



# Sun StorEdge™ 6120 Array Release Notes

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Release 1.1.1

Version 3.0.6 Firmware and Sun StorEdge  
Configuration Service Software Version 2.1.1

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Adobe PostScript

# Sun StorEdge 6120 Array Release Notes

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These release notes provide information about the Sun StorEdge™ 6120 array that was not included in the array documentation, but could affect the installation and operation of the array. Be sure to read this document before you begin the array installation.

These Release Notes apply to the Release 1.1.1 patch and Release 1.1 for Sun StorEdge™ 6120 Array (Version 3.0.6 Firmware). The Release 1.1.1 patch corrects problems with the localized online help in Release 1.1.

The Release Notes consists of the following sections:

- “Release 1.1.1 Patch Notes” on page 2
- “Release 1.1 Features” on page 3
- “Product Changes” on page 4
- “System Requirements” on page 4
- “Required Software Packages and Patches” on page 5
- “Known Issues and Bugs” on page 9
- “Release Documentation” on page 18
- “Additional Documentation” on page 19
- “Documentation of Release Features” on page 32
- “Sun StorEdge 6120 Array Terminology” on page 36
- “Service Contact Information” on page 36

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# Release 1.1.1 Patch Notes

The following information applies to the Release 1.1.1 patch when used with the Sun StorEdge™ 6120 Array (Version 3.0.6 Firmware).

## 1. Localized Help

The patch installs the localized help from Sun StorEdge Configuration Service Software Version 2.1.0 release. It corrects most of the incorrect links found in the localized help installed for Release 1.1.

The new features in this release are documented only in the English version of online help. The localized help does not contain information about the new features. The English text of the online help for new features is included in “Documentation of Release Features” on page 32.

## 2. Profile Tab

The patch corrects a tab label that links to the Profiles function in the user interface of Sun StorEdge Configuration Service.

## 3. User Interface

The user interface for Sun StorEdge Configuration Service has not been localized for this release.

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# Release 1.1 Features

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 4

## 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 software and the CLI command **modify pool** can now initialize an offline pool.

# 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.

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## Product Changes

The following changes have been made to this product but are not yet updated in the product documentation:

- “Array Configuration Changes” on page 3
- “Thin-Scripting Client” on page 6
- “Installing the 6120 in a Sun Rack 900” on page 24

The documentation for these changes is included in “Additional Documentation” on page 19.

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## System Requirements

Sun StorEdge 6120 hardware and software platform requirements, and other supported software, are detailed in the *Sun StorEdge 6120 Array Installation Guide*.

For information on the required software packages and patches for management and data host software, refer to the next section.

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# Required Software Packages and Patches

This section documents the software packages and patches for management and data host software that are required for this release.

The tasks *must* be completed in the following order:

1. **Install software packages, if needed.**
2. **Install data host patches, if needed.**
3. **Install management software patches.**

## Management Software Packages

You can manage the Sun StorEdge 6120 with one of the following management software packages installed on a host with an Ethernet connection to the array.

- **Sun StorEdge 6000 Family Host Installation Software**

This package includes the Configuration Service software, the Storage Automated Diagnostics Environment (StorADE) software and the Remote Configuration CLI (sscs). The software is available by download from <http://www.sun.com/download> or from 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.

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**Note** – You must install any management software packages the host needs *before* you install the patches.

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### ▼ To Download the Management Host Software Packages

1. **Go to:**  
<http://www.sun.com/download>
2. **In the Browse By Category window, click the Search tab.**
3. **In the Search window, enter 6000.**
4. **Click the Sun StorEdge 6000 Family Host software link.**

5. Follow the instructions on the site to download the software package.
6. Run the installation script (install.sh) procedure described in the *Sun StorEdge 6000 Family Host Installation Software Guide*.

## Data Host Software Patches

TABLE 1 lists the minimum required level software patches that are necessary for the array. Install the patches 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 <i>Sun StorEdge SAN Foundation 4.2 Installation Guide</i> at <a href="http://www.sun.com/storage/san">http://www.sun.com/storage/san</a> for patch and product information.
	112392-04 or later 113698-02	VERITAS VxVM 3.5 general patch <sup>1</sup> VERITAS VxVM 3.5 supplemental general patch <sup>1</sup> <ul style="list-style-type: none"> <li>• VERITAS VxVM patches must be installed in the order listed.</li> <li>• If you install a later version of patch of 112392, such as the -05 revision, the supplemental patch (113698-02) is not required.</li> </ul>
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

**TABLE 1** Data Host Software Patches (Continued)

Platform	Patch Number	Patch Description
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

## ▼ To Install the Data Host Software Patches

1. **Determine the required data host software patches listed in TABLE 1.**
2. **Go to** <http://www.sunsolve.sun.com>.
3. **Navigate to Patchfinder.**
4. **Download the required patches.**
5. **Use the `patchadd(1M)` command in a CLI session to install the data host software patches in TABLE 1.**

Refer to the README files for more patch information.

## Management Software Patches

The following lists the management software patches needed to meet the baseline requirements for Release 1.1 and Release 1.1.1.

### Release 1.1.1

114950-03 - Configuration Services, Storage Profiles, Internationalization, Localization for SE6120 (Install if Configuration Service is installed on the management host).

### Release 1.1

114285-07 - SE6120 FW v3.0.6 - Firmware - Required

114950-02 - Configuration Services, Storage Profiles, Internationalization, Localization for SE6120 (Install if Configuration Service is installed on the management host).

114590-13 - StorADE SUNWstade Support Patch (Host Only; Install if StoreADE version 2.2 is installed on the management host).

## ▼ To Install the Management Software Patches

1. **Determine the required management software patches.**
2. **Go to** <http://www.sunsolve.sun.com>.
3. **Navigate to Patchfinder.**
4. **Download the required patches.**
5. **Use the `patchadd(1M)` command in a CLI session to install the management software patches.**

Refer to the README files for more patch information.

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# Known Issues and Bugs

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

- “Known Issues” on page 11
- “Bugs” on page 15

## Known Issues

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

- “Sun StorEdge Configuration Service Issues” on page 11
- “Documentation Issues” on page 13
- “Multiplatform Issue” on page 14

## Sun StorEdge Configuration Service Issues

### *Managing Sun StorEdge 6120s*

You can manage Sun StorEdge 6120s through the management host that runs the Sun StorEdge Configuration Service software. This facility, once installed and configured, enables you to administer arrays using either a browser-based graphical user interface (GUI) or a native host, thin-scripting client. Unlike the Sun StorEdge 6320 system management interface, this software must be loaded on a host that has an Ethernet connection to the array(s) being managed.



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**Caution** – Because the Sun StorEdge Configuration Service software retains the array state and configuration service, do not use the array Telnet interface while an array is being managed by the Sun StorEdge Configuration Service.

If you add an array under Sun StorEdge Configuration Service management that had been managed previously with the Telnet interface, you must record and delete all existing LUN access control settings, such as initiator groups and LUN masking settings. After you have done so, you can register the array in the Sun StorEdge Configuration Service tool, reconfigure the storage pools and initiator groups, and set permissions.

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## *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.

## *Older Browser Versions*

If you are managing Sun StorEdge 6120 arrays 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 configurations. 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.

## *Array Health Status*

When using the Sun StorEdge Configurations Services administration to change network settings, the screen incorrectly displays the array health status as "Error." If you change array network configurations, you must coordinate the new array network settings with network physical connections. First, update the array settings in the configuration services software, apply the settings, then change the physical network connection to the correct gateway subnet.

## *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
<code>-a, --array array-name</code>	Specifies an <i>array-name</i> 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
<code>-a, --array array-name</code>	Specifies an <i>array-name</i> up to 40 characters long.
<code>arraypower value</code>	Where <i>value</i> can be either <code>off</code> (shutdown the array), <code>restart</code> (restart the array), or <code>rad</code> (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
<code>-a, --array array-name</code>	Specifies an <i>array-name</i> up to 40 characters long.
<code>-u, --unconfigure tray-name</code>	Unconfigures a tray.
<code>-d, --disable tray-name</code>	Disables a tray.
<code>-e, --enable tray-name</code>	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 5 lists the Flash image required for each supported platform.

**TABLE 5** Qlogic Flash Images by Platform

Platform	Flash Image	HBA Device Driver
qlc + Win 2K	Qlogic x86 Flash Image	Sun supported driver
qlc + Win NT	Qlogic x86 Flash Image	Sun supported driver
qlc + Solaris SPARC host	Sun supplied Qlogic HBA	n/a
qlc + Linux	Qlogic x86 Flash Image	Red Hat 7.2

Should a Flash update be required, contact your Sun Authorized Service Representative for details on obtaining the flash image. See “Service Contact Information” on page 34.

# Bugs

This section contains a list of bugs that are organized by category, and then by the priority and severity within each category. This section consists of the following categories:

- “General Bugs” on page 13
- “Sun StorEdge Configuration Service Bugs” on page 14
- “Sun StorEdge 6120 Array Bugs” on page 14
- “Online Help Bugs” on page 16

## General Bugs

### *Telnet Fibre Channel Speed*

Currently, when you request the Fibre Channel (FC) speed using the CLI command `sys fc_speed`, the bandwidth is displayed incorrectly as 1 Gb, even when there is a different bandwidth available. #4872969

#### *Workaround*

Use the CLI command `sys list` to display the proper FC speed.

### *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

## 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.

## 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.

## *Loopback Tests*

In order for the loopback test on the array to work properly, a Fibre Channel device must first be attached to the loop. #4825088

### *Workaround*

Use the `sim_diag` command to diagnose host loop issues. This command must be used only by Sun authorized service providers. Before running this command, make sure that a Fibre Channel device is connected to the array and that the array `sys_fc_topology` setting is set to `loop` mode. For more information on these array commands and settings, refer to the *Sun StorEdge 6020 and 6120 Arrays System Manual*.

## *Enable Command*

If the command `enable` fails to enable a drive in an array Telnet CLI session, an error message is not displayed on the console; however, an error message is recorded in the array `syslog` file. #4845863

### *Workaround*

If you are using the `enable` command to enable a drive, check the `syslog` file to make sure the command executed correctly.

## *Offline Diagnostics*

Due to known issues with the offline diagnostics (`ofdg`) facility on Sun StorEdge 6120s, inconsistent results are sometimes reported. #4794710

### *Workaround*

Confirm results that are obtained from the output of the array command `ofdg`. Obtain other supporting evidence, such as corresponding `syslog` messages, or `fru stat` command output, or contact your Sun service representative (see "Service Contact Information" on page 34).

## *LED Command*

The `led` command, which issues commands to array controller LEDs, works only for the first array in an array HA configuration. For example, the following command correctly turns off the amber, blue, and green LEDs on the first array's controller (#4801209):

```
led -e 1 -f controller -l busy
```

However, using the same command as follows does not change the second array's controllers LEDs in an HA configuration:

```
led -e 2 -f controller -l busy
```

## Online Help Bugs

### *Blank Localized Help Page for Access Matrix*

When clicking help from the Access Matrix page, a pop-up help window displays a blank page.

#### *Workaround*

Refer to the help in “Viewing the Access Matrix” on page 35.

### *Incorrect Localized Help Information for Profiles*

When selecting help from the Array Profiles page, a pop-up help window shows irrelevant information regarding Array Registration.

#### *Workaround*

Refer to the written help in “Managing Profiles” on page 33.

### *Wrong Profile Features in Help*

The online help documents two Profile features that are not implemented in Release 1.1:

- Profile Management button
- Profile Filter button

### *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 Search Facility*

The localized online help search function does not work correctly. The search fails when a keyword is non-ASCII. If the keyword is in English, the search results are displayed in English, and the corresponding contents are localized. #4842713

### *Localized Help Index*

The localized online help index does not work properly. For example, in Japanese and the Simplified Chinese environment, unnecessary English characters are displayed on the Index tab. #4866283

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# Release Documentation

TABLE 6 lists the documentation for the Sun StorEdge 6120 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 6** Sun StorEdge 6120 Array and Related Documentation

<b>Application</b>	<b>Title</b>	<b>Part Number</b>
Installation and documentation overview	<i>Sun StorEdge 6120 Array Start Here</i>	817-0198- <i>nn</i>
Release information	<i>Sun StorEdge 6120 Array Release Notes</i>	817-0201-13
Site preparation	<i>Sun StorEdge 6120 Array Site Preparation Guide</i>	817-0960- <i>nn</i>
Safety requirements	<i>Sun StorEdge 6120 Array Regulatory and Safety Compliance Manual</i>	817-0961- <i>nn</i>
Array install procedures	<i>Sun StorEdge 6120 Array Installation Guide</i>	817-0199- <i>nn</i>
Management software installation	<i>Sun StorEdge 6000 Family Host Installation Software Guide</i>	817-1739- <i>nn</i>
Overview, service, reference, and CLI administration	<i>Sun StorEdge 6020 and 6120 Arrays System Manual</i>	817-0200- <i>nn</i>
Management and configuration help	<i>Sun StorEdge Configuration Service online help</i>	n/a
	<i>Sun StorEdge SSCS (1M) man page</i>	n/a
StorADE troubleshooting and diagnostics	<i>Storage Automated Diagnostic Environment 2.2 User's Guide,</i>	817-0822- <i>nn</i>
	<i>Storage Automated Diagnostic Environment 2.2 Release Notes,</i>	817-0823- <i>nn</i>
SAN Foundation	<i>Sun StorEdge SAN Foundation 4.2 Release Notes</i>	817-1246- <i>nn</i>

**TABLE 6** Sun StorEdge 6120 Array and Related Documentation (Continued)

Application	Title	Part Number
	<i>Sun StorEdge SAN Foundation 4.2 Installation Guide</i>	817-1244- <i>nn</i>
Multipathing support	<i>Sun StorEdge Traffic Manager Software Release Notes</i>	817-0385- <i>nn</i>
Cabinet information	<i>Sun StorEdge Expansion Cabinet Installation and Service Manual</i>	805-3067- <i>nn</i>
Sun Rack information	<i>Sun Rack Installation Guide</i>	816-6386- <i>nn</i>

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## Additional Documentation

The following section documents the following product features that have not yet been added to the product documentation or online help:

- “Array Configuration Changes” on page 19
- “Thin-Scripting Client” on page 22
- “Installing the 6120 in a Sun Rack 900” on page 24

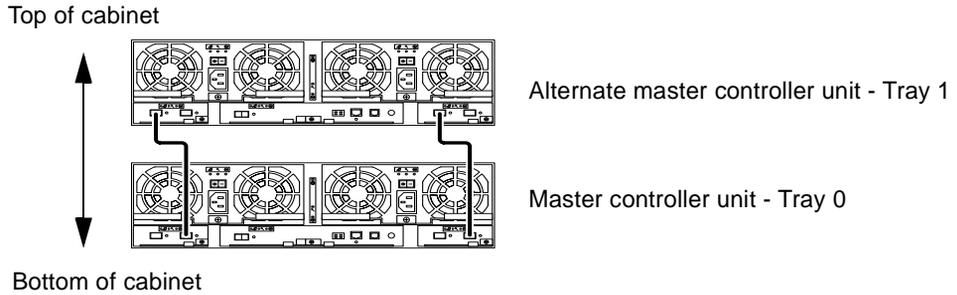
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## Array Configuration Changes

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:

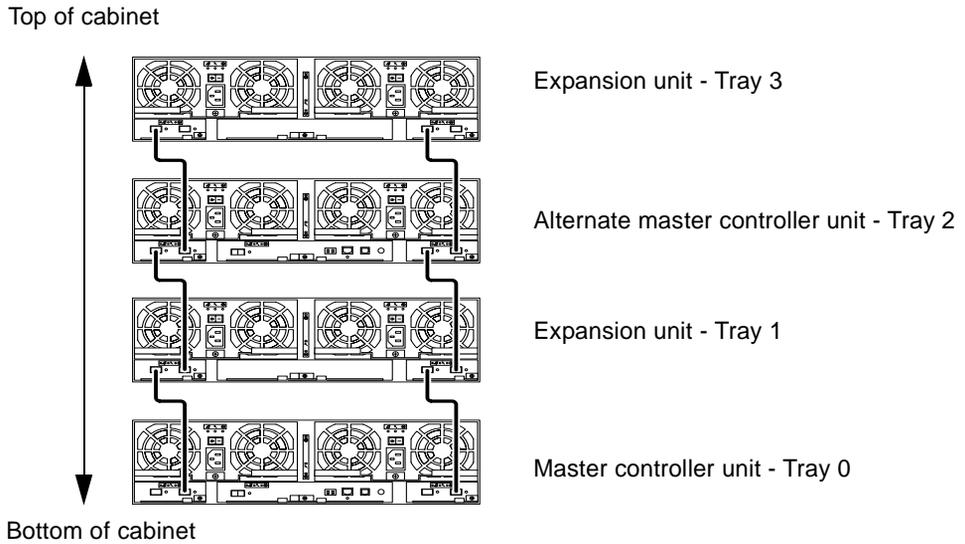
- Adding expansion units to an existing array 2x2 or 2x4 HA configuration.
- Removing expansion units from an existing array 2x4 or 2x6 HA configuration.

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.

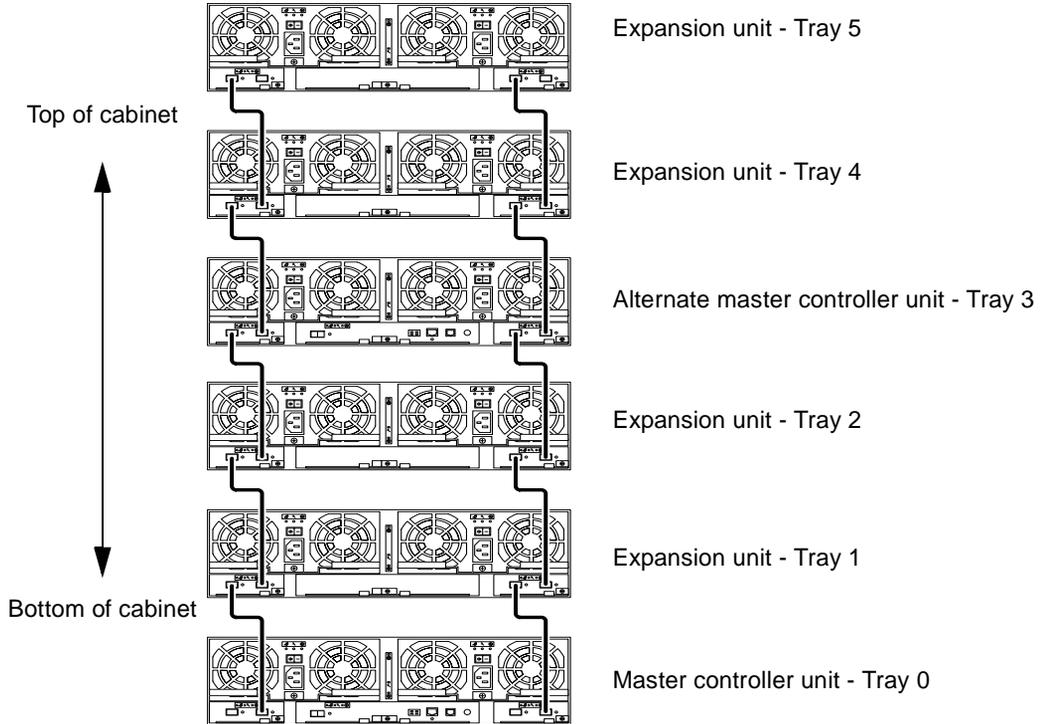


FIGURE 3 2x6 HA Configuration and Corresponding Tray Numbers

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**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.

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## ▼ 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

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## 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 6120 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 6120 Array - Related Software (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 6100 Series**.
5. Click **Sun StorEdge 6120 Array**.
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.

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# Installing the 6120 in a Sun Rack 900

This section describes the procedure to install the expansion rails from the Sun StorEdge 6120 3U Rack Kit into the Sun Rack 900 (X6876A). Refer to Chapter 3 of the Sun StorEdge 6120 Array Installation Guide for details on placing the array in the rack.

## Rail Expansion Kit for the Sun Rack 900

### Prerequisite

To install the array into a Sun Rack 900 cabinet, you must order the Sun StorEdge 6120 array with the Sun StorEdge 6120 3U Rack Kit, Sun Rack 900 (X6876A).

### Packing Contents

The rail expansion hardware is 3 rack units (Us) high. You can install up to 10 arrays into a Sun Rack 900.

The following items are shipped with the Sun Rack 900 rail expansion kit:

- Two cabinet expansion rails
- Ten mounting screws for cabinet rails: 6 X M6 - 4 x 10-32
- Eight mounting screws for the array: 4 X M6 - 4 X 10-32

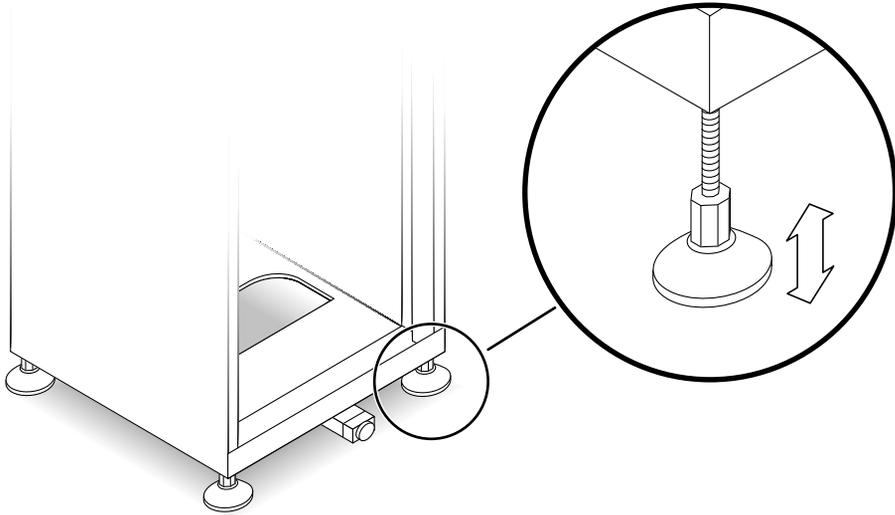
# Installation Procedure

## 1. Prepare the cabinet for the installation.

Refer to the Sun Rack Installation Guide for specific instructions.

### a. Stabilize the cabinet as described in the Sun Rack Installation Guide.

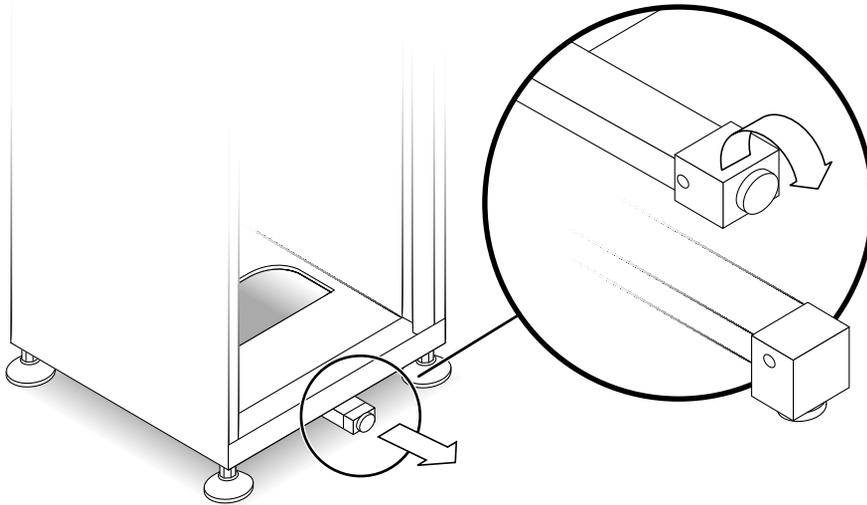
- Adjust the leveling feet with the wrench to level the vertical position.



**FIGURE 4** Adjusting a Leveling Foot

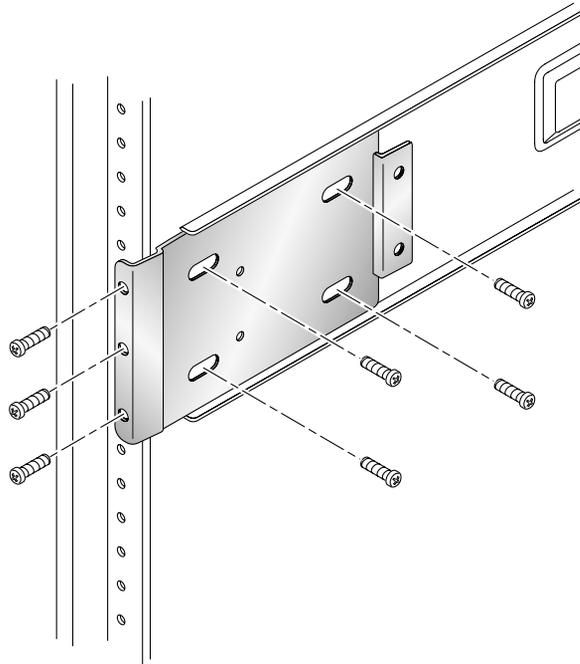
### b. Deploying the Antitilt Bar

- Pull out the end of the antitilt bar to its fully extended position.
- Rotate the foot 90 degrees and adjust its height to rest on the floor.



**FIGURE 5** Deploying the Antitilt Bar

- c. Remove or open the top front panel.**
  - d. Remove or open the vented rear panel.**
- 2. Place the left side rail in the cabinet in the first available position from the bottom.**
- Loosely align the side rail's rear bracket over the **outside** face of the cabinet's rear rail. At the same time, align the side rail's front bracket to the **inside** face of the front rail.
- 3. If the rail fits, proceed to Step 4. If not, adjust the rail size with the rear brackets:**
- a. Measure the depth of the cabinet from the inside face of the front mounting rail to the outside face of the rear mounting rail.**
  - b. Measure the distance from the outside face of the side rail's front bracket to the inside face of the rail's rear bracket. Adjust the rear bracket with Steps c to e, as necessary.**
  - c. Loosen the four expansion screws holding the rear bracket to the side rail (FIGURE 6).**
  - d. Slide the rear bracket to accommodate the depth of the cabinet.**
  - e. Tighten the screws to resecure the rear bracket to the side rail.**



**FIGURE 6** Mounting the Rear Expansion Bracket of the Side Rail

- 4. Align the three rear holes of the side rail with the holes for three Rack Units (RUs) in the rear mounting rail of the cabinet (FIGURE 6).**
- 5. Install three mounting screws into the rear rail holes. Tighten all screws.**
- 6. Repeat Steps 2 through 5 for the right side rail.**

7. From the front of the Sun Rack 900, align the front bracket of the left side rail *behind* the vertical mounting rail (FIGURE 7).

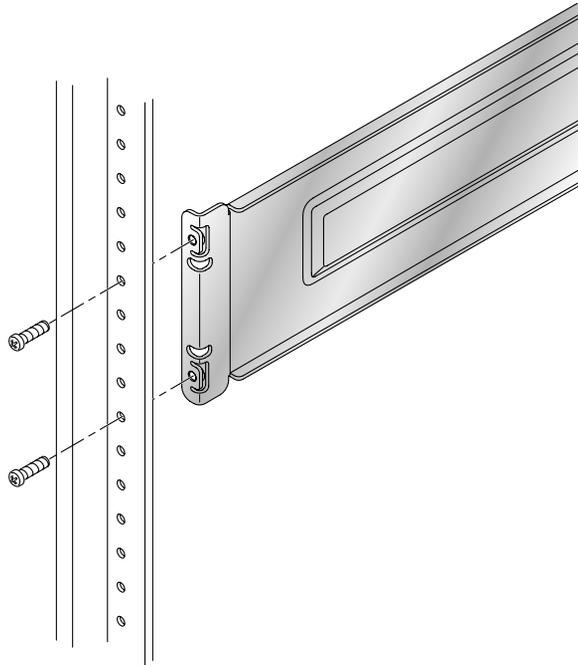


FIGURE 7 Attach the front bracket of the side rail behind the mounting rail.

8. Insert and tighten two screws through the vertical mounting rail to the front bracket of the side rail.
9. Repeat Steps 7 and 8 for the right side rail.



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**Caution** – Use two people to lift and move the array for Step 10. Use care to avoid injury. An array can weigh up to 90 pounds (41 kg).

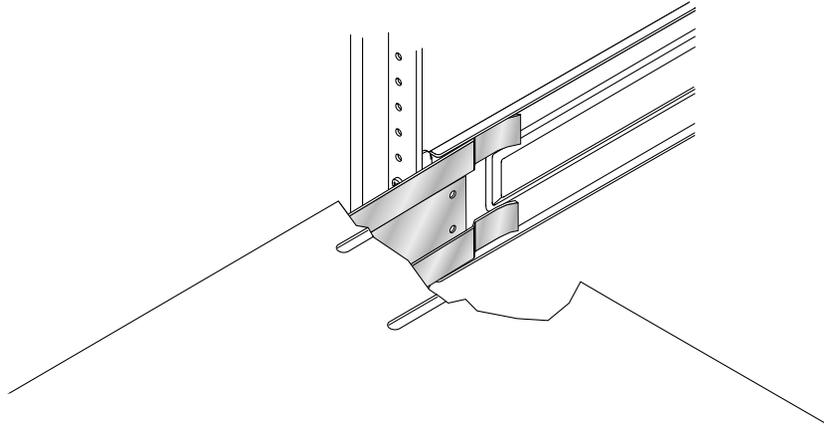
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**Caution** – The cabinet can become front-heavy while an array is being installed. Unless your cabinet is bolted to the floor, ensure that the stabilizer legs are extended before proceeding. Failure to extend the legs can result in the cabinet tipping forward and injuring personnel.

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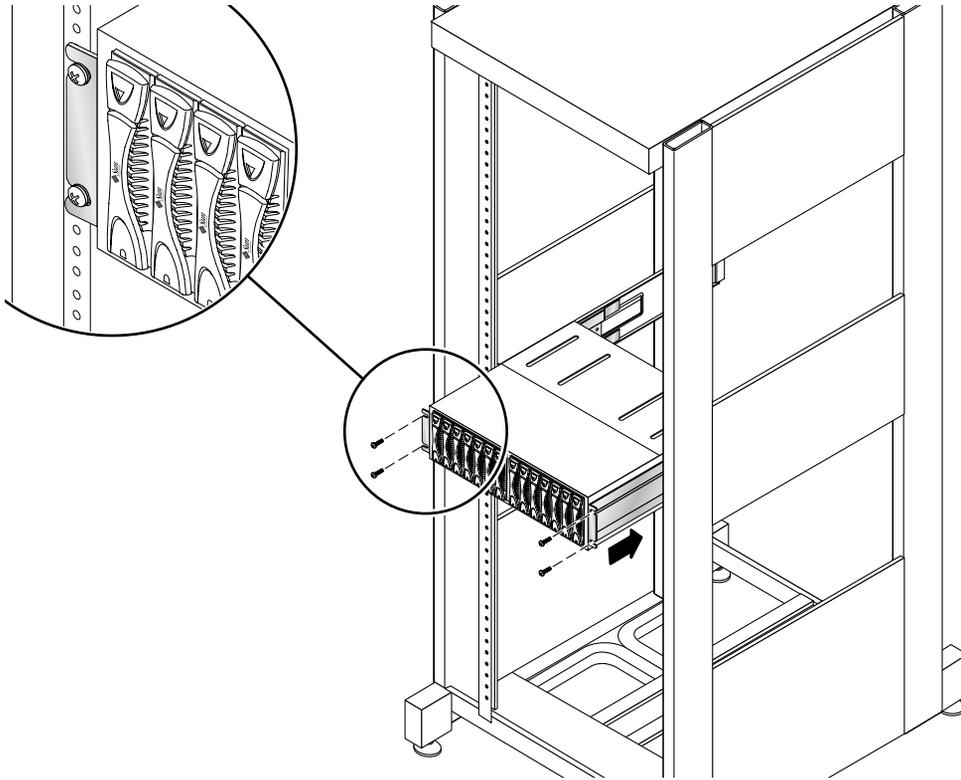
- 10. Lift the array and align the forked ends of the array rear brackets with the rack rails (FIGURE 8).**



**FIGURE 8** Inserting the array rear bracket into the rack rail.

- 11. Insert the brackets of the array into the rails.**
- 12. Slide the array into the cabinet until the front brackets touch the front mounting rails.**  
The array should slide into the cabinet smoothly.

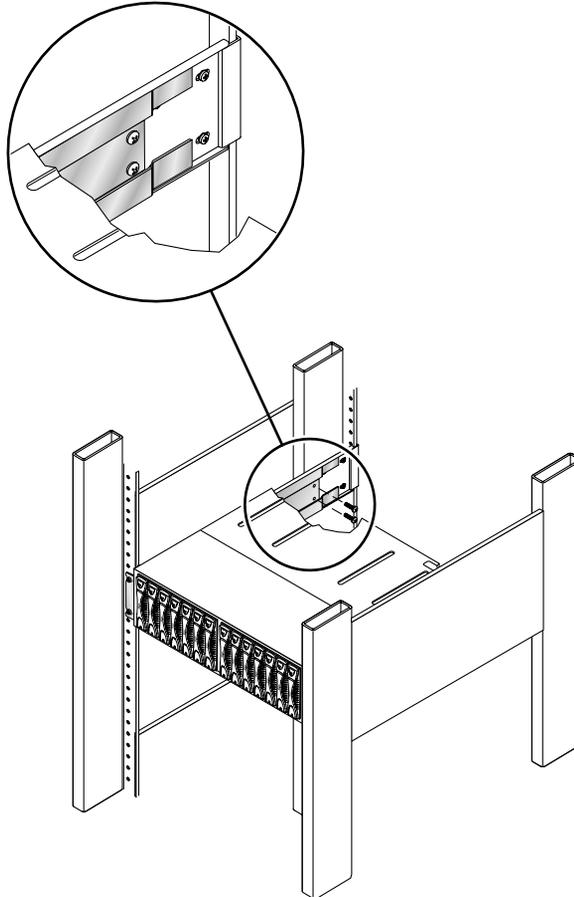
- 13. Secure the array by tightening the screws to hold the array bracket to the front mounting rail (FIGURE 9).**



**FIGURE 9** Securing the Array with the Front Screws

- 14. Secure the left rear bracket of the array to the side rail using two screws (FIGURE 10).**

The screw holes on the array rear bracket should align with the holes on the side rail. The screw holes are located on the side rail after the four expansion screws used in Step 3. Access them from the rear of the cabinet.



**FIGURE 10** Securing the 6120 Rear Bracket to the Side Rail with Two Screws

- 15. Repeat Step 14 for the right rail. Continue to follow this procedure for each Sun StorEdge 6120 array and expansion unit that you install.**

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# Documentation of Release Features

This section lists the English text from the Configuration Service online help for the release features. The help topics are:

- “Array Management” on page 32
- “Managing Profiles” on page 33
- “To Change an Array Disk Profile” on page 34
- “Viewing the Access Matrix” on page 35
- “To Place a Storage Pool Online or Offline” on page 35

## Array Management

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**Caution** – Do not configure the Sun StorEdge 6000 Family arrays by using the array command-line interface and this web browser user interface at the same time. Use the command-line interface **or** web browser user interface.

Do not use more than one instance of the software at a time to access or configure the same storage arrays or systems. For example, two storage users using the software from two different machines cannot add the same volumes to a volume group each user is creating or modifying.

---

The Array Management main menu is the default page that is displayed after you log into the software. From this page, you can:

- Configure specific storage arrays
- Configure multiple arrays by duplicating an existing array’s settings to another array

This page also enables you to check detailed system and device health status by launching the Storage Automated Diagnostic Environment application. (This application is installed by default on the Sun StorEdge 6300 Storage Service Processor. It must be installed on the local Solaris host for the Sun StorEdge 6100 arrays to be able to launch it from this page.)

See also Array Details and Tray Reconfiguration.

- Configuring An Array
- Managing Storage Pools
- Array Registration (Sun StorEdge 6120)

- Express Array Configuration
- Managing Profiles
- Custom Array Configuration
- Duplicating Array Settings
- Managing Volumes

## Managing Profiles

Clicking the Array Management Profile tab displays the Profile Management page. You can choose a pre-configured profile or create a new one. Filter the profiles to display with the following information:

- Name - The profile name
- Raid - RAID level 0, 1, or 5 configured across all disks within a virtual disk
  - Segment size – A segment size of 4 Kbytes, 8 Kbytes, 16 Kbytes, 32 Kbytes, or 64 Kbytes. In a RAID-5 configuration, the segment size is the size of the data striped across volumes.
- Readahead – The read-ahead cache.status (on/off)
- Array Type – Determines the specific array type to use:
  - 1) Exact Match – IOPS (1x2, 2x4 array)
  - 2) Exact Match – Bandwidth (1x1, 2x2 array)
  - 3) Exact Match – Capacity (1x3, 2x6 array)
  - 4) Best Available Match – IOPS
  - 5) Best Available Match – Bandwidth
  - 6) Best Available Match – Capacity

Types 1 to 3 match only one array configuration (1x1, 1x2, 1x3, 2x2, 2x4, 2x6). If a profile has one of these three parameter settings and the specific array is not available, then the profile cannot be applied.

Types 4 to 6 attempt to match the best available array based on the environment (IOPs, Bandwidth, Capacity). For example, Best Available Match – Capacity will search for 2x6s, then 2x4s, then 2x2s. The following rules apply to the three Best Available Match settings for the listed models:

- (SE6120: MR-1) IOPS: 1x2 - 1x1 - 1x3
- (SE6120: MR-1) Bandwidth: 1x1 - x2- 1x3
- (SE6120: MR-1) Capacity: 1x3 - 1x2 - 1x1
- (SE6120: MR-2, SE6320) IOPS: 2x4 - 2x2 - 2x6

- (SE6120: MR-2, SE6320) Bandwidth: 2x2 - 2x4 - 2x6
- (SE6120: MR-2, SE6320) Capacity: 2x6 - 2x4 - 2x2

Note: that for the last three choices, the array or system determines the best available match.

Also see To Change an Array Disk Profile.

## ▼ To Change an Array Disk Profile

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**Note** – Before you reconfigure an existing array, note that any information you enter here overwrites the existing information for the array.

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- 1. Select the Array Management Individual Configuration tab.**
- 2. Select an array in the Array Selection table and click Express Configuration.**

The Express Configuration page displays showing array details. You can update the array description.
- 3. Click Change Profile.**

The Change Profile Wizard displays, showing the current profile and new profiles to select. The page lists profile details such as raid settings, read-ahead status, and segment size.
- 4. Select a profile from the Profile List.**
- 5. Click next.**
- 6. Select a tray from the table.**

You can add all drives or a specific number of drives in the array to the profile.

---

**Note** – If the number of available drives is less than number of total drives plus a hotspare drive, all drives must be selected for maximum utilization.

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- 7. Select the number of drives to allocate from the drives to add from the Allocate pull-down menu.**
- 8. Click next.**

The Confirm Selection page appears with a list of the affected volumes and trays that will be affected by a changed profile.
- 9. Press the next button to save the profile changes or press the Back or Cancel button to not change the profile.**

# Viewing the Access Matrix

Select Storage Access tab → Access Matrix button to display the Array Access Management page. The page lists the read/write permissions for each initiator by volume and the following fields:

- Volume Name.
- LUN – The logical unit number of the volume. The default LUN is the first one available.
- Group – The volume group name. A volume can only belong to one volume group.
- Initiator WWN – The World Wide Name (wwn) of the initiator. For example, 210000e08b047212.
- Group – The initiator group name.
- Permissions Default – Default read/write permissions on the volume. The permissions apply to all initiators unless mapped otherwise.
- Group – Group permissions between the volume group and this initiator group.
- Effective – Actual permission that the initiator has on the volume.

## ▼ To Place a Storage Pool Online or Offline

1. Click **Individual Configuration** at the **Array Management** page.
2. Select a storage array in the table and click **Custom Configuration**.
3. Click **Manage Pools**.
4. Select one or more pools in the table.
5. Click one of the following buttons:
  - Click **Online** to place the storage pool volumes online, making the storage available
  - Click **Offline** to place the storage pool volumes offline. Note - you can initialize a pool that is offline.
6. Click **Refresh** to update the storage pool status in the table.

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**Note** – As noted in “Documentation Issues” on page 13, the following message will come up whenever a user is about to initialize a pool. This message is not localized at this time.

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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."

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## Sun StorEdge 6120 Array Terminology

The Storage Networking Industry Association (SNIA) is currently developing a standard set of terminology. When it has been totally adopted by all storage manufacturers, this terminology standard will make it easier for customers to understand terms used by different vendors.

Sun Microsystems is making a move to adopt the SNIA terms now. The first storage product to use the new SNIA terminology is the Sun StorEdge 6000 family product line.

TABLE 7 shows a comparison (mapping) of the array Telnet terms to the terms used by the Sun StorEdge Configuration Service management software.

**TABLE 7** Sun StorEdge 6120 Terminology

<b>Array Telnet CLI Terminology</b>	<b>Sun StorEdge Configuration Service Software Terminology</b>
Volume	Storage Pool
Slice	Volume
LUN	Volume
Administrative Domain	Storage Array
Partner Group	HA Configuration
Array	Tray
Enclosure	Tray
Expansion Unit	Expansion Unit

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## Service Contact Information

If you need help installing or using this product, go to:

<http://www.sun.com/service/contacting>