



Sun StorEdge™ 6000 Family Host Installation Software Guide

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Preface

This document explains the installation considerations, requirements, and procedures for installing the Sun StorEdge™ 6000 Family Host Installation Software from a CD or a web-based download. The intended audience for this document includes Sun service and support engineers, SAN administrators, and storage system administrators.

How This Book Is Organized

Chapter 1 explains the requirements and preparation procedures for the software installation.

Chapter 2 explains how to install and remove the software.

Chapter 3 explains how to log in to the software using the command-line interface (CLI) and a web browser.

Using UNIX Commands

This document does not contain information about basic UNIX® commands and procedures such as shutting down the system, booting the system, and configuring devices.

See one or more of the following for this information:

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

Typographic Conventions

| Typeface | Meaning | Examples |
|------------------|--|--|
| AaBbCc123 | The names of commands, files, and directories; on-screen computer output | Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. % You have mail. |
| AaBbCc123 | What you type, when contrasted with on-screen computer output | % su Password: |
| <i>AaBbCc123</i> | Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values. | Read Chapter 6 in the <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> be superuser to do this. To delete a file, type <code>rm filename</code> . |
| [] | In syntax, brackets indicate that an argument is optional. | <code>scmadm [-d sec] [-r n[:n],[n]...] [-z]</code> |
| {arg arg} | In syntax, braces and pipes indicate that one of the arguments must be specified. | <code>sndradm -R b {p s}</code> |
| \ | At the end of a command line, the backslash (\) indicates that the command continues on the next line. | <code>atm90 /dev/md/rdisk/d5 \ /dev/md/rdisk/d1 atm89 \ /dev/md/rdisk/d5 /bit- maps/map2 \ ip sync</code> |

Shell Prompts

| Shell | Prompt |
|---------------------------------------|----------------------|
| Bourne shell and Korn shell | \$ |
| Bourne shell and Korn shell superuser | # |
| C shell | <i>machine-name%</i> |
| C shell superuser | <i>machine-name#</i> |

Related Documentation

This section lists:

- Sun StorEdge 6320 System Documentation
- Sun StorEdge 6120 Array Documentation
- System Component Documentation

Sun StorEdge 6320 System Documentation

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

| Application | Title | Part Number |
|---|--|--|
| Late-breaking news | <ul style="list-style-type: none">• <i>Sun StorEdge 6320 System 1.2 Release Notes</i> | 816-7880- <i>nn</i> |
| Sun StorEdge 6320 system preparation | <ul style="list-style-type: none">• <i>Sun StorEdge 6320 System 1.2 Site Preparation Guide</i>• <i>Sun StorEdge 6320 System Regulatory and Safety Compliance Manual</i> | 816-7877- <i>nn</i> 816-7876- <i>nn</i> |
| System installation and initial configuration | <ul style="list-style-type: none">• <i>Sun StorEdge 6320 System 1.2 Installation Guide</i> | 816-7878- <i>nn</i> |
| Configuration | <ul style="list-style-type: none">• <i>Sun StorEdge Configuration Service Online Help</i> | NA |
| Software installation from CD | <ul style="list-style-type: none">• <i>Sun StorEdge 6000 Family Host Installation Software Guide</i> | 817-1739- <i>nn</i> |
| System reference | <ul style="list-style-type: none">• <i>Sun StorEdge 6320 System 1.2 Reference and Service Manual</i> | 816-7879- <i>nn</i> |
| System diagnostics | <ul style="list-style-type: none">• <i>Storage Automated Diagnostics Environment Online Help</i>• <i>Storage Automated Diagnostics Environment 2.2 User's Guide, System Edition</i> | NA 817-0192- <i>nn</i> |

Sun StorEdge 6120 Array Documentation

The following is a list of documents related to the Sun StorEdge 6120 array.

| Subject | Title | Part Number |
|---|---|--|
| Late-breaking news | • <i>Sun StorEdge 6120 Array Release Notes</i> | 817-0201- <i>nn</i> |
| Sun StorEdge 6120 array preparation | • <i>Sun StorEdge 6120 Array 1.0 Site Preparation Guide</i> • <i>Sun StorEdge 6120 Array Regulatory and Safety Compliance Manual</i> | 817-0960- <i>nn</i> 817-0961- <i>nn</i> |
| System installation and initial configuration | • <i>Sun StorEdge 6120 Array Installation Guide</i> | 817-0199- <i>nn</i> |
| System reference | • <i>Sun StorEdge 6020 and 6120 Arrays Reference and Service Manual</i> | 817-0200- <i>nn</i> |

System Component Documentation

The following documents provide information about system components.

| Application | Title | Part Number |
|---|---|---|
| SAN Foundation Software | <ul style="list-style-type: none">• <i>Sun StorEdge SAN Foundation 4.n Configuration Guide</i> | 817-1245- <i>nn</i> |
| Traffic Manager Software | <ul style="list-style-type: none">• <i>Sun StorEdge Traffic Manager Software Installation and Configuration Guide</i>• <i>Sun StorEdge Traffic Manager 3.n Installation and User's Guide for Microsoft Windows 2000 and Windows NT Operating Systems</i>• <i>Sun StorEdge Traffic Manager 3.n Installation and User's Guide for IBM AIX Operating System</i>• <i>Sun StorEdge Traffic Manager 3.0 Installation and User's Guide for Hewlett Packard HP-UX Operating System</i> | 816-1420- <i>nn</i> 817-0830- <i>nn</i> 817-0832- <i>nn</i> 817-0834- <i>nn</i> |
| Sun StorEdge network Fibre Channel switch-8 and switch-16 | <ul style="list-style-type: none">• <i>Sun StorEdge Network FC Switch-8 and Switch-16 Release Notes</i>• <i>Sun StorEdge Network FC Switch-8 and Switch-16 Installation and Configuration Guide</i>• <i>Sun StorEdge Network FC Switch-8 and Switch-16 Best Practices Manual</i>• <i>Sun StorEdge Network FC Switch-8 and Switch-16 Operations Guide</i>• <i>Sun StorEdge Network FC Switch-8 and Switch-16 Field Troubleshooting Guide</i> | 816-0842- <i>nn</i> 816-0830- <i>nn</i> 816-2688- <i>nn</i> 816-1986- <i>nn</i> 816-0252- <i>nn</i> |
| SANbox™ switch management using SANSurfer® | <ul style="list-style-type: none">• <i>SANbox-8/16 Segmented Loop Switch Management User's Manual</i>• <i>SANbox-8 Segmented Loop Fibre Channel Switch Installer's/User's Manual</i>• <i>SANbox-16 Segmented Loop Fibre Channel Switch Installer's/User's Manual</i> | 875-3060- <i>nn</i> 875-1881- <i>nn</i> 875-3059- <i>nn</i> |
| Expansion cabinet | <ul style="list-style-type: none">• <i>Sun StorEdge Expansion Cabinet Installation and Service Manual</i> | 805-3067- <i>nn</i> |
| Storage Service Processor | <ul style="list-style-type: none">• <i>Sun V100 Server User's Guide</i> | 806-5980- <i>nn</i> |
| Solaris OS | <ul style="list-style-type: none">• <i>Solaris Handbook for Sun Peripherals</i> | 816-4468- <i>nn</i> |

Accessing Sun Documentation

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

<http://www.sun.com/documentation>

Sun Storage 6320 System Documentation

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

Sun Storage 6120 Array Documentation

http://www.sun.com/products-n-solutions/hardware/docs/Network_Storage_Solutions/Midrange/6120/index.html

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

Sun StorEdge 6000 Family Host Installation Software Guide, part number 817-1739-12

Planning for the Installation

This chapter explains requirements and preparation procedures for installing the Sun StorEdge 6000 Family Host Installation Software from a CD-ROM or a web-based download from www.sun.com/software/download/.

The topics described in this chapter include the following:

- “Software Overview” on page 1-2
- “Software Requirements” on page 1-6
- “Required and Supported Hardware” on page 1-7
- “Preparing the SAN” on page 1-9

1.1 Software Overview

The Sun StorEdge 6000 Family Host Installation Software package includes the following software:

- Sun StorEdge 6120 Configuration Service Software
- Sun StorEdge 6120/6320 Remote Configuration CLI (sscs)
- Sun StorEdge SAN Foundation Software
- Storage Automated Diagnostic Environment

This package provides what is needed to use the Sun StorEdge 6120 array and Sun StorEdge 6320 system with Solaris OS hosts. You will need to download additional software for hosts running other than Solaris OS.

TABLE 1-1 shows all the software components of the Sun StorEdge 6120 array and StorEdge 6320 system.

TABLE 1-2 explains the software components available in the Sun StorEdge 6000 Family Host Installation Software package.

TABLE 1-3 explains the additional software components available by web download. (They are not included in the Sun StorEdge 6000 Family Host Installation Software package.)

TABLE 1-1 Sun StorEdge 6120 Array and Sun StorEdge 6320 System Software Overview

| | Sun StorEdge 6120 Array | Sun StorEdge 6320 System |
|----------------------------|--|--|
| Management Software | <ul style="list-style-type: none"> • Sun StorEdge Configuration Service Software <p>Install the 6120 array management software on an external Solaris OS host.</p> | <ul style="list-style-type: none"> • Sun StorEdge Configuration Service Software • Sun StorEdge Storage Automated Diagnostic Environment Software - for Sun StorEdge 6320 system diagnostics <p>The system ships with the management software installed on the internal Service Processor. The Sun StorEdge Configuration Service Software can also be installed on an external Solaris OS host.</p> |
| | <p>You can also manage the StorEdge 6120 arrays and StorEdge 6320 systems with the following management tool installed on an external host:</p> <ul style="list-style-type: none"> • Remote Configuration CLI (sscs) (also called the thin-scripting client) available for <ul style="list-style-type: none"> • Solaris OS - Sun StorEdge 6000 CLI Package for Solaris OS (optional) • AIX - Sun StorEdge 6000 CLI Package for AIX • Red Hat Linux - Sun StorEdge 6000 CLI Package for Linux • HP-UX - Sun StorEdge 6000 CLI Package for HP-UX • Windows 2000 Advanced Server - Sun StorEdge 6000 CLI Package for Windows | |
| Host Software | <p>Servers and other external data hosts on the SAN use the following software:</p> <ul style="list-style-type: none"> • Sun StorEdge SAN Foundation Software - Solaris OS hosts • Sun StorEdge Traffic Manager Software - Hosts with other operating systems • Storage Automated Diagnostic Environment Software - Device Edition (optional) | |

TABLE 1-2 Software Available from the Sun StorEdge 6000 Family Host Installation Software Package (Solaris OS CD or Web Download)

| Software | Description |
|---|--|
| Sun StorEdge Configuration Service Software | <p>This software enables you to manage Sun StorEdge 6000 Family storage arrays and devices in a storage area network (SAN) environment. You can perform a variety of functions by using the Configuration Service web interface or the command-line interface (CLI):</p> <ul style="list-style-type: none">• Configure and manage storage trays, pools, LUNs, and volumes• Create and manage initiator groups and initiators• Administer storage service processor features such as passwords, user email notification, date, network settings, and other items• View logs, reports, and overall array health |
| Sun StorEdge Remote Configuration CLI (Solaris OS version) | <p>The CLI provides remote configuration from a command-line interface. This thin-scripting client software provides access to storage array configuration and management services through a CLI client on an external host.</p> |
| Storage Automated Diagnostic Environment Software - Device Edition (Optional) | <p>The Storage Automated Diagnostic Environment Software - Device Edition resides on SAN devices to assist for measuring the online health and diagnostic monitoring tool of the SAN.</p> <p>Also available for download from: http://www.sun.com/software/download/</p> <p>Patches are available from: http://sunsolve.sun.com/</p> |
| Sun StorEdge SAN Foundation Software - (for Solaris OS hosts) | <p>This software incorporates kernel drivers and utilities that enable Solaris OS data hosts to connect to, monitor, and transfer data on a SAN.</p> <p>Install the software on Solaris OS data hosts.</p> <p>Also available for download from: http://www.sun.com/storage/san</p> <p>Patches are available from: http://sunsolve.sun.com/</p> |

TABLE 1-3 Additional Software Available by Web-based Download

| Software | Description |
|---|---|
| Sun StorEdge Remote Configuration CLI (sscs) - Hosts for Other Operating Systems | <p>For remote configuration from a command-line interface, install a Sun StorEdge 6000 CLI package for AIX, HP-UX, Linux, or Windows 2000 Server. This thin-scripting client software provides access to storage array configuration and management services through a CLI client on an external host.</p> <p>Supported Operating Systems</p> <ul style="list-style-type: none">• AIX - Sun StorEdge 6000 CLI Package for AIX• Red Hat Linux - Sun StorEdge 6000 CLI Package for Linux• HP-UX - Sun StorEdge 6000 CLI Package for HP-UX• Windows 2000 Advanced Server - Sun StorEdge 6000 CLI Package for Windows |
| Sun StorEdge Traffic Manager Software - Hosts for Other Operating Systems | <p>This software incorporates kernel drivers and utilities that enable data hosts running operating systems other than Solaris OS to connect to, monitor, and transfer data on a SAN.</p> <p>Install the software on data hosts.</p> <p>Available for download from: http://www.sun.com/software/download/</p> <p>Patches are available from: http://sunsolve.sun.com/</p> |

1.2 Software Requirements

TABLE 1-4 lists the required operating environment and software.

TABLE 1-4 Operating System and Browser Requirements

| | |
|--|--|
| Operating Environment and Supporting Software | Solaris™ OS 9 Solaris OS 8 10/01 with patch number 110934-07 Java™ SDK version 1.4.0 Sun™ Management Center version 3.0 Note: For AIX, HP-UX, LINUX, and Windows 2000 Server requirements, refer to the <i>Sun StorEdge 6320 System 1.2 Installation Guide</i> . |
| Web Browser (minimum version) | Microsoft Internet Explorer version 5.0 Netscape Navigator™ version 4.79 or 6.0 |

1.2.1 Netscape Navigator Version 4.79 Note

If you use the Netscape Navigator version 4.79 web browser to connect to the Sun StorEdge Configuration Service software through the secure HTTPS port 9443, you might encounter an error message the first time you attempt to connect. The error message appears in a pop-up window after you respond to the last security certificate prompt:

```
A network error occurred while Netscape was receiving data.  
(Network Error: I/O error) Try connecting again.
```

You can avoid this problem by:

- Using the Netscape Navigator version 6.0 or later to connect to the secure HTTPS port
- Using Netscape Navigator version 4.79 to connect to the unsecured HTTP port 9080

1.3 Required and Supported Hardware

TABLE 1-5 shows the required and supported hardware for the Sun StorEdge 6000 Family Host Installation Software.

TABLE 1-5 Required and Supported Hardware

| | |
|---|--|
| Host Machines, Supported | The software is supported on host machines using the Solaris operating system. Note: For server requirements for hosts running AIX, HP-UX, LINUX, and Windows 2000, refer to the <i>Sun StorEdge 6320 System Installation Guide</i> . |
| Supported Storage Arrays and Systems | Sun StorEdge 6120 arrays Sun StorEdge 6320 systems |
| Disk and Memory Space Requirements | |
| Disk Space | 1 Gbyte |
| System Memory | 256 Mbytes (512 Mbytes is preferred) |

1.4 Installing Required Patches

Required patches and update procedures for a new release are listed in the Sun StorEdge 6320 system and Sun StorEdge 6120 array release notes.

The current release notes are available from:

- Sun StorEdge 6320 system - http://www.sun.com/products-n-solutions/hardware/docs/Network_Storage_Solutions/Midrange/6320/index.html
- Sun StorEdge 6120 array - http://www.sun.com/products-n-solutions/hardware/docs/Network_Storage_Solutions/Midrange/6120/index.html

Review the patch requirements and update the patches required for your system.

1.4.0.1 Sun StorEdge 6320 System

For the Sun StorEdge 6320 system management software patches, follow the release notes procedure to use the Storage Automated Diagnostic Environment software to determine and download required patches.

1.4.0.2 Sun StorEdge 6120 Array

For the Sun StorEdge 6120 array and data hosts software, review the patch requirements and the installation procedures in the release notes and install the required patches from the SunSolve web site:

<http://sunsolve.sun.com>

The basic download procedure for a Sun StorEdge 6120 patch is:

1. Navigate to the Patch Portal and select Patch Finder.
2. Download the desired array patch images.
3. Refer to the patch README file for specific patch installation instructions.

Note – Also refer to the *Sun StorEdge SAN Foundation Software 4.2 Release Notes* and the *Storage Diagnostic Environment 2.2 Release Notes* for a list of patches that are required.

1.5 Preparing the SAN

Before installing the Sun StorEdge 6000 Family Host Installation Software, set up your SAN and install the Sun StorEdge SAN Foundation software, version 4.2 on Solaris OS hosts and Sun StorEdge Traffic Manager on hosts running other operating systems.

▼ To Set Up a SAN

You must set up the SAN before installing Sun StorEdge 6000 Family Host Installation Software.

- 1. Install the host bus adapters (HBAs) and connect the hosts, switches, and storage devices.**

Refer to the documentation that came with your HBAs, data hosts, switches, and storage devices for specific instructions on setting up that particular hardware. You can find a table of hardware components that are on Sun's price list in the *Sun StorEdge SAN Foundation Software Configuration Guide*.

- 2. Upgrade the operating system, if necessary.**

Make sure that required operating system versions (listed in the Release Notes) are on the hosts. For example, the minimum Solaris OS version supported in this release is Solaris OS 8 4/01 operating environment (OE). Refer to your Solaris OS OE installation and user's documentation for details.

- 3. Install the Recommended and Security Patch Cluster on the host.**

The Recommended and Security Patch Cluster is available at <http://sunsolve.sun.com>.

- 4. For Solaris OS hosts, install the Sun StorEdge SAN Foundation Software from the CD-ROM or the web as listed in Chapter 2, "Installing the Sun StorEdge 6000 Family Host Installation Software" on page 2-11 to complete the installation.**

- 5. For hosts running operating systems other than Solaris OS, install the Sun StorEdge Traffic Manager from www.sun.com/software/download/.**

Installing the Sun StorEdge 6000 Family Host Installation Software

Note – Perform the procedures in this chapter as the superuser (root).

This chapter explains the following topics:

- “Installation Task Summary” on page 2-12
- “Before You Install the Software” on page 2-13
- “Installing the Sun StorEdge 6000 Family Host Installation Software” on page 2-16
- “Post-Installation Procedures” on page 2-24
- “Removing the Software” on page 2-27

2.1 Installation Task Summary

TABLE 2-1 shows the installation steps for this chapter.

TABLE 2-1 Installation Steps

| Installation Step | See This Section or Chapter |
|--|---|
| 1. Read the Release Notes for your system. | “Accessing Sun Documentation” on page -xi |
| 2. Review the requirements in Chapter 1. | “Planning for the Installation” on page 1-1 |
| 3. Complete the SAN preparation procedures for each host where you will install software. | “Preparing the SAN” on page 1-9 |
| 4. Install the software as superuser (root). | “Before You Install the Software” on page 2-13 “Installing the Sun StorEdge 6000 Family Host Installation Software” on page 2-16 |
| 5. Configure the Sun StorEdge SAN Foundation Software and Storage Automated Diagnostic Environment (if necessary). | “Sun StorEdge SAN Foundation Software” on page 2-24 “Configuring the Storage Automated Diagnostic Environment Software” on page 2-24 |
| 6. Check the log files for messages related to the installation. | “Checking Log Files After the Installation” on page 2-25 |
| 7. Log in using the CLI (<code>sscs</code>) or a web browser. | “Logging In To the Software” on page 3-30 |

2.2 Before You Install the Software

Before you install the software, read the following sections:

- “Suggested Installation Strategies” on page 2-13
- “Multiple Copies of the Sun StorEdge Configuration Service Software” on page 2-15

2.2.1 Suggested Installation Strategies

The following section discusses considerations for installing software on management and data hosts.

2.2.1.1 Management Host

- Sun StorEdge 6120 arrays

The management host is the machine on which you install the Sun StorEdge Configuration Service software (which includes the web-based configuration tool and the Remote Configuration CLI *SSCS*). You can install the Remote Configuration CLI (*SSCS*) on other machines that have network connections to the management station.

- Sun StorEdge 6320 systems

The web-based management software is already installed internally on the Storage Service Processor. You can install the Remote Configuration CLI (*SSCS*) on external hosts to use a command-line interface rather than a web browser. The hosts must have Ethernet connections to the Sun StorEdge 6320 system.

Note – The management host does not have to be connected to the SAN fabric. It does require an Ethernet connection to the arrays. See FIGURE 2-1.

2.2.1.2 Data Hosts

The data hosts are machines connected to your SAN Fibre Channel fabric that read and write data in your SAN with Fibre Channel connections to the Sun StorEdge 6320 system or Sun StorEdge 6120 arrays. You must install the Sun StorEdge SAN Foundation software (for Solaris OS) or Traffic Manager software (other operating systems) on each data host connected to the fabric. You might also want to install Storage Automated Diagnostic Environment client software for debugging any data path connectivity issues.

For the Sun StorEdge 6120 Arrays, the management and data host stations can be a single machine, but for efficiency, install the Sun StorEdge Configuration Service software portion on a machine not in the data path (that is, a machine that is not a data host station).

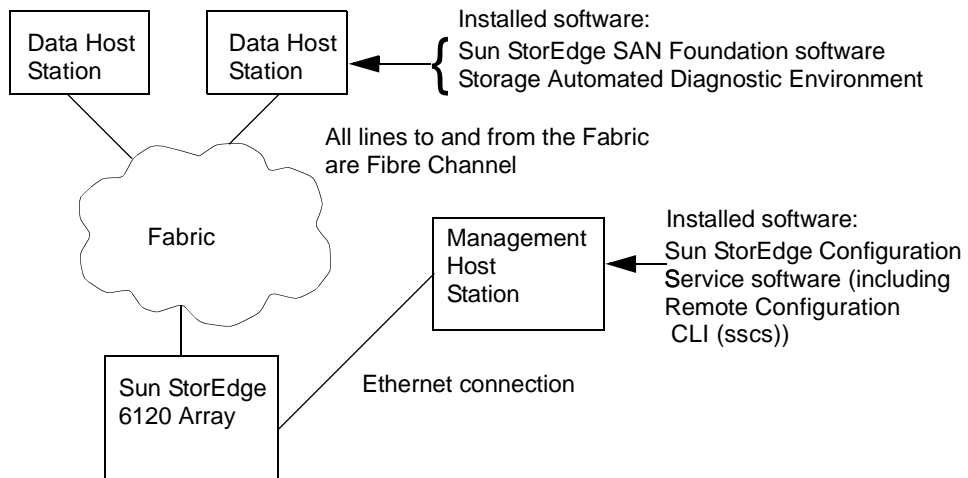


FIGURE 2-1 Sun StorEdge 6120 Array Example Installation

2.2.2

Multiple Copies of the Sun StorEdge Configuration Service Software

You might need to install multiple copies of the Sun StorEdge Configuration Service software if you have many Sun StorEdge 6120 arrays. The Sun StorEdge Configuration Service software requires additional memory for each pool, volume, or initiator or volume group. The exact number of Sun StorEdge 6120 arrays that can be configured with one copy of the Sun StorEdge Configuration Service software varies with the complexity of the configurations, the memory on the system where the Sun StorEdge Configuration Service software is installed, and the other applications running on the system.

When you use more than one copy of the Sun StorEdge Configuration Service software, you must specify the IP address of each Sun StorEdge 6120 array that will be configured with that copy of the software.



Caution – Only one copy of the Sun StorEdge Configuration Service software should be used to configure a particular Sun StorEdge 6120 array. Using multiple copies of the StorEdge Configuration Service software to configure a particular Sun StorEdge 6120 array causes unpredictable results.

2.3 Installing the Sun StorEdge 6000 Family Host Installation Software

You can install the software packages from a Solaris OS CD or by web download. After loading the software from the CD or downloading it from the web, run the `install.sh` script and follow the steps in the script.

The follow sections explain this procedure in detail:

- “Install the Software as the Superuser (root)” on page 2-16
- “Installing the Software from the CD” on page 2-17
- “Installing the Software from the Web” on page 2-18
- “Completing the Installation Script” on page 2-19

Then continue with the next section:

- “Post-Installation Procedures” on page 2-24

2.3.1 Install the Software as the Superuser (root)

You have to install the software packages as the superuser (`root`).

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

▼ To Remove Superuser Environment or Profile Aliases

- **Log in as superuser and type the appropriate command in a terminal window.**

For the Korn shell:

```
# unalias -a
```

For the C shell:

```
> unalias *
```

2.3.2 Installing the Software from the CD

To install the Sun StorEdge 6000 Family Host Installation Software from CD:

1. **Log in to your management host station as superuser.**
2. **Remove any defined aliases for this user as described in “To Remove Superuser Environment or Profile Aliases” on page 2-16.**
3. **Insert the CD into the CD-ROM drive and start the Volume Manager daemon `vold(1)` (if needed).**

If you downloaded the software from the Sun Download Center, and uncompressed the `SE6X20_host_sw.tar` file, go to the directory where you extracted the files and perform step 5.

```
# /etc/init.d/volmgt start
```

Note – You need to start the Volume Manager daemon only once. Do not start the daemon again.

4. **Change to the `root` directory. For example,**

```
# cd /cdrom/host_cd
```

5. **Run the `install.sh` script.**

```
# ./install.sh
```

The installation menu is displayed.

6. **Go to “Completing the Installation Script” on page 2-19 to continue the installation.**

2.3.3 Installing the Software from the Web

You can also download the software from the Sun Download Center (SDLC).

▼ To Download and Install the Software

1. **Download the latest version of the software from the Sun Download Center by going to the following URL:**

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

2. **Choose the link for the Sun StorEdge 6000 Family Host Installation Software.**

3. **Log in.**

If you have not already registered, do so and then log in.

4. **Choose Accept and Continue on the Legal/License Agreement page.**

5. **Choose the link for the SE6X20_host_sw.tar.Z package.**

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

For example:

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

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

7. **Change to the directory in which you saved the SE6X20_host_sw.tar.Z file.**

```
# cd /directory
```

8. **Uncompress the SE6X20_host_sw.tar.Z package.**

```
# uncompress SE6X20_host_sw.tar.Z
```

9. **Extract the SE6X20_host_sw.tar package.**

```
# tar -xvf SE6X20_host_sw.tar
```

10. Run the `install.sh` script.

```
# ./install.sh
```

The installation menu is displayed.

11. Go to “Completing the Installation Script” on page 2-19 to continue the installation.

2.3.4 Completing the Installation Script

The installation script main menu displays when you execute the `install.sh` script as shown in CODE EXAMPLE 2-1.

CODE EXAMPLE 2-1 Installation Script Main Menu

```
Host Software Installation
-----

This script installs software for your Sun StorEdge(tm) 6120
or your Sun StorEdge(tm) 6320 storage system.

Software components included in this distribution:
- Sun StorEdge[tm] SAN Foundation Software
- Storage Automated Diagnostic Environment
- Sun StorEdge 6120 Configuration Service Software
- Sun StorEdge 6120/6320 Remote Configuration CLI (sscs)

Do you want to continue? [y/n] :
```

The script steps that follow the main menu allow you to choose what software you want to install and where it should be installed. TABLE 2-2 explains the menu options to pick for your installation.

TABLE 2-2 Installation Script Menu Choices

| If You Want to Install | Type y for These Menu Options |
|--|--|
| All packages on one machine. | <ul style="list-style-type: none"> • Sun StorEdge SAN Foundation software • Storage Automated Diagnostic Environment • Sun StorEdge Configuration Service |
| Remote Configuration CLI and Sun StorEdge Configuration Service on the <i>Sun StorEdge 6120 array management station</i> . | <ul style="list-style-type: none"> • Sun StorEdge Configuration Service |
| Remote Configuration CLI, Sun StorEdge Configuration Service, and Storage Automated Diagnostic Environment software on the <i>Sun StorEdge 6120 array management station</i> . | <ul style="list-style-type: none"> • Sun StorEdge Configuration Service • Storage Automated Diagnostic Environment |
| Remote Configuration CLI on the <i>Sun StorEdge 6320 system management station</i> . | <ul style="list-style-type: none"> • Sun StorEdge6120/6320 Remote Configuration CLI (sscs) |
| Sun StorEdge SAN Foundation software on <i>each data host station</i> . | <ul style="list-style-type: none"> • Sun StorEdge SAN Foundation software |
| Storage Automated Diagnostic Environment on <i>each data host station</i> . | <ul style="list-style-type: none"> • Storage Automated Diagnostic Environment |

The example shows selecting software to install on an external management host and data hosts, such as servers.

- **On the Management Host:** To install the Remote Configuration CLI (sscs), Sun StorEdge Configuration Service (6120), and Storage Automated Diagnostic Environment software (6120) on a management host, type **y** next to the Sun StorEdge 6120 Configuration Service Software and Storage Automated Diagnostic Environment Software choices and **n** next to the other choices.

Note – The Sun StorEdge 6120 Configuration Service menu option installs both the CLI and web-based software.

- **On each Data Host:** To install the Sun StorEdge SAN Foundation software and Storage Automated Diagnostic Environment on a data host station, type **y** next to those two menu choices and **n** next to the other choices.

Complete the following steps for your installation, substituting your menu choices for the example in CODE EXAMPLE 2-2.

1. Type **y** next to menu choices corresponding to the software being installed, and **n** next to the other choices, and press **Return** after each choice.

For example, to install the Storage Automated Diagnostic Environment software, type **y** next to that menu choice and **n** next to the rest of the menu choices.

CODE EXAMPLE 2-2 .Sample Installation Script

```
Do you want to install ....
  Sun StorEdge[tm] SAN Foundation Software [y/n]: n
  Storage Automated Diagnostic Environment [y/n]: y
  Sun StorEdge[tm] 6120 Configuration Service Software [y/n]:n
  Sun StorEdge[tm] 6120/6320 Remote Configuration CLI (sscs)
    (CLI) [y/n]:n

You have chosen to install the following components:

    Storage Automated Diagnostic Environment

Is this correct? [y/n] y

The log file can be located at:
/var/sadm/install/se6x20/6x20_Host_SW_Install.log

Checking Solaris version ..... 5.9
Checking Solaris environment .....

Press Return to continue...
Installing Storage Automated Diagnostic Environment .....
    Package SUNWstade      :
Processing package instance <SUNWstade> from
</export/mas/storade/package>
Copyright
.
.
.
Storage Automated Diagnostic Environment Binary Code License
Agreement
.
.
.
Do you accept the terms? [yes,no,view,?] y

Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
    5 package pathnames are already properly installed.
## Verifying package dependencies.
## Verifying disk space requirements.
```

```

## Checking for conflicts with packages already installed.
The following files are already installed on the system and are
being used by another package:  /usr <attribute change only>

Do you want to install these conflicting files [y,n,?,q]y
This package contains scripts which will be executed with super-
user permission during the process of installing this package.
Do you want to continue with the installation of <SUNWstade>
[y,n,?] y
Files are displayed
.
.

## Executing postinstall script.
-----
After the package is completely installed, execute the program
'/opt/SUNWstade/bin/ras_install'.
This will complete the installation of SUNWstade. -----
-----
If you choose not to use cron this time, re-run ras_install later
to establish a cron entry.
-----
Installation of <SUNWstade> was successful.
Installed Successfully
Installation of <SUNWstade> was successful.
Installed Successfully

Checking installed patches...
Verifying sufficient filesystem capacity (dry run method)...
Installing patch packages...

Patch number 114590-04 has been successfully installed.
See /var/sadm/patch/114590-04/log for details
Executing postpatch script...
-----
After the patch is completely installed, execute the program
'/opt/SUNWstade/bin/ras_install'.
This will complete the installation requirements of this patch.
-----
Patch packages installed:
  SUNWstade

Press Return to continue...

..... Bye!!

```

2. If you installed the Sun StorEdge SAN Foundation software, install the most recent Sun StorEdge SAN Foundation software patches from <http://sunsolve.sun.com/>.

3. Go to “Post-Installation Procedures” on page 2-24 to complete any applicable post-installation procedures (for example, running `ras_install`).

2.4 Post-Installation Procedures

Follow the post-installation procedures depending on the software you installed.

This section explains the following topics:

- “Sun StorEdge SAN Foundation Software” on page 2-24
- “Configuring the Storage Automated Diagnostic Environment Software” on page 2-24
- “Checking Log Files After the Installation” on page 2-25
- “To Ensure the Services Are Started” on page 2-25
- “Sun StorEdge 6120 Array Root Password” on page 2-26

2.4.1 Sun StorEdge SAN Foundation Software

If you installed the Sun StorEdge SAN Foundation software from the Sun StorEdge 6000 Family Host Installation Software package, refer to the *Sun StorEdge SAN Foundation Software Installation Guide* (on the CD or at <http://www.sun.com/storage/san> or <http://docs.sun.com/>) for the post-installation procedures that ensure the product operates correctly.

2.4.2 Configuring the Storage Automated Diagnostic Environment Software

If you installed the Storage Automated Diagnostic Environment with the `install.sh` script, refer to the “Getting the Storage Automated Diagnostic Environment Ready” section of the *Storage Automated Diagnostic Environment User’s Guide – Device Edition* (`deviceguide.pdf`) (available from <http://docs.sun.com/>) for the correct configuration procedures.

2.4.3 Checking Log Files After the Installation

Check the following files for messages related to the installation if you encountered installation problems:

- `/var/sadm/install/se6x20/6x20_Host_SW_Install.log`
This log contains installation, removal, configuration, error, or informational messages.
- `/var/adm/messages`
This log contains general system error or informational messages.

▼ To Ensure the Services Are Started

- **After installing the Sun StorEdge Configuration Service software, use the `ps` command to ensure the services are started.**

```
# ps -ef |grep se6000
root 9852    1 0 14:45:13 console 0:00 /bin/ksh /opt/se6x20/bin/se6000watchdog
root 10061   1 1 14:45:47 console 0:08 //usr/java/bin/java -Dapp.name=se6000ui
-Djavaw.wbem.rmiport=5987 -Djava.endors
root 10249   444 0 14:46:59 console 0:00 grep se6000
```

If the services were not started, restart them by running the following command:

```
# /opt/se6x20/bin/restart_se6000
```

2.4.4 Sun StorEdge 6120 Array Root Password

Sun StorEdge 6120 arrays are shipped from the factory with no password set for the array's root user. Ensure that you set the array's root user password before logging in and setting up the Sun StorEdge Configuration Service and Storage Automated Diagnostic Environment software facilities.

Note – You must set a root password to manage the arrays. See “Registering a New Sun StorEdge 6120 Array” on page 3-37 for the array registration procedure.

▼ To Assign a Root Password for an Array

1. **Telnet to the Sun StorEdge 6120 array using the array's IP address.**

```
% telnet array_IP_address

Trying array_IP_address ...
Connected to array_IP_address
Escape character is '^]'.

Unauthorized access is prohibited.
```

2. **Log in as root. Do not type a password.**

```
Login: root
Password:

6120 Release 3.0.3 Mon Oct 27 15:47:42 PST 2003 (10.4.36.137)
Copyright (C) 1997-2003 Sun Microsystems, Inc.
All Rights Reserved.
```

3. **Issue the `passwd` command. Do not type a password for the OLD password.**

```
prompt> passwd
OLD password:
NEW password: new_password
NEW password (confirm): new_password
prompt>
```

4. **Log out of the telnet session.**

2.5 Removing the Software

To stop and remove the software, perform the following procedure.

▼ To Remove the Sun StorEdge 6000 Family Host Installation Software

1. **Log in to your machine as superuser.**
2. **Remove any defined aliases for this user as described in “To Remove Superuser Environment or Profile Aliases” on page 2-16.**
3. **Run the `uninstall.sh` script.**

```
# cd /cdrom/host_cd  
# ./uninstall.sh
```


Logging In To the Software

This chapter explains the following topics:

- “Logging In” on page 3-30
- “Logging In Using the CLI” on page 3-32
- “Logging In Using a Web Browser” on page 3-34
- “Registering a New Sun StorEdge 6120 Array” on page 3-37

3.1 Logging In

You can use the command-line interface (CLI) or a web browser to log in to the software.

Read the following sections before beginning the log in procedures:

- “Understanding User Accounts and Roles” on page 3-30
- “User IDs and Default Passwords” on page 3-31

3.1.1 Understanding User Accounts and Roles

The Sun StorEdge 6320 system is configured with three user accounts and the Sun StorEdge 6120 Array has three user roles available as shown in TABLE 3-1. The web-based software and CLI enable the `admin` user or role to authorize users to access the system and the software, and to set passwords for the accounts or roles.

Note – For the Sun StorEdge 6120 storage arrays, valid user names are existing or newly-created Solaris OS or other operating environment user accounts with assigned user roles. The System Administrator first logs in as root and assigns the user role (admin, storage, or guest) to the valid user account. Once user roles are assigned, users can log in using their user name and password. The user role defines array access.

The user roles are as follows:

TABLE 3-1 User Roles

| User Role | Description |
|----------------------|--|
| <code>admin</code> | An <code>admin</code> user or role has all administration privileges. With the web interface: The <code>admin</code> user can add, modify, and delete users and modify system attributes on the Administration page. |
| <code>storage</code> | A <code>storage</code> user or role can use most of the software features related to storage device configuration. With the web interface: The Administration page is available to this user as read-only; this user cannot modify admin settings. This user can use the features available from the Configuration page. |
| <code>guest</code> | A <code>guest</code> user or role has read-only privileges and can view the information. This user cannot modify any settings or feature. |

Note – Only the `admin` user or role can change the passwords.

3.1.2 User IDs and Default Passwords

TABLE 3-2 contains the IDs and default passwords for the Sun StorEdge 6120 arrays and 6320 systems.

TABLE 3-2 User IDs and Passwords for the Sun StorEdge 6120 and 6320

| Array or System | ID | Default Password | Notes |
|-------------------|----------------------------------|------------------------------|---|
| Sun StorEdge 6120 | Your user ID Example: hh39079 | Your user password | Only users with passwords on the host machine where the software is installed can log in. |
| Sun StorEdge 6320 | admin storage guest | !admin !storage !guest | Only users with passwords on the Storage Service Processor can log in. |

3.2 Logging In Using the CLI

Enter `/opt/se6x20/cli/bin/sscs` to access the CLI commands that enable you to perform the same software operations as those available on the web browser. See the `sscs(1M)` man page.

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

Note – For the Sun StorEdge 6120 storage arrays, valid user names are existing or newly-created Solaris or other operating environment user accounts with assigned user roles. The System Administrator first logs in as `root` and assigns the user role (admin, storage, or guest) to the valid user account. Once user roles are assigned, users can log in using their user name and password. The user role defines array access.

▼ To Log In Using the CLI

- **Perform one of the following steps, depending on your storage product.**
 - Type the following command in a terminal window for the Sun StorEdge 6120:

```
% sscs login -h hostname [-t] [-f] -u username
Password: password
```

where *hostname* is the host machine where you installed the software, *username* is a user on the host, and *password* is your password.

- Type the following command in a terminal window for the Sun StorEdge 6320:

```
% sscs login -h SE_6320_SPname [-t] [-f] -u user
Password: !password
```

where *SE_6320_SPname* is the Sun StorEdge 6320 Service Processor, *user* is one of the accounts (admin, storage, or guest) on the Storage Service Processor *SE_6320_SPname*, and *!password* is the default password for the account (!admin, !storage, or !guest).

TABLE 3-3 explains the optional arguments associated with the `sscs login` command for the Sun StorEdge 6320:

TABLE 3-3 `sscs login` Command Line Optional Arguments

| Argument | Description |
|----------|---|
| -f | Forces a login if another user with the same user name is already logged in. The duplicate user is then logged off. |
| -t | Log in using an HTTP connection. |

▼ To Log Out of the CLI

- Use the `sscs logout` CLI command as shown below:

```
# sscs logout
```

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

3.3 Logging In Using a Web Browser

You can manage the Storage Service Processor, power sequencers, storage arrays, and related system network features using a web browser to launch the Sun StorEdge Configuration Service or Sun Automated Diagnostic Environment web interface. Use the Sun StorEdge Configuration Service to configure the system. Use the Sun Automated Diagnostic Environment to monitor, detect, and diagnose array failures for Sun storage devices. See “To Log In to the Storage Automated Diagnostic Environment” on page 3-36.

Note – For the Sun StorEdge 6120 storage arrays, valid user names are existing or newly-created Solaris OS or other operating system user accounts with assigned user roles. The System Administrator first logs in as `root` and assigns the user role (admin, storage, or guest) to the valid user account. Once user roles are assigned, users can log in using their user name and password. The user role defines array access. Refer to “User Roles” on page 3-30 for more information.

After you log in, you can access each page of Configuration Service by choosing the labeled tab:

- Configuration
- Jobs
- Administration

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

TABLE 3-4 contains the valid port numbers when logging in with the web browser.

TABLE 3-4 Port Numbers

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

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

▼ To Log in to Configuration Service

Note – See “Netscape Navigator Version 4.79 Note” on page 1-6.

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

Note – *ip_address* is the IP address of the host where the software is installed.

- For a non-SSL HTTP server:

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

where 9080 is the default port number for the software.

Note – For password security, use the SSL HTTP URL.

- For an SSL HTTP server:

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

where 9443 is the default port number for the software.

3. Log in as follows:

- For the Sun StorEdge 6120:

```
User Name: yourID  
Password: yourPassword
```

where *yourID* is your login ID and *yourPassword* is your login password.

- For the Sun StorEdge 6320:

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

4. Click the Log In button.

Note – After you log in to the 6120 Array for the first time, the screen indicates that there are no available arrays. You must register the arrays before the software can recognize them. See “Registering a New Sun StorEdge 6120 Array” on page 3-37.

▼ To Log In to the Storage Automated Diagnostic Environment

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

Note – *ip_address* is the host name where the software is installed.

For a non-SSL HTTP server:

```
http://ip_address:7654/
```

where 7654 is the default port number for the software.

Note – If you are concerned about password security, use the SSL HTTP URL.

- For an SSL HTTP server:

```
https://ip_address:7443/
```

where 7443 is the default port number for the software.

3. **Log in as follows:**

```
User Name: ras  
Password: agent
```

where *ras* and *agent* are the default login and password.

4. **Choose the Log In button.**

The Storage Automated Diagnostic Environment main window is displayed.

▼ To Change the Storage Automated Diagnostic Environment Device Edition Interface to Resemble Version 2.2

1. **From the Storage Automated Diagnostic Environment main window, select Administration - General Maintenance - Window Options.**
2. **For Browser Window Size, choose Big Screen / Multiple Frames.**
3. **For Choose Color Scheme, choose New Sun Style Blue.**
4. **Select Update Options to implement the change.**

▼ To Log Out of the Web-based Software

- **Choose Log Out from any page in Configuration Service or the Storage Automated Diagnostic Environment.**

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

3.4 Registering a New Sun StorEdge 6120 Array

Before you can manage a Sun StorEdge 6120 array, you must register it.

▼ To Register A New Array

1. **Log in to the array through a web browser as a user with a user role of storage.**
See “Understanding User Accounts and Roles” on page 3-30 and “Logging In Using a Web Browser” on page 3-34.
2. **Choose the Array Management page tab.**
3. **Choose Array Registration.**

4. Choose Register New Array.

The New Array Registration page is displayed.

5. Type the following information in the text fields:

- IP address of the array
- Root password for array access
- Root password in the Verify field

Note – Sun StorEdge 6120 arrays are shipped from the factory with no password set for the array’s root user. See “Sun StorEdge 6120 Array Root Password” on page 2-26 to set the root password.

6. Select Persist Password if you do not want to have the system prompt you for the password each time you access the array.

If you do not type a password and choose Save, the system prompts you for a password each time you attempt to access the array.

7. Choose Save.

Note – Create storage pools and volumes after you register the arrays. See the online help for the correct procedures.

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