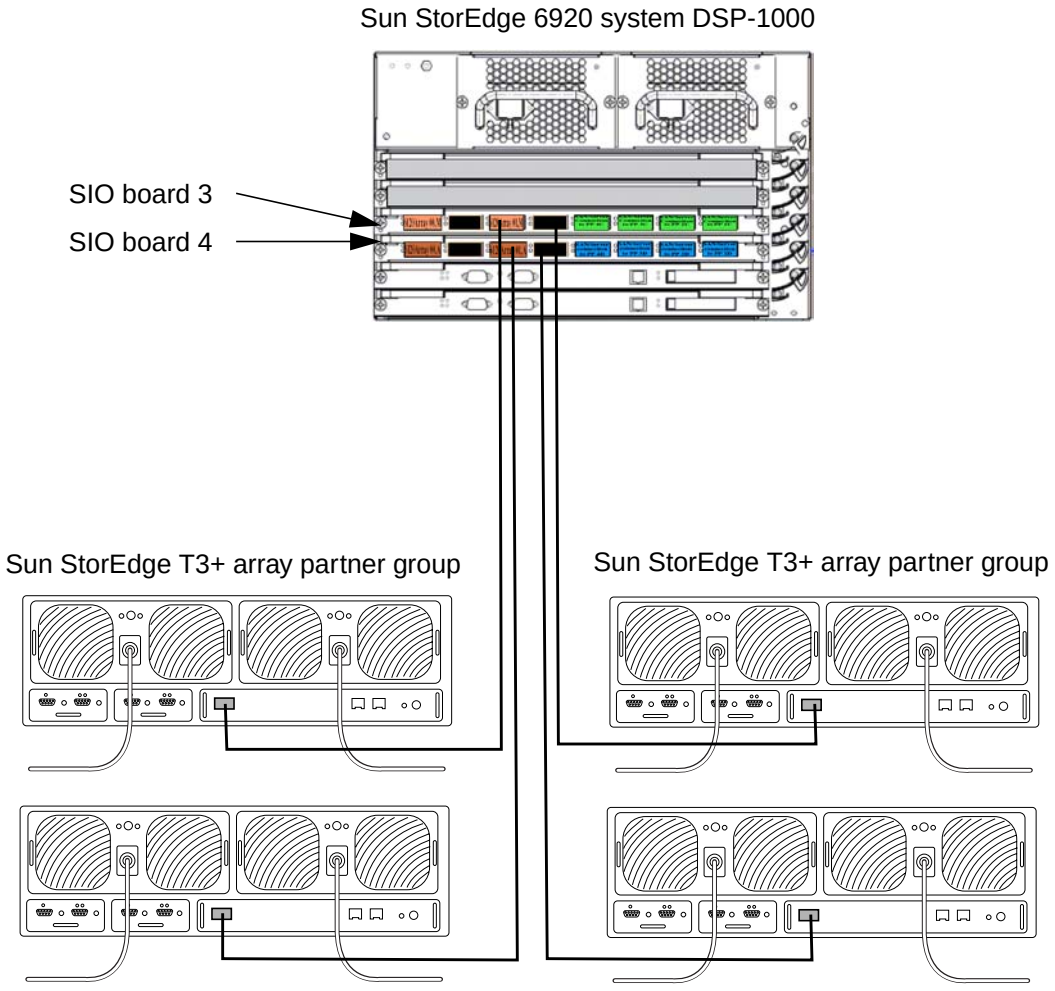


FIGURE 7 Cable Connections Between the DSP-1000 and T3+ Array Partner Groups in a Sun StorEdge 6920 Base Cabinet 0

3. **Connect the appropriate power cables (available pre-installed in the cabinet for each tray position) to the Sun StorEdge T3+ arrays.**

   a. **T3+ in cabinet position 0E to power cable labeled "J11 R5" for the left PCU and to power cable labeled "J11 L5" for the right PCU.**

   b. **T3+ in cabinet position 0F to power cable labeled "J6 R6" for the left PCU and to power cable labeled "J6 L6" for the right PCU.**

   c. **T3+ in cabinet position 0G to power cable labeled "J8 R10" for the left PCU and to power cable labeled "J8 L10" for the right PCU.**

   d. **T3+ in cabinet position 0H to power cable labeled "J8 R9" for the left PCU and to power cable labeled "J8 L9" for the right PCU.**

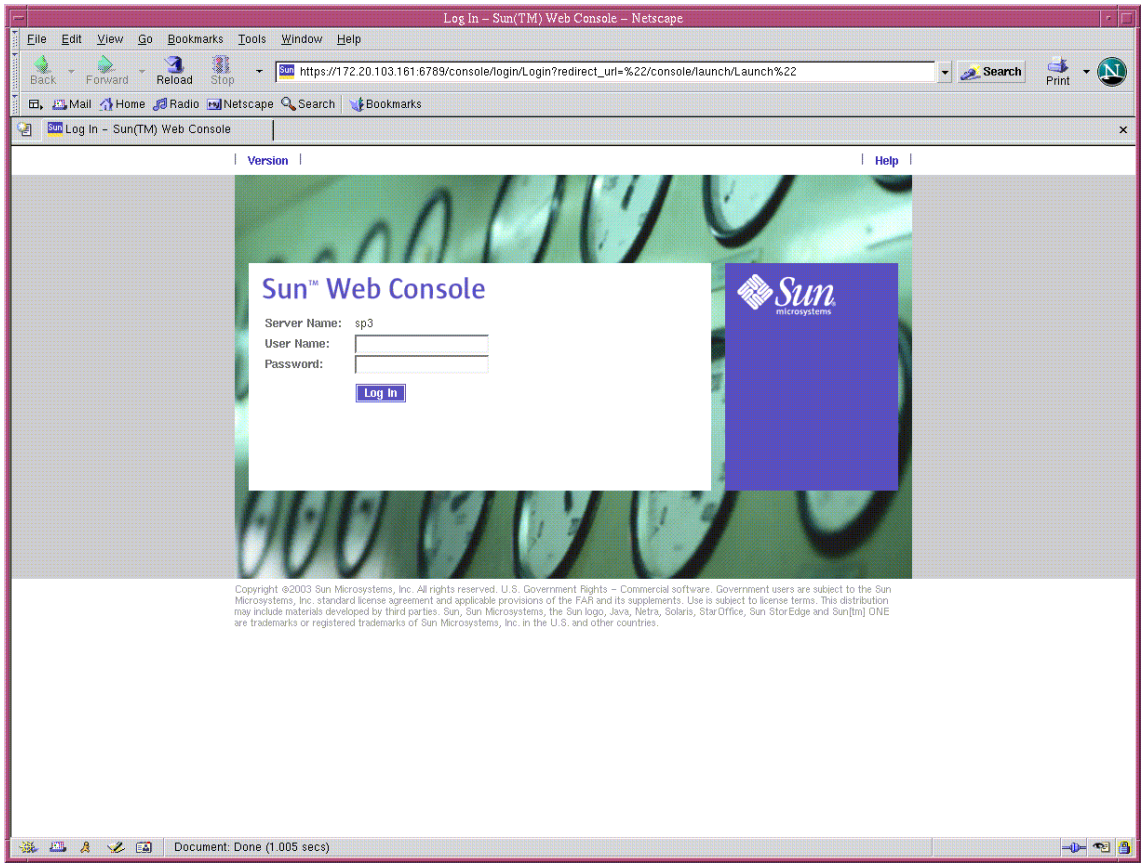
4. **Connect the Sun StorEdge T3+ arrays to an independent Ethernet.**

▼ To Verify the Installation

1. **Open an approved browser.**

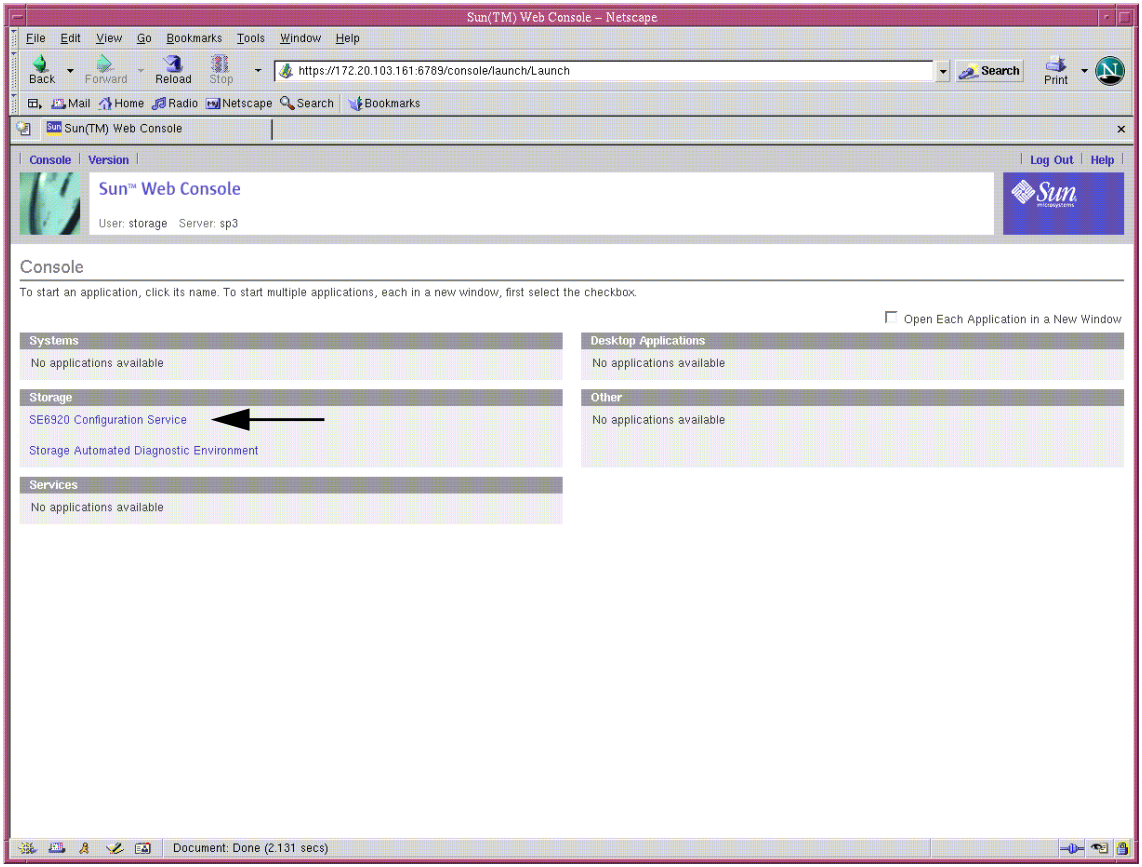
   See “Supported Web Browsers” on page 47.

2. **Access and log in to the Sun Web Console:**
   `http://`*IP-address*`|`*host-name*`:6789`**.**



3. **Type the user name and password.**
   - Default User Name: **storage**
   - Default Password: **!storage**

4. **Under Storage, click SE6920 Configuration Service.**



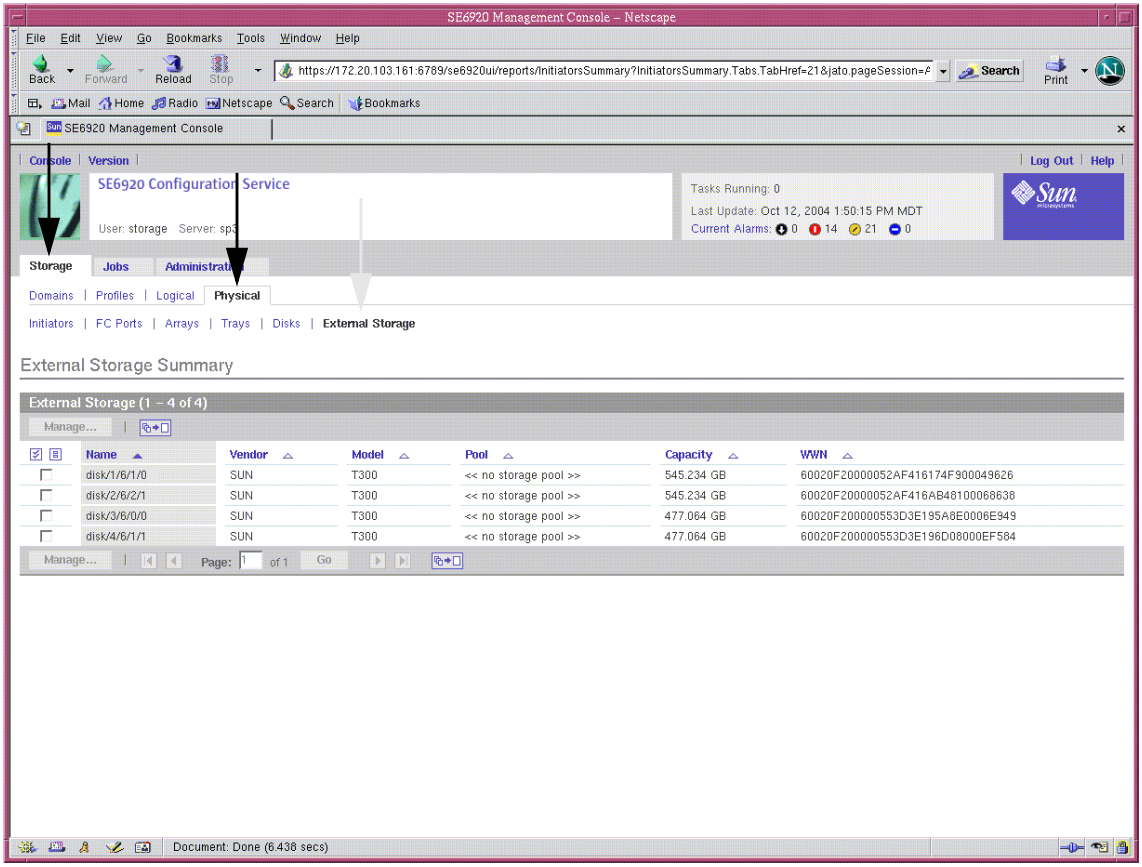
5. **Click the following tabs at the top left of the screen: Storage → Physical → External Storage.**

6. **Verify the following:**

   a. **The Model field displays “T300”.**

   b. **The Pool field displays “no storage pool”.**

Note – Ensure that all the Sun StorEdge T3+ arrays of each partner groups are displayed.



Note – Sun StorEdge T3+ arrays are referred to as *external storage* in the Sun StorEdge 6920 system.

Managing External Storage

The attached Sun StorEdge T3+ arrays are referred to as *external storage* because the Sun StorEdge T3+ arrays must be managed by both the Sun StorEdge 6920 Configuration Service software and by the Sun StorEdge T3+ command-line interface (CLI). The Sun StorEdge T3+ arrays are also fault diagnosed by using the Sun StorEdge Automated Diagnostic Environment - Device Edition.

You can manage the external virtual disks by using the Manage External Storage Wizard. From the SE6920 Configuration Service console, select Storage → Physical → External Storage to display the external storage list for your system. The TABLE 2 shows some external storage definitions.

TABLE 2 External Storage Summary

Field	Definition
Name	Virtual disk which resides on an external storage device
Vendor	External storage device vendor name
Model	Vendor model of the external storage device
Pool	Pool on the Sun StorEdge 6920 system to which the external virtual disk is assigned
Capacity	External virtual disk size
WWN	World wide name of the external storage

To select a storage pool for the external storage, select the checkbox next to the device(s) and click the Manage button to start the Manage External Storage Wizard. Then, follow the instructions in the wizard.

Note – There is no online Help for this feature.

CLI Commands

You can use the following command-line interface (CLI) commands to display external storage information:

- Use the `sscs list externalstorage` command to display the virtual disk list.

```
t3b1:/:<1>sscs list externalstorage

External Storage:    disk/1/8/1/1/0    Storage Domain:    Pool:
External Storage:    disk/1/8/1/4/0    Storage Domain:    Pool:
External Storage:    disk/1/8/1/2/0    Storage Domain:    Pool:
External Storage:    disk/1/8/1/5/0    Storage Domain:    Pool:
External Storage:    disk/1/8/1/3/0    Storage Domain:    Pool:
External Storage:    disk/1/8/1/6/0    Storage Domain:    Pool:
External Storage:    disk/1/8/1/8/0    Storage Domain:    Pool:
External Storage:    disk/1/8/1/7/0    Storage Domain:    Pool:
External Storage:    disk/1/8/1/9/0    Storage Domain:    Pool:
External Storage:    disk/1/8/1/10/0   Storage Domain:    Pool:
```

- Use the `sscs list externalstorage` *disk-name* command to display details about a particular virtual disk.

```
t3b1:/:<2>sscs list externalstorage disk/4/2/138/0

External Storage Disk:     disk/1/8/1/1/0
  Storage Domain:
  Storage Pool:
  Model:                   T300
  Vendor:                  SUN
  State:                   Not In Use
  Status:                  OK
  Total Capacity:          144703455232
```

Note – The software does *not* configure the external storage. To change the configuration, you must reference the documentation provided by the vendor for the array's management software package.

Fibre Channel Switch Zoning Recommendation

If you configure a storage area network (SAN) so that the Sun StorEdge 6920 system is in the same zone as other storage devices, the LUNs for all the devices are visible to the Sun StorEdge 6920 system. To prevent this, you should configure the other storage devices in the SAN to use LUN masking. Alternatively, you can configure the Sun StorEdge 6920 system ports to be in separate zones so that no other array devices are visible to the system.

Tip – Many switch manufacturers recommend zoning one HBA to one storage port.

I/O Stream Guard

The I/O Stream Guard feature of QLogic Fibre Channel switches is disabled by default. Allow the switch to remain in this default state. If this QLogic switch feature is enabled, it suppresses Registered State Control Notification (RSCN) messages on a port basis and the Sun StorEdge 6920 system cannot correctly resolve the state of the initiator on the fabric.

Installing Patches Using the Sun Web Console

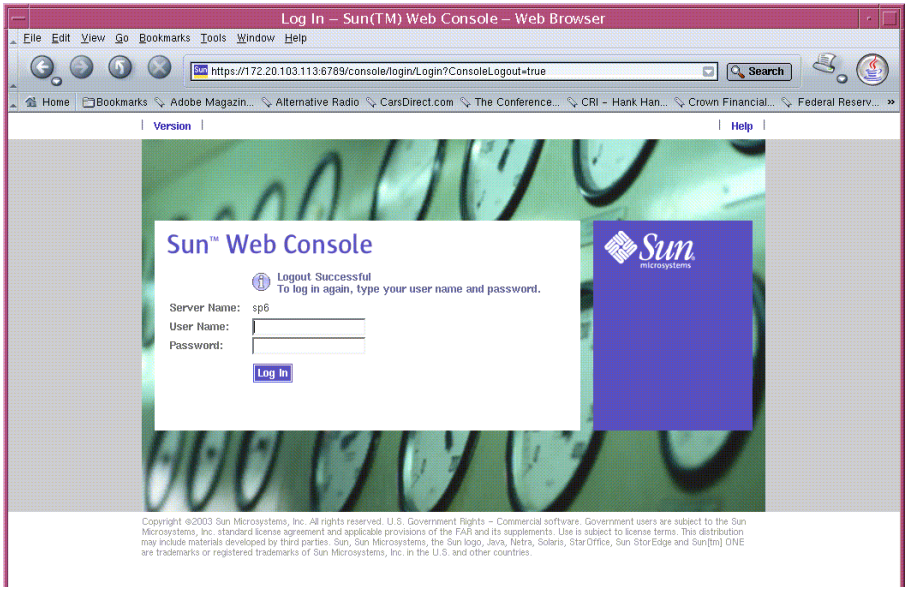
This procedure installs all required patches, including the Sun StorEdge 6920 System Maintenance Update 1 (MU1) patch. The MU1 patch contains updates to the system component functionality and provides a new feature that allows Sun StorEdge T3+ arrays to be added to the system.

Caution – Stop all VERITAS I/O operations and unmount the VERITAS File System software before installing the Sun StorEdge 6920 System Maintenance Update 1 (MU1) patch. The VERITAS File System (VxFS) software can experience an I/O failure if it is running during the installation. This issue is resolved by the Sun StorEdge 6920 System MU1 software once it is installed.

1. **Open an approved browser.**

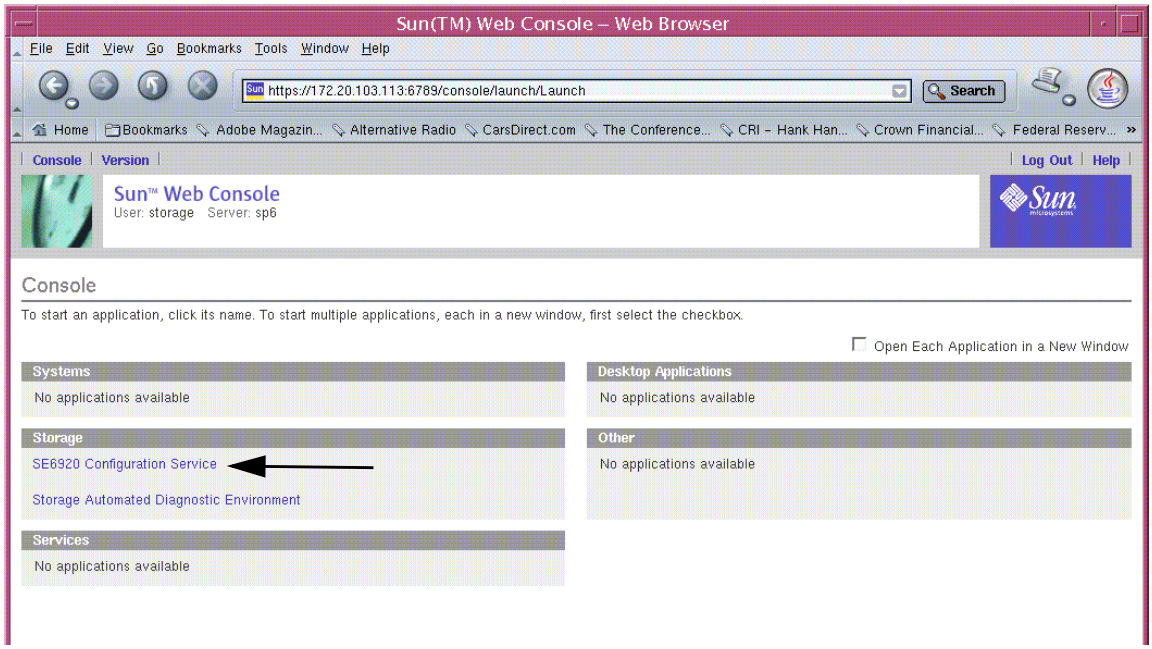
   See "Supported Web Browsers" on page 47.

2. **Access and log in to the Sun Web Console:**
   `http://`*IP-address*`|`*host-name*`:6789`.

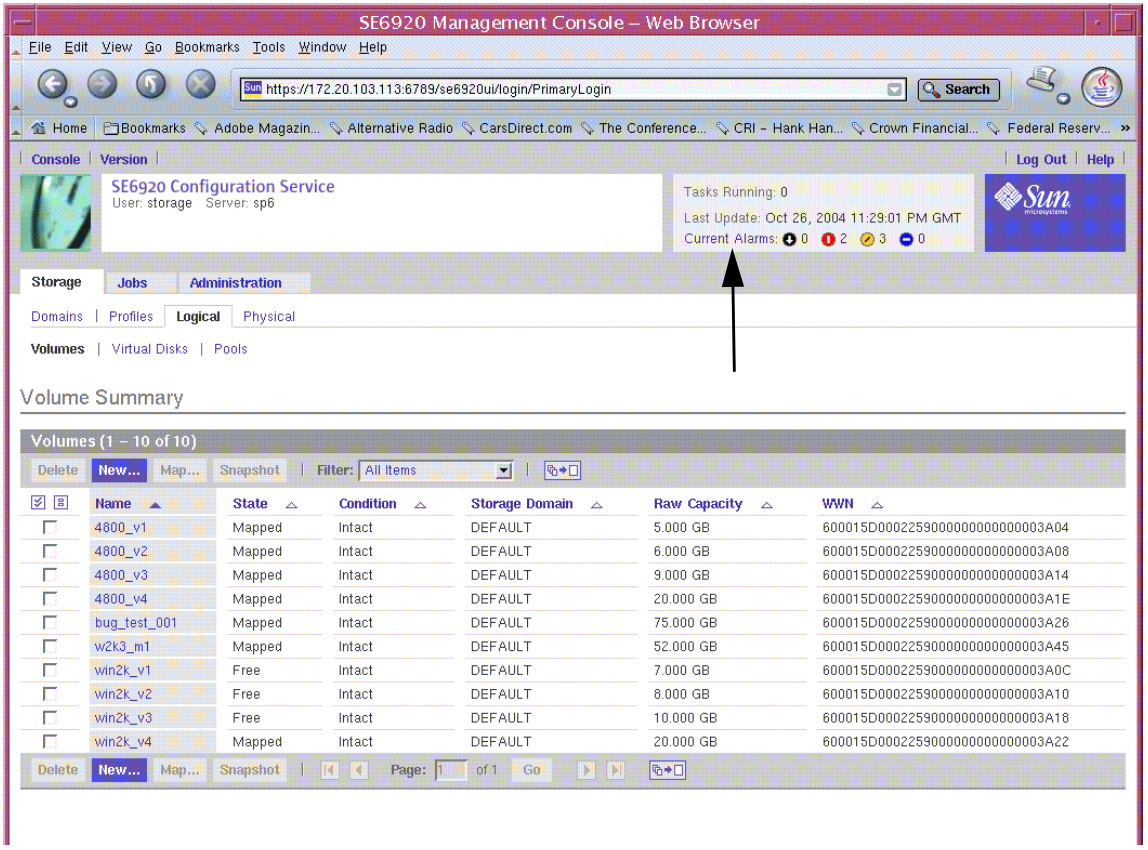


3. **Type the user name and password.**
   - Default User Name: `storage`
   - Default Password: `!storage`

4. **Under Storage, click SE6920 Configuration Service.**

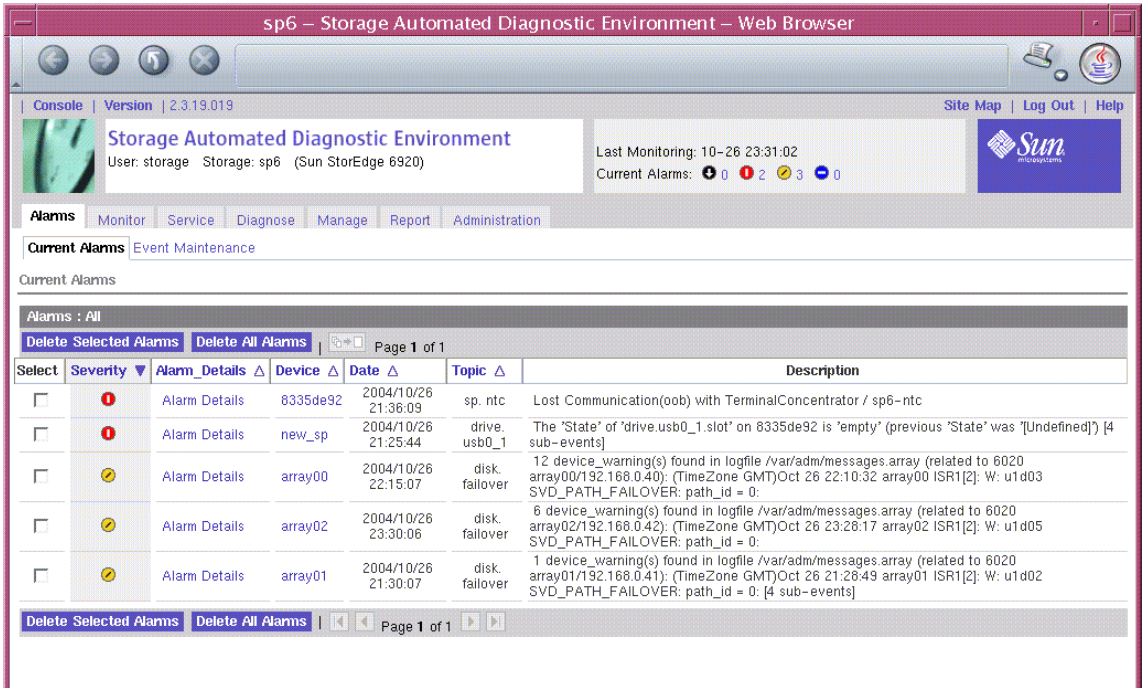


5. **Click Current Alarms.**

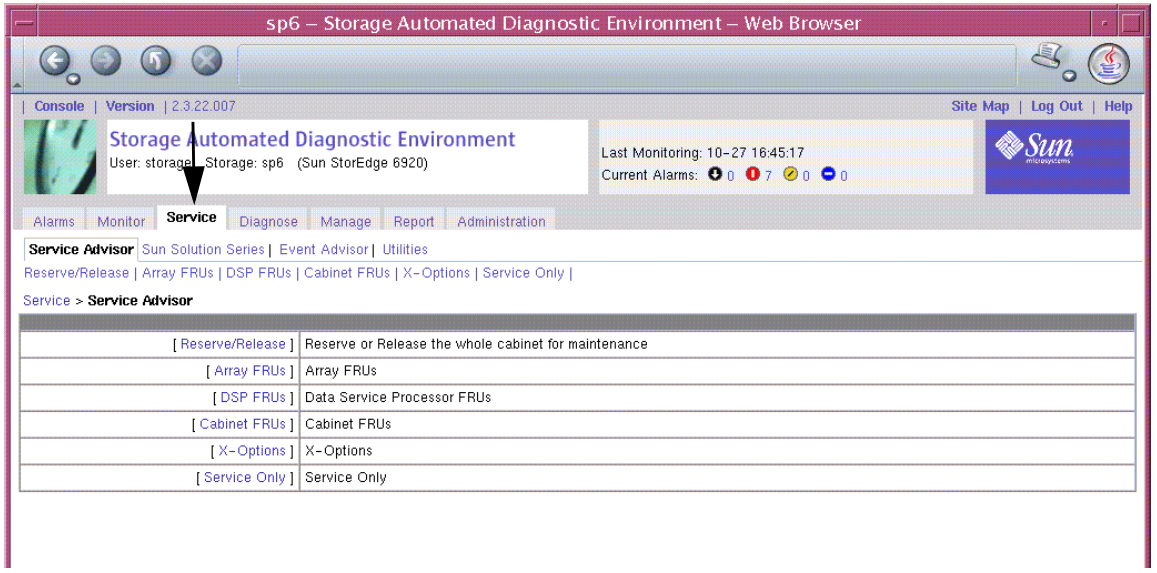


A list of any current alarms is displayed.

6. **Resolve any alarms before proceeding.**

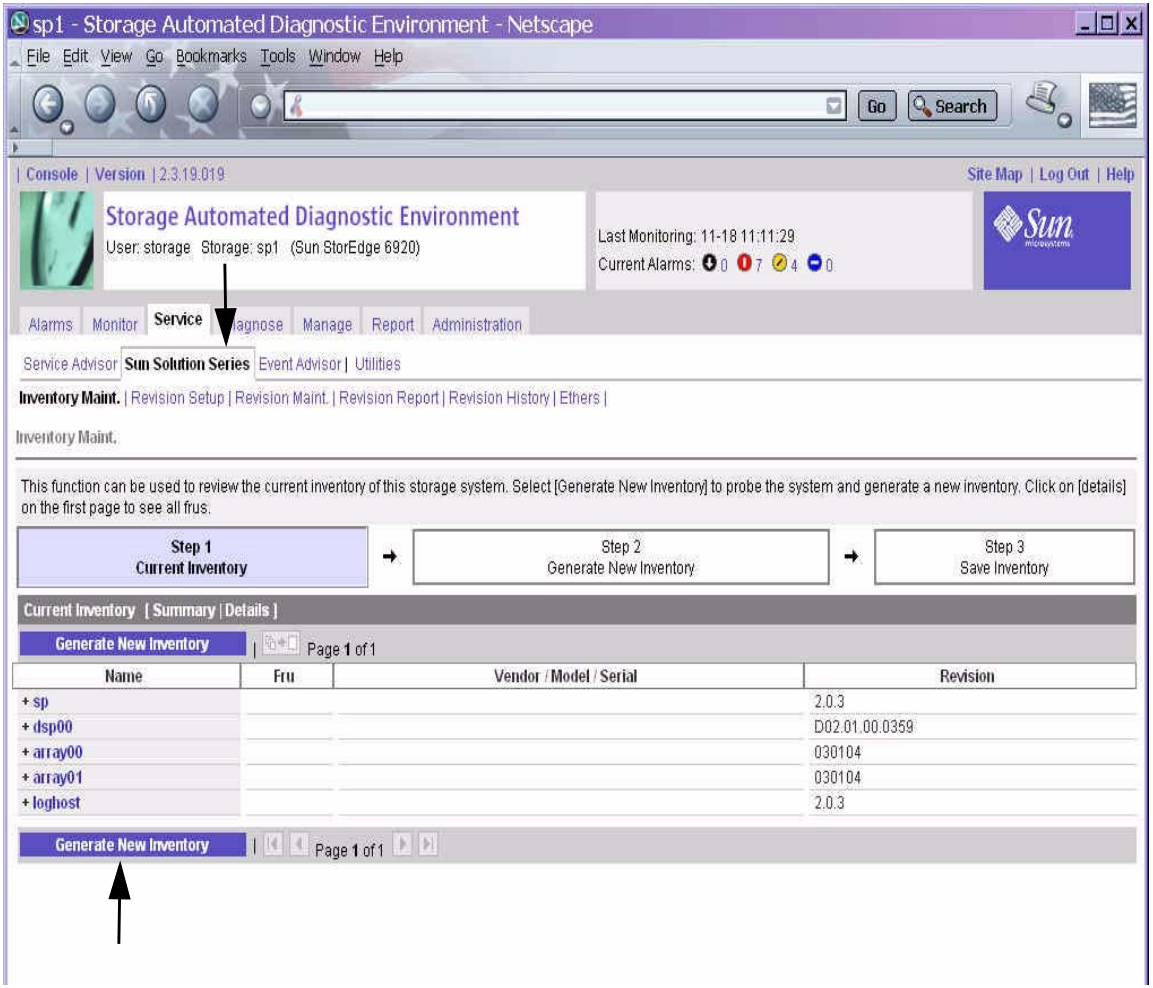


7. **Click the Service tab.**



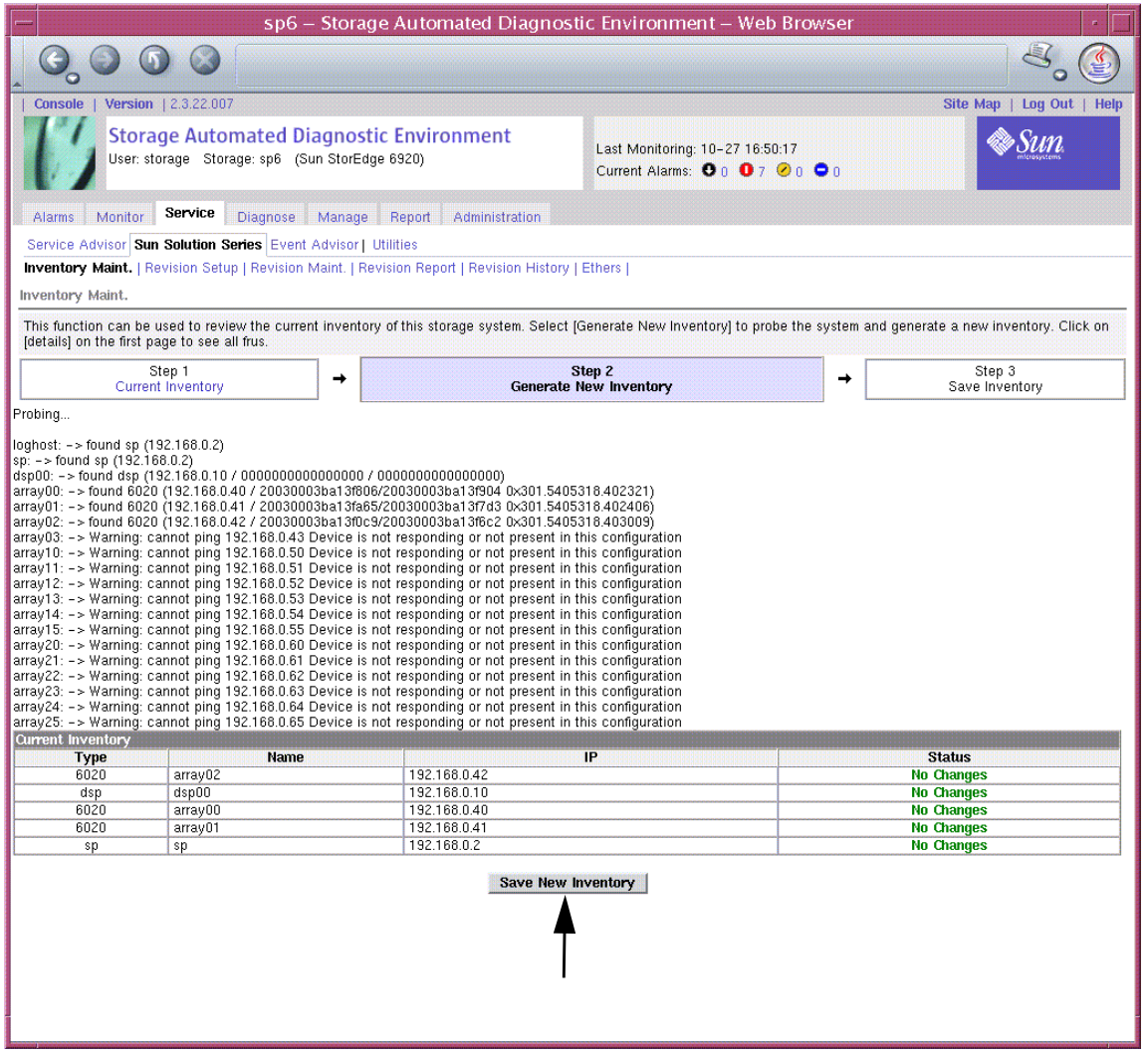
8. **Click the Sun Solution Series tab.**

Than click Generate New Inventory.



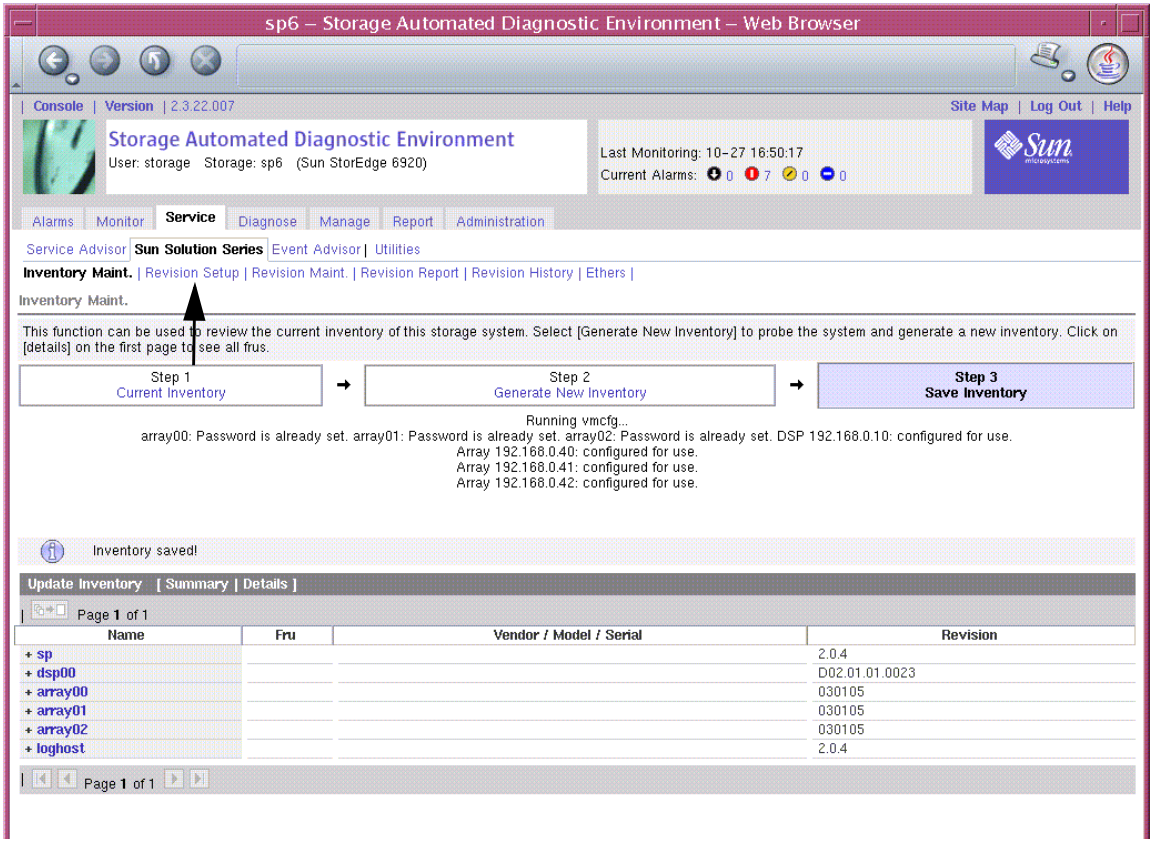
Note – There are three boxes labeled Step 1, Step 2, and Step 3 that, along with the text prompts, indicate actions to perform.

9. **When the inventory generation is complete (the Step 2 box highlights), click Save New Inventory.**



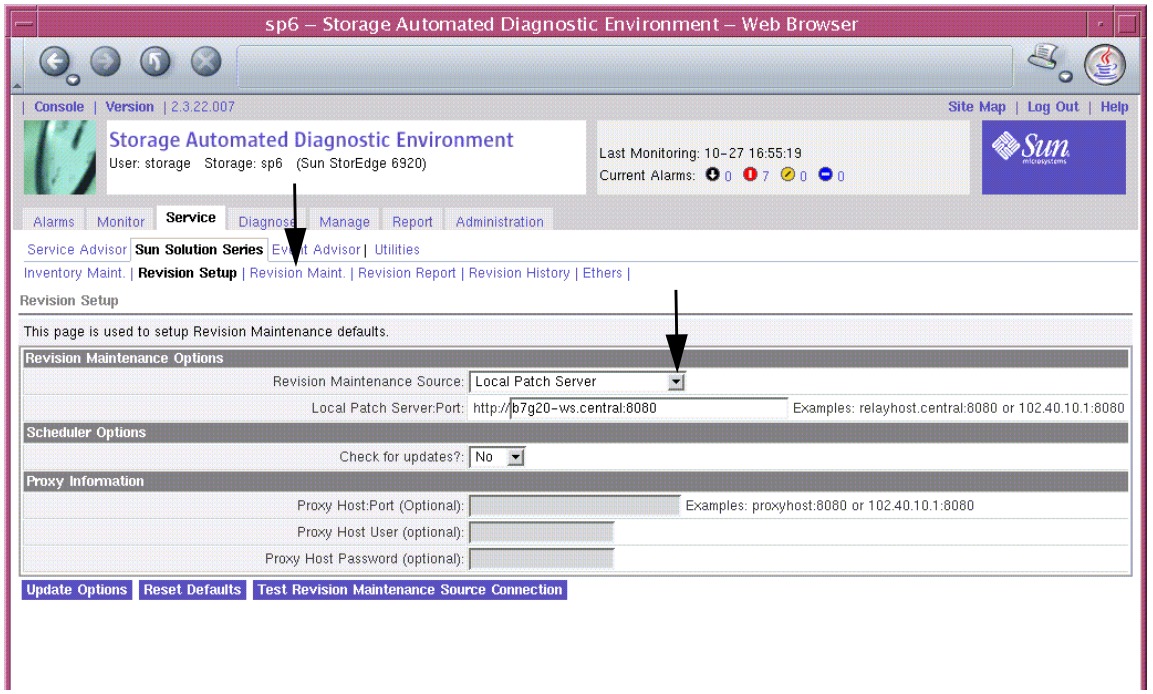
When the inventory is saved, the following menu appears.

10. **Click the Revision Setup tab.**

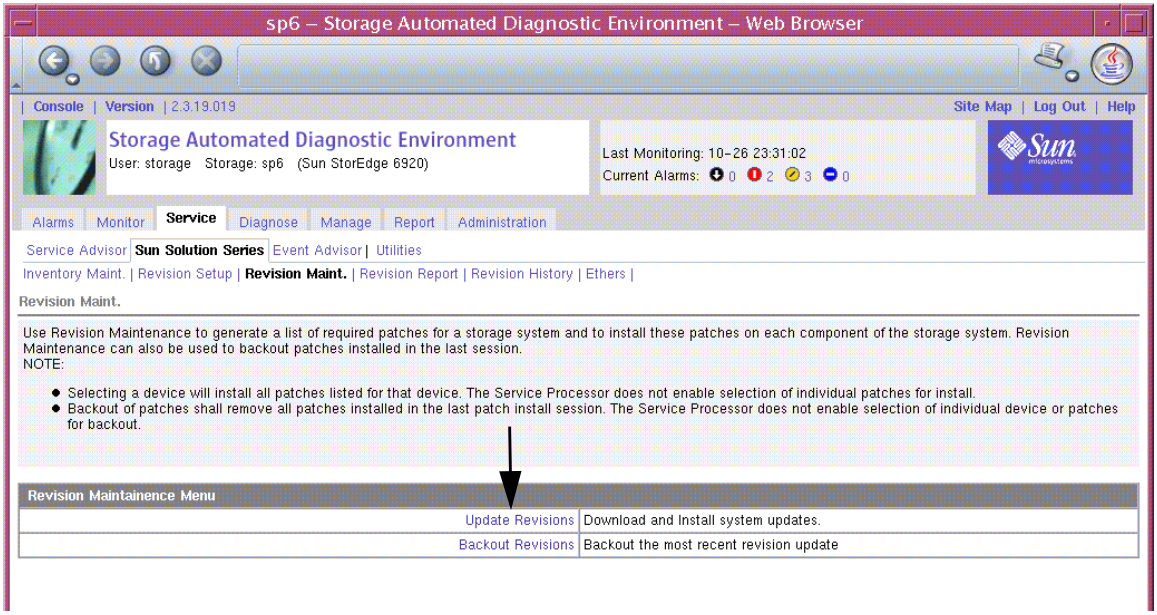


11. **Select the patch update path from the Revision Maintenance Source menu and then click the Revision Maint. tab.**

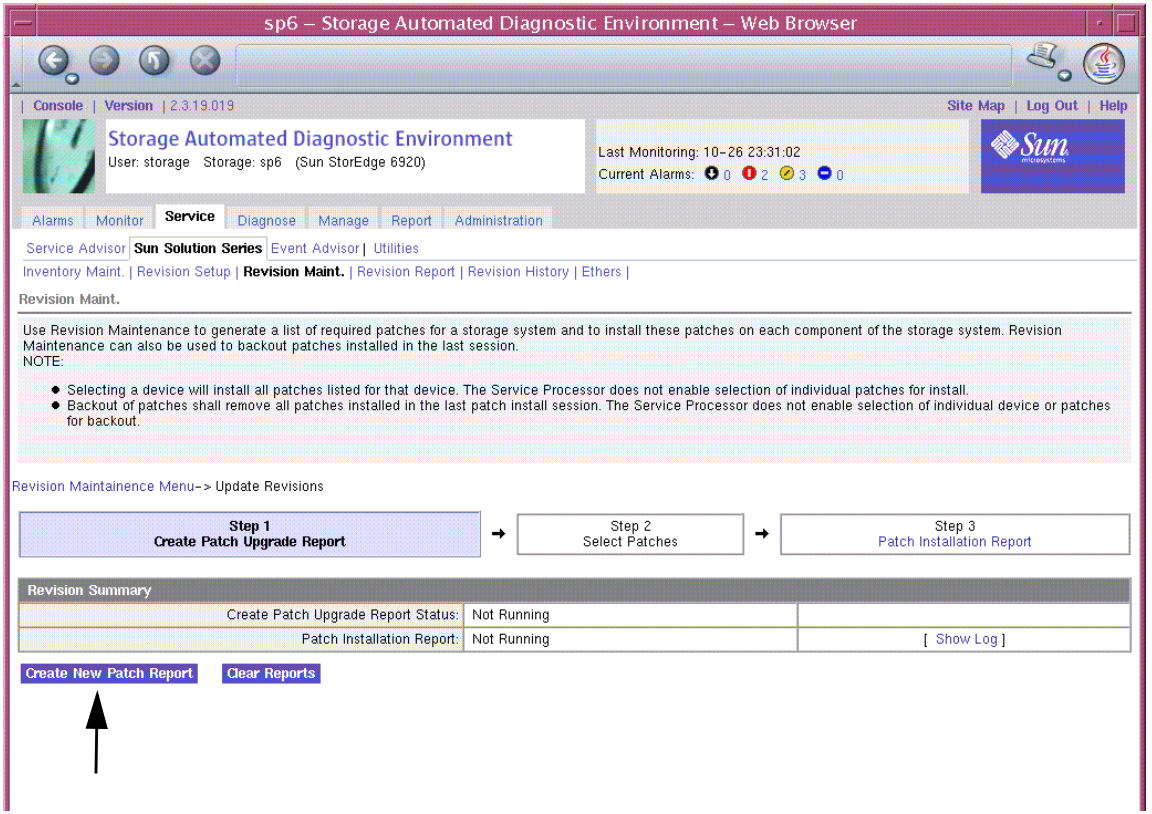
Note – The "Test Revision Maintenance Source Connection" currently works only for patch servers using port 8080. If the patch server source you are using to obtain revisions does not use port 8080, you should disregard any test connection errors generated by the "Test Revision Maintenance Source Connection." These messages are incorrect and the connection to these patch servers is not affected.



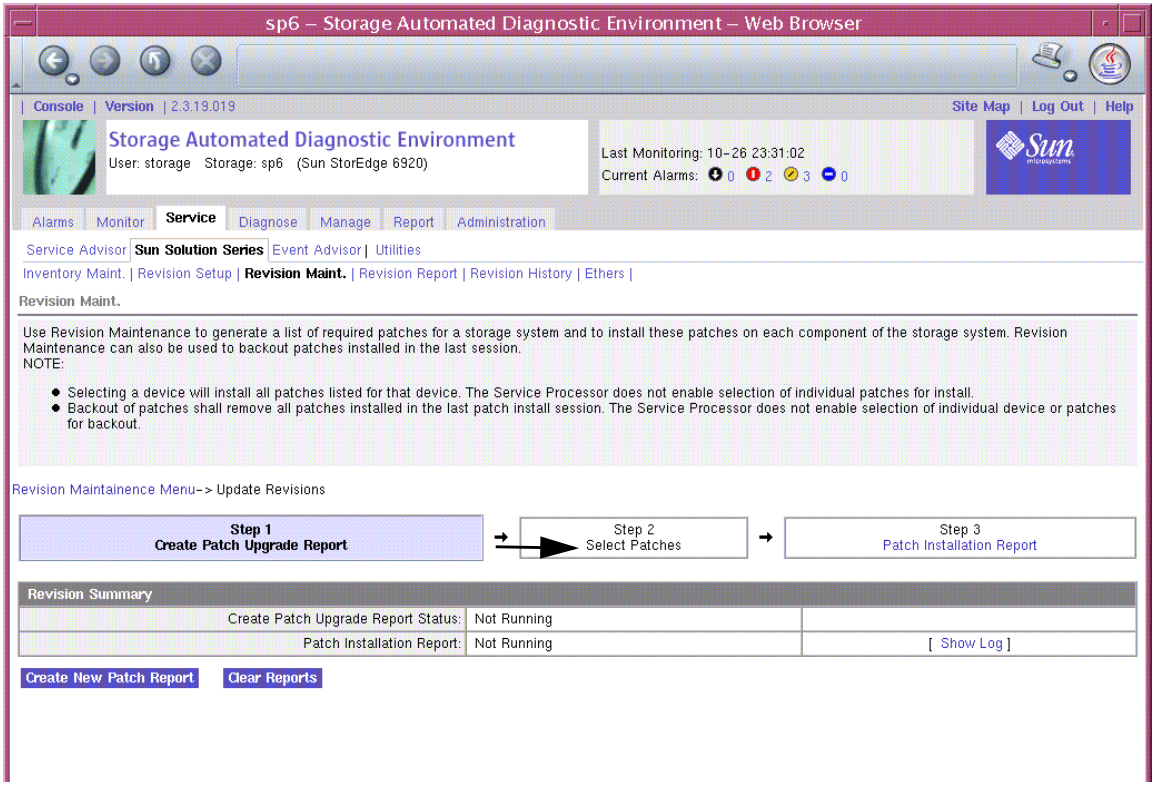
12. **Click Update Revisions.**



13. **Click Create New Patch Report.**



14. **Wait for the Create New Patch Report box to reappear, and then click Select Patches.**



15. **The system indicates the patches you need to install as shown in** FIGURE 8**. Click a box in the Select Device column and click Apply Selected.**

Note – Certain patches must be installed before others. The example in FIGURE 8 shows such a situation. In this instance you would check the box available and note that the process will have to be repeated as explained later in this procedure.

Note – The total time to install all the patches varies, but could be as long as several hours.

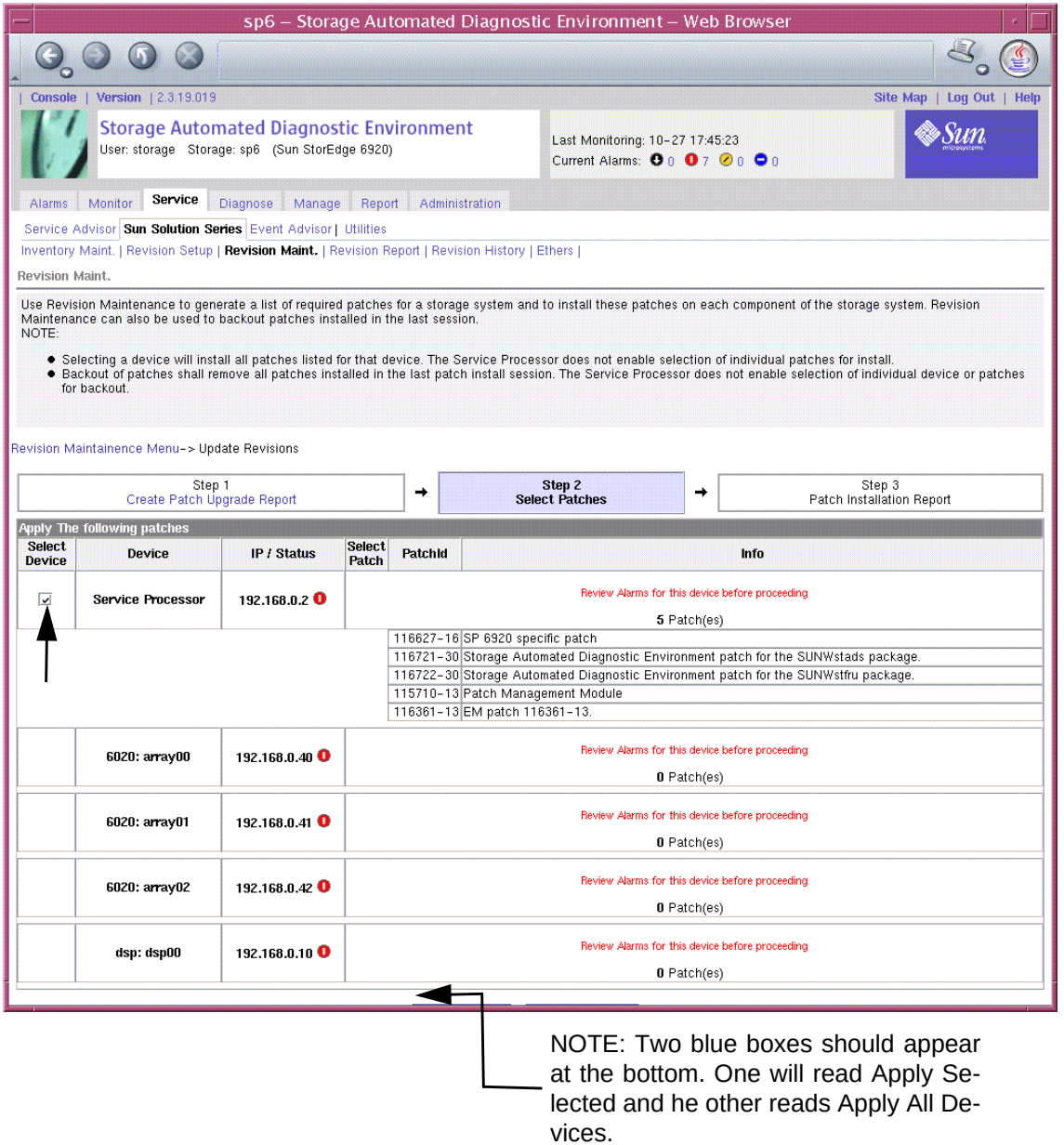
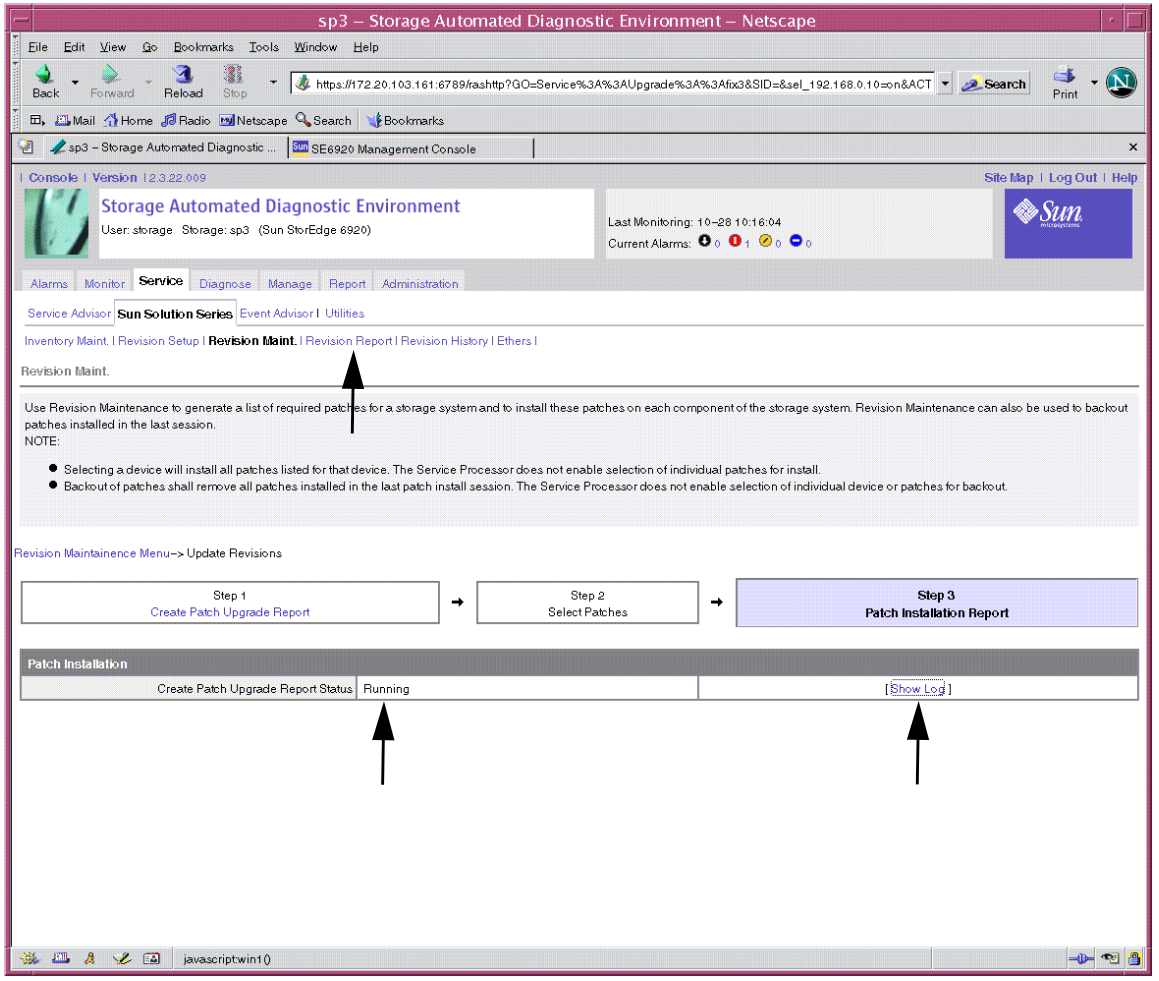


FIGURE 8 Patch Selection Screen

When you click either Apply Selected or Apply All Devices, the Create Patch Upgrade Report Status screen is displayed.



Note – If desired, click Show Log to view the dynamic upgrade process log as shown in FIGURE 9.

16. **When the Create Patch Upgrade Report Status changes from "Running" to "Done", click Revision Report.**

The Revision Maintenance Upgrade Log window is displayed as a separate window.

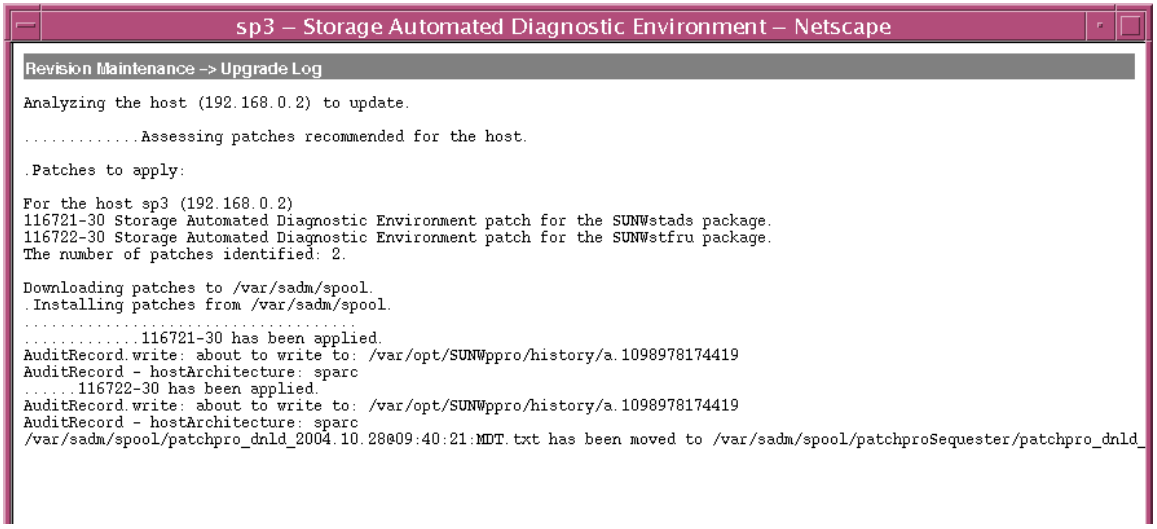
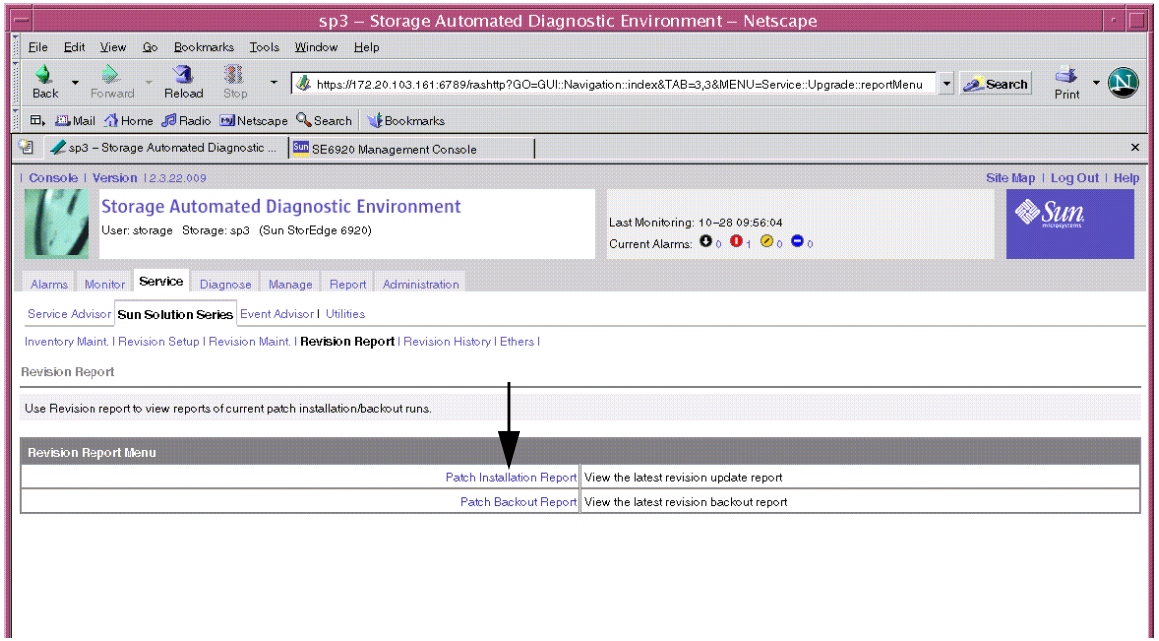


FIGURE 9 Revision Maintenance Upgrade Log

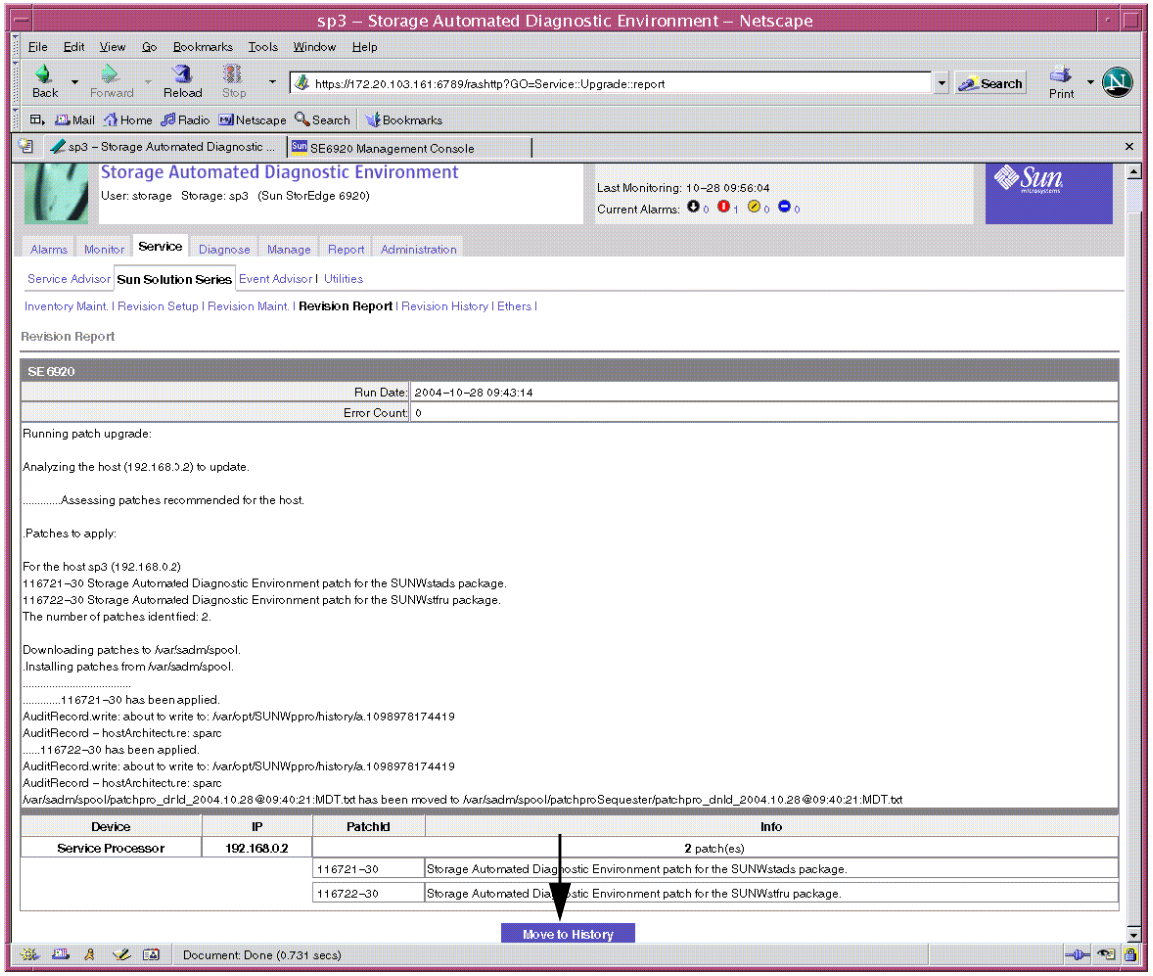
Note – You can leave this separate window open, or close it as desired.

The Patch Revision Report screen is displayed.



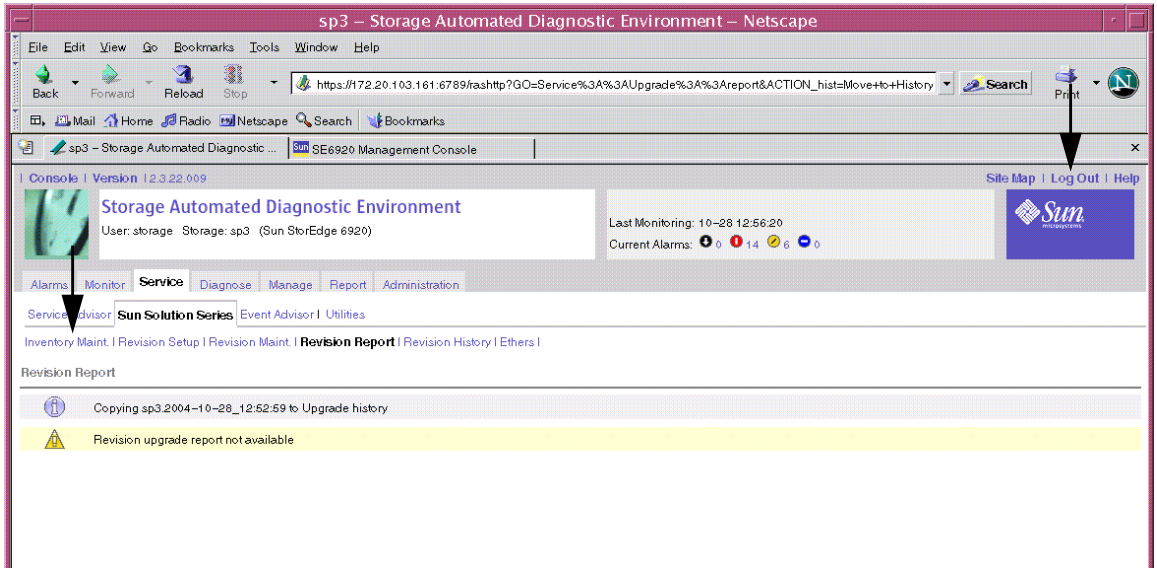
17. Click Patch Installation Report.

The Patch Installation Report screen is displayed.



18. Click Move to History.

The Patch Installation Report screen changes as shown below.



19. **Perform one of the following:**
    - If there are more patches to install, click Inventory Maint. and repeat from Step 8 until all patches have been installed.
    - If there are no more patches to install, log out of the Sun Web Console.

Installing Patches Using the Upgrade CD

The Sun StorEdge 6920 System Storage Service Processor v1.2 Upgrade CD contains patches to update the Storage Service Processor software for the Sun StorEdge 6920 system. It does not reinstall the Storage Service Processor image.

Note – Before proceeding with the upgrade, verify that the system is in a healthy state. Within Configuration Services, the top-right displays Current Alarm status. If necessary, click Current Alarms to see whether any alarms are actionable. If disk firmware patches are recommended for upgrading, quiesce I/O to all of the volumes connected to the array being updated.

There are two parts to the process of updating the software on the Storage Service Processor:

- "To Prepare to Download Software Updates" on page 42
- "To Apply the Software Updates" on page 42

▼ To Prepare to Download Software Updates

1. **Insert the CD into the CD-ROM drive of the Storage Service Processor.**
2. **Open a supported browser.**
   See "Supported Web Browsers" on page 47.
3. **Type the IP address of the system in this format:** `https://`*IP-address*`:6789`
4. **Type the user name and password.**
   Default User Name: **storage**
   Default Password: `!`**storage**
5. **Click the Log In button.**
   The system displays the Sun Web Console page.
6. **Select** `Storage Automated Diagnostic Environment` **to access the system.**
7. **Click Service → Sun Solution Series → Revision Setup.**
   The Revision Setup page is displayed.
8. **Change the Revision Maintenance Source field to** `CD`**.**
9. **Click Update Options to save the settings.**
   Continue to "To Apply the Software Updates" on page 42.

▼ To Apply the Software Updates

1. **Click Service → Sun Solution Series → Inventory Maint.**
   The Inventory Maint page is displayed.
2. **Click Generate New Inventory to update the inventory list of the system.**
3. **When the inventory is completed, click Save New Inventory to update your list.**
4. **Click Service → Sun Solution Series → Revision Maint.**
   The Revision Maint page is displayed.
5. **Click Update Revisions.**
6. **Click Create New Patch Report.**
   It might take a few minutes to report the available patches. You can monitor the status by reviewing the Create Patch Upgrade Report Status. When the patch report is complete, you will see the available software updates for system.

7. **Click Select Patches when it becomes active.**

   The system displays the available patches for storage arrays and other system components.

Caution – Before preceding with the upgrade, verify that the system is in a healthy state. Within the Sun Web Console, under Storage, click SE6920 Configuration Service. Then, if any alarms are indicated in the upper right, click Current Alarms to see whether the alarms are actionable and resolve them. Then, if any disk firmware patches are recommended for update (upgrade/downgraded), quiesce all I/O processes and unmount any file systems and all volumes before accessing the drives to be updated.

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8. **To update software for a specific device, select the device that you want to update and click Apply Selected.**

   When the update is complete, the system displays the Patch Installation Report.

9. **To save the installation report, click Move to History.**

10. **Repeat Step 2 through Step 9 until there are no more patches available.**

    Revision maintenance updates do not offer all device patches in the first Patch Report. You must repeat steps 1 through 9 until there are no more software updates available to select.

11. **When the software update is complete, click Service → Utilities → Eject CD.**

    For more information about Storage Automated Diagnostic Environment software, refer to the online help.

Data Host Software and Required Patches

Multipathing software must be installed on each data host that communicates with the Sun StorEdge 6920 system. For Solaris™ Operating System (Solaris OS) data hosts, this software is part of the Sun StorEdge SAN Foundation Software. For non-Solaris data hosts, this software is the Sun StorEdge Traffic Manager software.

If the Sun StorEdge 6920 Data Host Installation Software CD is not shipped with your system, contact your Sun sales representative.

TABLE 3 lists the source for the multipathing software as well as required operating system patches.

Note – If a data host needs multipathing software, you must install it before you install the patches.

TABLE 3 Data Host Software and Required Patches

Data Host Platform	Software (Minimum Version)	Minimum OS Patch Level	OS Patch Level Notes
Solaris 9 OS	Sun StorEdge SAN Foundation Software 4.4*	Solaris 9 113277-12	
OR		Solaris 9 113072-07	Required if you have volumes that are greater than 1 TB (available for Solaris 9 OS only)
Solaris 8 4/01 OS	Sun StorEdge SAN Foundation Software 4.4*	Solaris 8 108974-32	
Microsoft Windows 2000 Server and Advanced Server	Sun StorEdge Traffic Manager software 4.4 for Windows 2000	Microsoft Windows 2000 Service Pack, SP 4	Available from Microsoft
Microsoft Windows 2003 Web, Standard, and Enterprise Edition	Sun StorEdge Traffic Manager software 4.4 for Windows 2003	N/A	
IBM AIX 5.1 (32- and 64-bit)	Sun StorEdge Traffic Manager software 4.4 for AIX 5.1	Maintenance Level 5	Available from IBM
HP-UX 11.00 and 11.i	Sun StorEdge Traffic Manager software 4.4 for HP-UX	Patch set, September 2003	Available from Hewlett-Packard
Red Hat Enterprise Linux AS 2.1 and 3.0	Sun StorEdge Traffic Manager software 4.4 for Linux 2.1	Kernel 2.4.9-e.3	Available from Red Hat Linux
Red Hat Linux ES/WS 2.1 and 3.0	Sun StorEdge Traffic Manager software 4.4 for Linux 2.1	Version 2.4.9-e.12	Available from Red Hat Linux

* To ensure the baseline Sun StorEdge SAN Foundation Software is version 4.4, download and install the latest patches from the following web site:
`http://sunsolve.sun.com/`

Downloading the VERITAS Volume Manager ASL

VERITAS Volume Manager 3.5 and 4.0 provide support for the Sun StorEdge 6920 system in the form of Array Support Library (ASL) software packages. ASL software packages must be installed on the same data host system as the Volume Manager 3.5 or 4.0 software so that the ASL software can recognize the arrays in the Sun StorEdge 6920 system.

Download the ASL software packages and accompanying `ReadMe` file from the Sun Download Center using the following procedure.

▼ To Download the VERITAS Volume Manager ASL

1. **Log in as superuser on the Sun server you are connecting to the Sun StorEdge 6920 system.**
2. **Go to the All Products listing:**

   `http://www.sun.com/software/download/allproducts.html`
3. **Under the V heading, click VERITAS Volume Manager Array Support Library (ASL).**
4. **Click the link that is appropriate for your platform.**
5. **Click Download to go to the Sun Download Center.**

   The page identifies the product you selected as VERITAS Volume Manager Array Support Library (ASL) for your platform and language.
6. **If not previously registered, register.**
   a. **Click the Register Now link at the bottom of the left column.**
   b. **On the registration page, complete the required fields and click Register.**
7. **Log in.**
   a. **Type your user name and password in the left column, and click Login.**
   b. **On the Terms of Use page, read the license agreement, click Yes to Accept, and click Continue.**
8. **Download the compressed `TAR` file that contains the ASL package for the Sun StorEdge 6920 system and `ReadMe` file.**
9. **Use the `tar` command extract option (`tar xvf` *filename*) to retrieve the files.**
10. **Refer to the `ReadMe` file to determine how to install the VERITAS Volume Manager ASL.**

Supported Array and Drive Firmware Levels

The minimum supported array firmware revision level is 3.1.4.

If you are adding existing Sun StorEdge 6120 arrays or expansion trays to the Sun StorEdge 6920 system, you must do the following:

- Upgrade the array controller cards to firmware level 3.1.4 or later by applying patch 115179-11.
- Apply the latest released drive firmware patches to all disks in the arrays (see TABLE 4).

TABLE 4 Drive Firmware Revision Levels and Patches

Vendor	Model	Minimum Patch Level
Seagate	ST336753F (36 GB, 15k rpm)	116748-03
	ST336607F (36 GB, 10k rpm)	113671-01
	ST336752FC (36 GB, 15k rpm)	113672-01
	ST373453F (73 GB, 15k rpm)	113673-02
	ST373307F (73 GB, 10k rpm)	114708-05
	ST3146807F (146 GB, 10k rpm)	114709-05
Fujitsu	MAN3735FC (73 GB, 10k rpm)	116513-01
	MAP3735F (72 GB, 10k rpm)	116514-05
	MAP3147F (146 GB, 10k rpm)	116815-03
	MAS3367FC (36 GB, 15k rpm)	116816-01
	MAS3735FC (72 GB, 15k rpm)	116817-01
Hitachi	DK32EJ14F (146 GB, 10k rpm)	116465-01
	DK32EJ72F (72 GB, 10k rpm)	116464-01
	DK32EJ36F (36 GB, 10k rpm)	116463-01

Of those disks listed in TABLE 4, the following disks in TABLE 5 are the only ones supported by the Sun StorEdge 6920 System Maintenance Update 1.

TABLE 5 Sun StorEdge 6920 System Maintenance Update 1 Drive Firmware Revision Levels and Patches

Vendor	Model	Minimum Patch Level
Seagate	ST336752FC (36 GB, 15k rpm)	113672-01
	ST373307F (73 GB, 10k rpm)	114708-05
	ST3146807F (146 GB, 10k rpm)	114709-05

Supported Software and Hardware

The software and hardware components described in the following sections have been tested and qualified to work with the Sun StorEdge 6920 system:

- "Supported Web Browsers" on page 47
- "Additional Supported Data Host Software" on page 48
- "Supported Fibre Channel Switches and HBAs" on page 49
- "Supported Languages" on page 49

Supported Web Browsers

The Sun StorEdge 6920 system supports the web browsers listed in TABLE 6.

TABLE 6 Supported Web Browsers

Browser	Minimum Version
Netscape Navigator™	7.0
Microsoft Internet Explorer	5.0
Mozilla	1.2.1

Note – The Sun StorEdge 6920 management software requires that you enable pop-up windows in your web browser.

Additional Supported Data Host Software

The software listed in TABLE 7 is compatible for use on data hosts with data paths or network connections to the Sun StorEdge 6920 system.

TABLE 7 Supported Sun Data Host Software

Software	Minimum Version
Sun StorEdge Enterprise Storage Manager	2.1 plus Patch 117367-01
Sun StorEdge Availability Suite	3.2
Sun StorEdge Enterprise Backup Software	7.1
Solstice DiskSuite	4.2.1
Solaris Volume Manager software (embedded in the Solaris 9 Operating System)	N/A
Sun StorEdge Traffic Manager for HP-UX, IBM AIX, Microsoft Windows 2000, and Microsoft Windows 2003	4.4
Sun StorEdge Performance Suite with Sun StorEdge QFS	4.0
Sun StorEdge Utilization Suite with Sun StorEdge SAM-FS	4.0
Sun Cluster software	3.0, update 3
Storage Automated Diagnostic Environment, Device Edition	2.3 plus patch 116720-10

The third-party software listed in TABLE 8 is compatible for use on data hosts with data paths or network connections to the Sun StorEdge 6920 system.

TABLE 8 Supported Third-Party Software

Software	Version
VERITAS NetBackup Server	5.0
VERITAS NetBackup Enterprise Server	5.0
VERITAS Volume Manager with Dynamic Multipathing (DMP) for Solaris	3.5 and 4.0
VERITAS File System (VxFS) for Solaris	3.5 and 4.0
VERITAS Volume Replicator for Solaris	3.5
Legato NetWorker®	7.1

Supported Fibre Channel Switches and HBAs

The Sun StorEdge 6920 system supports all of the Fibre Channel (FC) switches and data host bus adapters (HBAs) supported by SAN Foundation Software 4.4 (and later) with one exception. The Sun StorEdge 6920 system does support Sun-branded JNI host bus adapters (HBAs) (P/N SG-(X)PCI2FC-JF2 and SG-(X)PCI21C-JF2) with SAN Foundation software version 4.2.

For a list of supported FC switches and HBAs, see the *Sun StorEdge SAN Foundation Software Release Notes*.

Supported Languages

The Sun StorEdge 6920 management software and Storage Automated Diagnostic Environment application support the languages/locales listed in TABLE 9.

TABLE 9 Supported Languages/Locales

Language	Locale
English	en
French	fr
Japanese	ja
Korean	ko
Simplified Chinese	zh
Traditional Chinese	zh_TW

Note – Man pages are available only in English and Japanese.

Note – There will be a translated version of the Maintenance Update 1 version of these Release Notes.

System Usage Limitations

TABLE 10 lists maximum values for elements of the Sun StorEdge 6920 system.

TABLE 10 Sun StorEdge 6920 System Limitations

System Attribute	Maximum
Volumes per system	1024 volumes
Virtual disks per tray	2 virtual disks
Volumes per virtual disk	32 striped volumes
Snapshots per volume	8 snapshots
Initiators* that can communicate with the system	256 initiators
Data host HBA ports that can communicate with one system port	128 data host HBA ports
Volumes that can be mapped to a single data host HBA port worldwide name (WWN)	256 volumes
Storage domains	14 storage domains (1 system defined; 13 available for user definition)
Storage pools	64 storage pools
Storage profiles	14 system-defined storage profiles; no limit for user defined profiles

* The term initiator means the "initiator instance" as seen by the Sun StorEdge 6920 system. If a data host-side HBA port sees 'N' ports, the system sees 'N' initiators. The 256-initiator limit translates to a maximum of 128 dual-path data hosts, where each data host HBA port can see one port of the system.

Network Connection Limitations

The Sun StorEdge 6920 system firewall that connects to the site (customer) local area network (LAN) supports a half-duplex 10-Mbps network connection. Configure the port settings on your network switch or hub to an "auto-negotiate" setting. If for some reason you cannot use an auto-negotiate setting, set the network switch or hub to half duplex 10 Mbps.

Fibre Channel Port Limitations

The Sun StorEdge 6920 system is configured with either two or four storage resource card (SRC) sets; each SRC set consists of one SRC and one storage I/O card. Each SRC set has four processors and eight Fibre Channel (FC) ports. One processor serves adjacent FC ports (for example, ports 1 and 2 share a processor, ports 3 and 4 share a processor, and so forth). The FC ports are shared between SAN/data host and storage array connections. These arrays are connected to the DSP and physically installed in the Sun StorEdge 6920 system.

As described in the *Sun StorEdge 6920 System Getting Started Guide* and the online help, you should evenly distribute FC ports between SAN/data host and storage array connections. For example, in a system with two SRC sets and a total of 16 FC ports, you would allocate 8 ports for SAN/data host connections and 8 ports for storage connections. In a system with four SRC sets and a total of 32 FC ports, you would allocate 16 ports for SAN/data host connections and 16 ports for storage connections.

If you cannot evenly distribute the total number of FC ports between SAN/data host and storage array connections, you must adhere to the following port allocation rules:

- Adjacent FC ports that share a processor must be used exclusively for SAN/data host connections or exclusively for storage array connections. For example, if port 1 is used for a SAN/data host connection, port 2 can be used only for a SAN/data host connection.
- If only one of the FC ports that share a processor is used for a storage array connection and the other port is unused, the unused port can be used only for a future storage connection. Similarly, if only one of the FC ports sharing a processor is used for a SAN/data host connection and the other port is unused, the unused port can be used only for a future SAN/data host connection.

These rules apply to the following system configurations:

- 16 FC ports and more than 4 arrays
- 16 FC ports and more than 8 SAN/data host connections
- 32 FC ports and more than 8 arrays
- 32 FC ports and more than 16 SAN/data host connections

Release Documentation

TABLE 11 lists the documents that are related to the Sun StorEdge 6920 system. For any document number with *nn* as a version suffix, use the most current version available.

You can search for this documentation online at:

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

TABLE 11 Sun StorEdge 6920 System Documentation

Subject	Title	Part Number
Unpacking instructions attached to the shipping container	*Unpacking Guide*	816-5230-*nn*
System license information	*Sun StorEdge 6920 System License Cards*	817-5829-*nn* 817-5225-*nn*
System planning information	*Sun StorEdge 6920 System Site Preparation Guide*	817-5224-*nn*
System regulatory and safety information	*Sun StorEdge 6920 System Regulatory and Safety Compliance Manual*	817-5230-*nn*
System installation and initial configuration information	*Sun StorEdge 6920 System Getting Started Guide*	817-5227-*nn*
Software installation from CD	*Sun StorEdge 6920 System Host Installation Software Guide*	817-5831-*nn*

System overview information, as well as information on system configuration, maintenance, and basic troubleshooting, is covered in the online help included with the software. In addition, the `sscs`(1M) man page provides information about the commands used to manage storage using the command-line interface (CLI).

Known Issues

The following sections provide information about known issues with this product release.

Accessing Disk Drives

Access all disk drives by using the configuration management software provided with your system to configure and manage individual disk arrays. If a disk drive is accessed directly, it can fail due to firmware inconsistencies and by the resulting discrepancies between the actual disk drive configuration and the configuration that the Storage Service Processor (SSP) expects.

Missing Allen Wrench

A 6-mm Allen wrench, part number 345-1424-01, might be missing from the Sun StorEdge 6920 System ship kit. If so, contact your Sun service representative.

Data Services Platform Fan Replacement

The fan in the Data Services Platform (DSP) is a field-replaceable unit (FRU). When removing the fan, observe the following caution.

Caution – The fan has unprotected blades that might still be spinning when the fan is removed. Be sure that the fan blades have stopped moving completely before removing the fan from the cabinet.

Bugs

The following sections provide information about bugs filed against this product release:

- "Configuration Management Software" on page 54
- "Command–Line Interface" on page 58
- "Storage Automated Diagnostic Environment" on page 59
- "Internationalization" on page 61
- "Other Known Issues" on page 62
- "Unclear Messages" on page 66
- "Known Documentation Issues" on page 67

If a recommended workaround is available for a bug, it follows the bug description.

Configuration Management Software

This section describes known issues and bugs related to the configuration management software graphical user interface (GUI).

High Volume Counts Might Affect GUI Performance

Bug 4977706 – The performance of the GUI might degrade as volume counts approach 1024.

Storage Pool Details Page: Delete Button Should Be Unavailable

Bug 4985377 – When an In Use storage pool is displayed on the Storage Pool Details page, the Delete button should not be active. If you attempt to delete a storage pool that is in use, the following error is displayed:

```
None of the storage pools were deleted. The following errors were
encountered:
```

poolname – `Item is in use`

Storage Profile Summary Page: Inadvertent RAID-5 Configuration

Bug 5010540 – When you change a RAID-5 level storage profile from the Storage → Profiles → Storage Profile Summary page, you can save an invalid drive configuration. For example, if you modify a RAID-5 storage profile and select two drives, the configuration is saved even though the selection is not valid. A RAID-5 storage profile requires a minimum of three drives.

Wizards: Next and Finish Buttons Fail to Indicate Progress

Bug 4936719 – When you click the Next or Finish button in some wizards, you do not always get an indication that the operation is in progress on some browsers. Clicking the Next or Finish button again will not cause any problems. Appearance of the next prompt indicates that the operation is complete.

Administration, General Settings Page: Changing IP Address Causes Browser Session to Terminate

Bug 4987947 – Changing the IP address of the Sun StorEdge 6920 system on the Administrator page causes the browser session to terminate without notification. The new IP address is saved on the Storage Service Processor. This problem does not occur when you change other network settings such as the domain name server (DNS) IP address or gateway address.

Workaround – Log in to the system again using the new IP address.

Volume Summary Page: Stripe Virtualization Strategy May Fail With Unclear Error Message

Bug 4941750 – Creating a volume using the stripe virtualization strategy might fail if the remaining space in the storage pool does not contain stripe partitions that are large enough to be a multiple of the requested volume size. For example, if the storage pool contains three virtual disks, two with 36 gigabytes remaining and one with 18 gigabytes remaining, a request to create a 90-gigabyte volume will fail, since equal-sized stripe elements cannot be allocated. In this case, the largest volume size that can be requested is 72 gigabytes.

Workaround – If you receive the following error when creating a volume using striping, either request a smaller volume size or use the maximum capacity option:

```
The volume size specified is too large for the devices specified
```

Identical Storage Pool Names Not Displayed Across Storage Domains

Bug 4993083 – If the same storage pool name is used in more than one storage domain, the GUI does not display the names accurately.

Workaround – When creating storage pools, assign names that are unique across the whole system.

Configuration and Diagnostic Operations Cannot Run Simultaneously

Bug 4953295 – You cannot run diagnostic and configuration operations from the GUI or CLI simultaneously. For example, you cannot replace a hardware field-replaceable unit (FRU) using the Storage Automated Diagnostic Environment interface while performing a configuration operation using the Sun StorEdge 6920 Configuration Service application.

Workaround – Allow all configuration operations invoked from the Sun StorEdge 6920 Configuration Service application or CLI to finish before using the Storage Automated Diagnostic Environment application. Allow all upgrade or maintenance operations invoked in the Storage Automated Diagnostic Environment application to finish before using the Sun StorEdge 6920 Configuration Service application or CLI.

Network Domain Name Cannot Be Changed in GUI

Bug 5046043 – The Sun StorEdge 6920 Configuration Service application does not allow you to change the name of the network domain.

Workaround – Use the command-line interface (CLI) `sscs` command to change the network domain name. For example, the following command changes the network domain name to NEWNAME:

```
sscs modify -D NEWNAME net
```

Whenever you change the network parameters, you must log back in to the system.

Current Alarms Window Does Not Have Scroll Bars

Bug 5051403 – The Current Alarms link on the Configuration Services user interface page opens the current alarms list in a new window. The window, however, might not permit you to scroll through entries that are not showing.

Workaround – Access the Current Alarms list from the Storage Automated Diagnostic Environment application. This allows you to scroll through the list of current alarms properly.

Add Storage To Pool Wizard: Displays Invalid Trays

Bug 5049258 – The Add Storage To Pool wizard can erroneously display invalid trays for selection when you attempt to add storage to a pool.

Workaround – After you add storage to a pool, wait at least one minute before attempting to add more storage to a pool (including the same storage pool).

If the Add Storage To Pool wizard shows a list of trays that contains two entries for each tray, cancel the operation and wait another minute. This should clear the invalid trays from the display.

Selecting Multiple Objects Enables Buttons Allowing Selection of Invalid Operations

Bug 4931792 – When you select multiple objects on certain pages, the software incorrectly enables some buttons that allow you to select invalid operations. However, if you select a button that is incorrectly enabled (for example, if you try to take a snapshot of unmapped volumes) an error message indicates that the operation is not valid.

New Profile Wizard: Chunk Size Available for Concatenated Volumes

Bug 4939795 – In the New Profile wizard, the chunk size field is available for use with concatenated volumes.

Workaround – You can only specify chunk size when using the striping virtualization strategy.

Changing Passwords Works Intermittently

Bug 5061119 – If you type a password into the New Password and Password Confirmation fields, then click Set Password, the change might not occur, in spite of the following message:

```
The password has been successfully changed.
```

If this happens, and you type the user name and “old” password, the login is accepted.

Workaround – If the password update was not accepted initially, change the password again.

Virtual Disks Are Not Re-Initialized When Re-Assigned To a New Storage Pool

Bug 5069434 – The system software does not prevent you from adding a virtual disk created for one storage pool to another storage pool that has a different storage profile. Because the original attributes of a virtual disk cannot be changed, the result is a virtual disk residing in a storage pool with attributes that do not match the attributes of the storage pool.

Workaround – Although you cannot re-assign a virtual disk from one storage pool to another pool with a different storage profile, you can delete the virtual disk and create a new one. First delete the volumes, and then delete the virtual disk. Create a new virtual disk in the storage pool with the desired storage profile.

Command-Line Interface

This section describes known issues and bugs in the command-line interface (CLI).

`update_rss_console` *Command: Model Number Has Format Restrictions*

Bug 4943441 – When you type a model number in `update_rss_console`, the model number must begin with upper case letters "SE", contain no spaces, and be followed by a specific model number. For example, "SE6920" is a valid model number format.

`sscs` *Command: Import/Export Subcommands Are Not Supported*

Bug 4987209 – The `sscs import` and `export` subcommands are not available in this release. The man page incorrectly includes `import` and `export` as valid subcommands.

`boot -r` *Solaris Command:* `mp_support` *Parameter Incorrectly Changed*

Bug 4987017 – When you reboot using the `boot -r` Solaris command, the `mp_support` parameter is incorrectly changed in the NVRAM area of the array.

Workaround – After the reboot, you can set the failover mode to `mp_support=mpxio` using the following command:

```
sscs modify -f explicit array array-name
```

Storage Automated Diagnostic Environment

This section describes known issues and bugs related to the Storage Automated Diagnostic Environment application.

Firmware Update: Array LEDs May Display Incorrectly After Update

Bug 5045368 – After you perform an array firmware update, the LEDs on the array loop card and enclosure might be amber.

Workaround – Check for errors in the `syslog` file and run the `fru stat` command. If no errors are reported, you can ignore the amber LEDs. In this case, the amber LEDs indicates a sudden burst of interrupts. The LEDs will light green after a reboot.

Firmware Update: Firmware Levels Are Not Restored if Firmware Upgrade Fails

Bug 5015297 – If a failure occurs during a firmware upgrade, the firmware levels are not restored to the versions that existed before the upgrade.

Workaround – Go to Service → Service Advisor → Inventory Maint. and generate a new inventory, fix any reported problems, save the inventory, and then re-run Revision Maintenance. If the problem persists, call Sun Customer Service. Refer to "To Apply the Software Updates" on page 42 for the full procedure.

Timestamp in Logs Is Incorrect

Bug 4985811 – The timestamp in the `/var/adm/messages.`*array* log does not currently match the timestamp in the local `syslog` file for the Storage Service Processor.

Local Notification Information Page: Do Not Select All or Informational

Bug 4995950 – When setting up remote email notification on the Administration → Notification → Local Email → Local Notification Information page of the Storage Automated Diagnostic Environment application, do not select All or Informational. These selections will cause notification to be sent for all events, including those that do not indicate a fault.

Workaround – Select only Warning, Error, and Down when setting up fault notification.

Replacing Standby Switch Fabric Card Causes Actionable Event

Bug 4951253 – When you replace a standby switch fabric card (SFC), an actionable event could occur, even though the card correctly returns to standby mode when the reload is complete.

Service Advisor New Array Configuration Procedure Is Incorrect

Bug 5050631 – A step is missing from the "Configure new arrays" procedure under Service → Service Advisor → X-Options → Adding Storage Arrays. An error will occur if you do not release the reservation before you perform step 6. c) "Select and apply any patches as required."

Workaround – Release the reservation of the cabinet before you select and apply patches for the new array.

Installation of Network Terminal Concentrator (NTC) Patch Renders NTC Inaccessible

Bugs 5061336 – After you install an upgrade patch to the NTC, the NTC might become inaccessible.

Workaround – Reboot the NTC by removing and reapplying power. To reboot the NTC, remove the power connection at the back of the Service Processor accessory tray for 10 seconds, then reattach the power connection.

Internationalization

This section describes known issues and bugs related to internationalization and language translation.

Job Descriptions Are Not Displayed Correctly

Bug 5028558 – For jobs that are created in French, Japanese, Korean, Simplified Chinese, and Traditional Chinese, the job descriptions cannot be displayed correctly in a different language environment. This applies to all jobs except the Creating Vdisk job.

Labels on Test from Topology Pages Are Not Translated

Bug 4853278 – Some labels on the Storage Automated Diagnostic Environment (System Edition) Test From Topology pages are not translated and appear in English.

Device Performance Items Are Not Translated

Bug 4991042 – Some labels on the Storage Automated Diagnostic Environment (System Edition) Device Performance page are not translated and appear in English.

Microsoft Internet Explorer Browser Displays Garbled Characters for Traditional Chinese Locale

Bug 5056025 – When using the Sun Storage Automated Diagnostic Environment, the display of Traditional Chinese characters is garbled in the Internet Explorer browser. This is because the Traditional Chinese version of the Internet Explorer browser in the Windows environment does not support EUC-TW encoding.

Workaround – Use the Traditional Chinese version of Mozilla (version 1.7) or Netscape (version 7.1) in the Windows environment.

Storage Automatic Diagnostic Environment Online Help Does Not Display on Korean or Traditional Chinese GUI

Bug 5009584 – In the Korean and Traditional Chinese versions of Netscape 7 or Mozilla browser, if the "Default Character Encoding" setting is wrong or not selected, the Storage Automatic Diagnostic Environment online help cannot be displayed.

Workaround – Change the browser settings as follows:

1. From the localized version of Netscape 7 or Mozilla browser, go to Edit → Preferences → Navigator → Languages.
2. Click "Default Character Encoding" and select EUC-KR for Korean or EUC-TW for Traditional Chinese.
3. In the "Language in Order of Preference" field, select [ko] for Korean, or [zh_tw] for Traditional Chinese.
4. Click OK to save the settings.

Other Known Issues

This section describes other known issues and bugs found in the system.

Patch Update Process Fails: DSP Patch 115708-26

Bug 5016298 – When using the Revision Maintenance feature of the Sun Storage Automated Diagnostic Environment application, an intermittent problem can occur when attempting to install the DSP patch 115708-26. The attempt fails and is accompanied by the "Upgrade phase 1 failed" SNMP trap error message.

Workaround – Submit a request to install this patch again using the Revision Maintenance feature of the Sun Storage Automated Diagnostic Environment application.

Patch Upgrade Issue

A resource issue has been identified during a full system upgrade that causes intermittent upgrade failures.

Workaround – A second installation of a revision maintenance patch will resolve these failures. This problem is addressed for the current release in the procedures detailed in "Installing Patches Using the Sun Web Console" on page 22, and "Installing Patches Using the Upgrade CD" on page 41. Following these procedures will ensure that you apply an upgrade patch to only one component at a time and re-start the revision maintenance for each patch of each component.

Array Upgrade Issue

An intermittent problem can occur with PatchPro timing out during an array firmware upgrade. This does not affect the data-path operation, but the upgrade log will indicate that the patch installation failed. Currently this issue has only been observed on large capacity systems with numerous arrays.

Workaround – Re-run the revision maintenance process for the array(s) that failed patch install.

Patch Update Process Fails: Sun StorEdge 6120 array firmware

Bug 6186096 – When using the Revision Maintenance feature of the Sun Storage Automated Diagnostic Environment application to install a patch for the Sun StorEdge 6120 array firmware, you might not receive a prompt to supply the directory that the `.netrc` file will be created in. The following message is associated with this error:

```
Uploading firmware to 6120.
       ..................
       6120 controller firmware update halted:
       Firmware image uploading failed.
```

Workaround – Use the Revision Maintenance feature of the Sun Storage Automated Diagnostic Environment application to update the Sun StorEdge 6120 array firmware.

Patch Update Process Fails: Sun Storage Automated Diagnostic Environment

Bug 5016298 – When one or more patches fail to install by using the Revision Maintenance feature of the Sun Storage Automated Diagnostic Environment application, the patch installation report might be inaccurate. It might not display all the patches that had failed. It might report only the last patch that had failed and, the error count for the number of patches that had failed might be incorrect.

Workaround – None. This problem will be resolved in the next Sun StorEdge 6920 System Maintenance Update release.

Patch Update Process Fails: Sun StorEdge 6120 Array Interconnect Cards

Bug 5104394 – When using the Revision Maintenance feature of the Sun Storage Automated Diagnostic Environment application, an array firmware upgrade can fail when updating an array interconnect (*loop*) card of a Sun StorEdge 6120 array in a 2x6 configuration. The Telnet session reserved to update the loop cards ends prematurely and results in some loop cards not being updated.

Workaround – Use the Revision Maintenance feature of the Sun Storage Automated Diagnostic Environment application again to update those remaining loop cards that have not been updated.

Patch Update Process Fails: Maintenance Update 1 Patch

Bug 6182802 – When using the Revision Maintenance feature of the Sun Storage Automated Diagnostic Environment application to install the Maintenance Update 1 patch in the DSP-1000 or a storage array of the Sun StorEdge 6920 System, the process can stop with the error message shown below. This problem might also prevent other updates to the components.

```
/var/sadm/spool/patch-id/pkginfo (No such file or directory)
```

Workaround – Use the Revision Maintenance feature of the Sun Storage Automated Diagnostic Environment application again to update the Sun StorEdge 6920 System components.

Enterprise Storage Manager Software: Incorrectly Recognizes Virtual Disks

Bug 4976822 – Sun StorEdge Enterprise Storage Manager software incorrectly recognizes individual virtual disks in Sun StorEdge 6920 storage pools.

Workaround – Use the Sun StorEdge™ 6920 Configuration Service application to obtain correct information about storage pools and virtual disks.

Booting/Rebooting: Errors Occur During Boot for Direct-Attached Storage Data Hosts

Bug 4969489 – When direct-attached storage data hosts are connected to the Sun StorEdge 6920 system and devices are connected in auto-topology mode, a panic might occur during initial booting.

Workaround – Edit the `jfca.conf` file in `/kernel/drv` using the following values:

```
Loop FcLoopEnabled = 1;
FcFabricEnabled = 0;
Fabric FcLoopEnabled = 0;
FcFabricEnabled = 1;
```

Booting/Rebooting: Booting May Take Several Minutes

Bug 4962951 – During system initialization, wait several minutes until the system is fully reinitialized.

Booting/Rebooting: Windows Host with Emulex HBA Does Not Scan for LUNs After DSP Reboot

Bug 4910795 – If there is an Emulex data host bus adapter (HBA) in the configuration, and the system fails over, the HBA does not automatically scan for LUNs.

Workaround – Rescan for LUNs from the Windows data host.

Metadata May Remain on Previously Configured Volumes

Bug 5015342 – When you create a data host-visible volume on a virtual disk that previously contained files created by another data host operating system, some file system metadata remains on the volume. The metadata is recognized by `fsck` or another data host-based utility because the Data Services Platform (DSP) does not reinitialize a volume before the volume is created.

Workaround – You can resolve this problem in one of the following ways:

- Before deleting a data host-visible volume that has file system metadata, use a data host-based utility to reinitialize the volume, removing any metadata that might be seen by other operating systems.
- After creating a data host-visible volume, immediately initialize it using a data host-based utility before using any other utility that might recognize old metadata.

Unclear Messages

The following messages were reported as incorrect or unclear.

Bug 5008902 – When you unmap more than one volume from the Initiator Details page, the operation completes successfully. However, a message similar to the following is erroneously displayed:

```
Error  None of the volume mappings were unmapped The following errors
were encountered:
4800_pc4-> vol51 - vol51
4800_pc4-> vol52 - vol52
```

Bug 4985618 – When an actionable Sun StorEdge Remote Response event occurs, the event message might be truncated. For example, when you remove a PCMCIA flash card from the alternate master management interface card (MIC), the following message is displayed:

```
slave does not have a
```

The event message should be displayed as follows:

```
slave does not have a pc card
```

Bug 5026946 – If you attempt to map a volume with an initiator that is located in a different storage domain, the following message is displayed:

```
Volume creation succeeded. The following errors were encountered:
volume-> servername - The initiator and volume are not in the same
Storage Domain
```

The message should indicate that the mapping failed and the volume was not created. For a volume to be mapped to an initiator, both must be located in the same storage domain.

Known Documentation Issues

The following topics describe known issues in areas of the documentation:

- "sscs CLI Man Page Corrections" on page 67
- "Getting Started Guide Corrections" on page 69
- "Online Help Issues and Corrections" on page 70

`sscs` CLI Man Page Corrections

This section describes corrections for the `sscs` man page.

CLI Man Page to Cancel a Job is Incorrect

Bug 5041614 – The man page incorrectly specifies that the `-c` option in the command `Modify Jobs` cancels the job. The correct option to cancel a job is a `-k` (or `--kill`).

Workaround – Use the `-k` option, as follows:

`modify -k` *job-id* `jobs`

CLI Man Page List Firewall Service is Incorrect

Bug 5040994 – The man page for the command `List Firewall Service` incorrectly uses a dash rather than an underscore, as follows:

```
list firewall-service service
```

Workaround – The man page should use an underscore instead, as follows:

```
list firewall_service [string[,string...]]
```

Updating Your Shell Environment to Display Japanese Man Pages

The `sscs` man page in the data host software is available in English and Japanese. (The Japanese man page supports the `ja` locale only.) To use the `man` command to display the man pages in Japanese, you must use the `ja` locale environment and update your `MANPATH` variable with one of the following procedures:

- To update the `MANPATH` variable using the Bourne or Korn shell:

1. Use an editor to update your `.profile` file `MANPATH` statement to include `/opt/se6x20/cli/man` and export your `MANPATH`:

   ```
   MANPATH="$MANPATH:/opt/se6x20/cli/man"
   export MANPATH
   ```

2. Save the file and exit the editor.

3. Reload your `.profile` file for your shell session:

   ```
   # . ./.profile
   ```

- To update the `MANPATH` statement using the C shell:

1. Use an editor to add `/opt/se6x20/cli/man` to the `MANPATH` statement in your `.login` file:

   ```
   setenv MANPATH "$MANPATH:/opt/se6x20/cli/man"
   ```

2. Save the file and exit the editor.

3. Reload your `.profile` file for your shell session:

   ```
   # source .login
   ```

Getting Started Guide Corrections

In the section "Selecting Ports for Additional Storage Connections" of the *Sun StorEdge 6920 System Getting Started Guide*, on page 34 the note incorrectly states that you cannot use ports in column 8 for storage connections. The note should state that you cannot use ports in column 1 for storage.

Several pages of the *Sun StorEdge 6920 System Getting Started Guide* depict and refer to the old version of the 6920 Service Processor Panel.

- FIGURE 1-1 Sun StorEdge 6920 System Base Cabinet Front and Back Views on page 2
- FIGURE 2-7 Base Cabinet Service Panel on page 19
- FIGURE 2-8 Expansion Cabinet Service Panel on page 20
- FIGURE 2-9 FC Cabling Between the Base Cabinet and an Expansion Cabinet on page 20
- FIGURE 2-10 Ethernet Cabling Between the Base Cabinet and an Expansion Cabinet on page 21
- FIGURE 2-18 Connecting Hosts to a SAN on page 32
- FIGURE 2-19 Connecting Hosts Directly on page 33
- FIGURE B-3 Service Panel Power Sequencer Jacks on page 83

For details on the new Service Processor Panel version, see "New Service Processor Panel" on page 3 of these release notes.

Selecting Ports for Additional Storage Connections

The single note under this section should indicate "column 1" and should read:

Note – You cannot use ports in column 1 for storage connections.

Storage Array Configurations

Under this section, the second heading of Table 1-2 should read "Controllers x Trays" instead of "Trays x Controllers".

USB in Drive Installation Drawing

The USB in Drive Installation drawing (Figure 2-17) under the topic Installing the USB Flash Disk of the *Sun StorEdge 6920 System, Getting Started Guide, Installing and Configuring the System*, is incorrect. Use the upper USB port, rather than the lower one, as it is indicated incorrectly in the illustration.

Service Panel Label Is Incorrectly Cited in the Getting Started Guide

The *Sun StorEdge 6920 System Getting Started Guide, Installing and Configuring the System,* incorrectly cites a port called Service Console on page 38. There is no Service Console port. The two ports for serial connections are Service Serial and Serial Console.

Preparing the System for Remote Power

If you are setting up the system to enable remote power management, you must connect the power sequencer serial cables between the base cabinet 0 and one or both expansion cabinets. This is described in the *Sun StorEdge 6920 System Getting Started Guide*, Appendix B, Step 8. Substitute this step for "Connecting the Ethernet and Power Sequencer Cables" on page 8 of these Release Notes.

Online Help Issues and Corrections

The following topics describe known issues in areas of the online help.

- Localized Versions Display Online Help in English
- New Service Processor Panel

New Service Processor Panel

The following sections of the online Help refer to the early version of the 6920 Service Processor Panel:

- About the System's Cabinet
- About the Service Processor Panel
- About Allocating Ports

For details on the later Service Processor Panel version, see "New Service Processor Panel" on page 3 of these release notes.

Revised Online Help Sections

The following sections of the online Help have been revised.

- About Lights-Out Management
- Powering the System On and Off
- Performing a Partial Shutdown
- Performing a Full Shutdown
- Restoring the System After a Full Shutdown

About Lights-Out Management

Lights-out management, also called remote power management, enables you to use a remote console to power off and power on the system. The system has the lights-out management feature disabled by default so that the system's key switch controls power to the system components and the arrays. When you enable the lights-out management feature, the power to these components is controlled by the power relay's sequencers.

For instructions on enabling and disabling the lights-out management feature, use the following procedure:

1. Go to the Sun Web Console page and click Storage Automated Diagnostic Environment.
2. Click Service → Service Advisor → X-Options.

Powering the System On and Off

By default, powering off the system results in a full shutdown. If the power relay is enabled, you have the option of performing a partial shutdown.

- In a partial shutdown, the system shuts down the storage devices and continues to run, enabling you to restart the system from a remote console. Because the Data Services Platform (DSP) is connected to switch outlets of the power sequencer, the system can restore power to it. Then the management interface card (MIC) powers on the other cards in the DSP.
- In a full shutdown, the system shuts down the storage devices, then gradually shuts down itself. You must restart the system manually.

You must be logged in as the `admin` user to power off the system. Before you power off the system, you must halt any I/O between the data hosts and the system.

Caution – Failure to stop I/O before powering off can cause data loss.

Performing a Partial Shutdown

When you perform a partial shutdown, the system is in the following state:

- The Storage Service Processor in the base cabinet remains powered on.
- The Storage Service Processor accessory tray remains powered on.
- All storage arrays are powered off.
- The Data Services Platform (DSP) is powered off.
- Only the Power Available LED on the power sequencers is lit.

To perform a partial shutdown of the system:

1. Log in as `admin`.
2. On the Sun Web Console page, click Sun StorEdge 6920 Configuration Service.
3. Click Administration → General Settings.
4. Click the System Partial Shutdown button.
5. Click OK to confirm you want to perform a partial shutdown.

   The following message is displayed on the General Settings page:

   ```
   Partial system shutdown completed successfully
   ```

To restore the system, use the following procedure:

1. Log in as `admin`.
2. On the Sun Web Console page, click Sun StorEdge 6920 Configuration Service.
3. Click Administration → General Settings.
4. Click the System Power Up button.

The power sequencers in the base cabinet and any expansion cabinets are activated and restore power to the components.

Performing a Full Shutdown

To turn the system's power off completely:

1. Log in as `admin`.
2. On the Sun Web Console page, click Sun StorEdge 6920 Configuration Service.
3. Click Administration → General Settings.
4. Click System Shutdown.

5. Click OK to confirm you want to perform a complete shutdown.

The system is now in the following state:

- The Storage Service Processor in the base cabinet is powered off and under the control of lights-out management.
- The Storage Service Processor accessory tray remains powered on.
- The Data Services Platform (DSP) remains powered on.
- All storage trays remain powered on.
- The power and cooling unit (PCU) fans are on.
- The PCU Remove LEDs are lit.
- All Power LEDs on the power sequencers are lit.

You must perform the following manual procedure on the system to complete the shutdown:

1. Remove the front trim panel from the base cabinet and any expansion cabinets.
2. At the bottom front and bottom back of each cabinet, raise the AC power sequencer circuit breakers to Off.

   The system is now in the following state:

- The Storage Service Processor accessory tray is powered off.
- The Data Services Platform (DSP) is powered off.
- All storage trays are powered off.
- The PCU fans are off.

If you are servicing the power sequencers or moving the system, disconnect the power cables. Otherwise, leave the power cables connected to ensure a proper grounding path for electrostatic discharge.

Restoring the System After a Full Shutdown

If you want to restore the system after it has been powered off with the full shutdown procedure, you must go to the location of the system and perform the following procedure:

1. Open the front door and back door of the base cabinet and any expansion cabinets.
2. Remove the front trim panel from each cabinet.
3. Verify that the AC power cables are connected to the correct AC outlets.
4. At the bottom front and bottom back of each cabinet, lower the AC power sequencer circuit breakers to On.

The power status LEDs on both the front and back panel illuminate in the following order, showing the status of the front power sequencer:

- Main AC power LED (this lights when the power is applied to the cabinet)
- Sequencer Stage 1
- Sequencer Stage 2

5. At the back of the system, locate the power switch for the Storage Service Processor and press the power switch on.
6. Verify that all components have only green LEDs lit.
7. Replace the front trim panels and close all doors.

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

Service Contact Information

Contact Sun Customer Service if you need additional information about the Sun StorEdge 6920 system or any other Sun products:

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