Sun StorEdge™ 6320 System 1.1 Release Notes

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Sun StorEdge 6320 System 1.1 Release Notes

The Sun StorEdge™ 6320 systems are complete, preconfigured storage solutions.

The headings include:

- "Features in this Release" on page 1
- "Product Changes" on page 3
- "System Requirements" on page 8
- "Known Issues and Bugs" on page 13
- "Release Documentation" on page 29
- "Service Contact Information" on page 31

Features in this Release

Following are the new features in this release:

- "Storage Profiles" on page 2
- "Access Matrix" on page 2
- "Administrative Information" on page 2
- "Initialize Pool Functionality" on page 2
- "Volume Group Parameters" on page 2

Storage Profiles

Configuration Service adds the following functionality to the storage profiles:

- Ten new profile templates.
- Additional profile details such as RAID settings, read-ahead, and segment size.
- Specific array types to use in the profile.
- All profiles that match the array appear in the Change Profile wizard.

Access Matrix

Configuration Service adds an Array Access Management page that lists the read and write permissions for each initiator, initiator group, volume, and volume group.

Administrative Information

Configuration Service adds additional administrative information, including the system's model and vendor.

Initialize Pool Functionality

Configuration Service's online help and the CLI command **modify pool** can now initialize a pool that is offline.

Volume Group Parameters

Configuration Service's online help and the man pages have been updated to show that a volume can only be a member of one volume group.

Product Changes

The following updates have been added to this product that were not included in the product documentation:

- "Array Configuration Changes" on page 3
- "Thin-Scripting Client" on page 6

Array Configuration Changes

Sun StorEdge Configuration Service software supports adding and removing expansion units (that is, trays that do not contain controller cards) on existing array configurations using graphical-user-interface (GUI) wizards. This software supports the following array configuration changes:

- Adding expansion units to an existing array 2x2 or 2x4 HA configuration.
- Removing expansion units from an existing array 2x4 or 2x6 HA configuration.

Figure 1 illustrates the HA configurations and the corresponding tray number in the Sun StorEdge Configuration Service software.

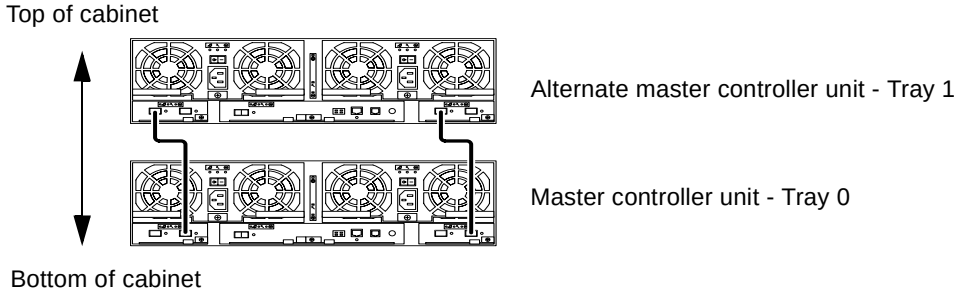

FIGURE 1 2x2 HA Configuration and Corresponding Tray Numbers

FIGURE 2 illustrates a Sun StorEdge 6120 array 2x4 HA Configuration and Corresponding tray numbers.

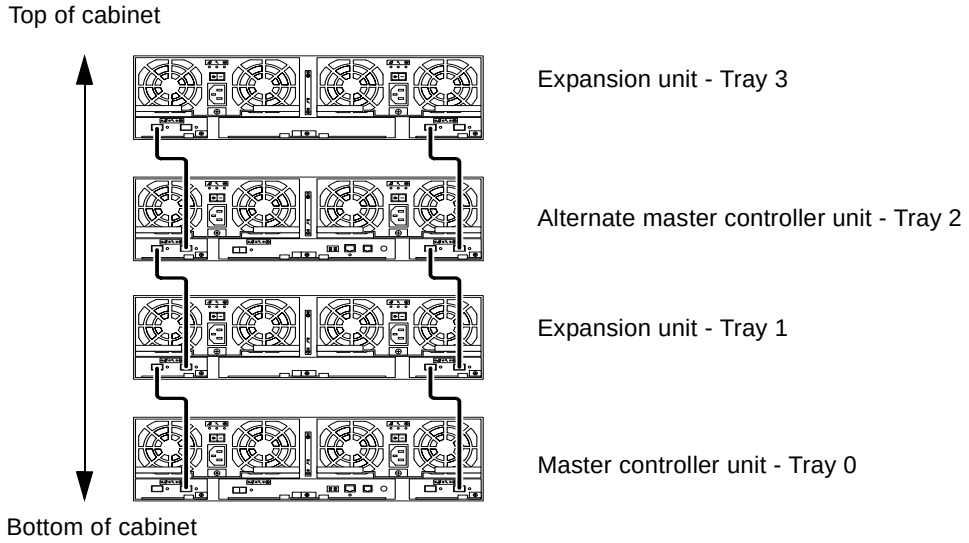

FIGURE 2 2x4 HA Configuration and Corresponding Tray Numbers

FIGURE 3 illustrates a Sun StorEdge 6120 array 2x6 HA Configuration and Corresponding Tray Numbers.

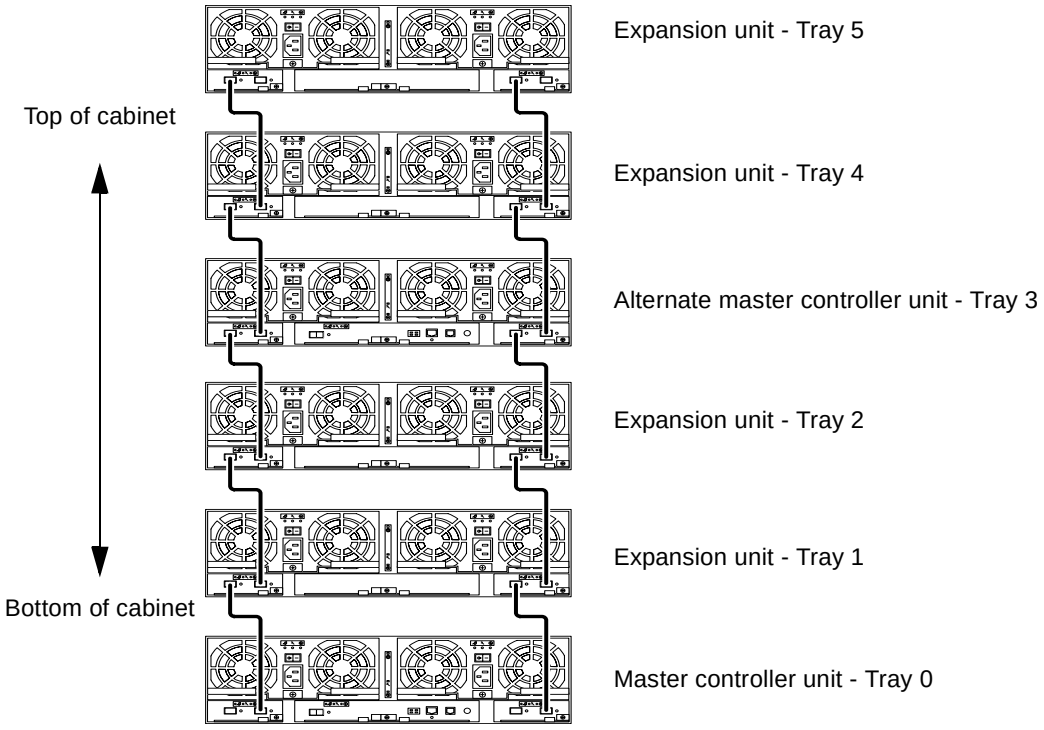

FIGURE 3 2x6 HA Configuration and Corresponding Tray Numbers

Note – If you use the management software to change the array configuration, make sure that the master controller unit is identified as Tray 0 before you begin. If the master controller unit has failed over, the alternate master controller unit assumes the master controller unit status. When this happens, the master controller unit tray number updates to the tray number of the alternate master controller unit. To change back to the original configuration and tray numbering, you must reset the array controller.

▼ To View the Expansion Unit Online Help

To review instructions about adding and removing expansion units, access the online help as follows:

1. **Click the online help link in the Sun StorEdge Configuration Service browser.**
2. **Navigate to Administering Your System → Array Details and Tray Reconfiguration.**
3. **Select one of the following options:**
   - To Add an Expansion Unit to an Array
   - To Remove an Expansion Unit from an Array

Thin-Scripting Client

A thin-scripting client is available for the Solaris operating environment as well as other hosts. The thin-scripting client provides a command-line interface (CLI) that enables access to Sun StorEdge 6320 system and management facilities. The client is available for download from:

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

You can navigate to the site that contains the scripting client files using either of the following methods:

▼ To Retrieve the Client from the Sun Download Center

1. **Go to the `http://www.sun.com` home page and click Downloads.**
2. **Go to Browse Downloads by Category and click System Administration.**
3. **Go to Storage Management and click Sun StorEdge 6320 System Software products (the "download" listing appears to be for the Windows platform but actually links you to downloads for all platforms).**
4. **Provide the user name and password to log in.**
5. **Download the appropriate files for your operating system.**

   For example, the files for the Linux operating system are:

   - `linux_se6x20.tar`
   - `linux_README.txt`

   The README file contains the client installation instructions.

▼ To Retrieve the Client from the Sun Storage Site

1. **Go to the** `http://www.sun.com` **home page, click Product & Services.**
2. **Go to Browse Products and click Storage.**
3. **Go to Hardware Storage and click Midrange Storage.**
4. **Select Sun StorEdge 6000 Family and click Sun StorEdge 6300 Series.**
5. **Click Sun StorEdge 6320 Series.**
6. **Go to Software Download and click Sun StorEdge 6000 Family Storage Products.**
7. **Provide the user name and password to log in.**
8. **Download the appropriate files for your operating system.**

   For example, the files for the Linux operating system are:

   - `linux_se6x20.tar`
   - `linux_README.txt`

   The README file contains the client installation instructions.

System Requirements

Sun StorEdge 6320 hardware and software platform requirements, and other supported software, are detailed in the *Sun StorEdge 6120 Array Installation Guide*. This section contains a list of additional software patches and packages that are required for this release.

Remote Management Host Software Packages

You must install the following software on the Sun StorEdge 6320 remote management host or any network host that is connected to the array:

- Sun StorEdge 6000 Family Host Installation Software (also available on the product CD). Refer to the *Sun StorEdge 6000 Family Host Installation Software Guide* (817-1739-10) for additional information.
- VERITAS Array Support Library. This is required if you have VERITAS Volume Manager support with the array.

Note – You must install the remote management software packages *before* you install the patches.

▼ To Download the Remote Management Host Software Packages

1. **Go to**:

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

2. **Select Browse All Products and click View All.**
3. **Click the Sun StorEdge 6320 system name.**
4. **Follow the instructions on the site to download the required remote management host software packages.**

▼ To Install the Packages

- **Run the installation script, as described in the *Sun StorEdge 6000 Family Host Installation Software Guide.***

Data Host Software Patches

TABLE 1 lists the minimum level software patches that are necessary for the array. These patches must be installed on the data host.

TABLE 1 Data Host Software Patches

Platform	Patch Number	Patch Description
Solaris 9 operating system, first release or later and Solaris 8 operating system, Update 4 or later	Refer to web site	Sun StorEdge SAN Foundation 4.2 software: Refer to the *Sun StorEdge SAN Foundation 4.2 Installation Guide* at `http://www.sun.com/storage/san` for patch and product information.
	112392-04 or later 113698-02	VERITAS VxVM 3.5 general patch* VERITAS VxVM 3.5 supplemental general patch[1] • VERITAS VxVM patches must be installed in the order listed. • If you install a later version of patch of 112392, such as the -05 revision, the supplemental patch (113698-02) is not required.
Microsoft Windows NT operating systems	Available from Microsoft	Microsoft Windows NT Service Pack, SP 6A
		Sun StorEdge Traffic Manager 3.0 NT
Microsoft Windows 2000 Server and Advanced Server	Available from Microsoft	Microsoft Windows 2000 Service Pack, SP 3
		Sun StorEdge Traffic Manager 3.0 Windows 2000
IBM AIX 4.3.3	Available from IBM	ML 10
		Sun StorEdge Traffic Manager 3.0 AIX
IBM AIX 5.1 32 and 64 bit	Available from IBM	ML 03
		Sun StorEdge Traffic Manager 3.0 AIX
HP-UX 11.00 and 11.i	Available from Hewlett-Packard	Patch set, September 2002
		Sun StorEdge Traffic Manager 3.0 HP-UX
Red Hat Linux 7.2 (single-path support only)	Available from Red Hat Linux	Version 2.4.7-10

* Required only for systems running VERITAS Volume Manager with the array.

▼ To Download the Data Host Software Patches

1. **Go to** `http://www.sunsolve.sun.com`**.**
2. **Download the data host software patches listed in** TABLE 1**.**

   You can access these patches by navigating to PatchPro → Network Storage Products.

Note – Due to a problem that disables a 6320 when attempting to use PatchPro to retrieve upgrades, you must first reboot the service processor before downloading the patches.

▼ To Install the Data Host Software Patches

Note – You must install the packages *before* you install the patches.

- **Use the** `patchadd`**(1M) command to install the data host software patches in** TABLE 1**.**

  Refer to the README files for more patch information.

L10N Baseline Patches

L10N baseline patches are available for the Sun StorEdge™ 6320, including:

StorADE patches: 114591-11 *and* 115704-01

You can download the patches then install them on your host using the utility "patchadd." Get the patches from:

```
http://sunsolve.sun.com
```

Refer to the *Storage Automated Diagnostics Environment 2.2 User's Guide* (817-0192) for additional information.

Follow these steps to update your system with the latest baseline patches.

1. Establish an HTTP session with the Storage Automated Diagnostics Environment (StorADE) GUI using a Web browser to download the patches. For example, enter:

   ```
   https://[host_name]:7443
   Login: storage
   Password:!storage
   ```

2. Create a new system inventory snapshot, as follows:

   a. Select **Manage** → **Service** → **Inventory Maintenance** and click **Generate New Inventory**. This generates an up-to-date system inventory list.

   b. Click **Save Inventory**.

3. Verify and fix the revisions for the system.

   a. Select **Manage** → **Service** → **Revision Maintenance** and click **Create Patch Report**.

   b. Click **Select Patches**. A list displays the available patches.

   c. **Click the device(s)** that you want to update, then click **Apply Selected**. The Patch Installation Report generates a log of the changes that are applied.

4. **Rerun Step 3**.

   You *must* install Patch 113193-02 as a prerequisite to all the other L10N baseline patches. Therefore, rerun Step 3, so that all necessary patches are installed on the system, including, for example:

   StorADE patches: 114591-11 *and* 115704-01

   L10n patch: 114960-02

   As necessary, the localized patch for Sun StorEdge 6320 is 114960-02. The supported languages are French, Japanese, and Simplified Chinese.

Available Patches

Following is a list of the currently available patches:

113193-02 - PatchPro Patch

114285-07 - SE6120 FW v3.0.6

114590-13 - StorADE SUNWstade Support Patch (Host Only)

114591-16 - StorADE SUNWstads Support Patch (Service Processor Only)

114596-01 - SSRR MIRE 28 OPIE Patch

114950-02 - Configuration Services, Storage Profiles, Internationalization, Localization for SE6120.

114960-02 - Configuration Services, Storage Profiles, Internationalization, Localization for SE6320.

115589-01 - Sun StorEDGE 6320 Service Processor Patch

Known Issues and Bugs

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

- "Known Issues" on page 13
- "Bugs" on page 17

Known Issues

This section includes known issues about this product that are not associated with a Sun bug ID number. This section contains the following topics:

- "General Issues" on page 13
- "Sun StorEdge Configuration Service Issues" on page 14
- "Documentation Issues" on page 15
- "Multiplatform Issue" on page 16

General Issues

Secure Shell

Secure shell (SSH) through a Sun StorEdge Remote Response/Point-to-Point Protocol interface is supported. LAN SSH connections, however, are not allowed.

Authenticated Proxy Server

You cannot use an authenticated proxy server, which requires a proxy user name and password, to connect to the Internet and access the Sun external patch distribution server.

6320 Service Processor Accessory Tray Cabling

Caution – To reduce the risk of fire, use only No. 26 AWG or larger UL Listed or CSA Certified Telecommunication Line Cord.

Updating StorADE Drops the Connection

After installing a StorADE patch, the application restarts automatically, which enables the changes to take effect. You cannot access the StorADE GUI for a brief period. Thereafter, you must refresh the StorADE screen to reestablish the connection.

Sun StorEdge Configuration Service Issues

Netscape Version 4.79

There is an issue with Netscape™ Version 4.79. Double clicking the top bar of the browser or resizing the window causes loss of context on the screen. If this happens, bring up the window menu and select Reload.

Managing Sun StorEdge 6320 systems

The Sun StorEdge 6320 systems can be managed through either a browser-based GUI or a native host thin-scripting client that provides a command line interface. To use the thin scripting client, the Sun StorEdge Configuration Service host CD-ROM must be installed on a supported host system on the Customer LAN.

Older Browser Versions

If you are managing the Sun StorEdge 6320 system using an older generation (HTTP 1.0-based) Web browser such as Netscape 4.x or earlier, you could experience time-out conditions from the browser when configuring large Sun StorEdge 6320 systems. In large configurations, older browsers need more time to calculate capacities and can time out before those calculations are complete. In this case, you might need to reload the browser page to continue working with the system.

If time outs become an issue, update your browser to a version that supports HTTP 1.1 (Netscape 6 or higher). This issue affects browser-based administration only and does not affect the Sun StorEdge Configuration Service command-line administration using the thin scripting client.

Pool Initialization Warning Message

The following message will come up whenever a user is about to initialize a pool. This message is not localized at this time.

```
System detected volumes created in the selected pool(s).
Initializing a pool will destroy any data in these volumes. The
table shows the affected volumes. To continue, click  "Initialize,"
otherwise click "Cancel."
```

Documentation Issues

Several commands were added to the Sun StorEdge Configuration Service that were not listed in the documentation, as cited here.

Listing the Array Status

This command displays the status information about arrays. The `sscs list arraypower` command-line syntax is shown below.

```
# sscs list -a array-name arraypower
```

TABLE 2 describes the arguments associated with the `list arraypower` subcommand.

TABLE 2 `sscs list arraypower` Command-Line Arguments

Argument	Description
`-a,--array` *array-name*	Specifies an *array-name* up to 40 characters long.

Modifying Power for an Array

This command modifies power for an individual array. The `sscs modify arraypower` command-line syntax is shown below.

```
# sscs modify -a array-name arraypower { off | restart | rad }
```

TABLE 3 describes the arguments associated with the `modify arraypower` subcommand.

TABLE 3 `sscs modify arraypower` Command-Line Arguments

Argument	Description
`-a,--array` *array-name*	Specifies an *array-name* up to 40 characters long.
`arraypower` *value*	Where *value* can be either `off` (shutdown the array), `restart` (restart the array), or `rad` (restore the array default values).

Modifying Tray

This command disables, enables, or unconfigures a controller. The `sscs modify tray` command-line syntax is shown below.

```
# sscs modify -a array-name -d tray-name
```

TABLE 4 describes the arguments associated with the `modify tray` subcommand.

TABLE 4 `sscs modify tray` Command-Line Arguments

Argument	Description
`-a, --array` *array-name*	Specifies an *array-name* up to 40 characters long.
`-u, --unconfigure` *tray-name*	Unconfigures a tray.
`-d, --disable` *tray-name*	Disables a tray.
`-e, --enable` *tray-name*	Enables a tray.

Multiplatform Issue

Qlogic Host Bus Adapters

Qlogic host bus adapters (HBAs) require host-specific flash code. Sun supported Qlogic HBAs could require a flash image update, depending on the platform. TABLE 3 lists the Flash image required for each supported platform.

Bugs

Following is a list of bug categories associated with Sun StorEdge 6320 systems and associated software and hardware. The bug ID numbers follow the bug descriptions.

- "Sun StorEdge Configuration Service Issues" on page 14
- "Sun StorEdge 6120 Array Bugs" on page 18

Sun StorEdge Configuration Service Bugs

Sun StorEdge Configuration Service Wizards

The Sun StorEdge Configuration Service wizards instruct you to add or remove expansion trays in a storage array. The wizard then direct you to physically remove or add the required expansion trays, then recable and power on the newly configured storage array. You must allow enough time for the storage array to boot completely before clicking the Next button. Otherwise, if you proceed to the next screen before the newly configured storage array boots completely, the wizard can time out because it cannot communicate with the storage array. When a timeout occurs, this indicates that the storage array was not ready to communicate over the Ethernet connection. #4863467

Workaround
If the wizard times out before the array boots, click the Retry button in the wizard to reattempt communication with the array. If the wizard is unable to communicate with the storage array, and you do not initiate a retry, eventually the wizard will log off. If the wizard logs off during a tray addition procedure, and if storage pools existed in the original configuration, those pools will not be placed online automatically by the wizard. You must then manually place the storage pools online using the Sun StorEdge Configuration Service tool *after* the array has booted completely.

Loopcard Boot Message

While booting the system, in a master and slave loopcard environment, you might see the following message:

```
"Unable to obtain mid-plane serial number"
```

This is caused by an inadequate timeout to allow the master loopcard to boot before the slave loopcard. This condition, however, should have no bearing on the operation of your system. #4845755

Localized Array Registration Tab

In the localized version of the Configuration Service software, when you select the Array Registration tab it incorrectly displays the information for the Profiles tab instead. #4908973

Workaround

Click on the Array Registration tab to get the Profiles information.

Sun StorEdge 6120 Array Bugs

Adding an Array with the Add Expansion Tray Wizard

When adding an expansion array with the Add Expansion Tray wizard (Administration → General → Array Power → Management → *array_name* → Add Expansion), the online help does not properly clarify the consequences of placing the existing pools online. #486615

The online help should read:

(Optional) Select the Online Existing Pools option to place the existing storage pools online.

If you do not selected this option, the existing storage pools remain offline.

If you place the existing storage pools online, then storage arrays are available.

If you do not place the storage pools online, the storage arrays are unavailable.

You can also place storage pools online later, as described in the section, To Place a Storage Pool Online or Offline.

Copy-Back Reconstruction Rates

Reconstructing data from a standby drive to a replaced drive is performed at a high reconstruction rate, regardless of the array's global reconstruction rate setting. This results in increased host latency during the copy-back from the standby drive as the array conducts this operation in the shortest amount of time. When the copy-back operation is complete, the array response to host I/Os resumes to normal performance levels. Reconstruction of data on the array to the standby disk (after the initial drive failure is detected), responds correctly to the reconstruction rate tunables that are configured on the array. #4862463

Workaround
Schedule a drive replacement procedure during an array maintenance period to avoid impacting array performance during normal operations.

Online Help

Localized Help PDF Unavailable

In the localized versions of the Sun StorEdge Configuration Service software, the link “Help in Adobe Acrobat PDF Format” to the file `help.pdf` is unavailable. #4863940

Localized Help is Currently Invalid

The localized help has not yet been updated for this release and is invalid. #4908598

Adding Host Ports to the 6320 System

This procedure allows you to add additional host ports to the 6320 System. The default number of host ports is five.

Overview

This section describes key considerations for understanding the process of adding host ports to the 6320 System.

The 6320 System rack uses two 16-port switches to provide Fibre Channel connectivity to hosts that are outside of the racks, and 6020 storage arrays that are inside the racks.

The base assumption is that you have two 6020 storage devices that require a master connection and an alternate master connection. Connections that are removed will be recabled to the patch panel to provide additional host connections.

The top switch is called Switch 1 and it connects the master path Fibre Channel connections. The bottom switch is called Switch 2 and it connects alternate master path Fibre Channel connections.

The Fibre Channel ports are labeled 0 to 15. The default wiring scheme follows:

- Ports 0 to 4 are for direct connections to the patch panel for host connections.
- Ports 5 to 9 are for connections to internal 6020 storage inside the master rack.
- Ports 10 to 15 are
- connected to the switch for internal storage in an expansion rack.

The patch panel ports are labeled 1 to 14 A and B. There will be mismatches in port numbers. The patch panel has 28 total Fibre Channel ports while the switches have 30 total ports; so there are two ports on each switch that you cannot allocated to hosts.

This procedure removes the connections for internal storage in the expansion rack (Ports 10 to 15) and reduces the number of internal storage connections (Ports 7 to 9). Ports 5 and 6 cannot be allocated to a host port.

Note – Eliminating the expansion storage connections through implementation of this procedure negates the ability to add an expansion rack in the future. Additionally, removing of the expansion cable (530-1058-01) can damage it and render it unusable.

Total Number of Ports You Can Add

The maximum number of additional host ports that can be added is nine master path connections and nine alternate master path connections.

Sample 6320 System Fibre Channel Connections

This section provides a sample of the 6320 System Fibre Channel connections.

Patch Panel-to-Switches

LC-to-LC Cables (5pcs) Patch Panel to Switches (host connections) - (537-1057-01 LC-LC .8M)

- Patch Panel 1A to SW1 Port 0
- Patch Panel 2A to SW1 Port 1
- Patch Panel 3A to SW1 Port 2
- Patch Panel 4A to SW1 Port 3
- Patch Panel 5A to SW1 Port 4

LC-to-LC Cables (5pcs) Patch Panel to Switches (host connections) - (537-1057-01 LC-LC .8M)

- Patch Panel 1B to SW2 Port 0
- Patch Panel 2B to SW2 Port 1
- Patch Panel 3B to SW2 Port 2
- Patch Panel 4B to SW2 Port 3
- Patch Panel 5B to SW2 Port 4

Switches-to-Master Rack T4s

LC-to-LC Cables (5pcs) Switches to T4 in Master Rack (Masters) - (537-1041-01 LC-LC 2M)

- SW1 Port 5 to (T400) Master
- SW1 Port 6 to (T401) Master
- SW1 Port 7 to (T402) Master
- SW1 Port 8 to (T403) Master
- SW1 Port 9 to (T404) Master

LC-to-LC Cables (5pcs) Switches to T4 in Master Rack (Alt. Master's) - (537-1041-01 LC-LC 2M)

- SW2 Port 5 to (T400) Alternate Master
- SW2 Port 6 to (T401) Alternate Master
- SW2 Port 7 to (T402) Alternate Master
- SW2 Port 8 to (T403) Alternate Master
- SW2 Port 9 to (T404) Alternate Master

Switches to Patch Panel (for connections to T4s in the Expansion Rack):

Master Breakout Cable (1pc) - (537-1058-01 MPT TO FANOUT, MASTER (70cm [40cm ruggedized])

- Cable connect 1A-1B to SW1 Port 10
- Cable connect 2A-2B to SW1 Port 11
- Cable connect 3A-3B to SW1 Port 12
- Cable connect 4A-4B to SW1 Port 13
- Cable connect 5A-5B to SW1 Port 14
- Cable connect 6A-6B to SW1 Port 15
- MPT-to-Patch Panel EXP FC 1A

Master Breakout Cable (1pc) - (537-1058-01 MPT TO FANOUT, MASTER (70cm [40cm ruggedized])

- Cable connect 1A-1B to SW2 Port 10
- Cable connect 2A-2B to SW2 Port 11
- Cable connect 3A-3B to SW2 Port 12
- Cable connect 4A-4B to SW2 Port 13
- Cable connect 5A-5B to SW2 Port 14
- Cable connect 6A-6B to SW2 Port 15
- MPT-to-Patch Panel EXP FC 1B

FIGURE 4 shows the 6320 System patch panel details.

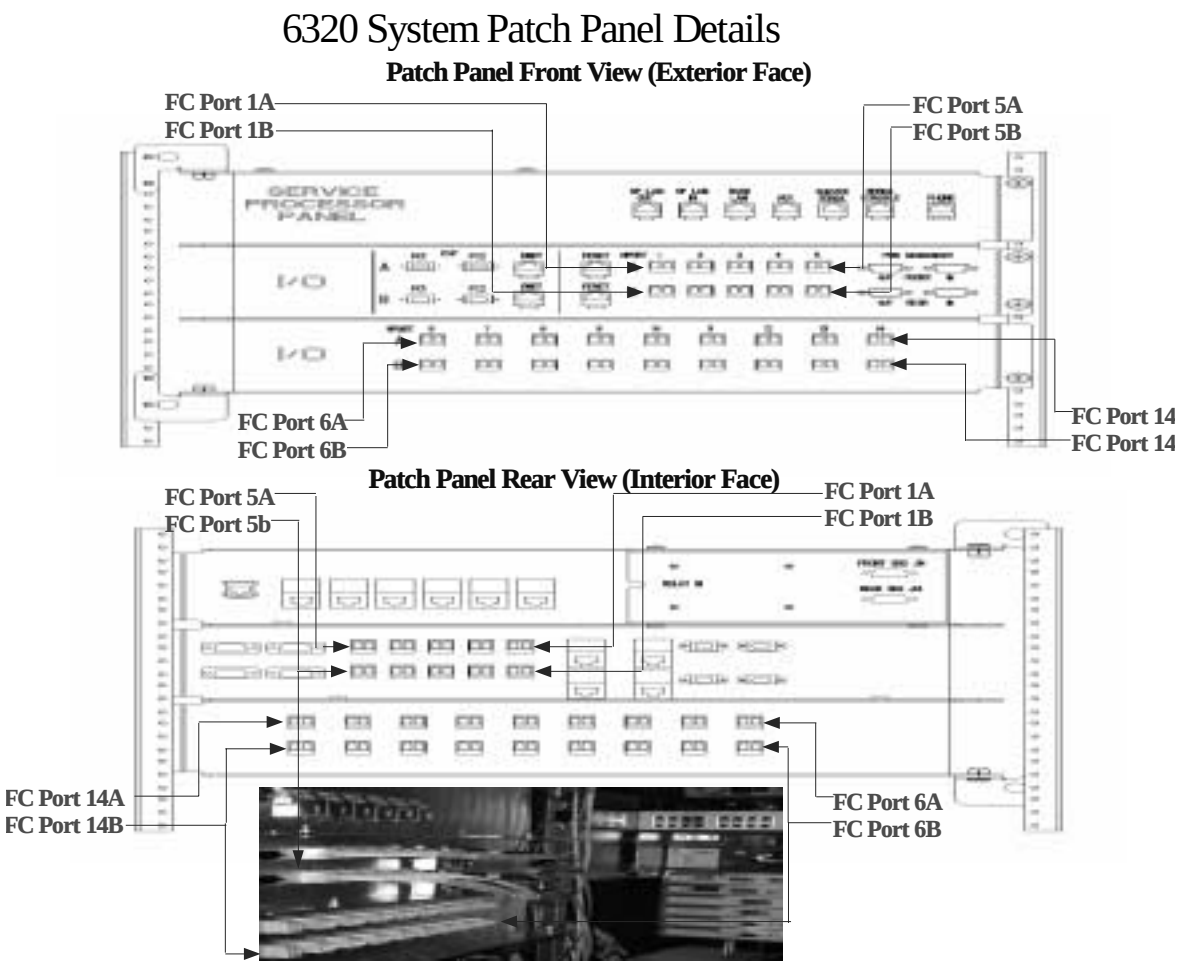

FIGURE 4 6320 System Patch Panel Details

FIGURE 5 shows a 16-port Fibre Channel Switch details.

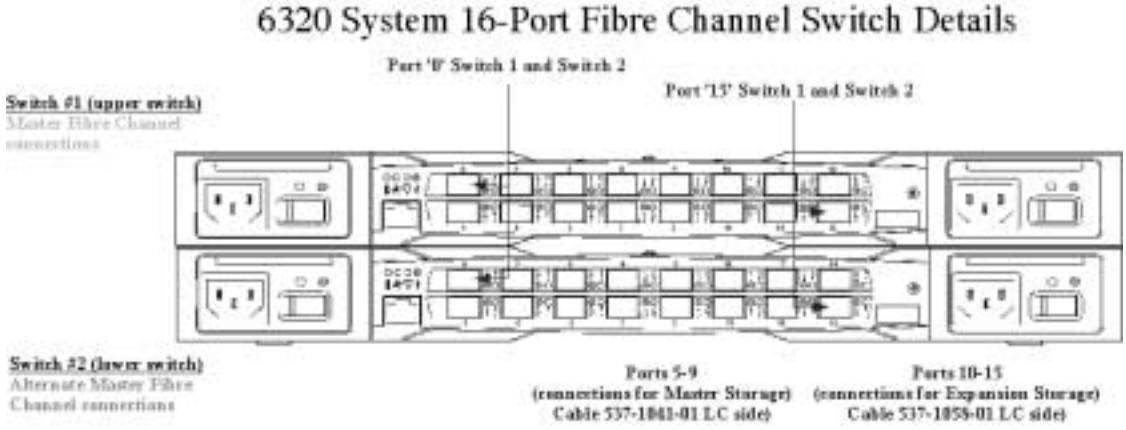

FIGURE 5 16-port Fibre Channel Switch Details

Removing and Replacing Connections to add Host Ports to the 6320 System

The steps provided here describe the logical sequence remove and then replace the connections to add hosts to the 6320 System. Refer to FIGURE 4 for switch and port references.

1. Remove the following connections from Switch 1 that use the MPT-to-Fanout cable (537-1058-01).

- LC connector 1A-1B to Switch 1 Port 10
- LC connector 2A-2B to Switch 1 Port 11
- LC connector 3A-3B to Switch 1 Port 12
- LC connector 4A-4B to Switch 1 Port 13
- LC connector 5A-5B to Switch 1 Port 14
- LC connector 6A-6B to Switch 1 Port 15

2. Remove the following connections from Switch 2 that use the MPT-to-Fanout cable (537-1058-01).

- LC Connector 1A-1B to Switch 2 Port 10
- LC Connector 2A-2B to Switch 2 Port 11
- LC Connector 3A-3B to Switch 2 Port 12
- LC Connector 4A-4B to Switch 2 Port 13
- LC Connector 5A-5B to Switch 2 Port 14
- LC Connector 6A-6B to Switch 2 Port 15

Steps 1 and 2 Notes:

- Removing the MTP connection to the Patch Panel for the MPT-to-Fanout cable (537-1058-01) is optional.
- Tie off the MPT-to-Fanout cable (537-1058-01) securely when you remove the connections. This cable is fragile and can be damaged or rendered nonoperational during implementation of this procedure.

3. Add the following master path host connections between the patch panel and Switch Number 1 using cable 537-1057-01 (0.8M, LC-LC) (6 pcs).

- LC connector to Switch 1 Port 10, opposite LC connector to Patch Panel Port 9A
- LC connector to Switch 1 Port 11, opposite LC connector to Patch Panel Port 10A
- LC connector to Switch 1 Port 12, opposite LC connector to Patch Panel Port 11A
- LC connector to Switch 1 Port 13, opposite LC connector to Patch Panel Port 12A
- LC connector to Switch 1 Port 14, opposite LC connector to Patch Panel Port 13A
- LC connector to Switch 1 Port 15, opposite LC connector to Patch Panel Port 14A

4. Add the following alternate master path host connections between the Patch Panel and Switch 2 using cable 537-1057-01 (0.8M,LC-LC)(6 pcs).

LC connector to Switch 2 Port 10, opposite LC connector to Patch Panel Port 9B
LC connector to Switch 2 Port 11, opposite LC connector to Patch Panel Port 10B
LC connector to Switch 2 Port 12, opposite LC connector to Patch Panel Port 11B
LC connector to Switch 2 Port 13, opposite LC connector to Patch Panel Port 12B
LC connector to Switch 2 Port 14, opposite LC connector to Patch Panel Port 13B
LC connector to Switch 2 Port 15, opposite LC connector to Patch Panel Port 14B

Steps 3 and 4 Notes:

- Steps 3 and 4 add six master and alternate master host connections.
- Do not stretch or pinch routing cable 537-1057-01 (0.8M, LC-LC).
- Tie off the cables 537-1057-01 (0.8M, LC-LC) securely to other cables in the bundle.

5. Remove the following Master Storage connections from Switch 1 that use cable 2M, LC-LC (537-1041-01).

The cable specified for removal should not be already connected to a 6020 in the Master rack. If the cable is connected to a 6020 skip disconnecting this cable.

- LC Connector to Switch 1 Port 7, other LC connector connected to (T402) Master (if not populated in the rack)
- LC Connector to Switch 1 Port 8, other LC connector connected to (T403) Master (if not populated in the rack)
- LC Connector to Switch 1 Port 9, other LC connector connected to (T404) Master (if not populated in the rack)

6. Remove the following Alternate Master Storage connections from Switch 2 that use cable 2M LC-LC (537-1041-01).

The cable specified for removal should not be connected already to a 6020 in the Master rack. If the cable is connected to a 6020 *skip* disconnecting this cable.

- LC Connector to Switch 2 Port 7, other LC connector connected to (T402) Alt-Master (if not populated in the rack)
- LC Connector to Switch 2 Port 8, other LC connector connected to (T403) Alt-Master (if not populated in the rack)
- LC Connector to Switch 2 Port 9, other LC connector connected to (T404) Alt-Master (if not populated in the rack)

7. Add the following master path host connections between the Patch Panel and Switch 1 using cable 537-1057-01 (0.8M,LC-LC)(3 pcs).

- LC Connector to Switch 1 Port 7, other LC connector connected to Patch Panel Port 6A
- LC Connector to Switch 1 Port 8, other LC connector connected to Patch Panel Port 7A
- LC Connector to Switch 1 Port 9, other LC connector connected to Patch Panel Port 8A

8. Add the following alternate master path host connections between the Patch Panel and Switch 2 using cable 537-1057-01 (0.8M,LC-LC)(3 pcs).

- LC Connector to Switch 2 Port 7, other LC connector connected to Patch Panel Port 6B
- LC Connector to Switch 2 Port 8, other LC connector connected to Patch Panel Port 7B
- LC Connector to Switch 2 Port 9, other LC connector connected to Patch Panel Port 8B

Steps 7 and 8 Notes:

- Steps 7 and 8 add up to four master and alternate master host connections, depending on how man 6020s were already populated in the rack.
- Steps 7 and 8 add three master and alternate master host connections.
- Do not stretch or pinch routing cable 537-1057-01 (0.8M, LC-LC).
- Tie off the cables 537-1057-01 (0.8M, LC-LC) securely to other cables in the bundle.

Storage Service Processor USB Flash Disk

The Sun StorEdge 6320 System ships with a universal serial bus (USB) flash disk to backup the storage service processor (SP) configuration files (for example, /etc/ethers). In the Sun StorEdge 6320 System, the Sun Fire™ V100 server is the storage service processor. In the event of an SP failure, Field Service personnel can use the flash to restore the original configuration to a replacement SP.

This procedure instructs users in how to install the USB flash, which is shipped in a box with the system.

Note – Do not connect a USB flash disk with an image that you want to restore to a working SP or any other USB port as the image on the flash disk could be over-written.

Note – The flash disk is formatted for the Solaris operating system. Do not connect it to a PC as Windows will not recognize it and will ask if you want to format the disk.

▼ To Install The USB Drive

3. **If your USB has a write protection switch on the side of the USB flash disk, verify that it is set to the unlock symbol.**

4. **Insert the USB flash disk into USB Port 1 on the rear panel of the storage service processor.**

   If your flash disk has an LED green light, it displays when the flash disk connects correctly.

5. **Use a web browser to sign into Configuration Service, the management software on the SP.**

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

6. **From the Administration/General menu, select Logs.**

   If the system has failed in an attempt to backup to the USB flash, the following message will appear in the log every two minutes:

```
IO Error accessing persistence file on flash disk
```

If the error messages do not stop within three minutes after installing the flash disk, refer to the following site to contact support:

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

Restoring Configuration Files

In the event of a services processor failure, contact support as noted above.

All restoration procedures must be performed by Customer Support personnel only. They can use the USB drive with a Restore CD to restore the configuration on a new SP.

Release Documentation

TABLE 5 lists the documentation for the 6320 and related products. Documents that cite the suffix *nn*, imply that you should use the most current version. This documentation is available online at:

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

TABLE 5 Sun StorEdge 6320 Array and Related Documentation

Application	Title	Part Number
Installation and documentation overview	*Start Here for the Sun StorEdge 6320 System*	816-7875-*nn*
Release information	*Sun StorEdge 6320 System 1.1 Release Notes*	816-7880-13
Site preparation	*Sun StorEdge 6320 Series 1.0 Site Prep Guide*	816-7877-*nn*
Safety requirements	*Sun StorEdge 6320 Series 1.0 Regulatory and Compliance Guide*	816-7876-*nn*
6320 installation procedures	*Sun StorEdge 6320 Series 1.0 Installation Guide*	816-7878-*nn*
Overview, service, reference, and CLI administration	*Sun StorEdge 6320 Series 1.0 Reference and Service Manual*	816-7879-*nn*
Management software installation	*Sun StorEdge 6000 Family Host Installation Software Guide*	817-1739-*nn*
Management and configuration help	*Sun StorEdge Configuration Service online help*	n/a
	Sun StorEdge SSCS (1M) man page	n/a
6120 installation and documentation overview	*Sun StorEdge 6120 Array Start Here*	817-0198-*nn*
6120 release information	*Sun StorEdge 6120 Array Release Notes*	817-0201-13
6120 site preparation	*Sun StorEdge 6120 Array Site Preparation Guide*	817-0960-*nn*

TABLE 5 Sun StorEdge 6320 Array and Related Documentation *(Continued)*

Application	Title	Part Number
6120 safety requirements	*Sun StorEdge 6120 Array Regulatory and Safety Compliance Manual*	817-0961-*nn*
6120 array installation	*Sun StorEdge 6120 Array Installation Guide*	817-0199.*nn*
6120 overview, service, reference, and CLI administration	*Sun StorEdge 6020 and 6120 Arrays System Manual*	817-0200-*nn*
StorADE troubleshooting and diagnostics	*Storage Automated Diagnostic Environment 2.2 User's Guide,*	817-0822-*nn*
	Storage Automated Diagnostic Environment 2.2 Release Notes,	817-0823-*nn*
SAN Foundation	*Sun StorEdge SAN Foundation 4.2 Release Notes*	817-1246-*nn*
	Sun StorEdge SAN Foundation 4.2 Installation Guide	817-1244-*nn*
Multipathing support	*Sun StorEdge Traffic Manager Software Release Notes*	817-0385-*nn*
Cabinet information	*Sun StorEdge Expansion Cabinet Installation and Service Manual*	805-3067-*nn*
Sun Rack information (6120 only)	*Sun Rack Installation Guide*	816-6386-*nn*

Sun StorEdge 6320 System Terminology

The Storage Networking Industry Association (SNIA) is currently developing a standard terminology list. Sun Microsystems is adopting the SNIA terms now. The Sun StorEdge 6320 system is the first storage product to use the new SNIA terminology list.

TABLE 6 shows a comparison (mapping) of the terms used by the Sun StorEdge 6120 arrays to the SNIA terms used by the Sun StorEdge 6320 system.

TABLE 6 Sun StorEdge 6320 Terminology

Sun StorEdge 6120 Terminology[1]	Sun StorEdge 6320 Terminology
Volume	Storage Pool
Slice	Volume
LUN	Volume
Administrative Domain	Storage Array
Partner Group	Storage Array
Array	Tray
Enclosure	Tray
Expansion Unit	Expansion Unit

1—This is the Telnet-based terminology used on the Sun StorEdge 6120 arrays.

Service Contact Information

Contact Sun Customer Service if you need additional information on the Sun StorEdge 6320 System or any other Sun products:

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