Sun StorEdge™ Enterprise Storage Manager Base Applications Getting Started Guide

Release 4.0

Sun Microsystems, Inc.
www.sun.com

Part No. 819-3320-10
September 2005, Revision 10

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Preface

The *Sun StorEdge Enterprise Storage Manager Base Applications Getting Started Guide* is a combined software installation, initial configuration, and getting started guide for the Sun StorEdge Enterprise Storage Manager (ESM) Base Applications 4.0, which include:

- Sun StorEdge™ Data Replication Manager 1.0
- Sun StorEdge™ Management Portal 1.0
- SANbox Manager 2.1
- Sun StorEdge™ SAN Foundation Software 4.4.6
- Storage Automated Diagnostic Environment, Enterprise Edition, 2.4

Before You Read This Document

This guide is written for the software installer and storage administrator of the Sun StorEdge ESM Base Applications.

Users of this document should have knowledge or experience in the following areas:

- Solaris Operating System
- Sun SPARC hardware
- Local area networks
- Storage area networks

How This Document Is Organized

Chapter 1 provides an overview of the ESM Base Applications and system requirements for each application.

Chapter 2 provides procedures for installing the ESM Base Applications.

Chapter 3 describes how to configure and use the Management Portal.

Chapter 4 describes how to configure and use Data Replication Manager.

Appendix A provides procedures for uninstalling the ESM Base Applications.

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. Refer to the following for this information:

- Software documentation that you received with your system
- Solaris™ Operating System documentation, which is at:

  http://docs.sun.com

Shell Prompts

Shell	Prompt
C shell	*machine-name*%
C shell superuser	*machine-name*#
Bourne shell and Korn shell	$
Bourne shell and Korn shell superuser	#

Typographic Conventions

Typeface*	Meaning	Examples
AaBbCc123	The names of commands, files, and directories; on-screen computer output	Edit your `.login` file. Use `ls -a` to list all files. `% You have mail.`
AaBbCc123	What you type, when contrasted with on-screen computer output	`% su` `Password:`
AaBbCc123	Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values.	Read Chapter 6 in the *User's Guide*. These are called *class* options. You *must* be superuser to do this. To delete a file, type `rm` *filename*.

* The settings on your browser might differ from these settings.

Related Documentation

For related documents, go to:

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Sun StorEdge Enterprise Storage Manager Base Applications Getting Started Guide, part number 819-3320-10.

CHAPTER 1

Sun StorEdge Enterprise Storage Manager Base Applications Overview

This chapter describes the components of and requirements for the Sun StorEdge Enterprise Storage Manager (ESM) Base Applications software. It includes the following sections:

- "Product Overview" on page 5
- "Solaris Operating System Support" on page 8
- "System Requirements and Dependencies" on page 9

Product Overview

Sun StorEdge ESM comprises several applications that provide complete management for customer data and storage devices. The applications are grouped into two categories: ESM Base Applications and ESM Advanced Applications. The ESM Base Applications 4.0 software consolidates the distribution of the Sun Network Storage base software management products. It provides a single convenient location for customers, allowing them to install and manage the applications that are required to perform general administration and configuration tasks for the Sun storage and data management applications. Customers use these applications to perform basic storage management functions for Sun StorEdge hardware platforms and network storage management software.

The ESM Advanced Applications consist of products that provide open, integrated, heterogeneous storage area management. Sun StorEdge Operations Manager is part of the ESM Advanced Applications software.

The ESM Base Applications eliminate the need for searching and downloading various management applications from the web or from numerous CDs or DVDs. These products ship on a single DVD from which you can run a unified installation on a SPARC-based system running Solaris 8, 9 or 10.

The following components are included in the ESM Base Applications 4.0 release:

- Sun StorEdge Data Replication Manager 1.0.
- Sun StorEdge Management Portal 1.0
- SANbox Manager 2.1
- Sun StorEdge SAN Foundation Software 4.4.6
- Storage Automated Diagnostic Environment, Enterprise Edition, 2.4

Sun StorEdge Management Portal 1.0 and Sun StorEdge Data Replication Manager 1.0 are new products, available only as part of the ESM Base Applications 4.0 software package; Storage Automated Diagnostic Environment 2.4, SAN Foundation Software 4.4.6, and SANbox Manager 2.1 are existing products that are also available for download from `http://www.sun.com`.

When you install the Management Portal, dependent packages from Java Enterprise System (Java ES) 2005Q1 are automatically installed on the system. For more information on Java ES, go to the following URL:

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

The following subsections describe each of these components in more detail.

Sun StorEdge Data Replication Manager

Sun StorEdge Data Replication Manager manages and monitors remote data replication between two Sun StorEdge 6920 systems running Release 3.0.1 software. It is designed to manage replication across the entire enterprise.

Supported features include:

- Creation and management of replication sets and groups
- Management of replication links
- Monitoring of the state of replication set and groups
- Management of failure scenarios
- Ability to request snapshots of volumes
- Ability to grow volumes within a set

Sun StorEdge Management Portal

The Sun StorEdge Management Portal is a flexible, customizable interface for managing Sun Network Storage and third-party management applications. It functions as a dashboard and launchpad, providing an environment for aggregating and organizing a storage administrator's tools, data, and information.

The Management Portal features the following portlets:

- Portal Reporter – Displays the status of the Management Portal infrastructure, including information on databases, proxy configurations, and remote service.
- Administration Tasks – Allows access to administration tasks that enable you to configure the Management Portal.
- Event Organizer – Provides information about the filtered or unfiltered device list from the Storage Automated Diagnostic Environment.
- Storage Event Reporter – Displays all event information from storage networks, as recognized by the Storage Automated Diagnostic Environment.
- Storage Application Organizer – Contains a list of a user's web-based applications that are used for general management of the storage environment.
- Storage News and Information – Displays real-time storage news, information, and updates through Really Simple Syndication (RSS) feeds or links to the web.
- Data Replication Reporter – Uses information from the Data Replication Manager to deliver an overview of data replication between Sun StorEdge 6920 systems.
- Storage Pool Reporter – Displays information relative to the Sun StorEdge 6920 system storage pool type.
- Volume Performance Reporter – Provides performance statistics for volumes in a single Sun StorEdge 6130 array.
- File System Reporter – Displays how file system capacity is being used throughout the storage network.
- Report Organizer – Generates and displays reports from the Sun StorEdge Operations Manager.

SANbox Manager

SANbox Manager is a switch management application that allows storage administrators to install, configure, and monitor Sun StorEdge Network Fibre Channel switches.

Sun StorEdge SAN Foundation Software

The Sun StorEdge SAN Foundation Software is an integrated package of kernel drivers and utilities that enable a Solaris host to connect, monitor, and transfer data on a storage area network (SAN).

The SAN Foundation Software driver stack supports the new SAN features and components as they become available. SAN Foundation Software includes Leadville, MPxIO, SNIA Libraries, and Utilities.

Storage Automated Diagnostic Environment

Storage Automated Diagnostic Environment software provides health monitoring and diagnostic services for your storage environment. These services will help prevent downtime by providing advance notification of potential problems. Storage Automated Diagnostic Environment delivers proactive device monitoring and diagnostic services for Sun StorEdge arrays and systems, and Sun StorEdge Open SAN connectivity devices. The software can also distribute health information from Sun StorEdge devices to the Sun Remote Services Net Connect management services, enabling an integrated remote monitoring solution for your Sun environment, 24 hours a day, 7 days a week.

Solaris Operating System Support

TABLE 1-1 shows the ESM Base Applications that are supported on Solaris 8, Solaris 9, and Solaris 10. The ESM Base Applications run on SPARC hardware only.

TABLE 1-1 ESM Base Applications Support on the Solaris Operating System

ESM Base Applications	Supported Solaris OS Versions
Data Replication Manager	9, 10
Management Portal	9, 10
SANbox Manager	8, 9, 10
SAN Foundation Software	8, 9
Storage Automated Diagnostic Environment	8, 9, 10

System Requirements and Dependencies

The hardware requirements tables in this section describe the minimum system hardware requirements for ESM Base Applications. These requirements are based on observed performance criteria. If you are installing on a system that does not meet these minimum requirements, the `baconfig` utility will display a warning and give you the opportunity to cancel the installation. You can ignore the warning and continue the installation, but you might experience suboptimal application run-time performance.

The following subsections list the system requirements and dependencies for each application.

Sun StorEdge Data Replication Manager

TABLE 1-2 and TABLE 1-3 list the Data Replication Manager system requirements.

TABLE 1-2 Data Replication Manager Hardware Requirements

Hardware Components	Minimum Requirements
Platform	SPARC
Disk space	`/tmp`: 600 MB `/ (root)`: 256 MB
RAM	512 MB
CPU	UltraSPARC-IIi, 650 MHz or higher

TABLE 1-3 Data Replication Manager Software Requirements

Software	Requirements
Operating system	Solaris 9 or 10 (SPARC only)
Supporting software	Java Runtime Environment (JRE) 1.4.2. If this is not present on your system, you are given the option of installing a private version of JRE 1.4.2. Loading this version of JRE 1.4.2 will not affect the operation of other Java applications on your system.

Sun StorEdge Management Portal

TABLE 1-4 and TABLE 1-5 list the Management Portal hardware and software requirements.

TABLE 1-4 Management Portal Hardware Requirements

Hardware Components	Minimum Requirements
Platform	SPARC
Disk space	/var 736M /opt 1.5G /usr 300M /etc 12M
RAM	2 GB
CPU	Two 1.0 GHz UltraSPARC III CPU

TABLE 1-5 Management Portal Software Requirements

Software	Requirements
Operating system	Solaris 9 or 10 (SPARC only) You must have the Solaris Entire Distribution plus OEM Support software bundle (`SUNWCXall`). **Note:** Although Java ES is supported on the Solaris x86 platform, the Management Portal is not supported on that platform.

TABLE 1-5 Management Portal Software Requirements *(Continued)*

Software	Requirements
Supporting software	Java ES, SAN Foundation Software, and Storage Automated Diagnostic Environment.
Java ES Installation Note	The ESM Base Applications installation utility, `baconfig`, loads and configures a customized version of Java ES to support the Management Portal. The `baconfig` utility will not allow you to install the Management Portal on a system that has a pre-existing version of Java ES installed. If your system has a pre-existing Java ES version, uninstall Java ES before running `baconfig`.
Storage Automated Diagnostic Environment Installation Notes	When you install the Management Portal, the `baconfig` utility automatically installs Storage Automated Diagnostic Environment (StorADE). The `baconfig` utility loads StorADE 2.4 and the StorADE patches necessary to support the Management Portal. If you are installing the Management Portal on a system that has a pre-existing version of StorADE installed, it is possible to make use of that StorADE installation under certain circumstances: • The Enterprise Edition of StorADE version 2.4 (includes the SUNWstade and SUNWstadm packages) must be loaded. If the version of StorADE is not 2.4, you must manually remove StorADE before loading the Management Portal. • The StorADE patches (117650-45, 117654-45) are required. If StorADE 2.4 is already installed on the system, but does not include these patches, `baconfig` will install them. **Note:** Patch revision -45 is the minimum revision required for the Management Portal.

SANbox Manager

TABLE 1-6 and TABLE 1-7 lists the SANbox Manager system requirements.

TABLE 1-6 SANbox Manager Hardware Requirements

Hardware Components	Minimum Requirements
Platform	SPARC
Disk space	85 MB in `/usr`

TABLE 1-7 SANbox Manager Software Requirements

Software	Requirements
Operating system	Solaris 8, 9, or 10 (SPARC only). **Note:** Although SANbox Manager is supported on the Solaris x86 platform, the ESM Base Applications are not supported on that platform.

SAN Foundation Software

TABLE 1-8 and TABLE 1-9 lists the SAN Foundation Software system requirements.

TABLE 1-8 SAN Foundation Software Hardware Requirements

Hardware Components	Minimum Requirements
Platform	SPARC
Disk space	20 MB in `/(root)`

TABLE 1-9 SAN Foundation Software Requirements

Software	Requirements
Operating system	SAN Foundation Software should be loaded on Solaris 8 and 9 only (SPARC only).

Storage Automated Diagnostic Environment

TABLE 1-10 and TABLE 1-11 list the Storage Automated Diagnostic Environment system requirements.

TABLE 1-10 Storage Automated Diagnostic Environment Hardware Requirements

Hardware Components	Minimum Requirements
Platform	SPARC
RAM	120 MB
Disk space	90 MB in `/opt`; 20 MB in `/var/opt`

TABLE 1-11 Storage Automated Diagnostic Environment Software Requirement

Software	Requirements
Operating system	Solaris 8 4/01 or greater, 9, or 10 (SPARC only)

CHAPTER 2

Installing the ESM Base Applications Software

This chapter describes how to use the ESM Base Applications installation utility, `baconfig`, to install ESM Base Applications. It includes the following topics:

- "Using the ESM Base Applications Installation Utility (`baconfig`)" on page 15
- "Installing Data Replication Manager" on page 16
- "Installing the Management Portal" on page 25
- "Installing SANbox Manager" on page 60
- "Installing SAN Foundation Software" on page 64
- "Installing Storage Automated Diagnostic Environment" on page 69

Using the ESM Base Applications Installation Utility (`baconfig`)

The ESM Base Applications are installed by means of the `baconfig` utility, which is located on the ESM Base Applications DVD. To use the `baconfig` utility, you must be logged in as `root`. You list, install, and uninstall ESM Base Applications with `baconfig`. When any ESM Base Application is installed on a system, a copy of `baconfig` is copied to the system's disk (`/var/opt/SUNWbaconf/bin/baconfig`). The disk-resident copy of `baconfig` can be used to list and uninstall applications, but cannot be used for installing applications.

The `baconfig` utility reads and writes configuration information to the ESM Base Applications `state` files, which are located in the `/var/opt/SUNWbaconf/share/state` directory. The ESM Base Applications

`state` files contain information about currently installed ESM Base Applications. If the `state` files are removed or edited, the `baconfig` utility will not function properly. The `baconfig` utility is part of the `SUNWbaconf` package.

If you installed Storage Automated Diagnostic Environment or SANbox Manager using an installer other than `baconfig` (for example, `pkgadd` or the application's installer), the application is considered "unmanaged" and you cannot reinstall or uninstall the application using `baconfig`. In contrast, if you installed either of these applications using `baconfig`, it is considered "managed" and you can reinstall or uninstall the application using `baconfig`.

The following example shows system output listing Storage Automated Diagnostic Environment and SANbox Manager as "unmanaged" and not available to be uninstalled or installed using `baconfig`.

```
# ./baconfig
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 2
Please wait...

      Installed: Sun StorEdge Data Replication Manager 1.0
      Installed: Sun StorEdge Management Portal 1.0
      Installed: SANbox Manager 2.1 (unmanaged)
      Installed: Sun StorEdge San Foundation Software 4.4.6
      Installed: Storage Automated Diagnostic Environment - Enterprise
Edition 2.4 (unmanaged)
```

Installing Data Replication Manager

The Data Replication Manager installation process is explained in the following subsections:

- "Data Replication Manager System Requirements" on page 17
- "Installation Procedure" on page 18
- "Next Steps" on page 24

Data Replication Manager System Requirements

TABLE 2-1 and TABLE 2-3 list the Data Replication Manager system requirements.

TABLE 2-1 Data Replication Manager Hardware Requirements

Hardware Components	Minimum Requirements
Platform	SPARC
Disk space	`/tmp`: 600 MB `/ (root)`: 256 MB
RAM	512 MB
CPU	UltraSPARC-IIi, 650 MHz or higher

TABLE 2-2 Data Replication Manager Software Requirements

Software	Requirements
Operating system	Solaris 9 or 10 (SPARC only)
Supporting software	Java Runtime Environment (JRE) 1.4.2. If this is not present on your system, you are given the option of installing a private version of JRE 1.4.2. Loading this version of JRE 1.4.2 will not affect the operation of other Java applications on your system.

Installation Procedure

Use the following procedure to install Data Replication Manager.

1. **Insert the ESM Base Applications 4.0 DVD in the disk drive.**
2. **Log in as root.**
3. **Change the directory to where** `baconfig` **resides by typing** `cd /`*path-to-the-DVD*`/ESM_BASE_APPLICATIONS_4.0`**, as shown in the following example.**
4. **Type** `./baconfig`**.**
5. **Type** `2` **to view the list of installed ESM Base Applications.**

   The list of installed and uninstalled applications will vary, depending on the ones you have installed and the version of your operating system.

```
# cd /path-to-the-DVD/ESM_BASE_APPLICATIONS_4.0
# ./baconfig
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 2
Please wait...

  Not Installed: Sun StorEdge Data Replication Manager 1.0
  Not Installed: Sun StorEdge Management Portal 1.0
  Not Installed: SANbox Manager 2.1
  Not Installed: Sun StorEdge SAN Foundation Software 4.4.6
  Not Installed: Storage Automated Diagnostic Environment -
Enterprise Edition 2.4
```

6. **Type `1` at the first prompt to indicate that you want to install an application. Type `1` at the second prompt to select Data Replication Manager.**

   The list of installed and uninstalled applications will vary, depending on the ones you have installed and the version of your operating system.

```
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 1
Please wait...


The following applications are available to be installed
  1.   Sun StorEdge Data Replication Manager 1.0
  2.   Sun StorEdge Management Portal 1.0
  3.   SANbox Manager 2.1
  4.   Sun StorEdge SAN Foundation Software 4.4.6
  5.   Storage Automated Diagnostic Environment - Enterprise
Edition 2.4
  6.   Return to Main Menu
Enter the number of the application you wish to install.  Use a
comma separated list to install multiple applications.: 1
Please wait...
.
.
.
```

7. **Press Return to confirm your selection. The license agreement is displayed.**

```
The below product(s) have been selected

    Sun StorEdge Data Replication Manager 1.0

Is this correct? (Y/N) [Y] <Return>
Sun Microsystems, Inc. ("Sun") SOFTWARE LICENSE AGREEMENT

READ THE TERMS OF THIS AGREEMENT ("AGREEMENT") CAREFULLY BEFORE
OPENING SOFTWARE MEDIA PACKAGE. BY OPENING SOFTWARE MEDIA PACKAGE,
YOU AGREE TO THE TERMS OF THIS AGREEMENT. IF YOU ARE ACCESSING
SOFTWARE ELECTRONICALLY, INDICATE YOUR ACCEPTANCE OF THESE TERMS
BY SELECTING THE "ACCEPT" (OR EQUIVALENT) BUTTON AT THE END OF
THIS AGREEMENT. IF YOU DO NOT AGREE TO ALL OF THE TERMS, PROMPTLY
RETURN THE UNUSED SOFTWARE TO YOUR PLACE OF PURCHASE FOR A REFUND
OR, IF SOFTWARE IS ACCESSED ELECTRONICALLY, SELECT THE "DECLINE"
(OR EQUIVALENT) BUTTON AT THE END OF THIS AGREEMENT. IF YOU HAVE
SEPARATELY AGREED TO LICENSE TERMS ("MASTER TERMS") FOR YOUR
LICENSE TO THIS SOFTWARE, THEN SECTIONS 1-6 OF THIS AGREEMENT
("SUPPLEMENTAL LICENSE TERMS") SHALL SUPPLEMENT AND SUPERSEDE
THE MASTER TERMS IN RELATION TO THIS SOFTWARE.
.
.
.
```

8. **If you agree to the license, type** `y` **at the first prompt. Type** `y` **at the second prompt to continue the installation.**

```
15.     Integration.

This Agreement, including any terms contained in your Entitlement,
is the entire agreement between you and Sun relating to its subject
matter. It supersedes all prior or contemporaneous oral or written
communications, proposals, representations and warranties and
prevails over any conflicting or additional terms of any quote,
order, acknowledgment, or other communication between the parties
relating to its subject matter during the term of this Agreement.
No modification of this Agreement will be binding, unless in
writing and signed by an authorized representative of each party.

Please contact Sun Microsystems, Inc. 4150 Network Circle, Santa
Clara, California 95054 if you have questions.

Do you agree to the license? (Y/N) [Y] y
```

```
Checking for available disk space...

Attempting to install: Sun StorEdge Data Replication Manager 1.0
baconfig log file: /var/opt/SUNWbaconf/logs/DRM-1.0-
1120211536.install.log
-------------------------------------------------------------

This program installs Sun StorEdge Data Replication Manager
(DRM) 1.0 and supporting packages.
-------------------------------------------------------------

Do you want to continue? [y] [y,n,?] y
-------------------------------------------------------------
Checking for prior installations...
-------------------------------------------------------------
```

Note – Data Replication Manager requires the 1.4.2 version of the Java Runtime Environment (JRE). If `baconfig` is unable to find this version on the system, you can supply a path to JRE 1.4.2 or choose to install a private JRE.

If a private JRE is installed, it will not overwrite or modify existing JREs and will be used for Data Replication Manager only.

---

9. If JRE is not present on the system, type `install` to load a private copy.

```
************************ WARNING ****************************
Unable to locate a JVM that is compatible with DRM
************************ WARNING ****************************

Please indicate the location of JVM version 1.4.2, or enter
the word 'install' to have DRM install a private copy of 1.4.2.

Location of JVM 1.4.2: install
```

10. **Type a passphrase and press Return.**

```
Installing private JVM into /opt/SUNWrrm/jre
-------------------------------------------------------------
Installing Sun StorEdge Data Replication Manager (DRM) package.
-------------------------------------------------------------

In order to ensure the safety and security of the data that SUNWrrm
stores on-disk, all data are encrypted with a passphrase.  You will
not be required to remember the pass phrase, but it does need to
be at least 10 characters long
Enter passphrase: esmbaDRM1234
```

The passphrase is used to ensure that the credentials used to communicate with the Sun StorEdge 6920 systems will be encrypted when they are stored in the Data Replication Manager on-disk data cache. It is not necessary to remember this passphrase once the encryption key is generated; the system will not use the passphrase again.

```
Attempting to extract package: SUNWrrm.pkg
SUNWrrm.pkg successfully extracted.

Processing package instance <SUNWrrm> from
</tmp/Sun_StorEdge_RRM_Workdir/RRM/SUNWrrm.pkg>

Sun StorEDGE Data Replication Manager(sparc) 1.0
Using </opt/SUNWrrm> as the package base directory.
## Processing package information.
## Processing system information.
   4 package pathnames are already properly installed.
## Verifying package dependencies.
## Verifying disk space requirements.

Installing Sun StorEDGE Data Replication Manager as <SUNWrrm>
# Executing preinstall script.
#------------------------------------------------------------
# Sun StorEdge Data Replication Manager
#
#
# Copyright 2005 Sun Microsystems, Inc. All rights reserved.
# Use is subject to license terms.
#
#------------------------------------------------------------
# Installing part 1 of 1.
.
.
.
[ verifying class <none> ]
## Executing postinstall script.
Creating new data cache for SUNWrrm
Sun StorEdge Data Replication Manager  Object Store Created
Successfully!
Sun StorEdge Data Replication Manager -  Factory Data Loaded
Successfully!
Encrypted key generated successfully!
Generating SSL certificate
Extracting DRM BUI
Extracting BUI help documentation
Registering DRM browser user interface with Common Console
Registering com.sun.netstorage.mgmt.rrm.ui_1.0.
Restarting Common Console (this may take a few minutes)
```

```
Shutting down Sun Java(TM) Web Console Version 2.2.2...
See /var/log/webconsole/console_debug_log for server logging
information
Starting Sun Java(TM) Web Console Version 2.2.2...
See /var/log/webconsole/console_debug_log for server logging
information

Installation of <SUNWrrm> was successful.
Done installing Sun StorEdge Data Replication Manager (DRM)
packages.
Sun StorEdge Data Replication Manager (DRM) 1.0 and its supporting
application was installed successfully.
```

11. Type `4` to exit the `baconfig` utility.

```
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 4
```

Next Steps

Before you can use Data Replication Manager, you must set up a user role and register your Sun StorEdge 6920 systems. For instructions on setting up the `drmadmin` role, logging into Data Replication Manager, registering Sun StorEdge 6920 systems, and performing general administrative tasks, see Chapter 4.

Installing the Management Portal

The Management Portal installation process is explained in the following subsections:

- "Management Portal System Requirements" on page 25
- "Before You Begin" on page 27
- "Installation Procedure" on page 28
- "Next Steps" on page 59

Management Portal System Requirements

TABLE 2-3 and TABLE 2-4 list the Management Portal hardware and software requirements.

TABLE 2-3 Management Portal Hardware Requirements

Hardware Components	Minimum Requirements
Platform	SPARC
Disk space	/var 736M /opt 1.5G /usr 300M /etc 12M
RAM	2 GB
CPU	Two 1.0 GHz UltraSPARC III CPU

TABLE 2-4 Management Portal Software Requirements

Software	Requirements
Operating system	Solaris 9 or 10 (SPARC only) You must have the Solaris Entire Distribution plus OEM Support software bundle (`SUNWCXall`). **Note:** Although Java ES is supported on the Solaris x86 platform, the Management Portal is not supported on that platform.
Supporting software	Java ES, SAN Foundation Software, and Storage Automated Diagnostic Environment.
Java ES Installation Note	The ESM Base Applications installation utility, `baconfig`, loads and configures a customized version of Java ES to support the Management Portal. The `baconfig` utility will not allow you to install the Management Portal on a system that has a pre-existing version of Java ES installed. If your system has a pre-existing Java ES version, uninstall Java ES before running `baconfig`.
Storage Automated Diagnostic Environment Installation Notes	When you install the Management Portal, the `baconfig` utility automatically installs Storage Automated Diagnostic Environment (StorADE). The `baconfig` utility loads StorADE 2.4 and the StorADE patches necessary to support the Management Portal. If you are installing the Management Portal on a system that has a pre-existing version of StorADE installed, it is possible to make use of that StorADE installation under certain circumstances: • The Enterprise Edition of StorADE version 2.4 (includes the SUNWstade and SUNWstadm packages) must be loaded. If the version of StorADE is not 2.4, you must manually remove StorADE before loading the Management Portal. • The StorADE patches (117650-45, 117654-45) are required. If StorADE 2.4 is already installed on the system, but does not include these patches, `baconfig` will install them. **Note:** Patch revision -45 is the minimum revision required for the Management Portal.

Before You Begin

Collect the following information before you begin the installation.

TABLE 2-5 Management Portal Installation Information

Required Information	Description
Solaris Version	Version of Solaris (either 9 or 10) installed on the system on which you are installing the portal. The sample output in the installation procedure is from a system running Solaris 9.
IP Address	IP address of the system on which you are installing the portal. The sample output in the installation procedure uses `10.10.10.05` for the IP address.
Fully Qualified Domain Name	Fully qualified domain name of the system on which you are installing the portal. The sample output in the installation procedure uses `portal.example.sun.com` for the fully qualified domain name.
Domain Name	Domain name of the system on which you are installing the portal. The domain name is derived from the fully qualified domain name. The sample output in the installation procedure uses `example.sun.com` for the domain name.
Host Name	Host name of the system on which you are installing the portal. The sample output in the installation procedure uses `portal` for the host name.

The Java ES installer prompts you to set passwords for several Java ES-related administrative users. In the sample output for the installation, most of the passwords are set to `password`; the LDAP Password is set to `ldappass`. For an initial installation, you should use a single generic password. After the Management Portal is fully installed and configured, you can change the Java ES-related passwords.



Caution – When you type a password at a prompt during the Java ES installation process, the password is not masked.

Throughout the installation procedure, you will be prompted several times for the same information; this information is used by different devices or applications.

Installation Procedure

Use the following procedure to install the Management Portal.

1. **Insert the ESM Base Applications 4.0 DVD in the disk drive.**
2. **Log in as root.**
3. **Change the directory to where** `baconfig` **resides by typing** `cd /`*path-to-the-DVD*`/ESM_BASE_APPLICATIONS_4.0`**, as shown in the following example.**
4. **Type** `./baconfig`**.**
5. **Type** `2` **to view the list of installed ESM Base Applications.**

   The list of installed and uninstalled applications will vary, depending on the ones you have installed.

```
# cd /path-to-the-DVD/ESM_BASE_APPLICATIONS_4.0
# ./baconfig
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 2
Please wait...

  Not Installed: Sun StorEdge Data Replication Manager 1.0
  Not Installed: Sun StorEdge Management Portal 1.0
  Not Installed: SANbox Manager 2.1
  Not Installed: Sun StorEdge SAN Foundation Software 4.4.6
  Not Installed: Storage Automated Diagnostic Environment -
Enterprise Edition 2.4
```

6. **Type `1` at the first prompt to indicate that you want to install an application. Type `2` at the second prompt to select the Sun StorEdge Management Portal.**

   The list of installed and uninstalled applications will vary, depending on the ones you have installed.

```
 Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 1
Please wait...


The following applications are available to be installed
  1.   Sun StorEdge Data Replication Manager 1.0
  2.   Sun StorEdge Management Portal 1.0
  3.   SANbox Manager 2.1
  4.   Sun StorEdge SAN Foundation Software 4.4.6
  5.   Storage Automated Diagnostic Environment - Enterprise
Edition 2.4
  6.   Return to Main Menu
Enter the number of the application you wish to install.  Use a
comma separated list to install multiple applications.: 2
Please wait...
```

7. **Type `y` confirm your selection. The license agreement is displayed. If you agree to the license, type `y` at the prompt. Press Return to continue the installation.**

```
The below product(s) have been selected

    Sun StorEdge Management Portal 1.0

Is this correct? (Y/N) [Y] y

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OPENING SOFTWARE MEDIA PACKAGE. BY OPENING SOFTWARE MEDIA PACKAGE,
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(OR EQUIVALENT) BUTTON AT THE END OF THIS AGREEMENT. IF YOU HAVE
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LICENSE TO THIS SOFTWARE, THEN SECTIONS 1-6 OF THIS AGREEMENT
("SUPPLEMENTAL LICENSE TERMS") SHALL SUPPLEMENT AND SUPERSEDE
THE MASTER TERMS IN RELATION TO THIS SOFTWARE..
.
.
.
Do you agree to the license? (Y/N) [Y]   y
.
.
.
Checking system resources...

Do you wish to continue with the installation (Y/N) [Y] <Return>
```

The `baconfig` utility installs the Sun Java Web Console, as shown in the following screen. If Storage Automated Diagnostic Environment is not installed, the baconfig utility installs it.

```
Attempting to install: Sun Java(TM) Web Console 2.2.1
baconfig log file: /var/opt/SUNWbaconf/logs/Lockhart-2.2.1-
1123002101.install.log


Removal of <SUNWjhdem> was successful.

Removal of <SUNWjhdoc> was successful.

Removal of <SUNWjhdev> was successful.

Removal of <SUNWjhrt> was successful.
Copyright 2003 Sun Microsystems, Inc.  All rights reserved.
Use is subject to license terms.

Installation of <SUNWjhrt> was successful.
Copyright 2003 Sun Microsystems, Inc.  All rights reserved.
Use is subject to license terms.

Installation of <SUNWjhdev> was successful.
Copyright 2003 Sun Microsystems, Inc.  All rights reserved.
Use is subject to license terms.

Installation of <SUNWjhdoc> was successful.
Copyright 2003 Sun Microsystems, Inc.  All rights reserved.
Use is subject to license terms.

Installation of <SUNWjhdem> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.

Installation of <SUNWjato> was successful.
Copyright 2004 Sun Microsystems, Inc.  All rights reserved.
Use is subject to license terms.

Installation of <SUNWmctag> was successful.
Copyright 2004 Sun Microsystems, Inc.  All rights reserved.
Use is subject to license terms.

Installation of <SUNWmconr> was successful.
Copyright 2004 Sun Microsystems, Inc.  All rights reserved.
Use is subject to license terms.
.
.
.
```

```
Attempting to install: Storage Automated Diagnostic Environment -
Enterprise Edition 2.4
baconfig log file: /var/opt/SUNWbaconf/logs/StorADE-2.4-
1123002101.install.log

Storage Automated Diagnostic Environment (Storage A.D.E.)
installation ...
Version: 2.4.12.009
Current time: Tue Aug 2 13:04:23 EDT 2005

Note: A log will be saved to:
/var/sadm/install/Storage_ADE/Install.log

This script installs the Storage Automated Diagnostic Environment
software,
referred to as Storage A.D.E., for your storage system. Software
components
included in this distribution include:

o Storage A.D.E. 2.4 - Enterprise Edition
o Storage A.D.E. 2.4 - Management Station UI

Please refer to the Storage Automated Diagnostic Environment 2.4
release
notes for the Enterprise Edition and Management Station UI before
installing
this product.

Do you want to install ....

o The Storage A.D.E. 2.4 - Enterprise Edition [y/n] : o The Storage
A.D.E. 2.4 - Management Station UI [y/n] :
You have selected to install the following:

o Storage A.D.E. 2.4 - Enterprise Edition
o Storage A.D.E. 2.4 - Management Station UI

Is this correct? [y/n] :
Checking Solaris version ..... 5.9
.
.
.
```

8. **Type `y` to continue the installation.**

```
Attempting to install: Java Enterprise System Portal Server 3.0
baconfig log file: /var/opt/SUNWbaconf/logs/JESPortal-3.0-
1123002101.install.log

In order to install JES as used by the Storage Portal, you need to
have 'Sun StorEdge ESM Base Applications Getting Started Guide' in
front of you, and follow the instructions exactly.

Do you want to continue? (Y/N) y
```

The document that the script output references is this one, the *Sun StorEdge ESM Base Applications Getting Started Guide*.

The Management Portal has specific requirements for the configuration of Java ES. If these requirements are not met, the Management Portal will not function correctly. To assure that your system's Java ES configuration is correct, you must follow the instructions in this document precisely. It is critically important that you read and understand this document and the output of the Java ES installer before inputting your responses.

9. **View the Java ES introductory screen and then press Return to continue to the Software License Agreement screen.**

The `baconfig` utility installs specific Java ES components only. The information you need to install these components is contained in this document; it is not necessary to refer to the Java ES Release Notes and Installation Guide.

```
Welcome to the Sun Java(TM) Enterprise System; serious software
made simple.

Before you begin, please refer to the Release Notes and
Installation Guide, available at
http://docs.sun.com/coll/entsys_05q1.

You can install any or all of the Enterprise Network Services
provided by the Java Enterprise System.

Copyright 2005 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.

<Press ENTER to Continue> <Return>
```

Note – During the Java ES installation, you can type < (left-angle bracket) to return to the previous question or menu. The Java ES software installation does not occur until you answer all of the Java ES installer's questions. You can exit out of the Java ES installer by typing ! (exclamation point).

10. **Review the license agreement and then type** `yes` **to accept the agreement and continue the installation. If you do not accept these terms, the Java ES installer program terminates.**

```
Before you install this product, you must read and accept the
entire  Software License Agreement under which this product is
licensed for your use.

<Press ENTER to display the Software License Agreement> <Return>


Sun Microsystems, Inc. ("Sun")

SOFTWARE LICENSE AGREEMENT

READ THE TERMS OF THIS AGREEMENT ("AGREEMENT") CAREFULLY BEFORE
OPENING SOFTWARE MEDIA PACKAGE. BY OPENING SOFTWARE MEDIA PACKAGE,
YOU AGREE TO THE TERMS OF THIS AGREEMENT. IF YOU ARE ACCESSING
SOFTWARE ELECTRONICALLY, INDICATE YOUR ACCEPTANCE OF THESE TERMS
BY SELECTING THE "ACCEPT" (OR EQUIVALENT) BUTTON

AT THE END OF THIS AGREEMENT. IF YOU DO NOT AGREE TO ALL OF THE
TERMS, PROMPTLY RETURN THE UNUSED SOFTWARE TO YOUR PLACE OF
PURCHASE FOR A REFUND OR, IF SOFTWARE IS ACCESSED ELECTRONICALLY,
SELECT THE "DECLINE" (OR EQUIVALENT) BUTTON AT THE END OF THIS
AGREEMENT. IF YOU HAVE SEPARATELY AGREED TO LICENSE TERMS ("MASTER
TERMS") FOR YOUR LICENSE TO THIS SOFTWARE, THEN SECTIONS 1-6 OF
THIS AGREEMENT ("SUPPLEMENTAL LICENSE TERMS") SHALL SUPPLEMENT AND
SUPERSEDE THE MASTER TERMS IN RELATION TO THIS SOFTWARE.

.
.
.
If you have read and accept all the terms of the entire Software
License Agreement, answer 'yes', and the installation will
continue. If you do not accept all the terms of the Software
License Agreement, answer 'no', and the installation program will
end without installing the product. Have you read, and do you
accept, all of the terms of the preceding Software License
Agreement [No] {"<" goes back, "!" exits}? yes
```

11. **Press Return to accept the default language, English.**

Note – ESM Base Applications 4.0 supports English only.

```
Select the language support you want to install.

Note that English will always be installed

1.French
2.Spanish
3.Korean
4.Traditional Chinese
5.Simplified Chinese
6.German
7.Japanese
8.English only

Please enter a comma separated list of languages you would like
supported with this installation [8] {"<" goes back, "!" exits}
<Return>
```

12. **Review the component selection products and then press Return to continue with the installation.**

    The output on your system may vary, depending on the version of Solaris that is installed.

```
Component Products on this Host
---------------------------------------

The following component products are detected on this system. They
will appear disabled, "* *", in the following Component Selection
Main Menu.

Command Line Administration Tool  v7.0:PATCHES:116288-13,117540-
01 - Bundled Sample Applications  v7.0:PATCHES:116288-13 - Bundled

<Press ENTER to continue> <Return>
```

13. **View the Component Selection Main Menu and note the corresponding numbers of the following Java ES components. You will need to enter these five numbers in the next step. You enter the numbers in a comma-separated list; for example, type 2,4,6,8,10. (Please do not type 2,4,6,8,10; this is an example only.)**
    - Sun Java(TM) System Web Server 6.1 SP4 2005Q1 (60.58 MB)
    - Sun Java(TM) System Access Manager 6 2005Q1 (22.19 MB)
    - Sun Java(TM) System Message Queue 3 2005Q1 Enterprise Edition (10.02 MB)
    - Sun Java(TM) System Portal Server 6 2005Q1 (67.53 MB)
    - Sun Java(TM) System Directory Server 5 2005Q1 (46.09 MB)

Note – The output on your system may vary, depending on the version of Solaris that is installed on the system.



Caution – Take particular care in following instructions for the rest of this procedure. If you do not follow the steps exactly as instructed, the installation will fail.

```
Component Selection - Main Menu
-------------------------------
Note: "*  *" indicates that the selection is disabled

[ ] 1. Sun Java(TM) System Calendar Server 6 2005Q1 (43.41 MB)
[ ] 2. Sun Java(TM) System Directory Preparation Tool (303.30 KB)
[ ] 3. Sun Java(TM) System Web Server 6.1 SP4 2005Q1 (60.58 MB)
[ ] 4. Sun Java(TM) System Messaging Server 6 2005Q1 (125.65 MB)
[ ] 5. SunSM Remote Services Net Connect 3.1.1 (24.72 MB)
[ ] 6. Sun Java(TM) System Administration Server 5 2005Q1 (13.22 MB)
[ ] 7. High Availability Session Store (HADB) (44.34 MB)
[ ] 8. Sun Cluster 3.1 9/04 (10 bytes)
[ ] 9. Sun Java(TM) System Access Manager 6 2005Q1 (22.19 MB)
[ ] 10. Sun Java(TM) System Communications Express 6 2005Q1 (19.04
.
.
.
```

14. **Type the five numbers representing the required Java ES components. The numbers must be separated by commas.**

```
Enter a comma separated list of products to install, or press R to refresh
the list  [] {"<" goes back, "!" exits}: comma-separated- list-of-components
```

15. **Confirm that the five component selections are correct and press Return. If you need to change your selections, type < (left-angle bracket) to return to the Component Selection Main Menu.**

```
Component Selection - Selection Confirmation
--------------------------------------------

Based on product dependencies for your selections, the installer will
install:

 *  *  Sun Java(TM) System Directory Preparation Tool (303.30 KB)
[X] Sun Java(TM) System Web Server 6.1 SP4 2005Q1 (60.58 MB)
[X] Sun Java(TM) System Access Manager 6 2005Q1 (22.19 MB)
[X] Sun Java(TM) System Message Queue 3 2005Q1 Enterprise Edition (10.02
MB)
[X] Sun Java(TM) System Portal Server 6 2005Q1 (67.53 MB)
[X] Sun Java(TM) System Directory Server 5 2005Q1 (46.09 MB)

Enter 1 to Continue or 2 to go to product selection list again or Enter a
comma separated list of products to deselect. Enter "-" with product number
to deselect a product for eg. -5 will deselect product number 5 [1] {"<"
goes back, "!" exits} <Return>
```

16. **Press Return to continue with the installation.**

```
Component Selection - Selected Product "Sun Java(TM) System Directory
Preparation Tool"
------------------------------------------------------------------
Component Selection - Selected Product "Sun Java(TM) System Web Server 6.1
SP4 2005Q1"
------------------------------------------------------------------
Component Selection - Selected Product "Sun Java(TM) System Access Manager
6 2005Q1"
------------------------------------------------------------------

*[X] 1. Identity Management and Policy Services Core
*[X] 2. Access Manager Administration Console
*[X] 3. Common Domain Services for Federation Management
** * Access Manager SDK

Enter a comma separated list of components to install (or D to install all
) [D] {"<" goes back, "!" exits} <Return>

*[X] 1. Identity Management and Policy Services Core
*[X] 2. Access Manager Administration Console
*[X] 3. Common Domain Services for Federation Management
** * Access Manager SDK
```

17. **Press Return once more to continue the installation.**

```
Component Selection - Selected Product "Sun Java(TM) System
Message Queue 3 2005Q1 Enterprise Edition"
-----------------------------------------------------------------

Component Selection - Selected Product "Sun Java(TM) System Portal
Server 6 2005Q1"
-----------------------------------------------------------------

*[X] 1. Sun Java(TM) System Portal Server 6 2005Q1

Enter a comma separated list of components to install (or D to
install all )[D] {"<" goes back, "!" exits} <Return>

*[X] 1. Sun Java(TM) System Portal Server 6 2005Q1

Component Selection - Selected Product "Sun Java (TM) System
Directory Server 5 2005Q1
```

18. **If the following prompt is displayed, type** `yes` **to remove the bundled products automatically.**

    The prompt is displayed if `baconfig` detects incompatible versions of components that were installed with the operating system.

```
Bundled Products Found
------------------------
The installer has detected incompatible versions of components
that were installed with the operating system. The installer cannot
proceed until the following components are removed. To have the
installer remove the components, answer Yes. To manually remove
them, answer No and remove the components by using the prodreg
command or the pkgrm command.
Sun ONE Message Queue Platform Edition
Do you want the installer to remove the bundled products
automatically
[No] {"<" goes back, "!" exits} yes
```

19. **Review the list of shared components and then press Return to accept the list of upgrades.**

The list of software upgrades generated by the Java ES installer will vary, depending on the software configuration of your system. The patches and packages required by Java ES are bundled with the Java ES software.

```
Shared Component Upgrades Required
----------------------------------

The shared components listed below are currently installed. They will be
upgraded for compatibility with the products you chose to install.

Component    Package
--------------------
NSPR        SUNWpr
         4.1.2:PATCHES:115926-08,114049-12 (installed)
         4.5.1:PATCHES:114049-11,117724-10 (required)
NSS        SUNWtls
         3.3.4.4:PATCHES:115926-08,114049-12 (installed)
         3.9.5:PATCHES:114049-11,117724-10 (required)
JSS        SUNWjss
         3.1.3.0:PATCHES:115926-08 (installed)
         4.0:PATCHES:117724-10 (required)
JATO        SUNWjato
         2.1.2 (installed)
         2.1.4 (required)
JavaActivationFramework       SUNWjaf
         7.0.0.4:PATCHES:116296-13 (installed)
         8.1 (required)
JavaMail       SUNWjmail
         7.0.0.4.0.0:PATCHES:116300-13 (installed)
         8.1 (required)
NSPRX       SUNWprx
         4.1.2:PATCHES:115926-08,114049-12 (installed)
         4.5.1:PATCHES:114049-11,117724-10 (required)
NSSX        SUNWtlsx
         3.3.4.4:PATCHES:115926-08,114049-12 (installed)
         3.9.5:PATCHES:114049-11,117724-10 (required)
ICU        SUNWicu
         1.1:PATCHES:114677-07 (installed)
         1.1:PATCHES:114677-08 (required)
ICUX        SUNWicux
         1.1:PATCHES:114677-07 (installed)
         1.1:PATCHES:114677-08 (required)
NSSU        SUNWtlsu
         3.3.7:PATCHES:115926-08 (installed)
         3.9.5:PATCHES:117724-10 (required)

   Enter 1 to upgrade these shared components and 2 to cancel  [1] {"<" goes back,
"!" exits}: <Return>
```

20. **Respond to the following set of prompts, as described in** TABLE 2-6**.**

```
Installation Directories
------------------------

Enter the name of the target installation directory for each
product:

Directory Server, Server Root [/var/opt/mps/serverroot] {"<" goes
back, "!" exits}: <Return>
Directory Preparation Tool [/opt/SUNWcomds] {"<" goes back, "!"
exits}: <Return>
Access Manager [/opt] {"<" goes back, "!" exits}: <Return>
Web Server [/opt/SUNWwbsvr] {"<" goes back, "!" exits}: <Return>
Portal Server [/opt] {"<" goes back, "!" exits}: <Return>
```

TABLE 2-6 Installation Directories

Item	Description
Directory Server, Server Root	By default, this is /var/opt/mps/serverroot. Verify that this is the case, and press **Return**.
Directory Preparation Tool	By default, this is /opt/SUNWcomds. Verify that this is the case, and press **Return**.
Access Manager	By default, this is /opt. Verify that this is the case, and press **Return**.
Web Server	By default, this is /opt/SUNWwbsvr. Verify that this is the case, and press **Return**.
Portal Server	By default, this is /opt. Verify that this is the case, and press **Return**.

21. **Check the system status and press Return to continue with the installation.**

```
Checking System Status

      Available disk space...     : Checking OK
      Memory installed...         : Checking OK
      Operating system patches... : Checking OK
      Operating system resources... : Checking OK

System ready for installation

Enter 1 to continue [1] {"<" goes back, "!" exits} <Return>
```

22. **Specify that you want to configure now by pressing Return at both prompts to choose the default selections.**

Ignore the message regarding configuring the Sun Java System Directory Preparation Tool.

```
Screen for selecting Type of Configuration

1. Configure Now - Selectively override defaults or express through
2. Configure Later - Manually configure following installation

Select Type of Configuration [1] {"<" goes back, "!" exits}
<Return>

The following component products cannot be configured during
installation.
You have to configure them after installation is complete.

Sun Java(TM) System Directory Preparation Tool


Enter 1 to configure the other component products. [1] {"<" goes
back, "!" exits} <Return>
```

23. Respond to the following set of prompts, as described in TABLE 2-7.

This example is for Solaris 9. If you are running Solaris 10, type `root` for the System Group.

```
Common Server Settings

The following settings apply to all installed component products.

Enter Host Name [portal] {"<" goes back, "!" exits} <Return>
Enter DNS Domain Name [] {"<" goes back, "!" exits} example.sun.com
Enter IP Address [10.10.10.05] {"<" goes back, "!" exits} <Return>
Enter Server admin User ID [admin] {"<" goes back, "!" exits}
<Return>
Enter Admin User's Password (Password cannot be less than 8
characters) []{"<" goes back, "!" exits} password

Confirm Admin User's Password [] {"<" goes back, "!" exits}
password

Enter System User [root] {"<" goes back, "!" exits} <Return>
Enter System Group [other] {"<" goes back, "!" exits} <Return>
```

TABLE 2-7 Common Server Settings

Item	Description
`Host Name`	Verify that the correct host name of your system is displayed, and press **Return**. If it is incorrect, type in the correct name and press **Return**. In the example above, the host name is `portal`.
`DNS Domain Name`	Type the DNS domain name of your host. In this example, the fully qualified domain name is portal.example.sun.com; the DNS domain name for this system is `example.sun.com`.
`IP Address`	Verify that the correct IP address of your system is displayed, and press **Return**. If it is incorrect, type in the correct address and press **Return**. In the example above, the IP address is `10.10.10.05`.
`Server Admin User ID`	By default, this is `admin`. Verify that this is the case, and press **Return**.
`Admin User's Password`	Set the password of the server admin user. Keep the password simple. You can change it later. In the example above, the admin user's password is `password`. The password must be at least 8 characters Caution: The password you type is not masked.

TABLE 2-7 Common Server Settings *(Continued)*

Item	Description
`Confirm Admin User's Password`	Type the admin user's password again. Caution: The password you type is not masked.
`System User`	By default, this is `root`. Verify that this is the case, and press **Return**.
`System Group`	By default, this is `other`. For Solaris 9, verify that this is the case, and press **Return**. For Solaris 10, type `root` and press **Return**.

24. Respond to the following set of prompts, as described in TABLE 2-8.

```
Web Server: Administration  (1 of 2)

Enter  Server Admin User ID [admin] {"<" goes back, "!" exits}
<Return>
Enter Admin User's Password [] {"<" goes back, "!" exits} password
Retype Password [] {"<" goes back, "!" exits} password
Enter Host Name [portal.example.sun.com] {"<" goes back, "!"
exits} <Return>
Enter Administration Port [8888] {"<" goes back, "!" exits}
<Return>
Enter Administration Server User ID [root] {"<" goes back, "!"
exits} <Return>
```

TABLE 2-8 Web Server Administration Settings

Item	Description
`Server Admin User ID`	By default this is `admin`. Verify that this is the case, and press **Return**.
`Admin User's Password`	Set the password of the server admin user to the same one you used in TABLE 2-7. Caution: The password you type is not masked.
`Confirm Admin User's Password`	Type the admin user's password again. Caution: The password you type is not masked.

TABLE 2-8 Web Server Administration Settings *(Continued)*

Item	Description
`Host Name`	Verify that the correct host name of your system is displayed, and press **Return**. If it is incorrrect, type the correct host name and press **Return**. **Note:** The host name is the fully qualified domain name. In the example above, the host name is `portal.example.sun.com`.
`Administration Port`	By default, this is `8888`. Verify that this is the case, and press **Return**.
`Administration Server User ID`	By default, this is `root`. Verify that this is the case, and press **Return**.

25. Respond to the following set of prompts, as described in TABLE 2-9**.**

```
Web Server: Default Web Server Instance (2 of 2)

If you plan to deploy Access Manager or Portal Server in this
instance of Web Server , set Runtime User ID to superuser (usually
root) and set Runtime Group to the superuser's group (usually
other).

Enter System User ID [webservd] {"<" goes back, "!" exits} root
Enter System Group [webservd] {"<" goes back, "!" exits} root
Enter HTTP Port [80] {"<" goes back, "!" exits} <Return>
Enter content Root [/opt/SUNWwbsvr/docs] {"<" goes back, "!"
exits} <Return>
Do you want to automatically start Web Server when system re-
starts.(Y/N)[N] {"<" goes back, "!" exits} y
```

TABLE 2-9 Default Web Server Instance Settings

Item	Description
`System User ID`	Type `root` and press **Return**. Do not accept the default, `webservd`.
`System Group`	For Solaris 9, type `other` and press **Return**. For Solaris 10, type `root` and press Return. Do not accept the default, `webservd`.

TABLE 2-9 Default Web Server Instance Settings *(Continued)*

Item	Description
`HTTP Port`	By default, this is `80`. Verify that this is the case, and press **Return**.
`Content root`	By default, this is `/opt/SUNWwbsvr/docs`. Verify that this is the case, and press **Return**.
`start Web Server when system restarts`	Type `y` and press **Return**.

26. Respond to the following set of prompts, as described in TABLE 2-10.

```
Directory Server: General Settings (1 of 5)

Enter Server Admin ID [admin] {"<" goes back, "!" exits} <Return>
Enter Admin User's Password (At least 8 characters long) [] {"<"
goes back, "!" exits} password
Retype Password [] {"<" goes back, "!" exits} password
Enter Directory Manager DN [cn=Directory Manager] {"<" goes back,
"!" exits} <Return>
Enter Directory Manager's Password (At least 8 characters long) []
{"<" goes back, "!" exits} password
Retype Password [] {"<" goes back, "!" exits} password
```

TABLE 2-10 Directory Server General Settings

Item	Description
`Server Admin ID`	By default, this is `admin`. Verify that this the case, and press **Return**.
`Admin User's Password`	Type the same password you used in TABLE 2-7. Caution: The password you type is not masked.
`Retype Password`	Type the password again. Caution: The password you type is not masked.
`Directory Manager DN`	By default, this is `cn=Directory Manager`. Verify that this is the case, and press **Return**.
`Directory Manager's Password`	Type the same password you used in TABLE 2-7. Caution: The password you type is not masked.
`Retype Password`	Type the password again. Caution: The password you type is not masked.

27. **Respond to the following set of prompts, as described in** TABLE 2-11**.**

```
Directory Server: Server Settings (2 of 5)

Enter Server Identifier [portal] {"<" goes back, "!" exits}
<Return>
Enter Server Port [389] {"<" goes back, "!" exits} <Return>
Enter Suffix [dc=example,dc=sun,dc=com] {"<" goes back, "!" exits}
<Return>
Enter Administration Domain [example.sun.com] {"<" goes back, "!"
exits} <Return>
Enter System User [root] {"<" goes back, "!" exits} <Return>
Enter System Group [other] {"<" goes back, "!" exits} <Return>
```

TABLE 2-11 Directory Server- Server Settings

Item	Description
`Server Identifier`	By default, this is the host name of the system. Verify that this is the case, and press **Return**. In the example above, the server identifier is `portal`.
`Server Port`	By default, this is `389`. Verify that this is the case, and press **Return**.
`Suffix`	The suffix is derived from the host's domain name. **Note:** `portal.example.sun.com` **translates to a suffix of** `dc=example,dc=sun,dc=com`**.** Verify that your suffix is correct, and press **Return**.
`Administration Domain`	Verify that this is correct, and press **Return**. In the example above, the administration domain is `example.sun.com`.
`System User`	By default, this is `root`. Verify that this is the case, and press **Return**.
`System Group`	For Solaris 9, the default is `other`. For Solaris 10, the default is `root`. Verify that this is the case, and press **Return**.

28. Press Return to confirm that a new instance of the directory server will be created.

```
Directory Server: Configuration Directory Server (3 of 5)

This server's configuration can be stored in this new directory
server or in another previously prepared configuration server.

1. The new instance will be the configuration directory server
2. Use an existing configuration directory server

Enter your Choice [1] {"<" goes back, "!" exits} <Return>

Using the  directory server with the following configuration

    Directory Server Host: portal.example.sun.com
    Directory Server Port: 389
    Directory Server User: cn=Directory Manager
```

29. Press Return to store data in the new instance of the Directory Server.

```
Directory Server: Data Storage Location (4 of 5)

This server can store its own user data and group data, or it can
access user data and group data from another instance of directory
server.

1. Store data in the new directory server
2. Store data in an existing directory server

Enter your Choice [1] {"<" goes back, "!" exits} <Return>

Storing user data and group data on the server with the following
configuration

    Directory Server Host: portal.example.sun.com
    Directory Server Port: 389
    Directory Server User: admin
    Suffix: dc=example,dc=sun,dc=com
```

30. **Type `4` to specify that you do not want to populate the Directory Server with data. Then press Return to indicate that schema checking should not be disabled.**

```
Directory Server: Populate Data (5 of 5)

The new directory server can be populated with sample or real data.

1. Populate with sample organizational structure
2. Populate with data
3. Both
4. Populate with no data


Enter your Choice [1] {"<" goes back, "!" exits} 4

Do you wish to disable Schema Checking when importing data?
(yes/no) [No] {"<" goes back, "!" exits} <Return>
```

31. **Respond to the following set of prompts, as described in TABLE 2-12.**

```
Access Manager: Administration (1 of 6)

Administrator User ID: amAdmin <Return>
Administrator Password [] {"<" goes back, "!" exits}: password
Retype Password [] {"<" goes back, "!" exits}: password
LDAP User ID: amldapuser
LDAP Password [] {"<" goes back, "!" exits}: ldappass
Retype Password [] {"<" goes back, "!" exits}: ldappass
Password Encryption Key [HnqwzSxKwKoKd92rTbZGFIokaDQ8kuAA] {"<"
goes back,"!" exits}:  <Return>
```

TABLE 2-12 Access Manager Administration Settings

Item	Description
`Administrator User ID`	By default, the Administrator user ID is `amAdmin`. Verify that this is the case, and press **Return**.
`Administrator Password`	Type the same password you used in TABLE 2-7. Caution: The password you type is not masked.
`Retype Password`	Type the administrator user's password again. Caution: The password you type is not masked.

TABLE 2-12 Access Manager Administration Settings *(Continued)*

Item	Description
`LDAP Password`	Type a unique string. In the example above, the LDAP password is `ldappass`. Caution: The password you type is not masked. **Note:** The LDAP User's password cannot be the same as the Admin user's password.
`Retype Password`	Type the LDAP user's password again. Caution: The password you type is not masked.
`Password Encyption Key`	Press **Return** to accept the encryption key generated by the Java ES installer. You do not need to remember this key.

32. Type `2` to use the Sun Java Web Server for the Access Manager's web container.

```
Access Manager: Web Container (2 of 6)

1. Sun Java System Application Server
2. Sun Java System Web Server

Select the container to deploy the component and hit enter key [2]
{"<" goes back, "!" exits} 2
```

33. Respond to the following set of prompts, as described in TABLE 2-13**.**

```
Access Manager: Sun Java System Web Server (3 of 6)
Host Name [portal.example.sun.com] {"<" goes back, "!" exits}:
<Return>
Web Server Instance Directory [/opt/SUNWwbsvr/https-
portal.example.sun.com] {"<" goes back, "!" exits}:  <Return>
Web Server Port [80] {"<" goes back, "!" exits}:  <Return>
Document Root Directory [/opt/SUNWwbsvr/docs] {"<" goes back, "!"
exits}: <Return>
Secure Server Instance Port [No] {"<" goes back, "!" exits}:
<Return>
```

TABLE 2-13 Access Manager Web Server Administration Settings

Item	Description
`Host Name`	Verify that the correct host name of your system is displayed, and press **Return**. If it is not, type the correct host name, and press **Return**. **Note:** The host name is the fully qualified domain name. In the example above, the host name is `portal.example.sun.com`.
`Web Server Instance Directory`	This directory is derived from the fully qualified domain name of your system. Verify that the directory is correct, and press **Return**.
`Web Server Port`	By default, this is `80`. Verify that this is the case, and press **Return**.
`Document Root Directory`	By default, this is `/opt/SUNWwbsvr/docs`. Verify that this is the case, and press **Return**.
`Secure Server Instance`	Press **Return** to accept the default setting of `No` for the Secure Server Instance.

34. Respond to the following set of prompts, as described in TABLE 2-14**.**

```
Access Manager: Web Container for running Access Manager
Services(4 of 6)

Host Name [portal.example.sun.com] {"<" goes back, "!" exits}:
<Return>
Services Deployment URI [amserver] {"<" goes back, "!" exits}:
<Return>
Common Domain Deployment URI [amcommon] {"<" goes back, "!" exits}:
<Return>
Cookie Domain(Assure it is not a top level domain) [.sun.com] {"<"
goes back, "!" exits}: <Return>
Administration Console [Yes] {"<" goes back, "!" exits}: <Return>
Console Deployment URI [amconsole] {"<" goes back, "!" exits}:
<Return>
Password Deployment URI [ampassword] {"<" goes back, "!" exits}:
<Return>
```

TABLE 2-14 Access Manager Web Container for Access Manager settings

Item	Description
`Host Name`	Verify that the correct host name of your system is displayed and press **Return**. If it is not, type in the correct host name, and press **Return**. **Note:** The host name is the fully qualified domain name. In the example above, the host name is `portal.example.sun.com`.
`Services Deployment URI`	By default, this is `amserver`. Verify that this is the case, and press **Return**.
`Common Domain Deployment URI`	By default, this is `amcommon`. Verify that this is the case, and press **Return**.
`Cookie Domain`	Typically, this is the last two words of the domain name. Verify that this is true and press **Return**.
`Administration Console`	Press **Return** to accept the `Yes` default setting.
`Console Deployment URI`	By default, this is `amconsole`. Verify that this is the case, and press **Return**.
`Password Deployment URI`	By default, this is `ampassword`. Verify that this is the case, and press **Return**.

35. **Respond to the following set of prompts, as described in** TABLE 2-15**.**

```
Access Manager: Directory Server Information (5 of 6)

Directory Server Host [portal.example.sun.com] {"<" goes back, "!"
exits}: <Return>
Directory Server Port [389] {"<" goes back, "!" exits}: <Return>
Directory Root Suffix [dc=example,dc=sun,dc=com] {"<" goes back,
"!" exits}: <Return>
Directory Manager DN [cn=Directory Manager] {"<" goes back, "!"
exits}: <Return>
Directory Manager Password [] {"<" goes back, "!" exits}: password
```

TABLE 2-15 Access Manager Directory Server Information Settings

Item	Description
`Directory Server Host`	Verify that the correct host name of your system is displayed, and press **Return**. If it is not, type in the correct host name, and press **Return**. **Note:** The directory server host is the fully qualified domain name. In the example above, the directory server host is `portal.example.sun.com`.
`Directory Server Port`	By default, this is `389`. Verify that this is the case, and press **Return**.
`Directory Root Suffix`	The suffix is derived from the host's domain name. For example, `portal.example.sun.com` translates to a suffix of `dc=example,dc=sun,dc=com`. Verify that your suffix is correct and press **Return**.
`Directory Manager DN`	By default, this is `cn=Directory Manager`. Verify that this is the case, and press **Return.**
`Directory Manager Password`	Type the directory manager's password. Caution: The password you type is not masked.

36. Press Return to accept the `No` default.

```
Access Manager: Directory Server Information (6 of 6)

Is Directory Server provisioned with user data [No] {"<" goes back,
"!" exits}? <Return>
```

37. Type `2` to indicate you want to use the Sun Java Web Server.

```
Portal Server: Web Container
----------------------------
Portal Server must run inside a J2EE web container.
Third-party web containers must be installed and running.


1. Sun Java System Application Server
2. Sun Java System Web Server
3. BEA WebLogic Server
4. IBM WebSphere Application Server

Which web container will be used [4] {"<" goes back, "!" exits}? 2
```

38. **Respond to the following set of prompts, as described in** TABLE 2-16**.**

```
Portal Server: Sun Java System Web Server

Installation Directory [/opt/SUNWwbsvr] {"<" goes back, "!"
exits}: <Return>
Server Instance [portal.example.sun.com] {"<" goes back, "!"
exits}: <Return>
Server Instance Port [80] {"<" goes back, "!" exits}: <Return>
Is server instance port secure [No] {"<" goes back, "!" exits}?
<Return>
Server Document Root [/opt/SUNWwbsvr/docs] {"<" goes back, "!"
exits}: <Return>
```

TABLE 2-16 Portal Server- Java Web Server Settings

Item	Description
Installation Directory	By default, this is /opt/SUNWwbsvr. Verify that this is the case, and press **Return**.
Server Instance	Verify that the correct host name of your system is displayed, and press **Return**. If it is not, type in the correct host name and press **Return**. **Note:** The Server Instance is the fully qualified domain name. In the example above, server instance is portal.example.sun.com.
Server Instance Port	By default , this is 80. Verify that this is the case, and press **Return**.
Is Server instance Port secure?	By default, this is No. Verify that this is the case, and press **Return**.
Server Document Root	By default, this is /opt/SUNWwbsvr/docs. Verify that this is the case, and press **Return**.

39. **Respond to the following set of prompts, as described in** TABLE 2-17**.**

```
Portal Server: Web Container Deployment

Is a load balancer controlling multiple Portal Servers [No] {"<"
goes back, "!" exits}? <Return>
Deployment URI [/portal] {"<" goes back, "!" exits}: <Return>
Install Sample Portal [Yes] {"<" goes back, "!" exits} no
```

TABLE 2-17 Portal Server Web Container Deployment Settings

Item	Description
`Load Balancer controlling multiple Portal Servers`	By default, this is `No`. Verify that this is the case, and press **Return**.
`Deployment URI`	By default, this is `/portal`. Verify that this is the case, and press **Return**.
`Install Sample Portal`	Type `no` and press **Return**.

40. Type `1` to indicate that you want install Java ES.

```
Ready to Install
----------------
The following components will be installed.

Product: Java Enterprise System
Location: /var/sadm/prod/entsys
Space Required: 187.66 MB
------------------------------
Sun Java(TM) System Web Server 6.1 SP4 2005Q1
Sun Java(TM) System Message Queue 3 2005Q1 Enterprise Edition
Sun Java(TM) System Directory Preparation Tool
Sun Java(TM) System Directory Server 5 2005Q1
Sun Java(TM) System Access Manager 6 2005Q1
Identity Management and Policy Services Core
Access Manager Administration Console
Sun Java(TM) System Portal Server 6 2005Q1

1. Install
2. Start Over
3. Exit Installation

   What would you like to do [1] {"<" goes back, "!" exits}? 1
Please wait while the installer upgrades and installs shared
components...

Java Enterprise System
|-1%----------25%-------------50%-------------75%----------100%|
Installation Complete
```

The `baconfig` utility installs all the Java ES components requred to support the Management Portal. It is not necessary for you to to perform the postinstallation configuration and verification tasks documented in the *Sun Java Enterprise System Installation Guide*.

After the Java ES installation completes, press `!` (exclamation point) to exit the Java ES installer and continue with the Management Portal installation. When you exit the Java ES installer, you will return to the `baconfig` utility.

```
Software installation has completed successfully. You can view the
installation summary and log by using the choices below. Summary
and log files are available in /var/sadm/install/logs/.

Your next step is to perform the postinstallation configuration and
verification tasks documented in the Postinstallation
Configuration and Startup Chapter of the Sun Java(TM) Enterprise
System Installation Guide. See: http://docs.sun.com/doc/819-0056.

Enter 1 to view installation summary and Enter 2 to view
installation logs
   [1] {"!" exits} !
baconfig log file: /var/opt/SUNWbaconf/logs/JESPortal-3.0-
1123002101.install.log
```

41. **At the** `Access Manager amAdmin user password` **prompt, type the password (the password is masked). At the next prompt, retype the password.**

```
Attempting to install: Sun StorEdge Management Portal 1.0
baconfig log file: /var/opt/SUNWbaconf/logs/ESMPortal-1.0-
1123002101.install.log
Checking installed patches
Please wait...
Patch (or newer) already present, skipping: 117650-45
Patch (or newer) already present, skipping: 117654-45
================================================

    Sun StorEdge Management Portal 1.0
    Installation

================================================
Begin: Checking prerequisites
Please enter the Access Manager amAdmin user password.
password: ********
re-enter password: ********
End:   Checking prerequisites

Begin: Installing components
Adding SUNWjdmk-runtime...
Adding SUNWjdmk-runtime-jmx...
Adding SUNWcacaocfg...
Adding SUNWcacao...
Adding patch 118671-03...
Adding SUNWesmportal...
Adding SUNWesmdb...
Migrating database ...
Adding SUNWesmsvcs...
Adding SUNWesmsamq...
Adding SUNWesmperf...
Adding SUNWesmdt...
Adding SUNWesmdp...
Adding SUNWesmdoc...
End:   Installing components
.
.
.
```

```
Begin: Postinstall actions
Starting database...
Starting services...
Deploying Sun StorEdge Management Portal desktop...
Detected Java ES 3 Portal Servers
UX: /usr/sbin/useradd: WARNING: uid 80 is reserved.
Stopping Directory Server..
Directory Server Stop already Stopped..
Stopping Web Administration Server..
Web Administration Server Stop already Stopped..
Stopping Web Server..
Web Server Stopped..
Starting Directory Server..
Directory Server Started..
Starting Web Administration Server..
Web Administration Server Started..
Starting Web Server..
Web Server Started..
Detected Valid amAdmin password/running Portal Servers
Deploy desktop esmportal
extracted: META-INF/portletSetupTags.tld
Deploy desktop help
Deploy product images
Deploy NestedTabContainerProvider properties
Deploy EsmTabContainerProvider properties
Deploy stylesheets/images for portlets
Deploy stylesheets/images for desktop
Deploying to instance "portal.example.sun.com"...
.
.
.
```

```
Restarting the portal web server

Stopping Web Servers..
Web Admin Server Stopped..
Web Server Stopped..
Starting Web Servers..
Web Admin Server Started..
Web Server Started..
Deploy ESM Base Portlets
Deploy ESM portlet-smprssreader.war Portlet
Deploy ESM portlet-search.war Portlet
Deploy ESM portlet-drm.war Portlet
Deploy ESM portlet-poolagg.war Portlet
Deploy ESM portlet-samq.war Portlet
Deploy ESM portlet-som-reportlet.war Portlet
Deploy ESM portlet-performance.war Portlet
Deploy ESM portlet-dashboard.war Portlet
Deploy ESM portlet-jsf_admin.war Portlet
Add Users
Add Users successful
Load portal desktop
Load portal desktop successful
Add Admin Tab to desktop for seadmin
Add Admin Tab to desktop for seadmin successful

Restarting the portal servers

Stopping Directory Server..
Directory Server Stopped..
Stopping Web Administration Server..
Web Administration Server Stopped..
Stopping Web Server..
Web Server Stopped..
Starting Directory Server..
Directory Server Started..
Starting Web Administration Server..
Web Administration Server Started..
Starting Web Server..
Web Server Started..
.
.
.
```

```
Restarting the Service Container


Point your browser to http://portal.example.sun.com/portal
to access the Sun StorEdge Management Portal

End:   Postinstall actions

Installation successful.
Sun StorEdge Management Portal Installation log is at:

       /var/sadm/install/logs/smportal.log
baconfig log file: /var/opt/SUNWbaconf/logs/ESMPortal-1.0-
1123002101.install.log
```

42. Type `4` **to exit the** `baconfig` **utility.**

```
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 4
```

Next Steps

Before you can use the Management Portal, you must configure it. For instructions, see Chapter 3.

Installing SANbox Manager

The SANbox Manager installation process is explained in the following subsections:

- "SANbox Manager System Requirements" on page 60
- "Installation Procedure" on page 60

SANbox Manager System Requirements

TABLE 2-18 and TABLE 2-19 lists the SANbox Manager system requirements.

TABLE 2-18 SANbox Manager Hardware Requirements

Hardware Components	Minimum Requirements
Platform	SPARC
Disk space	85 MB in `/usr`

TABLE 2-19 SANbox Manager Software Requirements

Software	Requirements
Operating system	Solaris 8, 9, or 10 (SPARC only). **Note:** Although SANbox Manager is supported on the Solaris x86 platform, the ESM Base Applications are not supported on that platform.

Installation Procedure

Use the following procedure to install SANbox Manager.

1. **Insert the ESM Base Applications 4.0 DVD in the disk drive.**
2. **Log in as root.**
3. **Change the directory to where** `baconfig` **resides by typing** `cd` */path-to-the-DVD*`/ESM_BASE_APPLICATIONS_4.0`**, as shown in the following example.**
4. **Type** `./baconfig`**.**

5. **Type** 2 **to view the list of installed ESM Base Applications.**

   The list of installed and uninstalled applications will vary, depending on the ones you have installed and the version of your operating system.

```
# cd /path-to-the-DVD/ESM_BASE_APPLICATIONS_4.0
# ./baconfig
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 2
Please wait...

  Not Installed: Sun StorEdge Data Replication Manager 1.0
  Not Installed: Sun StorEdge Management Portal 1.0
  Not Installed: SANbox Manager 2.1
  Not Installed: Sun StorEdge SAN Foundation Software 4.4.6
  Not Installed: Storage Automated Diagnostic Environment -
Enterprise Edition 2.4
```

6. **Type `1` at the first prompt to indicate that you want to install an application. Type `3` at the second prompt to select SANbox Manager. Press Return at the third prompt to confirm your selection. The license agreement is displayed.**

   The list of installed and uninstalled applications will vary, depending on the ones you have installed and the version of your operating system.

```
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 1
Please wait...

The following applications are available to be installed
  1.   Sun StorEdge Data Replication Manager 1.0
  2.   Sun StorEdge Management Portal 1.0
  3.   SANbox Manager 2.1
  4.   Sun StorEdge SAN Foundation Software 4.4.6
  5.   Storage Automated Diagnostic Environment - Enterprise Edition 2.4
  6.   Return to Main Menu
Enter the number of the application you wish to install.  Use a comma
separated list to install multiple applications.: 3
Please wait...
The below product(s) have been selected

    SANbox Manager 2.1

Is this correct? (Y/N) [Y] <Return>
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("SUPPLEMENTAL LICENSE TERMS") SHALL SUPPLEMENT AND SUPERSEDE
THE MASTER TERMS IN RELATION TO THIS SOFTWARE.
.
.
.
```

7. **If you agree to the license, type** `y` **at the prompt.**

```
15.     Integration.

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Checking system resources...

Attempting to install: SANbox Manager 2.1
baconfig log file: /var/opt/SUNWbaconf/logs/SANbox-2.1-
1123680932.install.log
Copyright 2002 QLogic, Inc.
All Rights Reserved except where specifically shared.
/usr/opt/SUNWsmgr2/bin/SANbox_Manager
/usr/opt/SUNWsmgr2/bin/SANsurferFabricView
Now you can start the GUI by typing :
    /usr/opt/SUNWsmgr2/bin/SANbox_Manager

Installation of <SUNWsmgr2> was successful.
baconfig log file: /var/opt/SUNWbaconf/logs/SANbox-2.1-
1123680932.install.log
```

8. **When the installation is complete, type** `4` **to exit the** `baconfig` **utility.**

```
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 4
```

Installing SAN Foundation Software

The SAN Foundation Software installation process is explained in the following subsections:

- "Uninstallation Note" on page 64
- "SAN Foundation Software System Requirements" on page 64
- "Installation Procedure" on page 65

Uninstallation Note

SAN Foundation Software does not have an uninstaller; you cannot uninstall SAN Foundation Software using `baconfig`.

SAN Foundation Software System Requirements

TABLE 2-20 and TABLE 2-21 lists the SAN Foundation Software system requirements.

TABLE 2-20 SAN Foundation Software Hardware Requirements

Hardware Components	Minimum Requirements
Platform	SPARC
Disk space	20 MB in `/(root)`

TABLE 2-21 SAN Foundation Software Requirements

Software	Requirements
Operating system	SAN Foundation Software should be loaded on Solaris 8 and 9 only (SPARC only).

Installation Procedure

Use the following procedure to install SAN Foundation Software.

1. **Insert the ESM Base Applications 4.0 DVD in the disk drive.**
2. **Log in as root.**
3. **Change the directory to where** `baconfig` **resides by typing** `cd` */path-to-the-DVD*`/ESM_BASE_APPLICATIONS_4.0`**, as shown in the following example.**
4. **Type** `./baconfig`**.**
5. **Type** `2` **to view the list of installed ESM Base Applications.**

   The list of installed and uninstalled applications will vary, depending on the ones you have installed and the version of your operating system.

```
# cd /path-to-the-DVD/ESM_BASE_APPLICATIONS_4.0
# ./baconfig
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 2
Please wait...

  Not Installed: Sun StorEdge Data Replication Manager 1.0
  Not Installed: Sun StorEdge Management Portal 1.0
  Not Installed: SANbox Manager 2.1
  Not Installed: Sun StorEdge SAN Foundation Software 4.4.6
  Not Installed: Storage Automated Diagnostic Environment -
Enterprise Edition 2.4
```

6. **Type `1` at the first prompt to indicate that you want to install an application. Type `4` at the second prompt to select the SAN Foundation Software.**

   The list of installed and uninstalled applications will vary, depending on the ones you have installed and the version of your operating system.

```
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 1
Please wait...


The following applications are available to be installed
  1.   Sun StorEdge Data Replication Manager 1.0
  2.   Sun StorEdge Management Portal 1.0
  3.   SANbox Manager 2.1
  4.   Sun StorEdge SAN Foundation Software 4.4.6
  5.   Storage Automated Diagnostic Environment - Enterprise
Edition 2.4
  6.   Return to Main Menu
Enter the number of the application you wish to install.  Use a
comma separated list to install multiple applications.: 4
Please wait...
```

7. **Press Return to confirm your selection. The license agreement is displayed. If you agree to the license, type `y` at the prompt.**

```
The below product(s) have been selected

    Sun StorEdge SAN Foundation Software 4.4.6

Is this correct? (Y/N) [Y] <Return>
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Do you agree to the license? (Y/N) [Y]   y

Checking system resources...

Attempting to install: Sun StorEdge SAN Foundation Software 4.4.6
baconfig log file: /var/opt/SUNWbaconf/logs/SFK-4.4.6-
1123681480.install.log
Logfile /var/tmp/install_it_Sun_StorEdge_SAN.log : created on Wed
Aug 10 09:45:23 EDT 2005

This routine installs the packages and patches that
make up Sun StorEdge SAN.

Would you like to continue with the installation?
 [y,n,?]

Verifying system...
Checking for incompatiable SAN patches
Begin installation of SAN software
.
.
.
```

```
 Installing StorEdge SAN packages -

         Package SUNWsan        : Installed Previously.
         Package SUNWcfpl       : Installed Previously.
         Package SUNWcfplx      : Installed Previously.
         Package SUNWcfclr      : Installed Previously.
         Package SUNWcfcl       : Installed Previously.
         Package SUNWcfclx      : Installed Previously.
         Package SUNWfchbr      : Installed Previously.
         Package SUNWfchba      : Installed Previously.
         Package SUNWfchbx      : Installed Previously.
         Package SUNWfcsm       : Installed Previously.
         Package SUNWfcsmx      : Installed Previously.
         Package SUNWmdiu       : Installed Successfully.
         Package SUNWjfca       : Installed Successfully.
         Package SUNWjfcax      : Installed Successfully.
         Package SUNWjfcau      : Installed Successfully.
         Package SUNWjfcaux     : Installed Successfully.
         Package SUNWemlxs      : Installed Successfully.
         Package SUNWemlxsx     : Installed Successfully.
         Package SUNWemlxu      : Installed Successfully.
         Package SUNWemlxux     : Installed Successfully.

StorEdge SAN packages installation completed.

Begin patch installation
        Patch 111847-08         : Installed Successfully.
        Patch 113046-01         : Installed Successfully.
        Patch 113049-01         : Installed Successfully.
        Patch 113039-09         : Obsoleted by Q959621-07.
        Patch 113040-14         : Obsoleted by Q959622-09.
        Patch 113041-09         : Obsoleted by Q959623-03.
        Patch 113042-10         : Obsoleted by Q959624-05.
        Patch 113043-11         : Obsoleted by Q959625-05.
        Patch 113044-05         : Obsoleted by Q959626-04.
        Patch 114476-05         : Installed Successfully.
        Patch 114477-01         : Installed Successfully.
        Patch 114478-07         : Installed Successfully.
        Patch 114878-10         : Installed Successfully.
        Patch 119914-03         : Installed Successfully.

Installation of Sun StorEdge SAN completed Successfully
.
.
.
```

8. **Note the log files that are created during the installation. You must reboot the system to enable SAN Foundation Software.**

```
-----------------------------------------
-----------------------------------------
        Please reboot your system.
-----------------------------------------
-----------------------------------------
baconfig log file: /var/opt/SUNWbaconf/logs/SFK-4.4.6-
1123681480.install.log
```

9. **When the installation is complete, type** `4` **to exit the** `baconfig` **utility.**

```
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 4
```

Installing Storage Automated Diagnostic Environment

Storage Automated Diagnostic Environment can be either a stand-alone application or a supporting application for the Management Portal. This section describes how to install it as a stand-alone application.

The Storage Automated Diagnostic installation process is explained in the following subsections:

- "Storage Automated Diagnostic Environment System Requirements" on page 70
- "Installation Procedure" on page 70

Storage Automated Diagnostic Environment System Requirements

TABLE 2-22 and TABLE 2-23 list the Storage Automated Diagnostic Environment system requirements.

TABLE 2-22 Storage Automated Diagnostic Environment Hardware Requirements

Hardware Components	Minimum Requirements
Platform	SPARC
RAM	120 MB
Disk space	90 MB in `/opt`; 20 MB in `/var/opt`

TABLE 2-23 Storage Automated Diagnostic Environment Software Requirement

Software	Requirements
Operating system	Solaris 8 4/01 or greater, 9, or 10 (SPARC only)

Installation Procedure

Use the following procedure to install the Storage Automated Diagnostic Environment.

1. **Insert the ESM Base Applications 4.0 DVD in the disk drive.**
2. **Log in as root.**
3. **Change the directory to where** `baconfig` **resides by typing** `cd` */path-to-the-DVD*`/ESM_BASE_APPLICATIONS_4.0`**, as shown in the following example.**
4. **Type** `./baconfig`**.**
5. **Type** `2` **to view the list of installed ESM Base Applications.**

The list of installed and uninstalled applications will vary, depending on the ones you have installed and the version of your operating system.

```
# cd /path-to-the-DVD/ESM_BASE_APPLICATIONS_4.0
# ./baconfig
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 2
Please wait...

  Not Installed: Sun StorEdge Data Replication Manager 1.0
  Not Installed: Sun StorEdge Management Portal 1.0
  Not Installed: SANbox Manager 2.1
  Not Installed: Sun StorEdge SAN Foundation Software 4.4.6
  Not Installed: Storage Automated Diagnostic Environment -
Enterprise Edition 2.4
```

6. **Type** `1` **at the first prompt to indicate that you want to install an application. Type** `5` **at the second prompt to select the Storage Automated Diagnostic Environment.**

   The list of installed and uninstalled applications will vary, depending on the ones you have installed and the version of your operating system.

```
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 1
Please wait...


The following applications are available to be installed
  1.   Sun StorEdge Data Replication Manager 1.0
  2.   Sun StorEdge Management Portal 1.0
  3.   SANbox Manager 2.1
  4.   Sun StorEdge SAN Foundation Software 4.4.6
  5.   Storage Automated Diagnostic Environment - Enterprise
Edition 2.4
  6.   Return to Main Menu
Enter the number of the application you wish to install.  Use a
comma separated list to install multiple applications.: 5
Please wait...
```

7. **Type `y` confirm your selection. The license agreement is displayed. If you agree to the license, type `y` at the prompt.**

```
The below product(s) have been selected

    Storage Automated Diagnostic Environment - Enterprise Edition
2.4

Is this correct? (Y/N) [Y] y

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THE MASTER TERMS IN RELATION TO THIS SOFTWARE..
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.
.
Do you agree to the license? (Y/N) [Y]   y
.
.
.
```

```
Checking system resources...


Attempting to install: Sun Java(TM) Web Console 2.2.1
baconfig log file: /var/opt/SUNWbaconf/logs/Lockhart-2.2.1-
1123176918.install.log

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Installation of <SUNWjhrt> was successful.
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Installation of <SUNWjhdev> was successful.
Copyright 2003 Sun Microsystems, Inc.  All rights reserved.
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Installation of <SUNWjhdoc> was successful.
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Installation of <SUNWjhdem> was successful.
Copyright 2002 Sun Microsystems, Inc. All rights reserved.

Installation of <SUNWjato> was successful.
Copyright 2004 Sun Microsystems, Inc.  All rights reserved.
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Installation of <SUNWmctag> was successful.
Copyright 2004 Sun Microsystems, Inc.  All rights reserved.
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Installation of <SUNWmconr> was successful.
Copyright 2004 Sun Microsystems, Inc.  All rights reserved.
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.
.
.
```

```
 Registering com.sun.web.console_2.2.1.

Registering com.sun.web.ui_2.2.1.

    Registering /usr/share/webconsole/lib/serviceapi.jar
    as com_sun_management_services_api.jar for scope ALL

    Registering /usr/share/webconsole/lib/serviceimpl.jar
    as com_sun_management_services_impl.jar for scope ALL

    Registering /usr/share/webconsole/lib/consoleimpl.jar
    as com_sun_management_console_impl.jar for scope ALL

    Registering /usr/share/webconsole/lib/cc.jar
    as com_sun_management_cc.jar for scope ALL

    Registering /usr/share/webconsole/lib/SMIWebCommon.jar
    as com_sun_management_webcommon.jar for scope ALL

    Registering /usr/share/lib/jato/jato.jar
    as com_iplanet_jato_jato.jar for scope ALL


Installation of <SUNWmcon> was successful.
Copyright 2004 Sun Microsystems, Inc.  All rights reserved.
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    Registering /usr/share/webconsole/lib/solaris_impl.jar
    as com_sun_management_solaris_impl.jar for scope ALL

    Registering login module
com.sun.management.services.authentication.PamLoginModule

    Registering login module
com.sun.management.services.authentication.RbacRoleLoginModule


Installation of <SUNWmcos> was successful.
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    Registering /usr/share/webconsole/lib/solaris_implx.jar
    as com_sun_management_solaris_implx.jar for scope ALL

Installation of <SUNWmcosx> was successful.
.
.
.
```

```
Installing man pages ...

Installation complete.

Server not started! No management applications registered.
baconfig log file: /var/opt/SUNWbaconf/logs/Lockhart-2.2.1-
1123176918.install.log

Attempting to install: Storage Automated Diagnostic Environment -
Enterprise Edition 2.4
baconfig log file: /var/opt/SUNWbaconf/logs/StorADE-2.4-
1123176918.install.log

Storage Automated Diagnostic Environment (Storage A.D.E.)
installation ...
Version: 2.4.12.009
Current time: Thu Aug 4 13:37:37 EDT 2005

Note: A log will be saved to:
/var/sadm/install/Storage_ADE/Install.log

This script installs the Storage Automated Diagnostic Environment
software, referred to as Storage A.D.E., for your storage system.
Software components included in this distribution include:

o Storage A.D.E. 2.4 - Enterprise Edition
o Storage A.D.E. 2.4 - Management Station UI

Please refer to the Storage Automated Diagnostic Environment 2.4
release notes for the Enterprise Edition and Management Station UI
before installing this product.

Do you want to install ....

o The Storage A.D.E. 2.4 - Enterprise Edition [y/n] :
o The Storage A.D.E. 2.4 - Management Station UI [y/n] :
You have selected to install the following:

o Storage A.D.E. 2.4 - Enterprise Edition
o Storage A.D.E. 2.4 - Management Station UI

Is this correct? [y/n] :
Checking Solaris version ..... 5.9
.
.
.
```

```
Checking Solaris environment .....
Performing install of the Enterprise Edition .....

Installing <SUNWstade>...

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BE LEGALLY
INVALID.


SUNWstade: Copying /opt/SUNWstade/cpfiles contents to
/opt/SUNWstade.
/opt/SUNWstade/System/array_password
/opt/SUNWstade/System/cron_started
/opt/SUNWstade/htdocs/index.html
/opt/SUNWstade/snmp/share/snmp/mibs/.index
/opt/SUNWstade/snmp/share/snmp/sys.conf

SUNWstade: Running '/opt/SUNWstade/bin/ras_install -m -S N -c'.
Trying perl /usr/bin/perl (5006.001)
            -> This version works

*** USING PERL: /usr/bin/perl ***

  +----------------------------------+
  | Installing the Package and Crons |
  +----------------------------------+

*** Master Install ***

- Starting the Storage A.D.E service (rasserv):

/opt/SUNWstade/rasserv/bin/apachectl start: nice -5 ./rasserv
started ...
.
.
.
```

```
-----------------------------------------------------------------
To complete the configuration, point your browser to:

    https://<hostname>:6789


Please refer to the SUNWstadm release notes for additional
installation, configuration, and usage information.
-----------------------------------------------------------------

Installation of <SUNWstadm> was successful.
SUNWstazt is already installed
SUNWstazh is already installed
SUNWstako is already installed
SUNWstaja is already installed
SUNWstafr is already installed
Installation successful
+-----------------------------------------------------------------+
| You have installed the following:
|
| o Storage A.D.E. 2.4 - Enterprise Edition - Success
| o Storage A.D.E. 2.4 - Management Station UI - Success
|
| The UI can be accessed at the URL : https://<hostname>:6789/
+-----------------------------------------------------------------+

Finished at: Thu Aug 4 13:40:56 EDT 2005
Note: A log has been saved to:
/var/sadm/install/Storage_ADE/Install.log
Checking installed patches
Please wait...

Attempting to install patch: 117650-45

Checking installed patches...
Executing prepatch script...

117650: Removing the cron entry.
 ->  Agent cron removed.
Verifying sufficient filesystem capacity (dry run method)...
Installing patch packages...
.
.
.
```

```
Patch number 117650-45 has been successfully installed.
See /var/sadm/patch/117650-45/log for details
Executing postpatch script...

-----------------------------------------------------------------
After the patch is completely installed, execute
the program '/opt/SUNWstade/bin/ras_install'.

Please refer to the patch README and release notes for
additional installation, configuration, and usage
information. The latest version of the release notes
can be found at:

    http://docs.sun.com/app/docs?q=819-0432
-----------------------------------------------------------------

Patch packages installed:
  SUNWstade

Attempting to install patch: 117654-45

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

Patch number 117654-45 has been successfully installed.
See /var/sadm/patch/117654-45/log for details
Executing postpatch script...

117654: Checking the status of the Java Web Console.

117654: Stopping the Java Web Console to reregister.
Shutting down Sun Java(TM) Web Console Version 2.2.1...
See /var/log/webconsole/console_debug_log for server logging
information

117654: Unregistering Storage_A.D.E_2.4 from the Java Web Console.

    Unregistering Storage_A.D.E_2.4.
.
.
.
```

```
117654: Reregistering Storage_A.D.E_2.4 with the Java Web Console.

    Registering Storage_A.D.E_2.4.


117654: Enabling the Java Web Console console_debug_log file
to automatically grow and rollover using the default settings.

117654: Starting the Java Web Console after reregistration.
Starting Sun Java(TM) Web Console Version 2.2.1...
See /var/log/webconsole/console_debug_log for server logging
information

------------------------------------------------------------------
Complete the configuration by pointing your browser to:

    https://<hostname>:6789

Please refer to the patch README and release notes for
additional installation, configuration, and usage
information. The latest version of the release notes
can be found at:

    http://docs.sun.com/app/docs?q=819-0432
------------------------------------------------------------------

Patch packages installed:
  SUNWstadm

baconfig log file: /var/opt/SUNWbaconf/logs/StorADE-2.4-
1123176918.install.log
```

8. **Type** `4` **to exit the** `baconfig` **utility.**

```
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 4
```

Setting Up the sa_admin Role

During the Storage Automated Diagnostic Environment installation, no accounts or roles were created. However, Storage Automated Diagnostic Environment requires one role to be manually set up. The `sa_admin` role should be given to any user who will do more than just view and refresh the configuration information.

Note – The user whose role you plan to modify must be logged out of the system. If the user is not logged out of the system, the role assignment will fail.

To set up the `sa_admin` role, you must be logged in as root.

1. **To create the sa_admin role, type the following command:**

```
# roleadd -c "SA Role" -s /bin/pfcsh -A "solaris.*" -P "All"
sa_admin
```

2. **Set the `sa_admin` role password. The password is masked.**

```
# /usr/bin/passwd sa_admin
New Password: ********
Re-enter new Password: ********
passwd: password successfully changed for sa_admin
#
```

3. **Determine the existing roles of the user to whom you want to grant the `sa_admin` role.**

```
# /usr/bin/roles username
```

4. **Do one of the following, depending on the output from the preceding command:**
   - If the preceding command returned `No roles`, then the user does not have any roles. Use the following command to grant the `sa_admin` role to the user:

```
# /usr/sbin/usermod -R sa_admin username
```

- If the preceding command returned one or more roles, append the `sa_admin` role to the user's existing roles, as follows:

```
# /usr/sbin/usermod -R `/usr/bin/roles username`,sa_admin
username
```

5. **Verify that the `sa_admin` role was granted to the user:**

```
# /usr/bin/roles username
```

The `sa_admin` role should be listed in the output from the above command.

If `sa_admin` does not appear in the output and the user has existing roles, try running the command again by replacing `` `/usr/bin/roles username` `` with the output from the command issued in Step 3. Do not include spaces in the comma-separated list.

Changing the sa_admin Role Password

To change the `sa_admin` password, type the following:

```
# /usr/bin/passwd sa_admin
New Password: ********
Re-enter new Password: ********
```

Next Steps

For more information about Storage Automated Diagnostic Environment, go to `http://www.sun.com/products-n-solutions/hardware/docs/Software/index.html`.

CHAPTER 3

Setting Up and Using the Sun StorEdge Management Portal

The Sun StorEdge Management Portal contains a preconfigured environment for managing storage devices. This chapter describes basic portal concepts, the contents of the portal package, and the tasks you perform to configure and use the portal.

This chapter contains the following sections:

- "Portal Architecture" on page 83
- "Logging In to the Portal" on page 85
- "User Overview" on page 86
- "Using the Desktop" on page 87
- "Portlet Overview" on page 91
- "Configuration Tasks" on page 103
- "Administrative Tasks" on page 107

Portal Architecture

The portal architecture and infrastructure follow industry standards to bring information into a highly modular, dynamic, and customizable storage desktop built on top of the Java System Portal Server software, which is included in the Java Enterprise System.

FIGURE 3-1 shows the application tiers that you can have in your environment. The Sun StorEdge Management Portal is portal application software that provides the top two tiers of this application environment.

Information that resides in the portal environment comes from a variety of storage devices and information interfaces in the lower tier of the environment. Generally, users are not exposed to this lower tier, although administrators may have to enter information about the location of the information sources.

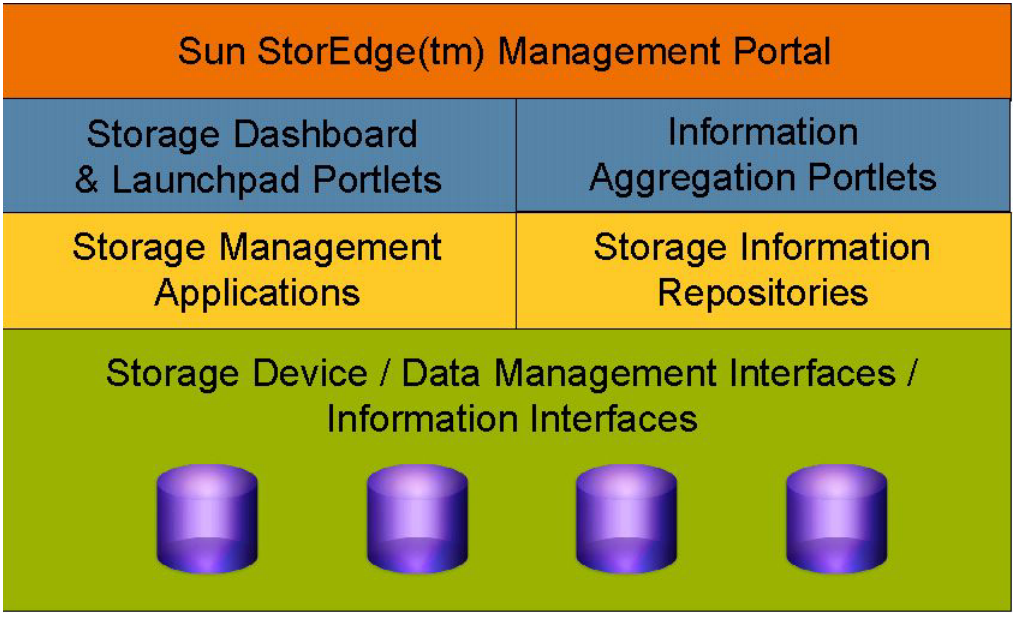


FIGURE 3-1 Management Portal and Surrounding Environment

When you log in to the Management Portal, you see the storage desktop, within which are a series of *portlets*, or individual applications. There are two types of portlets:

- **Storage dashboard and launchpad portlets** – These portlets help you organize storage devices by providing links to a variety of storage management applications, such as Sun StorEdge Operations Manager and device element managers. These portlets also provide contextual information, such as information about the health status of a device, vendor information, and WWN information. Depending on the status information displayed, such as an alarm or information indicating poor performance, you can then launch applications as needed.
- **Information aggregation portlets** – These portlets provide information about the storage types within your environment as well as information that can be useful in managing your storage. Much of this information is derived from the Internet or links provided with the product. These portlets generally launch external web sites, such as documentation and news sites.

Logging In to the Portal

You log in as either of the two users created as part of the default configuration:

- The general user (`sestorageadmin`) has access to management functions only.
- The administrator (`seadmin`) has access to all administrator functions.

To log in, follow these steps:

1. **Go to the portal login page at `http://`*hostname*`/portal`, where *hostname* is the fully qualified domain name of the management station on which you installed the Management Portal (FIGURE 3-2).**

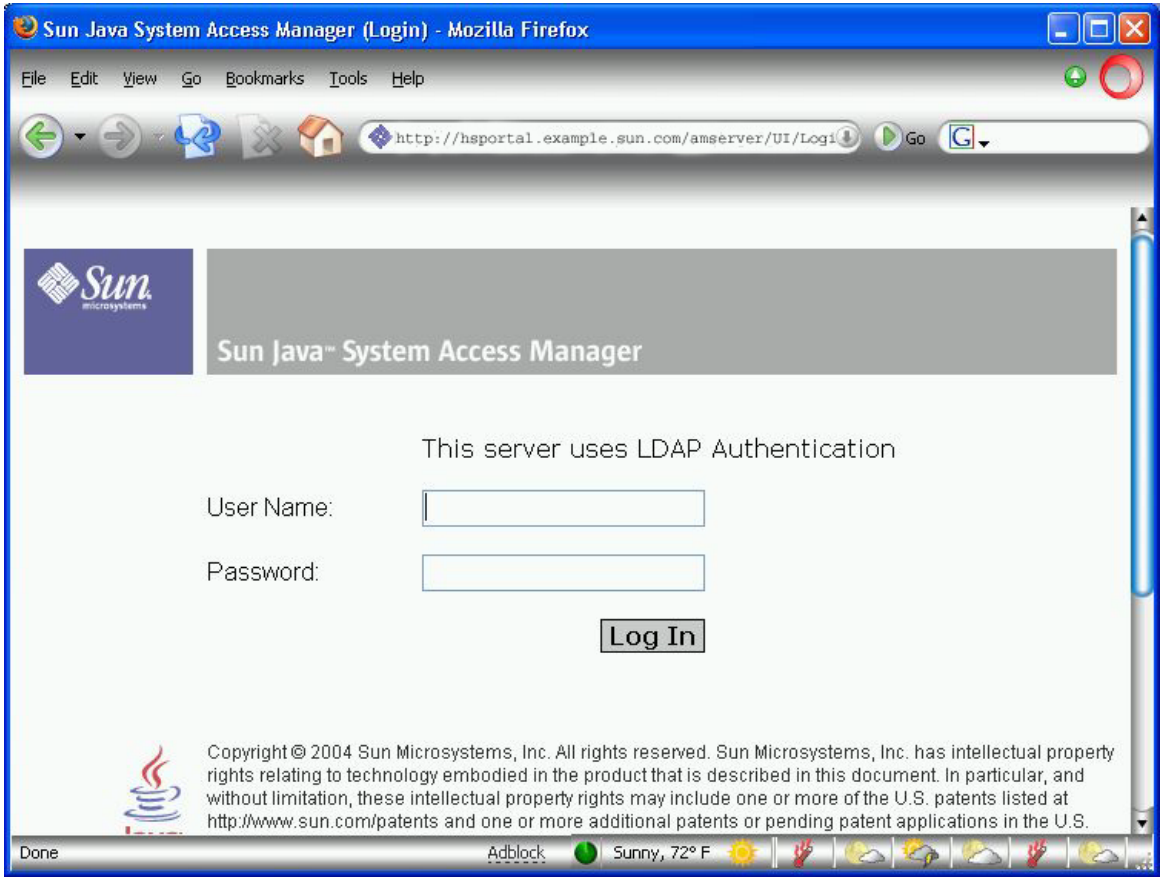


FIGURE 3-2 Sun StorEdge Management Portal Login Screen

2. **On the login page, enter your user name and password (either `seadmin` and `seadmin`, or `sestorageadmin` and `sestorageadmin`).**

3. **Click Login.**

User Overview

The Management Portal installation creates two users: `sestorageadmin` and `seadmin`. These users are described in the following subsections.

Management Portal General User

A Management Portal general user (`sestorageadmin`) can use the portal to manage and monitor storage devices and data services. This user can also personalize the environment. The following are some of the tasks that a general user can perform:

- Customize the storage desktop (by changing layouts, creating and removing tabs, and adding and removing portlets from pages).
- Modify content in portlets through the Edit Content menus.
- Launch the Storage Automated Diagnostic Environment and other management applications to which the portal links as allowed by application-specific permissions.
- View documentation and news links.
- Add additional applications to the Storage Application Organizer portlet.
- Add Really Simple Syndication (RSS) and Atom feeds to the Storage News and Information portlet.
- View performance and storage pool information.
- View data replication status and information.

General users cannot perform "global" administration operations, such as adding additional devices to monitor, configuring performance monitors, and configuring access and authorization to agents residing on a Sun StorEdge 6920 system. These tasks, available from the Administration Tasks portlet, can be performed by the Management Portal Administrator only.

Management Portal Administrator

A Management Portal administrator (`seadmin`) has access to the same functions as the general user. This user can also access functions for administering the Management Portal environment. After the installation and initial configuration are complete, daily administrator functions might include the following, through use of the Administration Tasks portlet:

- Adding additional devices to discover and monitor.
- Turning performance monitoring on or off for individual Sun StorEdge 6130 arrays.
- Adding information about newly deployed applications to which all network users should have access.
- Viewing the status of the various infrastructure services.
- Discovering new devices.
- Changing the rate at which devices are polled.
- Selecting SE 6130 arrays on which to collect performance data.
- Selecting SE 6920 arrays on which to collect storage pool information.

Many of these operations affect data collection and change the content available to all users. The Sun StorEdge Management Portal centralizes this configuration under a single master administrative ID to ensure a consistent and planned operational profile.

Using the Desktop

You cannot change the way the Sun StorEdge Management Portal collects data from outside sources, but you can personalize your own environment to control how you view storage. Common desktop operations include the following:

- Setting filters on the devices shown in a particular portlet.
- Adding personal display items (such as applications and news feeds).
- Altering the desktop layout or a page layout.
- Altering the portlets displayed on any page.

The storage desktop contains several layers of information, as shown in FIGURE 3-3.



FIGURE 3-3 Storage Desktop

From the desktop, you view individual portlets. A single portlet can be deployed in multiple places with unique content displayed in each instance. For example, you might have several instances of the Storage News and Information portlet on a page or on multiple pages, each displaying different information.

Using Masthead Functions

The following subsections describe various desktop elements and how to use them.

The masthead on the storage desktop is visible on all pages of the portal. The masthead includes the following:

- Buttons for basic user functions, such as Home, Logout, and Help.

- A Search field that enables searches for storage elements using regular expressions. The result of a search is a the list of matching elements and alarms on those elements.
- A summary of current alarms by alarm severity. Clicking an alarm severity to see a filtered list of alarms of that severity.

Using Portlet Controls

Each portlet has a series of controls along the top border, as shown in FIGURE 3-4. To see online help for the portlet, click the question mark Help button. The remainder of the operations are available from the Options menu in the far right corner of the portlet title bar.



FIGURE 3-4 Portlet Controls

When you click the Options menu, the available operations become visible for selection, as shown in FIGURE 3-5.



FIGURE 3-5 Options Menu

Options menu commands include the following:

- Edit Content – Takes you to a full-page display of options that help you personalize the view of the content. This feature is not available for all portlets.
- Minimize/Restore – Changes the full portlet view to a minimal title bar. You can use this option to compress information on the page. To return to a full view, use the Restore option.
- Help – Displays online help for the portlet.

Finding Help Online

To open the online help, do one of the following:

- To browse help from the table of contents, click the Help button in the desktop masthead.
- To see help for a specific portlet, click the Help button in the portlet title bar.
- To see help for a specific page, click the Details link on that page.

The help window has its own navigation, contents, and search capabilities, as shown in FIGURE 3-6.

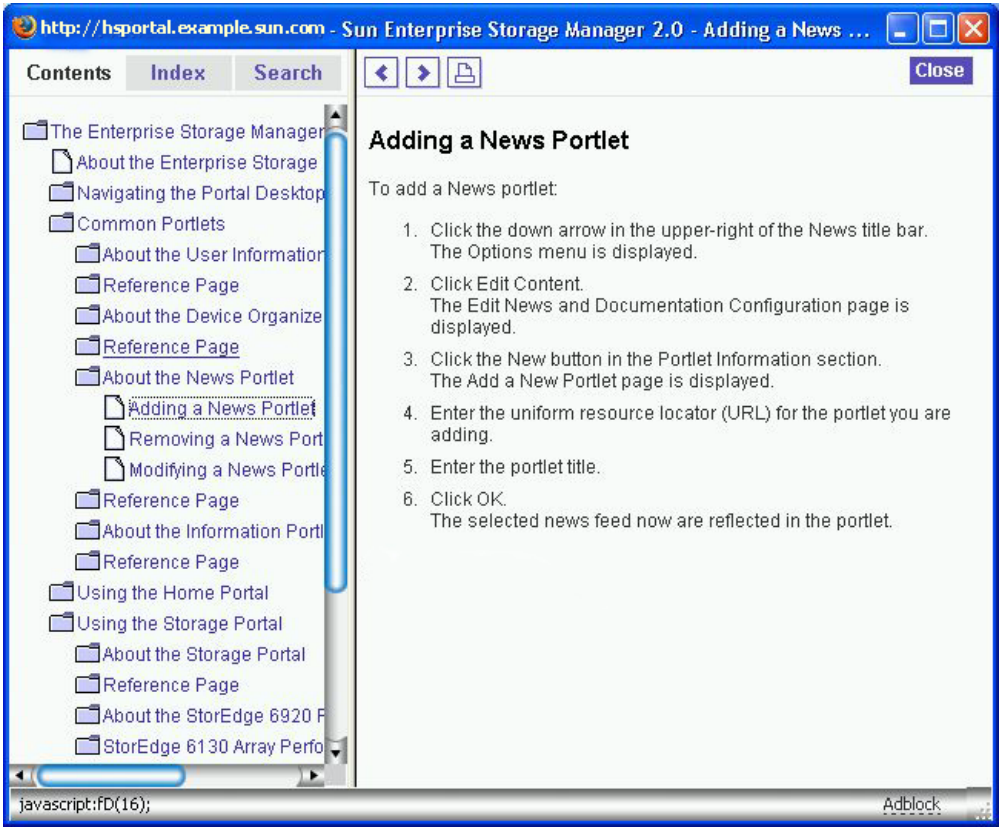


FIGURE 3-6 Help System

Customizing the Desktop

You can use the Page Options customization features to modify the layout, content, and pages of the storage desktop so that it contains the information you want in the form and location you want. There are three ways to modify your desktop environment:

- Content – You can add, remove, and hide portlets on specific pages within the environment, including both user-created and default pages.
- Layout – You can change the column layout of your pages as well as move portlets up and down within a column. This feature allows you to change the focus of a page to a different portlet.
- Tabs – You can add tabs to the environment, using blank pages to organize content to your own specifications. You can also remove tabs.

The Page Options links are in the top right corner of the desktop, underneath the masthead and tabs, as shown in FIGURE 3-7.



FIGURE 3-7 Page Options Links

Portlet Overview

This section describes the contents and attributes of each of the portlets on the storage desktop. A portlet can be added multiple times on the storage desktop. For example, you may want to add multiple Volume Performance Reporter portlets to display performance information for the 6130 arrays in your storage network. By default, each portlet has separate personalization settings.

The Portal Reporter and Administration Tasks portlets can be accessed by `seadmin` users only. The following portlets can be accessed by `seadmin` and `sestorageadmin` users.

- Event Organizer
- Storage Event Reporter
- Storage Application Organizer
- Storage News and Information
- Data Replication Reporter
- Storage Pool Reporter
- Volume Performance Reporter
- File System Reporter
- Report Organizer

TABLE 3-1 shows the portlets that are specific to individual Sun products.

TABLE 3-1 Sun Products Portlet Support

Portlets	Sun Product
Data Replication Reporter, Storage Pool Reporter	Sun StorEdge 6920 systems
Volume Performance Reporter	Sun StorEdge 6130 arrays
File System Reporter	Sun StorEdge SAM-FS
File System Reporter	Sun StorEdge QFS
Report Organizer	Sun StorEdge Operations Manager

The following subsections describe each of these portlets.

Portal Reporter Portlet

The Portal Reporter portlet, shown in FIGURE 3-8, enables you to quickly determine the status of various important processes and configurations. It is located on the Administration tab.

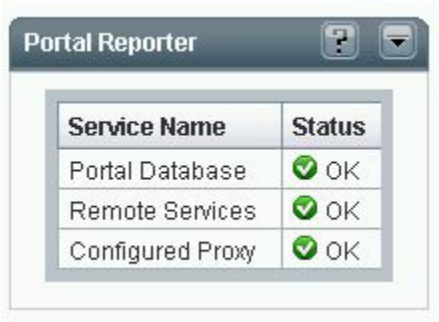


FIGURE 3-8 Portal Reporter

The first two service lights, Portal Database and Remote Services, indicate the availability of the "infrastructure" services, similar to the `checkservers` command from the `/opt/SUNWesmportal/bin` directory. If either of the dashboard lights is anything but green, there is a problem with the infrastructure. In this case, restart the server, using the `restartportal` command.

TABLE 3-2 shows the meanings of the status colors for the third service, Configured Proxy.

TABLE 3-2 Portlet Reporter Portlet Status Indicator

Portlet Reporter Status Colors	Description	Next Steps
Green	Connection to Internet is established and the proxy is configured correctly.	Add news feeds.
Yellow	Proxy is enabled and configured, but a connection to the Internet cannot be established.	Click Configure Proxy in the Administration Tasks portlet and verify that the proxy host name and port are correct. The issue may also be a slow proxy or slow Internet performance.
Red	The proxy is configured but disabled, and a connection to Internet cannot be established.	Check the proxy configuration and response.
Black	The proxy is not configured and a connection to the Internet cannot be established.	Configure a proxy to get an Internet connection.

Administration Tasks Portlet

Use the Administration Tasks portlet, shown in FIGURE 3-9, to set up the Management Portal. The Administration Tasks portlet is available only to the `seadmin` user. It is located on the Administration tab.

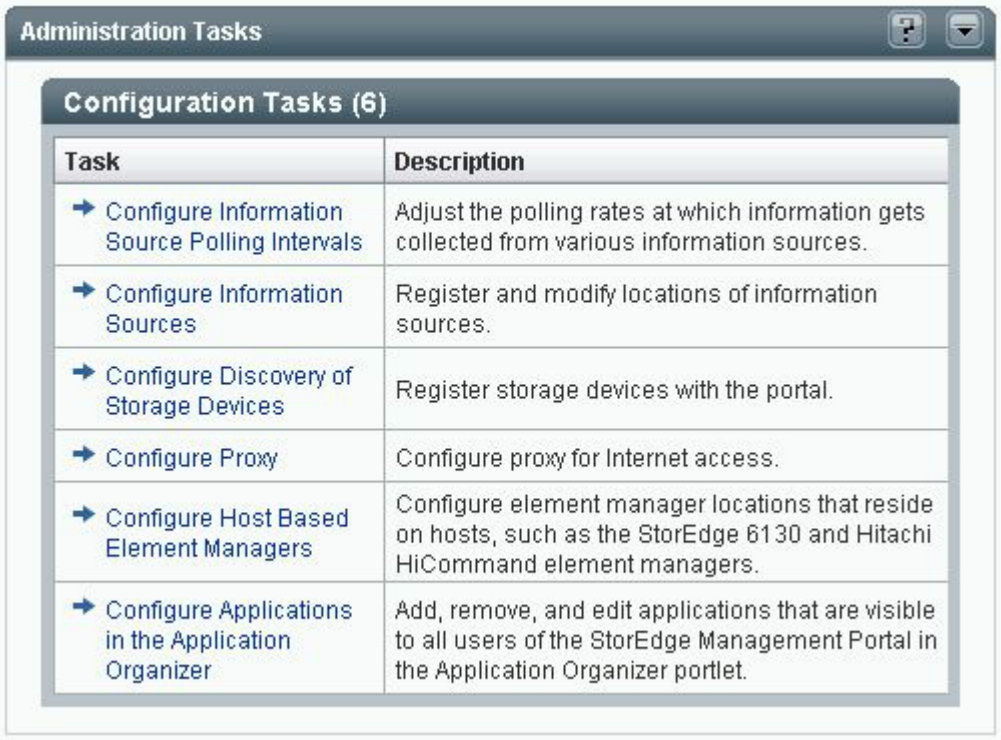


FIGURE 3-9 Administration Tasks

During the initial configuration, you should perform administration tasks in the following order:

1. Configure Information Sources
2. Configure Discovery of Storage Devices
3. Configure Proxy
4. Configure Host Based Element Managers
5. Configure Applications in the Application Organizer
6. Configure Information Source Polling Intervals

You use the Configure Information Sources task to register information sources (for example, Data Replication Manager) with the portal. For instructions on using this task, see "Configuration Tasks" on page 103.

You use the Configure Discovery of Storage Devices task to enter the IP addresses of systems that the portal should recognize. Depending on the number of devices that you are attempting to discover, this process can take from a few minutes to several hours.

You use the Configure Proxy task to enter proxy information that the Management Portal infrastructure can use to access information on the Internet. The only content that is currently retrieved from the Internet is RSS information for the Storage News and Information portlets.

After the initial configuration, the tasks you are most likely to use in your daily work are Configure Information Sources and Configure Polling Intervals.

Event Organizer Portlet

The Event Organizer, shown in FIGURE 3-10, allows you to display an alarm for each registered device in your network. If a device has multiple alarms, the one with the maximum severity will be displayed.

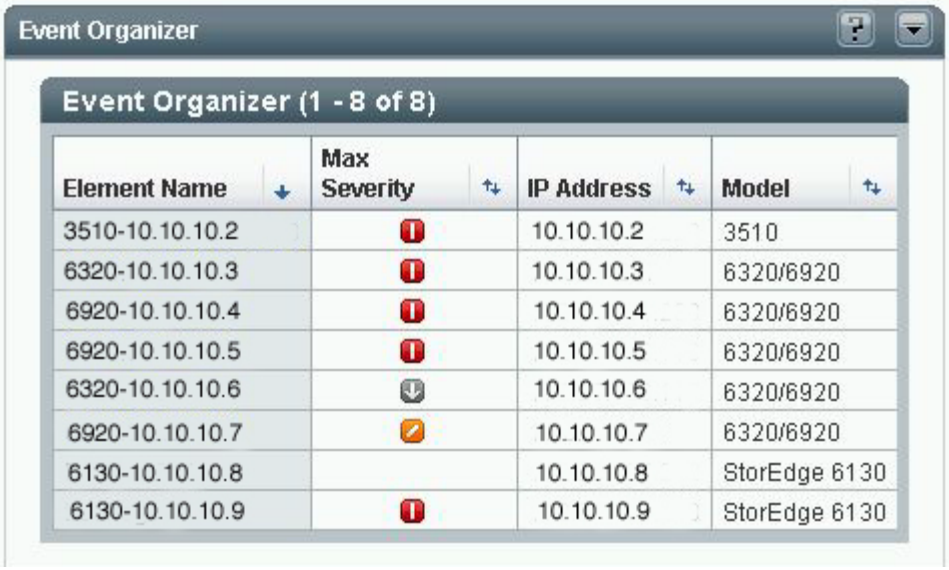


FIGURE 3-10 Event Organizer

The Event Organizer uses information from the embedded Storage Automated Diagnostic Environment agent.

If you click a device in the Element Name column, the management application for that device is launched, if it is available. Clicking an alarm under Max Severity brings up the Storage Automated Diagnostic Environment where you can find more information on the alarm, such as how to mitigate, acknowledge, or close it, for example. The first time you open the Storage Automated Diagnostic Environment, you are prompted for a user ID and password.

Storage Event Reporter Portlet

The Storage Event Reporter portlet, shown in FIGURE 3-11, shows all health information for the registered devices in your network.

The Storage Event Reporter portlet is located on the Home tab.

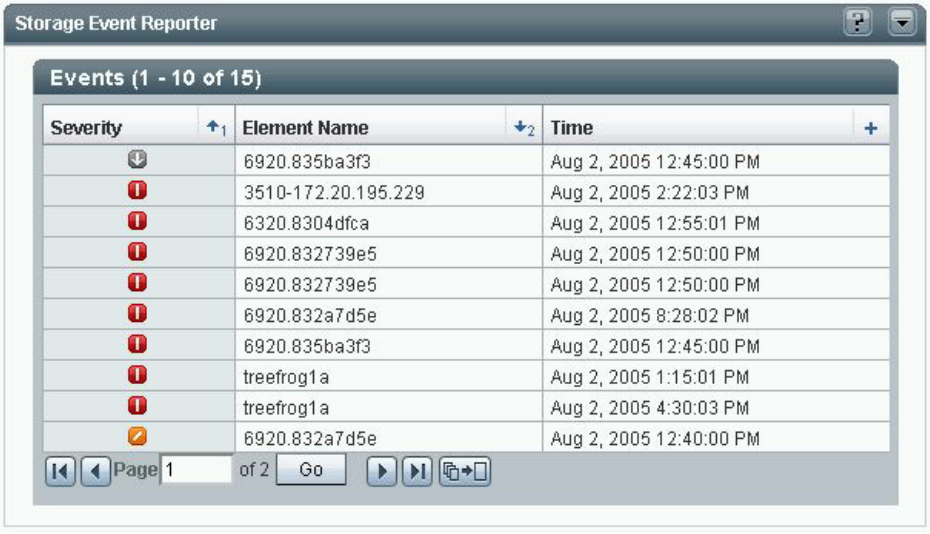


FIGURE 3-11 Storage Event Reporter

If you click a device in the Element Name column, the management application for that device is launched, if it is available. Clicking an alarm under Severity brings up the Storage Automated Diagnostic Environment where you can find more information on the alarm, such as how to mitigate, acknowledge, or close it, for example. The first time you open the Storage Automated Diagnostic Environment, you are prompted for a user ID and password.

Storage Application Organizer Portlet

The Storage Application Organizer portlet, shown in FIGURE 3-12, contains a list of web-based applications that are used for general management of the storage environment, such as Sun StorEdge Operations Manager and Data Replication Manager.

The Storage Application Organizer portlet is located on the Home tab.



FIGURE 3-12 Storage Application Organizer

The portal derives Storage Application Organizer information from three locations:

- Preconfigured applications delivered with the Sun StorEdge Management Portal.
- Application information entered by the Management Portal administrator for all users. The administrator manually enters this data.
- Frequently used application information entered by a general user, for that user's individual use.

The primary view of the Storage Application Organizer lists the name of each application and provides a link that launches the application in a new window. The table can be sorted in a variety of ways. By default, as many as ten applications can be shown on the primary view before the pagination controls appear on the bottom of the page.

Storage News and Information Portlet

The Storage News and Information portlet, as shown in FIGURE 3-13, displays channels, which are news, information, and documentation for Sun Microsystems network storage. Typically, a channel is an RSS news feed, but there are also other supported channel protocols, such as Atom.

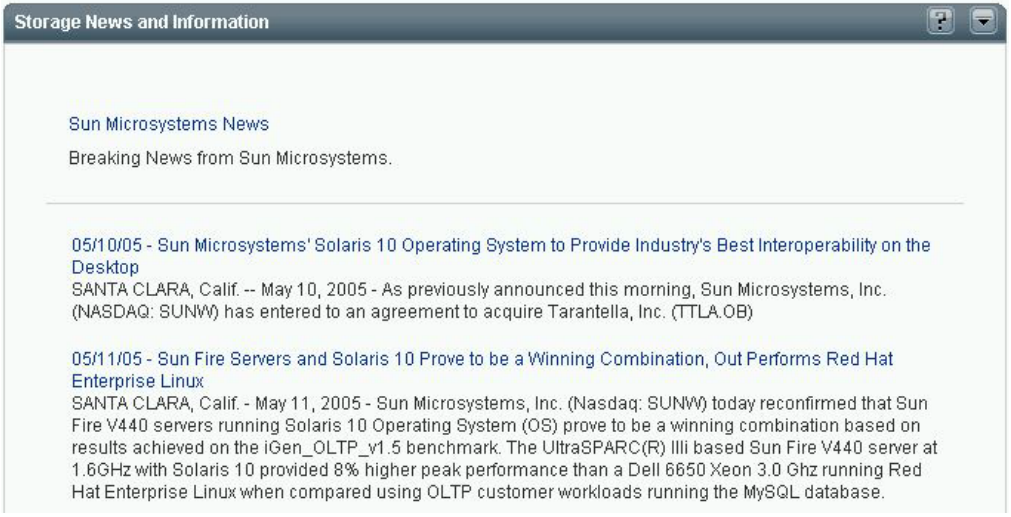


FIGURE 3-13 Storage News and Information Portlet

Administrators can add channels through the Administrative Tasks portlet. General users can add personal channels by customizing the Storage News and Information portlet.

Data Replication Reporter Portlet

The Data Replication Reporter portlet, shown in FIGURE 3-14, uses information from the Sun StorEdge Data Replication Manager 1.0 product to deliver a concise overview of replication sets between Sun StorEdge 6920 systems. All users can use this portlet for a variety of tasks, such as viewing replication sets or viewing the current state of a replication set (Replicating, Suspended, and Synchronizing). The state does not relate to the health of the replication set.

The Data Replication Reporter portlet is located on the SE 6920 subtab of the Storage tab.

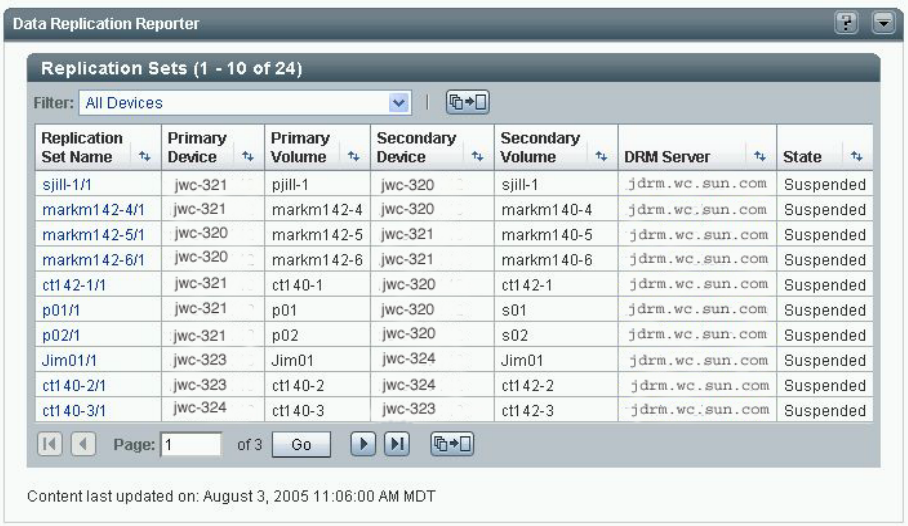


FIGURE 3-14 Data Replication Reporter

Before you can use Data Replication Manager through the Management Portal, the administrator (`seadmin`) must perform the following tasks:

1. Configure the Data Replication Reporter portlet.
2. Turn on the Data Replication Manager agent.

These tasks are described in "Setting Up the Data Replication Reporter Portlet" on page 104.

Storage Pool Reporter Portlet

The primary view of the Storage Pool Reporter portlet, shown in FIGURE 3-15, provides aggregate statistics about Sun StorEdge 6920 storage pools based on the storage profile type. Displayed information includes the storage profile type, the number of pools that have this type, the total capacity of all pools of this type, the available capacity from the pools, and the percentage of utilization. The Storage Pool Reporter is located on the SE 6920 subtab of the Storage tab.

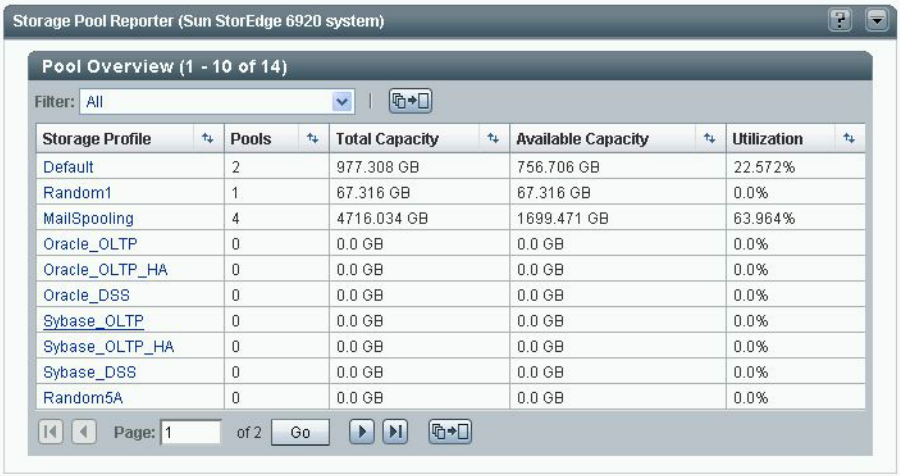


FIGURE 3-15 Storage Pool Reporter (Sun StorEdge 6920 System)

You use Storage Pool Reporter to do the following:

- Determine what storage profile types have the most allocated capacity in the network, the highest utilization capacity, the lowest utilization capacity, and other permutations involving capacity and storage profile type.
- Determine what storage pools on what devices make up the aggregate capacity of a particular storage profile type.
- Access devices that have available capacity of a particular storage profile type.

Before you can use Storage Pools through the Management Portal, the administrator (`seadmin`) must configure the Storage Pools portlet. For instructions, see "Setting Up the Storage Pools Portlet" on page 105.

Volume Performance Reporter Portlet

The Volume Performance Reporter portlet, shown in FIGURE 3-16, provides a view of various performance statistics for a single Sun StorEdge 6130 array. If you have a number of these arrays in your storage network, you might want to set up a portal page with a separate portlet for each. Alternatively, if you have just one array, you might want a separate portlet for each type of statistic.

The Volume Performance Reporter portlet is located on the SE 6130 subtab of the Storage tab.

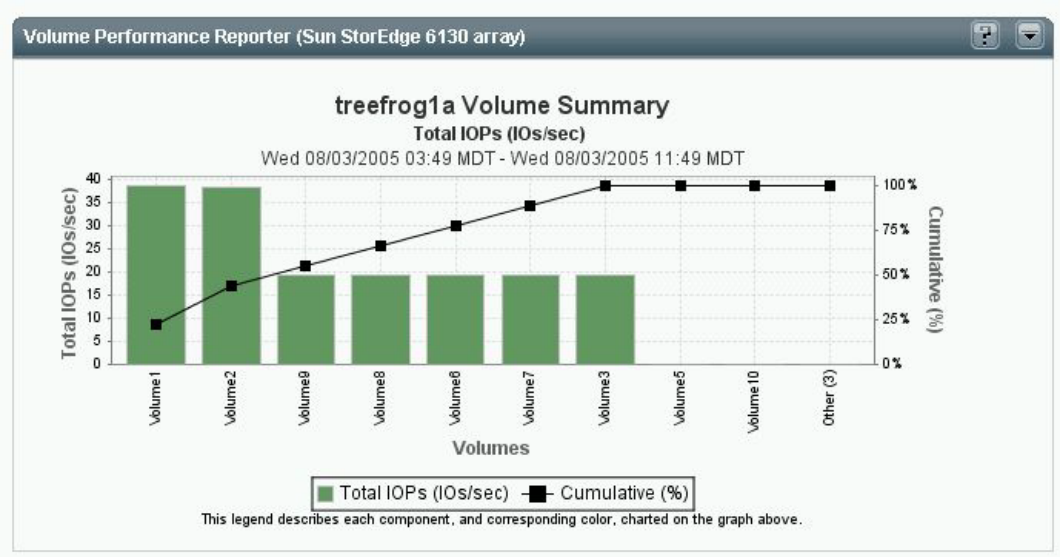


FIGURE 3-16 Volume Performance Reporter

The statistics are presented in the form of a Pareto chart for ease of use. However, a Pareto chart shows only the most active volumes, not all of the volumes. If you are interested in all volumes on a particular array, you can choose to render the information in table format, Pareto chart format, or both.

Clicking on a bar within the Pareto chart takes you to a Time Series chart. This chart depicts the volume's performance over time.

Before you can use the Volume Performance Reporter through the Management Portal, the administrator (`seadmin`) must configure the Volume Performance Reporter portlet. For instructions, see "Setting Up the Volume Performance Reporter Portlet" on page 105.

File System Reporter Portlet

The File System Reporter portlet, shown in FIGURE 3-17, allows you to view the capacity and utilization information for servers in file systems, if you have an instance of the File System Manager software installed on the network. This portlet is located on the File Systems tab.

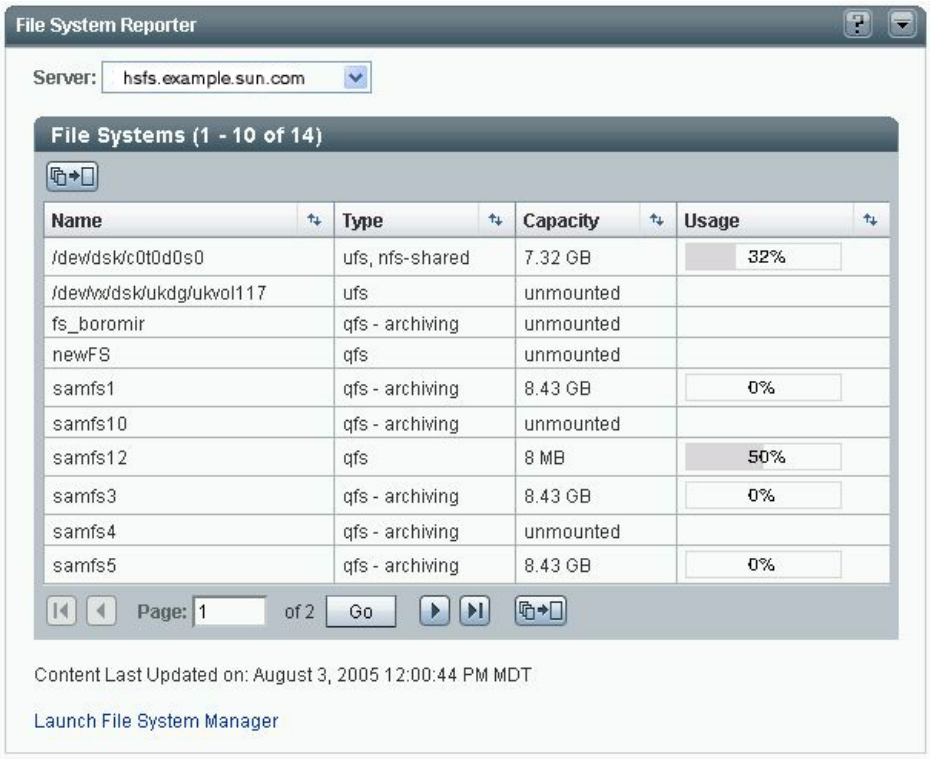


FIGURE 3-17 File System Reporter

Before you can use File System Reporter through the Management Portal, the administrator (`seadmin`) must perform the following tasks:

1. Configure the File System Reporter portlet.
2. Turn on the File System Reporter agent.

These tasks are described in "Setting Up the File System Reporter Portlet" on page 105.

Report Organizer Portlet

The Report Organizer portlet, shown in FIGURE 3-18, makes reports from the Sun StorEdge Operations Manager available with a single click. This portlet is located on the Enterprise tab.



FIGURE 3-18 Report Organizer

Configuration Tasks

This section describes the tasks that are involved in configuring portlets and other storage elements for use through the Management Portal. You may not need to complete all of these tasks, depending on what services are included in your particular environment.

You must be the Management Portal administrator (`seadmin`) user to complete these tasks.

Setting Up the Data Replication Reporter Portlet

Before Data Replication Manager can be used through the Management Portal, you must configure the Data Replication Reporter portlet and turn on the Data Replication Manager agent as described in this section.

For additional information on configuring Data Replication Manager, see Chapter 4.

▼ To Configure the Data Replication Reporter Portlet

1. **Click the Administration tab.**
2. **Click Configure Information Sources in the Administration Tasks portlet.**
3. **Select Operations > Add Data Replication Information Source from the Information Source table.**
4. **Enter the properties for Sun StorEdge Data Replication Manager.**

▼ To Turn On the Data Replication Manager Agent

The Management Portal queries Data Replication Manager for replication set information. To integrate these products, you must first turn on an agent that is shipped with Data Replication Manager.

1. **On the host on which Data Replication Manager is installed, log in to the system using a root password.**
2. **Edit the file** `/opt/SUNWrrm/etc/rrmapp.properties` **to change the value of** `rrm.xml.enabled` **to** `true` **from** `false`**.**

```
# Port for the XML data exporter.  Set 'enabled' to true and restart the DRM
# server in order to turn on the exporter.
#
rrm.xml.port=31338
rrm.xml.enabled=true
```

3. **(Optional) Change the port number that the interface will use when communicating with the Data Replication Manager portlet.**

   This change must be made both in the `rrmapp.properties` file and in the Data Replication Manager portlet so that the interface and portlet can communicate.

4. **Restart the Data Replication Manager server:**

```
# /opt/SUNWrrm/bin/drmserver restart
Restarting the DRM server...done.
#
```

Setting Up the Storage Pools Portlet

Before you can use the Storage Pools Portlet, you must configure Storage Pools in the Administration Tasks portlet, using the following procedure:

1. **Click the Administration tab.**
2. **Click Configure Information Sources in the Administration Tasks portlet.**
3. **Select Operations > Add Storage Pools Information Source from the Information Source table.**

   All discovered 6920 arrays will be listed in the table. Select an array that you wish to add and provide the login credentials for that device.

Setting Up the Volume Performance Reporter Portlet

Before you can use the Volume Performance Reporter portlet, you must configure it, as follows:

1. **Click the Administration tab.**
2. **Click Configure Information Sources in the Administration Tasks portlet.**
3. **Select Operations > Add Volume Performance Information Source from the Information Source table.**
4. **Select the Storage tab.**
5. **Select the SE 6130 tab.**
6. **Edit the content of the Volume Performance Reporter.**

   All discovered 6130 arrays will be listed in the table. Select the array on which you want to report.

Setting Up the File System Reporter Portlet

File System Manager is the browser interface tool used to manage the Sun StorEdge SAM-FS and QFS file systems. Before you can use File System Manager through the Management Portal, you must configure the File System Reporter portlet and turn on the File System Manager agent as described in this section.

▼ To Configure the File System Reporter Portlet

1. **Click the Administration tab.**
2. **Click Configure Information Sources in the Administration Tasks portlet.**
3. **Select Operations > Add File System Information Source from the Information Source table.**
4. **Enter the File System Manager host name, default port, and optional description.**

▼ To Turn On the File System Manager Agent

The File System Manager 2.0 software is packaged and delivered as part of the SAM-FS 4.4 and QFS 4.4 products. The Management Portal queries File System Manager for file system capacity information. To integrate these products, you must turn on an agent that is shipped with the File System Manager 2.0 and above.

1. **On the host on which File System Manager is installed, log in to the system using a root password.**
2. **Start the agent using the following command:**

```
# /opt/SUNWfsmgr/bin/fsmgr agent config -a
```

Specifying Element Manager Locations

Several storage element types use "host-based element managers." These are element managers that reside on a service processor that is not bundled within the storage device itself. These elements include Sun StorEdge 6120 (T3), 6130, and 9900 models, as well as Hitachi 9900 series arrays.

If the location of an element manager cannot be derived automatically, you must enter it manually, as follows:

1. **Click the Administration tab.**
2. **Click the Configure Host-based Element Managers task in the Administration Tasks portlet.**
3. **Enter the name of the host on which the element manager is installed.**

   The Sun StorEdge Management Portal will determine the URL.

Creating and Removing Users

When you install the Management Portal, the following two command-line utilities are installed in the `/opt/SUNWesmportal/bin` directory:

- `addEsmUser` *username* – Adds a user desktop, which includes a user name and password. When the configuration is complete, the new user can log in immediately and start personalizing the new desktop.
- `delEsmUser` *username* – Removes the user desktop. This permanently deletes the user and associated settings.

You must be root to execute these utilities, and you must supply the Java System Access Manager `amAdmin` password.

To change the user password, see the Java System Access Manager documentation at `http://docs.sun.com/app/docs/prod/java.sys/`.

Administrative Tasks

This section describes how to complete administrative tasks that you might need to perform while using the Management Portal.

Restarting, Starting, Stopping the Management Portal

To manually start, restart, or stop the servers used as a part of the Management Portal, you use the scripts located in the `/opt/SUNWesmportal/bin` directory. You must be logged in as root to make use of the scripts.

Note – These scripts do not accept additional parameters (for example, -h or -?). Execution of the script occurs immediately after entering the script name on the command line.

The scripts and their functions are as follows:

- `checkservers` – Displays the status of all servers.
- `restartportal` – Stops the running servers and starts them again after everything has completed.
- `startservers` – Starts all servers if they are not currently running.
- `stopservers` – Stops all servers.

Backing Up and Restoring Management Portal Information

Database backups occur daily through the use of a `cron` job. However, you can also make an immediate backup through the use of a script.

With database backups, discovered devices, historical data that can be used for performance monitoring, and the latest device scans are all stored. Backing up the database does not back up individual users, individual user configurations, or any desktop personalization.

▼ To Back Up the Database

Before you can back up the database, you must first stop all Management Portal database clients. Use the following procedure to stop the clients, back up the database, and restart the clients:

1. **Log in as root.**
2. **Stop the clients by entering the following commands:**

```
# cd /opt/SUNWesmportal/bin/
# ./stopservers
# cd /opt/SUNWcacao/bin
# ./cacaoadm stop
```

3. **Change the directory to the location of the scripts.**

```
# cd /opt/SUNWesmportal/util/psql/portal/bin/
```

4. **Run the database backup script.**

```
# ./dbbackup.sh
```

5. **After the backup is complete, restart the Management Portal clients by entering the following commands:**

```
# cd /opt/SUNWesmportal/bin/
# ./startservers
# cd /opt/SUNWcacao/bin
# ./cacaoadm start
```

The backup is located in the `/opt/SUNWesmportal/util/psql/backup` directory.



Caution – Do not add files to, remove files from, or modify in any way the files in the `/opt/SUNWesmportal/util/psql/backup` directory. Changing the contents or permissions of this directory will cause the restore process to fail.

There may be up to five backups in this directory. By default, the restore process uses the latest backup.

▼ To Restore the Database

Before you can restore the database, you must first stop all Management Portal database clients. Use the following procedure to stop the clients, restore the database, and restart the clients:

1. **Log in as root.**
2. **Stop the clients by entering the following commands:**

```
# cd /opt/SUNWesmportal/bin/
# ./stopservers
# cd /opt/SUNWcacao/bin
# ./cacaoadm stop
```

3. **Change the directory to the location of the scripts.**

```
# cd /opt/SUNWesmportal/util/psql/portal/bin/
```

4. **Run the database backup script.**

```
# ./dbrestore.sh
```

5. **After the restore is complete, restart the Management Portal clients by entering the following commands:**

```
# cd /opt/SUNWesmportal/bin/
# ./startservers
# cd /opt/SUNWcacao/bin
# ./cacaoadm start
```

CHAPTER 4

Configuring and Administering Data Replication Manager

This chapter describes the Data Replication Manager configuration and administration tasks. It contains the following sections:

- "Setting Up the drmadmin Role" on page 111
- "Logging In to Data Replication Manager" on page 113
- "Registering Devices" on page 117
- "Finding Help Online" on page 119
- "Administrative Tasks" on page 119

Setting Up the drmadmin Role

During the Data Replication Manager installation, no accounts or roles were created. However, Data Replication Manager requires one role to be manually set up. The `drmadmin` role should be given to any user who will add devices, create replication sets, or do anything more than simply view and refresh the configuration information.

Note – The user whose role you plan to modify must be logged out of the system. If the user is not logged out of the system, the role assignment will fail.

To set up the drmadmin role, you must be logged in as root.

1. **To create the `drmadmin` role, type the following command:**

```
# /usr/sbin/roleadd -c "DRM Admin" drmadmin
```

2. **Set the drmadmin role password. The password is not displayed.**

```
# /usr/bin/passwd drmadmin
New Password:drmadminpassword
Re-enter new Password:drmadminpassword
passwd: password successfully changed for drmadmin
#
```

3. **Determine the existing roles of the user to whom you want to grant the** `drmadmin` **role.**

```
# /usr/bin/roles username
```

4. **Do one of the following, depending on the output from the preceding command:**
   - **If the preceding command returned** `No roles`**, then the user does not have any roles. Use the following command to grant the** `drmadmin` **role to the user:**

```
# /usr/sbin/usermod -R drmadmin username
```

   - **If the preceding command returned one or more roles, append the** `drmadmin` **role to the user's existing roles, as follows:**

```
# /usr/sbin/usermod -R `/usr/bin/roles username`,drmadmin
username
```

5. **Verify that the** `drmadmin` **role was granted to the user:**

```
# /usr/bin/roles username
```

The `drmadmin` role should be listed in the output from the above command.

If the drmadmin role does not appear in the output, refer to the `usermod`(1m) and `roles`(1m) man pages for assistance in diagnosing and resolving the issue.

To set or change the drmadmin password, enter the following command:

```
# /usr/bin/passwd drmadmin
New Password: drmadminpassword
Re-enter new Password: drmadminpassword
```

Logging In to Data Replication Manager

To log in to Data Replication Manager after it is installed, use the following procedure:

1. **Enter the following URL in your web browser:**

   `https://`*drm-system*`:6789`

   where *drm-system* is the host name or IP address of the system on which Data Replication Manager has been installed.

   The Login Page is displayed.



2. **Enter your user name and password and click Log In.**

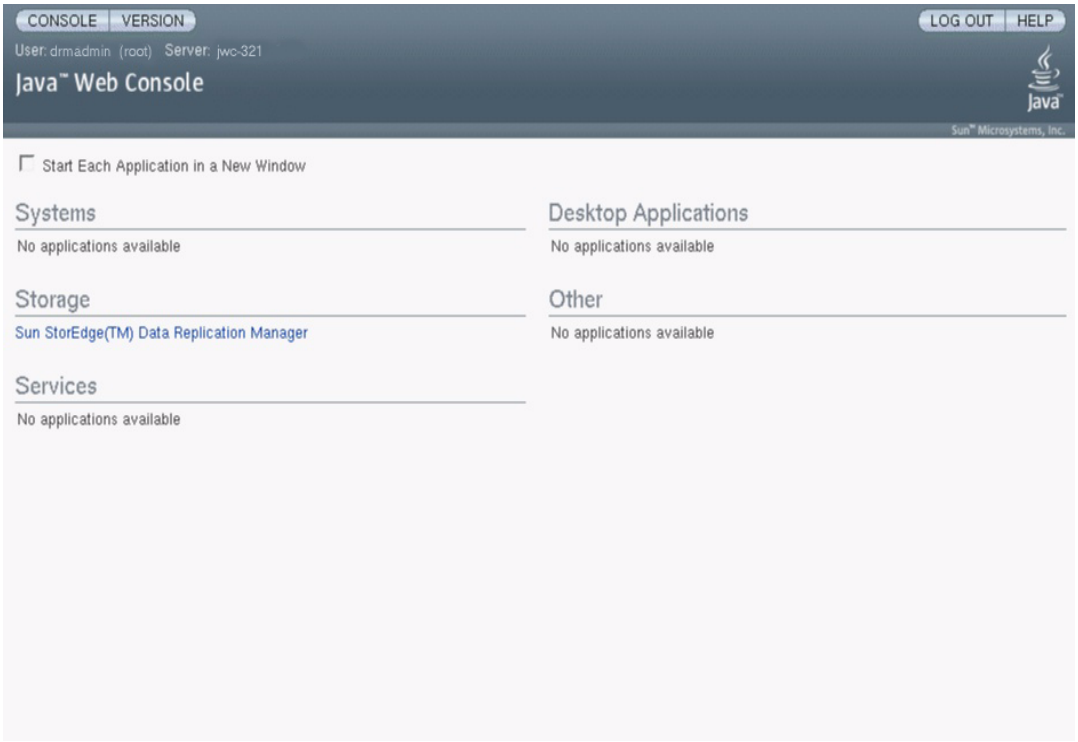
   All users have access to Data Replication Manager. However, only users with the `drmadmin` role will have administrative access, which allows them to configure and manage replication services.

3. **If you entered the user name and password of a user with the `drmadmin` role, select drmadmin from the Role Name list and provide the assigned role password, as shown here.**



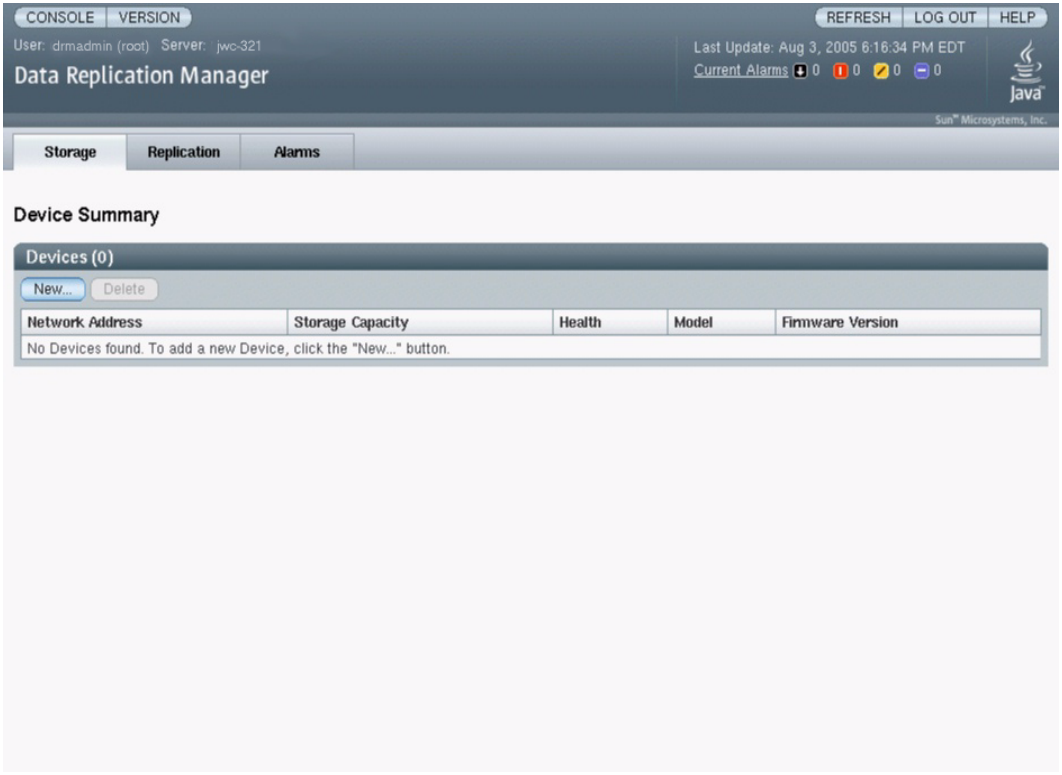
4. **Click Log In.**

   The Application Selection page is displayed.



5. **To access Data Replication Manager, select the Sun StorEdge Data Replication Manager link.**

   Data Replication Manager displays the Device Summary page, which enables you to manage registered replication devices. You must register devices for them to be listed here. For instructions, see the next section, "Registering Devices" on page 117.



Registering Devices

You must be logged in to Data Replication Manager with the `dradmin` role to register devices, including the Sun StorEdge 6920 systems.

1. **Click New on the Device Summary page.**

   The Register New Device page is displayed.



2. **In the Device Name field, type a host name or IP address. In the Username and Password fields, type the user name and password that Data Replication Manager will require for access to the device.**

   Although Data Replication Manager stores this data on disk, this data is encrypted and cannot be read.

3. **Click OK.**

   The registration process starts. As part of this process, Data Replication Manager logs in to the device and collects some initial data about the device.

   When the process is complete, the Device Summary page displays the new device.

   In addition to validating credentials and collecting initial data, Data Replication Manager initiates a full scan of the device to collect details about associated replication sets, volumes, consistency groups, and other pieces of data.

Note – This scan can take some time. While it is in process, the user interface can show what appears to be erroneous data. For example, the Replication Sets Summary page might show internal identifiers for World Wide Names (WWNs) in Device and Volume fields. These fields revert to their normal appearance when the scan is complete.

If the registration fails, check the following items:

- Credentials (user name and password) are valid.
- Host name or IP address is valid.
- Network connection to the Sun StorEdge 6920 system is available.

Next Steps

After you have registered your devices, you can perform management operations. For more information, see the Data Replication Manager online help.

If you are using the Sun StorEdge Management Portal software and the Data Replication Reporter portlet, you must manually configure the port for the Data Replication Manager server. For instructions, see "To Back Up and Restore Data Replication Manager Data" on page 121.

Finding Help Online

In the upper right corner of every page in the Data Replication Manager user interface is a link to the online help. The help window is context-sensitive; it automatically displays text for the current UI page.

Administrative Tasks

The following subsections discuss Data Replication Manager administrative tasks:

- "To Start, Stop, and Restart Data Replication Manager Processes" on page 120
- "To Change the Polling Interval" on page 120
- "To Back Up and Restore Data Replication Manager Data" on page 121
- "To Maximize the Logging/Tracing Feature" on page 122

▼ To Start, Stop, and Restart Data Replication Manager Processes

If you make configuration changes to the Data Replication Manager server, enable the Data Replication Manager portlet, or change the device rescan interval, you may need to start, stop, or restart the Data Replication Manager processes.

- **To start the server, log in as root and type the following command:**

```
# /opt/SUNWrrm/bin/drmserver start
```

- **To stop the server, log in as root and type the following command:**

```
# /opt/SUNWrrm/bin/drmserver stop
```

- **To restart the server, log in as root and type the following command:**

```
# /opt/SUNWrrm/bin/drmserver restart
```

▼ To Change the Polling Interval

By default, the Data Replication Manager server rescans devices for updated information (for example, new replication sets, volumes, or consistency groups) every 15 minutes. This section describes how to change the polling interval.

Although Data Replication Manager does not have any restrictions on the frequency of rescans, the interval should be as low as practical, given site considerations, including network speed and latency. Additionally, an interval more frequent than every 15 minutes can generate excessive traffic and is not recommended.

1. **Edit the file** `/opt/SUNWrrm/etc/rrmapp.properties` **and change the value of** `updaterScanInterval` **to the desired polling frequency, in minutes.**

   The following example shows how the relevant section of the file would appear if you were setting Data Replication Manager to rescan devices on an hourly basis:

```
# Default scan interval in minutes. Set to 0 or < 0 to turn off
automatic updates
updaterScanInterval=60
```

2. **Restart the Data Replication Manager server by typing the following command:**

```
# /opt/SUNWrrm/bin/drmserver restart
Restarting the DRM server...done.
#
```

▼ To Back Up and Restore Data Replication Manager Data



Caution – Shutting down the Data Replication Manager server will disrupt any active Data Replication Manager sessions. Users should not attempt to use the Data Replication Manager until this procedure is complete and the server has been restarted.

1. **Shut down the Data Replication Manager server:**

```
# /opt/SUNWrrm/bin/drmserver stop
Stopping the DRM server...done.
```

2. **Back up or restore the Data Replication Manager data. To backup or restore Data Replication Manager data, proceed to Step 2a or 2b, as appropriate.**

   a. **Backup the** `/var/opt/SUNWrrm/datastore` **and** `/opt/SUNWrrm/etc` **directories, using the tools employed at your site. For example, using tar, type:**

```
# tar cf /drm-backup.tar /var/opt/SUNWrrm/datastore
/opt/SUNWrrm/etc
```

   b. **Restore the** `/var/opt/SUNWrrm/datastore` **and** `/opt/SUNWrrm/etc` **directories, using the tools employed at your site. For example, using tar, type:**

```
# tar xf /drm-backup.tar
```

3. **Start the Data Replication Manager server:**

```
# /opt/SUNWrrm/bin/drmserver start
Starting the DRM server...done.
```

▼ To Maximize the Logging/Tracing Feature

Data Replication Manager maintains a number of logging and tracing files under `/var/opt/SUNWrrm`. By default, only minimal tracing is turned on. To enable a greater level of tracing, you must change the `log4j.properties` files.

You must be logged in as root to perform the following tasks.

1. **Edit the file `/opt/SUNWrrm/etc/bui/log4j.properties`, which contains the logging and tracing configuration for the user interface, and search for the following two lines:**

```
log4j.logger.com.sun.netstorage.mgmt.rrm=ERROR,
RRM_TRACE_APPENDER
log4j.logger.RRMLogger=INFO, RRM_LOG_APPENDER
```

2. **Change `ERROR` and `INFO` to `ALL`, as shown below:**

```
log4j.logger.com.sun.netstorage.mgmt.rrm=ALL, RRM_TRACE_APPENDER
log4j.logger.RRMLogger=ALL, RRM_LOG_APPENDER
```

3. **Restart the Sun Java Web Console, using the following command:**



Caution – Restarting the Data Replication Manager server may disrupt any active Data Replication Manager sessions. Users should not perform any Data Replication Manager actions while the restart is in progress.

```
# /usr/sbin/smcwebserver restart
```

4. **Open the file `/opt/SUNWrrm/etc/server/log4j.properties`, which contains the logging and tracing configuration for the Data Replication Manager server, and search for the following two lines:**

```
log4j.logger.com.sun.netstorage.mgmt.rrm=ERROR,
RRM_TRACE_APPENDER
log4j.logger.RRMLogger=INFO, RRM_LOG_APPENDER
```

5. **Change** `ERROR` **and** `INFO` **to** `ALL`**, as shown below:**

```
log4j.logger.com.sun.netstorage.mgmt.rrm=ALL, RRM_TRACE_APPENDER
log4j.logger.RRMLogger=ALL, RRM_LOG_APPENDER
```

6. **Restart the server, using the following command:**



Caution – Restarting the Web Console server will disrupt any active Web Console sessions. Users should log out prior to performing a restart and remain logged out until after the restart completes.

```
# /opt/SUNWrrm/bin/drmserver restart
```

The logging and tracing files in `/var/opt/SUNWrrm/log and /var/opt/SUNWrrm/trace` will now contain all actions that Data Replication Manager attempts to perform, including stack traces from exception handling.

APPENDIX **A**

Uninstalling ESM Base Applications Software

This appendix explains how to remove Sun StorEdge Enterprise Storage Manager (ESM) Base Applications. This appendix includes the following topics:

- "Uninstalling Data Replication Manager" on page 125
- "Uninstalling the Management Portal" on page 130
- "Uninstalling the Storage Automated Diagnostic Environment" on page 140
- "Uninstalling SANbox Manager" on page 144
- "Removing the Installation Toolkit" on page 146

Uninstalling Data Replication Manager

Uninstalling Data Replication Manager involves the following tasks:

- Uninstalling the application, using `baconfig`.
- Removing accounts, roles, and directories that are no longer used.
- Cleaning up old log files.

You must be logged in as root to uninstall Data Replication Manager.

Uninstallation Procedure

Use the following procedure to uninstall Data Replication Manager:

1. **Log in as root.**
2. **Start the** `baconfig` **utility, as shown in the following example.**
3. **Type** `2` **to obtain a listing of the installed ESM Base Applications.**

   Your list of applications will be different, depending on the ESM Base Applications that you have installed and the version of your operating system.

```
# /var/opt/SUNWbaconf/bin/baconfig
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 2
Please wait...

      Installed: Sun StorEdge Data Replication Manager 1.0
      Installed: Sun StorEdge Management Portal 1.0
  Not Installed: SANbox Manager 2.1
  Not Installed: Sun StorEdge SAN Foundation Software 4.4.6
      Installed: Storage Automated Diagnostic Environment -
Enterprise Edition 2.4
```

4. **Type `3` at the first prompt to indicate that you want to uninstall an application. Type `1` at the second prompt to select Data Replication Manager.**

   Your list of applications will be different, depending on the ESM Base Applications that you have installed and the version of your operating system.

```
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 3
Please wait...

The following applications can be uninstalled
1.   Sun StorEdge Data Replication Manager 1.0
2.   Sun StorEdge Management Portal 1.0
3.  Storage Automated Diagnostic Environment - Enterprise Edition
2.4
4.   Return to Main Menu
Enter the number of the application you wish to uninstall.  Use a
comma separated list to uninstall multiple applications.: 1
Please wait...
```

5. **Type `y` to continue.**

```
Attempting to uninstall: Data Replication Manager 1.0
baconfig log file: /var/opt/SUNWbaconf/logs/DRM-1.0-
1120143661.uninstall.log

------------------------------------------------------------

This program uninstalls Sun StorEdge Data Replication
Manager (DRM) 1.0 and supporting packages.

------------------------------------------------------------

Do you want to continue? [y] [y,n,?] y
```

6. **Type** `y` **to remove Data Replication Manager. Press** `Return` **to continue the uninstallation.**

```
Checking for prior installations...
-------------------------------------------------------------
About to remove Sun StorEdge Data Replication Manager (DRM) 1.0.

Do you want to continue? [y] [y,n,?] y

Shutting down DRM server

Uninstalling Browser User Interface component of SUNWrrm

    Unregistering rrmui.

Restarting Common Console (this may take a few minutes)
Shutting down Sun Java(TM) Web Console Version 2.2.2...
See /var/log/webconsole/console_debug_log for server logging
information
Server not started! No management applications registered.

Log and trace files in /var/opt/SUNWrrm were not removed.
If they are no longer needed, please remove them manually.


Removal of <SUNWrrm> was successful.
-------------------------------------------------------------
Hit enter to continue. <Return>
```

7. **Respond to the prompt** `Do you want to delete them?`**, to specify whether you want to remove the Data Replication Manager data cache and log files.**

```
-------------------------------------------------------------
The data cache and log files are still present on the system.
-------------------------------------------------------------

Do you want to delete them? [n] [y,n,?]

Uninstall of Sun StorEdge Data Replication Manager (DRM) 1.0
completed successfully.

Install/Uninstall log file named
/var/tmp/rrm.setup.log.06.30.2005.11:01 was created.
baconfig log file: /var/opt/SUNWbaconf/logs/DRM-1.0-
1120143661.uninstall.log
```

The data cache contains all the information that Data Replication Manager has gathered about the registered Sun StorEdge 6920 systems, including volumes, replication sets, and state. If you delete the cache, you must reregister all Sun StorEdge 6920 systems that you wish to manage through Data Replication Manager.

The log files contain tracing information that Data Replication Manager records, including user actions and command results.

After you respond to the prompt about whether you want to delete the data cache and log files, Data Replication Manager is removed from the system. Log files are created during the uninstallation.

8. **Type** `4` **to exit the** `baconfig` **utility.**

```
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 4
```

Removing Data Replication Manager Accounts and Roles

To remove the `drmadmin` role and the role assignment of any user given that role, log in as root and issue the following command:

```
# /usr/sbin/roledel drmadmin
```

Removing Data Replication Manager Directories Manually

If you chose to leave the data cache and log files during the installation process, you can remove them later by Issuing an `rm -rf` command on each of the following directories:

- `/var/opt/SUNWrrm`
- `/opt/SUNWrrm`
- `/etc/opt/SUNWrrm`

Cleaning Up Log Files

All Data Replication Manager log files are stored under `/var/opt/SUNWrrm/log` and `/var/opt/SUNWrrm/trace`.

To remove these directories, use the following command:

```
# /bin/rm -rf /var/opt/SUNWrrm/log /var/opt/SUNWrrm/trace
```

Uninstalling the Management Portal

The Management Portal uninstallation process is explained in the following subsections:

- "Before You Begin" on page 130
- "Uninstallation Procedure" on page 131

Before You Begin

Before you begin the uninstallation process, you should know the fully qualified domain name (such as `portal.example.sun.com`) of the system from which you are uninstalling the Management Portal. You must also know the passwords of the following Java ES administrative users, created when Java ES was installed:

- Java ES Directory Server administrative user
- Java ES Access Manager administrative user
- Portal Server administrative user
- Portal Server Directory Manager user

When the Management Portal is uninstalled, the Storage Automated Diagnostic Environment remains on the system, since it can function both as a stand-alone application and as a supporting application for the Management Portal. If you wish to fully remove the Storage Automated Diagnostic Environment, you must explicitly uninstall it, using `baconfig`. For instructions, go to "Removing the Storage Automated Diagnostic Environment Role" on page 144.

Uninstallation Procedure

The `baconfig` tool calls the Java ES uninstallation script `/var/sadm/prod/entsys/uninstall`. This script is created when Java ES is installed and prompts you for input during the uninstallation process.

In most cases, you can simply accept the default answer at these prompts. It is advisable, however, to read and understand the Java ES uninstaller prompts before doing so.

Throughout the uninstallation process, you can enter the left angle bracket (<) to return to the previous question or menu.

Java ES software uninstallation does not occur until answers have been supplied for all of the uninstaller questions. You can exit out of the Java ES uninstaller by typing an exclamation point (`!`).

1. **Log in as root.**
2. **Start the `baconfig` utility, as shown in the following example.**
3. **Type `2` to obtain a listing of the installed ESM Base Applications.**

   Your list of applications will be different depending on the ESM Base Applications that you have installed. Note that Sun StorEdge Management Portal and Storage Automated Diagnostic Environment are listed as separate elements.

```
# /var/opt/SUNWbaconf/bin/baconfig
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 2
Please wait...

  Not Installed: Sun StorEdge Data Replication Manager 1.0
      Installed: Sun StorEdge Management Portal 1.0
  Not Installed: SANbox Manager 2.1
  Not Installed: Sun StorEdge SAN Foundation Software 4.4.6
      Installed: Storage Automated Diagnostic Environment -
Enterprise Edition 2.4
```

4. **Type** 3 **at the first prompt to indicate that you want to uninstall an application. Type the number that corresponds to the Management Portal.**

   Your list of applications will be different, depending on the ESM Base Applications that you have installed and the version of your operating system.

```
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 3
```

```
Please wait...

The following applications can be uninstalled
1. Sun StorEdge Management Portal 1.0
2. Storage Automated Diagnostic Environment - Enterprise Edition
2.4
3. Return to Main Menu
Enter the number of the app you wish to install.  Use a comma
separated list to install multiple apps.: 1
Please wait...
```

5. **Type `y` at the first prompt to confirm your selection. Type `y` at the second prompt to confirm that you want to uninstall the application. Type the `amAdmin` user's password. The password does not appear on the screen.**

```
The below product(s) have been selected

    Sun StorEdge Management Portal 1.0

Is this correct? (Y/N) [Y] y
Attempting to uninstall: Sun StorEdge Management Portal EAV1.0.0
baconfig log file: /var/opt/SUNWbaconf/logs/ESMPortal-1.0-1123162151.uninstall.log

================================================

    Sun StorEdge Management Portal 1.0
    Uninstall

================================================
Uninstalling will modify the portal, web, identity, and directory servers
to a previous configuration, and cause the servers to be restarted.
Uninstall will remove all packages for Storage Management Portal

Are you sure you want to uninstall (default: n)?  [y,n,?] y
Please enter the Access Manager amAdmin user password.
password:
re-enter password:
Undeploying Storage Portal desktop...
Detected Java ES 3 Portal Servers

Restarting the portal web server
Stopping Web Servers..
Web Admin Server Stopped..
Web Server Stopped..
Starting Web Servers..
Web Admin Server Started..
Web Server Started..
Detected Valid amAdmin password/running Portal Servers
Undeploy ESM Base Portlets
Undeploy ESM portlet-smprssreader Portlet
Undeploy ESM portlet-search Portlet
Undeploy ESM portlet-drm Portlet
Undeploy ESM portlet-poolagg Portlet
Undeploy ESM portlet-samq Portlet
Undeploy ESM portlet-som-reportlet Portlet
Undeploy ESM portlet-performance Portlet
Undeploy ESM portlet-dashboard Portlet
Undeploy ESM portlet-jsf_admin Portlet
Delete ESM Desktop
Delete ESM Desktop successful
.
.
.
```

```
Undeploy desktop compiled jsp's
Undeploy desktop
Undeploy desktop help
Undeploy product images
Undeploy NestedTabContainerProvider properties
Undeploy EsmTabContainerProvider properties
Undeploy desktop images
Deploying to instance "portal.example.sun.com"...

Stopping the portal servers

Stopping Directory Server..
Directory Server Stopped..
Stopping Web Administration Server..
Web Administration Server Stopped..
Stopping Web Server..
Web Server Stopped..
Removing SUNWesmperf...
Removing SUNWesmsamq...
Removing SUNWesmsvcs...
Removing SUNWesmdb...
Removing SUNWesmdt...
Removing SUNWesmdp...
Removing SUNWesmdoc...
Removing SUNWesmportal...
Uninstall successful.
Sun StorEdge Management Portal Uninstall log is at:

        /var/sadm/install/logs/smportal.log
baconfig log file: /var/opt/SUNWbaconf/logs/ESMPortal-1.0-1123162151.uninstall.log
Directory Server Stop already Stopped..
Stopping Web Administration Server..
Web Administration Server Stop already Stopped..
Stopping Web Server..
Web Server Stop already Stopped..

Attempting to uninstall: Java Enterprise System Portal Server 3.0
baconfig log file: /var/opt/SUNWbaconf/logs/JESPortal-3.0-1123162151.uninstall.log
.
.
.
```

6. **When the Java ES uninstaller displays the text** `Welcome to the uninstallation program. You should exit all programs except Directory Server before Running this program`**, you must press Return to continue the uninstallation. This is a known bug in the Java ES uninstaller.**

   At the prompt `Enter a comma separated list of products to uninstall`, press Return to accept the default to uninstall all Java ES components.

```
Welcome to the uninstallation program. You should exit all programs except
   Directory Server before running this program. <Return>

Product Selection - Main Menu
-----------------------------
Note: "*  *" indicates that the selection is disabled

[X] 1.  Sun Java(TM) System Web Server 6.1 SP4 2005Q1        60.58 MB
[X] 2.  Sun Java(TM) System Message Queue 3 2005Q1 Enterprise Edition
10.02 MB
 *  *   Sun Java(TM) System Application Server Enterprise Edition 8.1
2005Q1        0 bytes
 *  *     Command Line Administration Tool        0 bytes
 *  *     Domain Administration Server        0 bytes
 *  *     Application Server Node Agent        0 bytes
 *  *     Load Balancing Plugin        0 bytes
 *  *     PointBase        0 bytes
 *  *     Sample Applications        0 bytes
[X] 10.  Sun Java(TM) System Directory Preparation Tool        303.30 KB
[X] 11. Sun Java(TM) System Directory Server 5 2005Q1        46.09 MB
 *  *   Sun Java(TM) System Administration Server 5 2005Q1        0 bytes
 *  *   Sun Java(TM) System Directory Proxy Server 5 2005Q1        0 bytes
[X] 14. Sun Java(TM) System Access Manager 6 2005Q1        3.14 MB
[X] 15.   Identity Management and Policy Services Core        2.10 MB
[X] 16.   Access Manager Administration Console        1.01 MB
[X] 17.   Common Domain Services for Federation Management        25.74 KB
 *  *     IdentityServerSDKAlone        0 bytes
[X] 19. Sun Java(TM) System Portal Server 6 2005Q1        67.53 MB
[X] 20.   Sun Java(TM) System Portal Server 6 2005Q1        67.53 MB
 *  *   Sun Java(TM) System Portal Server Secure Remote Access 6 2005Q1
0 bytes
.
.
.
*  *   Sun Cluster 3.1 9/04        0 bytes
 *  *     Sun Cluster Core        0 bytes
 *  *   Sun Cluster Agents for Sun Java(TM) System        0 bytes
 *  *     HA/Scalable Sun Java System Web Server        0 bytes
 *  *     HA Sun Java System Application Server        0 bytes
 *  *     HA Sun Java System Message Queue        0 bytes
 *  *     HA Sun Java System Calendar Server        0 bytes
 *  *     HA Sun Java System Administration Server        0 bytes
 *  *     HA Sun Java System Directory Server        0 bytes
 *  *     HA Sun Java System Messaging Server        0 bytes
 *  *     HA Sun Java System Application Server EE (HADB)        0 bytes
 *  *   Sun Java(TM) System Communications Express 6 2005Q1        0 bytes
 *  *   SunSM Remote Services Net Connect 3.1.1        0 bytes
 *  *   High Availability Session Store (HADB)        0 bytes
   Enter a comma separated list of products to uninstall
   [1,2,10,11,14,15,16,17,19,20] {"<" goes back, "!" exits}:<Return>
```

7. **Verify that the default answer is 1 (continue) and press Return to continue the uninstallation process. At the prompt** `Do you wish to proceed?`**, type** `yes`**.**

```
Product Selection - Selection Confirmation :
---------------------------------------------

Based on product dependencies for your selections, the uninstaller will
uninstall:

[X] 1.  Sun Java(TM) System Web Server 6.1 SP4 2005Q1        60.58 MB
[X] 2.  Sun Java(TM) System Message Queue 3 2005Q1 Enterprise Edition
10.02 MB
[X] 10.  Sun Java(TM) System Directory Preparation Tool        303.30 KB
[X] 11. Sun Java(TM) System Directory Server 5 2005Q1        46.09 MB
[X] 14. Sun Java(TM) System Access Manager 6 2005Q1        3.14 MB
[X] 15.   Identity Management and Policy Services Core        2.10 MB
[X] 16.   Access Manager Administration Console        1.01 MB
[X] 17.   Common Domain Services for Federation Management        25.74 KB
[X] 19. Sun Java(TM) System Portal Server 6 2005Q1        67.53 MB
[X] 20.   Sun Java(TM) System Portal Server 6 2005Q1        67.53 MB

   Enter 1 to Continue or 2 to go to product selection list again or Enter a comma
separated list of products to deselect. Enter "-" with product number to deselect a
product for eg. -5 will deselect product number 5 [1] {"<" goes back, "!" exits}
<Return>


Uninstalling these services can cause the loss of associated configuration
information.

   Do you wish to proceed? (Yes/No) [No] {"<" goes back, "!" exits} yes
```

8. **Respond to the following set of prompts, as described in** TABLE A-1**.**

   If `baconfig` shut down the directory (LDAP) server, the prompt in the following example is displayed. Press Return to continue the uninstallation process.

```
Directory Server: Configuration Directory Settings

   Enter Admin ID [admin] {"<" goes back, "!" exits} <Return>
   Enter Admin User's Password [] {"<" goes back, "!" exits} password

   The installer could not contact the specified configuration directory server
ldap://portal.example.sun.com:389. Or, you can uninstall it forcely, would you want
to go ahead with the uninstallation? [yes/no] [Yes] {"<" goes back, "!" exits}
<Return>
```

TABLE A-1 Directory Server Information

Item	Description
`Admin ID`	By default, this is `admin`. Verify that this is the case, and press **Return**.
`Admin User's Password`	Type the same password you used in TABLE 2-7.

The baconfig utility displays the components to be uninstalled and prompts you to confirm that you want to uninstall them.

9. **Respond to the following set of prompts, as described in** TABLE A-2**.**

```
Access Manager: Sun Java System Web Server

In order to uninstall Access Manager, you need to provide information of Sun Java
System Web Server

   Host Name [portal.example.sun.com] {"<" goes back, "!" exits}: <Return>
   Web Server Instance Directory [/opt/SUNWwbsvr/https-portal.example.sun. com] {"<"
goes back, "!" exits}: <Return>
   Web Server Port [80] {"<" goes back, "!" exits}: <Return>
   Document Root Directory [/opt/SUNWwbsvr/docs] {"<" goes back, "!" exits}: <Return>
   Secure Server Instance Port [No] {"<" goes back, "!" exits}: <Return>
```

TABLE A-2 Access Manager and Web Server Information

Item	Description
Host Name	Verify that the correct host name is displayed, and press **Return**. If it is incorrect, type in the correct host name, and press **Return**. The host name is the fully qualified domain name.
Web Server Instance Directory	Verify that the directory is correct, and press **Return**. This directory is derived from the fully qualified domain name of your system.
Web Server Port	By default, this is 80. Verify that this is the case, and press **Return**.
Document Root Directory	By default, this is /opt/SUNWwbsvr/docs. Verify that this is the case, and press **Return**.
Secure Server Instance	Press **Return** to accept the default setting (No).

10. Respond to the following set of prompts, as described in TABLE A-3**.**

```
Portal Server, Secure Remote Access: Access Manager

   Administrator Password [] {"<" goes back, "!" exits}: password

   Directory Manager DN [cn=Directory Manager] {"<" goes back, "!" exits}: <Return>
   Directory Manager Password [] {"<" goes back, "!" exits}: password

   Remove portal service entries from Directory Server [No] {"<" goes back, "!"
   exits}? yes
```

TABLE A-3 Portal Server, Secure Remote Access Information

Item	Description
Administrator Password	Type the Portal Server administrator's password.
Directory Manager DN	By default, this is cn=Directory Manager. Verify that this is the case, and press **Return**.
Directory Manager Password	Type the Directory Manager's password.
Remove portal service entries from Directory Server	Type **yes**, and press **Return**.

11. Type `1` to confirm that you want to uninstall Java ES. When the uninstallation process is complete, type `!` to exit the Java ES installer.

```
Ready to Uninstall
---------------
The following components will be uninstalled.

Product: Java Enterprise System
Location: /var/sadm/prod/entsys
Space Reclaimed: 253.92 MB
------------------------------
        Sun Java(TM) System Web Server 6.1 SP4 2005Q1
        Sun Java(TM) System Message Queue 3 2005Q1 Enterprise Edition
        Sun Java(TM) System Directory Preparation Tool
        Sun Java(TM) System Directory Server 5 2005Q1
        DSConfigurator
        Sun Java(TM) System Access Manager 6 2005Q1
           MAPplugin
           MiscPackages
           ExternalJARs
           Identity Management and Policy Services Core
           Access Manager Administration Console
           Common Domain Services for Federation Management
           ISConfigurator
        Sun Java(TM) System Portal Server 6 2005Q1
           Sun Java(TM) System Portal Server 6 2005Q1
           PSL10NConfigurator


1. Uninstall
2. Start Over
3. Exit Uninstallation

   What would you like to do [1] {"<" goes back, "!" exits}? 1

Java Enterprise System
|-1%------------25%---------------50%---------------75%------------100%|


Uninstallation Complete

Software uninstallation has completed successfully. You can view the
uninstallation summary and log by pressing 1 or 2 This information is also
automatically saved in /var/sadm/install/logs/.

   Enter 1 to view uninstallation summary or Enter 2 to view uninstallation
   logs [1] {"!" exits} !

Removal of <SUNWentsysl10n-uninstall> was successful.

Removal of <SUNWentsys-uninstall> was successful.
baconfig log file: /var/opt/SUNWbaconf/logs/JESPortal-3.0-1123162151.uninstall.log
Verifying that system is clean of JES components...
```

12. **Type** `4` **to exit the** `baconfig` **utility.**

```
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 4
```

Uninstalling the Storage Automated Diagnostic Environment

The Storage Automated Diagnostic Environment can be a stand-alone application or a supporting application for the Management Portal. If the Management Portal is installed, you cannot uninstall the Storage Automated Diagnostic Environment.

You must insert the ESM Base Applications DVD to uninstall the Storage Automated Diagnositc Environment.

The following subsections tell you how to remove the Storage Automated Diagnostic Environment application and the associated `sa_admin` role.

Uninstallation Procedure

1. **Insert the ESM Base Applications 4.0 DVD in the disk drive.**
2. **Log in as root.**
3. **Change the directory to where** `baconfig` **resides by typing** `cd /`***path-to-the-DVD***`/ESM_BASE_APPLICATIONS_4.0`**, as shown in the following example.**
4. **Type** `./baconfig`**.**
5. **Type** `2` **to obtain a listing of the installed ESM Base Applications.**

   Your list of applications will be different, depending on the ESM Base Applications that you have installed and the version of your operating system. Note that the Management Portal is not loaded. This indicates that this example is from a stand-alone installation of Storage Automated Diagnostic Environment.

6. **Type** `3` **at the first prompt to indicate that you wish to uninstall an application. Type the number that corresponds to the Storage Automated Diagnostic Environment.**

   Your list of applications will be different, depending on the ESM Base Applications that you have installed and the version of your operating system.

```
# cd /path-to-the-DVD/ESM_BASE_APPLICATIONS_4.0
# ./baconfig
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 2
Please wait...

Not Installed: Sun StorEdge Data Replication Manager 1.0
Not Installed: Sun StorEdge Management Portal 1.0
Not Installed: SANbox Manager 2.1
Not Installed: Sun StorEdge SAN Foundation Software 4.4.6
Installed: Storage Automated Diagnostic Environment - Enterprise Edition 2.4

Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 3
Please wait...
The following applications can be uninstalled
 1.   Storage Automated Diagnostic Environment - Enterprise Edition 2.4
 2.   Return to Main Menu
Enter the number of the app you wish to install.  Use a comma separated list to install
multiple apps.: 1
Please wait.
```

```
Attempting to uninstall: Storage Automated Diagnostic Environment - Enterprise
Edition 2.4
baconfig log file: /var/opt/SUNWbaconf/logs/StorADE-2.4-1119642210.uninstall.log

Storage Automated Diagnostic Environment (Storage A.D.E.) uninstallation ...
Version: 2.4.12.009
Current time: Fri Jun 24 15:43:35 EDT 2005

Note: A log will be saved to: /var/sadm/install/Storage_ADE/Install.log
This script uninstalls the Storage Automated Diagnostic Environment software,
referred to as Storage A.D.E., for your storage system. Software components included
in this distribution include:

o Storage A.D.E. 2.4 - Enterprise Edition
o Storage A.D.E. 2.4 - Management Station UI

Please refer to the Storage Automated Diagnostic Environment 2.4 release
notes for the Enterprise Edition and Management Station UI before uninstalling
this product.

Do you want to uninstall ....

o The Storage A.D.E. 2.4 - Enterprise Edition [y/n] : o The Storage A.D.E. 2.4 -
Management Station UI [y/n] :
You have selected to uninstall the following:

o Storage A.D.E. 2.4 - Enterprise Edition
o Storage A.D.E. 2.4 - Management Station UI

Is this correct? [y/n] : Checking Solaris version ..... 5.10
Performing uninstall of the Management Station UI .....

Removing package: <SUNWstadm> ...

SUNWstadm: Checking the status of the Java Web Console.

SUNWstadm: Stopping the Java Web Console to unregister.
Shutting down Sun Java(TM) Web Console Version 2.2.2...
See /var/log/webconsole/console_debug_log for server logging information

SUNWstadm: Unregistering Storage_A.D.E_2.4 from the Java Web Console.

    Unregistering Storage_A.D.E_2.4.

SUNWstadm: Restarting the Java Web Console after unregistration.
Server not started! No management applications registered.

Removal of <SUNWstadm> was successful.
Storage A.D.E. removal successful
Performing uninstall of the Enterprise Edition.....

Removing package: <SUNWstazt> ...
```

```
Removal of <SUNWstazt> was successful.
Removing package: <SUNWstazh> ...

Removal of <SUNWstazh> was successful.
Removing package: <SUNWstako> ...

Removal of <SUNWstako> was successful.
Removing package: <SUNWstaja> ...
Removal of <SUNWstaja> was successful.
Removing package: <SUNWstafr> ...

Removal of <SUNWstafr> was successful.
Removing package: <SUNWstade> ...
SUNWstade: Removing the cron entry.
 ->  Agent cron removed.
SUNWstade: Removing /etc/services entry.
SUNWstade: Removing /etc/inetd.conf entry and restarting inetd.
SUNWstade: Stopping snmptrapd
SUNWstade: Stopping the rasserv deamon.
/opt/SUNWstade/rasserv/bin/apachectl stop: nice -5 ./rasserv stopped

SUNWstade: Removing /opt/SUNWstade/cpfiles files and empty directories from
/opt/SUNWstade.

Removal of <SUNWstade> was successful.
Storage A.D.E. removal successful
+-----------------------------------------------------------------+
| You have uninstalled the following:
|
| o Storage A.D.E. 2.4 - Enterprise Edition - Success
| o Storage A.D.E. 2.4 - Management Station UI - Success
+-----------------------------------------------------------------+

Finished at: Fri Jun 24 15:44:11 EDT 2005
Note: A log has been saved to: /var/sadm/install/Storage_ADE/Install.log
baconfig log file: /var/opt/SUNWbaconf/logs/StorADE-2.4-1119642210.uninstall.log
```

The Storage Automated Diagnostic Environment is now removed from the system. Log files are created during the uninstallation.

7. **Type 4 to exit the** `baconfig` **utility.**

```
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 4
```

Removing the Storage Automated Diagnostic Environment Role

To remove the `sa_admin` role, enter the following command:

```
# /usr/sbin/roledel sa_admin
```

Uninstalling SANbox Manager

Use the following procedure to uninstall SANbox Manager:

1. **Log in as root.**
2. **Start the `baconfig` utility, as shown in the following example.**
3. **Type `2` to obtain a listing of the ESM Base Applications.**

   Your list of applications will be different, depending on the ESM Base Applications that you have installed and the version of your operating system.

```
# /var/opt/SUNWbaconf/bin/baconfig
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 2
Please wait...

Not Installed: Sun StorEdge Data Replication Manager 1.0
Not Installed: Sun StorEdge Management Portal 1.0
Installed: SANbox Manager 2.1
Not Installed: Sun StorEdge SAN Foundation Software 4.4.6
Not Installed: Storage Automated Diagnostic Environment -
Enterprise Edition 2.4
```

4. **Type** `3` **at the first prompt to indicate that you want to uninstall an application. Type the number that corresponds to the SANbox Manager.**

   Your list of applications will be different, depending on the ESM Base Applications that you have installed and the version of your operating system.

```
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 3
Please wait...


The following applications can be uninstalled
  1.   SANbox Manager 2.1
  2.   Return to Main Menu
Enter the number of the app you wish to install.  Use a comma
separated list to install multiple apps.: 1
Please wait...
Attempting to uninstall: SANbox Manager 2.1
baconfig log file: /var/opt/SUNWbaconf/logs/SANbox-2.1-
1120135348.uninstall.log

Removal of <SUNWsmgr2> was successful.

SANbox Manager has been removed from the system. Please note the
log file that was created during the uninstallation.
baconfig log file: /var/opt/SUNWbaconf/logs/SANbox-2.1-
1120135348.uninstall.log
```

   SANbox Manager is removed from the system, and a log file is created during the uninstallation.

5. **Type** `4` **to exit the** `baconfig` **utility.**

```
Choose from the following options
  1.   Install Application(s)
  2.   View Status
  3.   Uninstall Application(s)
  4.   Quit
Choice: 4
```

Removing the Installation Toolkit

The `baconfig` utility is delivered in the `SUNWbaconf` package. If you removed all ESM Base Applications from your system, and you want to remove the ESM Base Applications installation toolkit itself, use the following commands.

```
# /usr/sbin/pkgrm SUNWbaconf
# /usr/bin/rm -rf /var/opt/SUNWbaconf
```

Note – Do not remove `SUNWbaconf` if there are any ESM Base Applications loaded on the system.

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