Sun Storage Automated Diagnostic Environment Enterprise Edition Release Notes

Version 2.4.12.007

Sun Microsystems, Inc.
www.sun.com

Part No. 819-0432-10
November 2004, Revision A

Submit comments about this document at: `http://www.sun.com/hwdocs/feedback`

Copyright 2004 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, California 95054, U.S.A. All rights reserved.

Sun Microsystems, Inc. has intellectual property rights relating to technology that is described in this document. In particular, and without limitation, these intellectual property rights may include one or more of the U.S. patents listed at http://www.sun.com/patents and one or more additional patents or pending patent applications in the U.S. and in other countries.

This document and the product to which it pertains are distributed under licenses restricting their use, copying, distribution, and decompilation. No part of the product or of this document may be reproduced in any form by any means without prior written authorization of Sun and its licensors, if any.

Third-party software, including font technology, is copyrighted and licensed from Sun suppliers.

Parts of the product may be derived from Berkeley BSD systems, licensed from the University of California. UNIX is a registered trademark in the U.S. and in other countries, exclusively licensed through X/Open Company, Ltd.

Sun, Sun Microsystems, the Sun logo, AnswerBook2, docs.sun.com, Solaris, Solstice DiskSuite, Sun Cluster, and Sun StorEdge are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and in other countries.

All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the U.S. and in other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc. Legato, the Legato logo, and Legato NetWorker are registered trademarks of Legato Systems, Inc.

The OPEN LOOK and Sun™ Graphical User Interface was developed by Sun Microsystems, Inc. for its users and licensees. Sun acknowledges the pioneering efforts of Xerox in researching and developing the concept of visual or graphical user interfaces for the computer industry. Sun holds a non-exclusive license from Xerox to the Xerox Graphical User Interface, which license also covers Sun's licensees who implement OPEN LOOK GUIs and otherwise comply with Sun's written license agreements.

U.S. Government Rights—Commercial use. Government users are subject to the Sun Microsystems, Inc. standard license agreement and applicable provisions of the FAR and its supplements.

DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID.

Copyright 2004 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, Californie 95054, Etats-Unis. Tous droits réservés.

Sun Microsystems, Inc. a les droits de propriété intellectuels relatants à la technologie qui est décrit dans ce document. En particulier, et sans la limitation, ces droits de propriété intellectuels peuvent inclure un ou plus des brevets américains énumérés à http://www.sun.com/patents et un ou les brevets plus supplémentaires ou les applications de brevet en attente dans les Etats-Unis et dans les autres pays.

Ce produit ou document est protégé par un copyright et distribué avec des licences qui en restreignent l'utilisation, la copie, la distribution, et la décompilation. Aucune partie de ce produit ou document ne peut être reproduite sous aucune forme, par quelque moyen que ce soit, sans l'autorisation préalable et écrite de Sun et de ses bailleurs de licence, s'il y en a.

Le logiciel détenu par des tiers, et qui comprend la technologie relative aux polices de caractères, est protégé par un copyright et licencié par des fournisseurs de Sun.

Des parties de ce produit pourront être dérivées des systèmes Berkeley BSD licenciés par l'Université de Californie. UNIX est une marque déposée aux Etats-Unis et dans d'autres pays et licenciée exclusivement par X/Open Company, Ltd.

Sun, Sun Microsystems, le logo Sun, AnswerBook2, docs.sun.com, Solaris, Solstice DiskSuite, Sun Cluster, et Sun StorEdge sont des marques de fabrique ou des marques déposées de Sun Microsystems, Inc. aux Etats-Unis et dans d'autres pays.

Toutes les marques SPARC sont utilisées sous licence et sont des marques de fabrique ou des marques déposées de SPARC International, Inc. aux Etats-Unis et dans d'autres pays. Les produits portant les marques SPARC sont basés sur une architecture développée par Sun Microsystems, Inc. Legato, le logo Legato, et Legato NetWorker sout des marques déposées de Legato Systems, Inc.

L'interface d'utilisation graphique OPEN LOOK et Sun™ a été développée par Sun Microsystems, Inc. pour ses utilisateurs et licenciés. Sun reconnaît les efforts de pionniers de Xerox pour la recherche et le développement du concept des interfaces d'utilisation visuelle ou graphique pour l'industrie de l'informatique. Sun détient une license non exclusive de Xerox sur l'interface d'utilisation graphique Xerox, cette licence couvrant également les licenciées de Sun qui mettent en place l'interface d 'utilisation graphique OPEN LOOK et qui en outre se conforment aux licences écrites de Sun.

LA DOCUMENTATION EST FOURNIE "EN L'ÉTAT" ET TOUTES AUTRES CONDITIONS, DECLARATIONS ET GARANTIES EXPRESSES OU TACITES SONT FORMELLEMENT EXCLUES, DANS LA MESURE AUTORISEE PAR LA LOI APPLICABLE, Y COMPRIS NOTAMMENT TOUTE GARANTIE IMPLICITE RELATIVE A LA QUALITE MARCHANDE, A L'APTITUDE A UNE UTILISATION PARTICULIERE OU A L'ABSENCE DE CONTREFAÇON.

Please
Recycle

Contents

About This Release Note 2
Features in This Release 2
Product Components 2
Main Features 3
Changes And Enhancements 5
System Requirements 6
Qualified Platforms 6
SUNWstade Requirements 7
Firmware Upgrades 8
Installing the Software 9
Preparing for Installation 9
Installing the SUNWstade Package 10
Installing the SUNWstadm Package 11
Getting Started 16
Setting Up the Software With the CLI 16
Setting Up the Software With GUI 27
Device and Product Use Information 31
Browser 31
Localization 31

Sun StorEdge 5210 NAS 32
Sun StorEdge 3310, 3510, and 3511 Arrays 33
Brocade 34
SAM-FS/QFS 34
Solaris 35
HDS 36
JNI HBAs 36
Known Issues 36
SUNWstade Issues 36
SUNWstadm Issues 38
Resolved Issues 40
Release Documentation 45
Product Documentation 45
Related Documentation 47
Service Contact Information 48

Storage Automated Diagnostic Environment Enterprise EditionRelease Notes

This document contains important information about the Sun Storage Automated Diagnostic Environment Enterprise Edition that was not available at the time the product documentation was published. Read this document so that you are aware of issues or requirements that can impact the installation and operation of the Storage Automated Diagnostic Environment Enterprise Edition.

The Release Notes consists of the following sections:

- "About This Release Note" on page 2
- "Features in This Release" on page 2
- "System Requirements" on page 6
- "Installing the Software" on page 9
- "Getting Started" on page 16
- "Device and Product Use Information" on page 31
- "Known Issues" on page 36
- "Resolved Issues" on page 40
- "Release Documentation" on page 45
- "Service Contact Information" on page 48

About This Release Note

The information in this release note applies to the Storage Automated Diagnostic Environment Enterprise Edition when it is obtained as a standalone product from the Sun web site or from a CD.

Refer to the release notes for the device or system with which you obtained the Storage Automated Diagnostic Environment Enterprise Edition for additional information on this product.

Note – Command Line Instruction (CLI) procedures in this release note apply to the Storage Automated Diagnostic Environment Enterprise Edition it is obtained as a standalone product only.

Features in This Release

The Storage Automated Diagnostic Environment Enterprise Edition product is used for the fault management of Sun storage devices. It provides full-time device monitoring, local and remote notification, diagnostics, revision analysis, reports, and integration with appropriate device management software.

The Agents supplied by the Enterprise Edition can be used to collect data and analyze the condition of Sun StorEdge devices. The Diagnostics can be used to verify the condition of a system, identify failing FRUs, and verify FRU replacement.

The Storage Automated Diagnostic Environment Enterprise Edition is for use by system administrators and support personnel who are familiar with Sun's disk array and SAN products.

Product Components

Note – If you obtained Storage Automated Diagnostic Environment Enterprise Edition bundled with a device-specific or system specific software package, this section does not apply to you. Refer to the device-specific or system-specific release notes and documentation for product component information.

The Storage Automated Diagnostic Environment Enterprise Edition consists of two components:

- SUNWstade

  The SUNWstade is the base product package containing all product functions except the web browser-based management station. The base package contains a command line interface (CLI) for product configuration and use.

- SUNWstadm

  The optional SUNWstadm package adds a web browser-based graphical user interface (GUI) to the Storage Automated Diagnostic Environment Enterprise Edition. Additional management station packages are available to produce localization versions of the management station.

  Each product component is installed and configured separately.

Main Features

The following are the main features of the base component (SUNWstade) of the Storage Automated Diagnostic Environment Enterprise Edition:

- Collects and reports information about Sun StorEdge devices. Type of information reported includes device configuration, device statistics, device state and availability, device message-log information, and system configuration.

  Refer to the following file for a listing of all possible generated events:

  /opt/SUNWstade/System/EGrid/EventGrid2.pdf.

- Service Advisor guides the user through FRU replacement procedures for the Sun StorEdge 6130 Array.
- Contains revision checking functionality of Fiber Channel devices.
- The Sun SAM-QFS Storage Archive Manager and Quick File System application version 4.1 provides SNMP traps that can be consumed by the Storage Automated Diagnostic Environment Enterprise Edition. This feature allows the user to configure the Storage Automated Diagnostic Environment Enterprise Edition so that it posts alarms and alerts the user when these SAM-QFS traps occur. The traps themselves are generated from one of three sources. They are either about errors occurring with the SAM-QFS application itself, tape alerts from tape drives, or tape alerts from tape libraries. See the “Product Hints” section listed below for special instructions on configuring the Storage Automated Diagnostic Environment Enterprise Edition and SAM-QFS for this feature.
- The Sun SAM-QFS Storage Archive Manager and Quick File System application version 4.2 provides a Fault Management API which increases the level of fault coverage for Storage Automated Diagnostic Environment Enterprise Edition. In order to experience this additional coverage Storage Automated Diagnostic Environment Enterprise Edition (Master or Slave) must be installed on the same

host as the SAM-QFS 4.2 to be monitored. The additional features are realized only when SAM-QFS 4.2 is monitored by Storage Automated Diagnostic Environment Enterprise Edition. These features are as follows:

- Instrumentation Agent

  Queries the SAM-QFS 4.2 Fault Management API for Asset and Health attributes of the hardware devices (tape drives and libraries) included in the SAM-QFS configuration. Examples of device asset attributes are those which remain static such as device product name, vendor and serial number. Examples of device health attributes are "state" (on, idle, off or down) and "attention" (user intervention required). When a health attribute changes to a bad state, Storage Automated Diagnostic Environment Enterprise Edition issues an alarm which provides a detailed description and identifies the device in question.

- Revision Checking

  Storage Automated Diagnostic Environment Enterprise Edition uses the SAM-QFS 4.2 Fault Management API in order to retrieve the current firmware revisions of 4 Sun branded tape libraries and 11 Sun branded tape drives qualified to operate with SAM-QFS. A revision report indicates whether the firmware revisions of the installed devices are up to date with what Sun has currently released.

- Log Parsing

  Storage Automated Diagnostic Environment Enterprise Edition reads the sam-log every 5 minutes, processing only those entries made since the last polling cycle. If Storage Automated Diagnostic Environment Enterprise Edition finds sam-log entries that are of severity "warning" or higher, it posts alarms whose description contains the hardware device or process name and a description contained in the log entry. Note that in order for this feature to be effective, the SAM-QFS sam-log must be enabled by entries in the `/etc/opt/SUNWsamfs/defaults.conf` and /etc/syslog.conf files. See the SAM-QFS documentation for details.

- The Management Station component of the Storage Automated Diagnostic Environment Enterprise Edition (SUNWstadm) incorporates a graphical user view of fibre channel (FC) storage devices and their interconnections.

Changes And Enhancements

This section lists the changes and enhancements in the this release and the last release of the product

Version 2.4

- Separated product into base package with CLI (SUNWstade) and optional GUI package (SUNWstadm).
-
- New user interface for the management station
- Simplified Device Discovery
- Support for the Sun StorEdge 6130 storage Array
- SAN 4.X Support
- Bug fixes

Version 2.3

- Support for the Sun StorEdge SE 5210 NAS and Sun StorEdge SE 5210 EU
- Support for the Sun StorEdge 3511 serial ATA storage Array
- Support for the Sun StorEdge 3310 and 3120 SCSI JBOD Arrays
- SAM-QFS 4.2 SNMP traps, Asset/Health Instrumentation Log Parsing and Device Firmware Revision Checking.
- SAM-QFS 4.1 SNMP trap feature
- Support StorEdge 3510 FC array firmware 3.27r and sccli 1.5
- Support StorEdge 3310 SCSI RAID array 3.25s and sccli 1.5
- SAN 4.3
- Support Inrange FC9000 Switches
- Support for JNI Host Bus Adapters
- Support for HDS
- Support for 6140 McData FC Switch
- Periodic vol verify scheduling
- Updated revision matrix
- New Event Severity Mapping
- Bug fixes

System Requirements

This section describes the requirements for the Storage Automated Diagnostic Environment Enterprise Edition.

You can use the Sun Storage Automated Diagnostic Environment Enterprise Edition on the following platforms and operating systems:

Qualified Platforms

The following platforms are qualified for the Storage Automated Diagnostic Environment Enterprise Edition.

Sun Platforms

- All Sun Sparc Solaris servers

Operating Systems

- Solaris 9
- Solaris 8 4/01 or greater:

  Reference the *Best Practices for Deploying Storage the Sun Storage Automated Diagnostic Environment Utility* (817-5205-10) at http://www.sun.com/blueprints
- Perl:

  5.005 through 5.8.3 is mandatory. Use the following URL to download the proper version if necessary http://www.perl.com/pub/language/info/software.html
  If a supported version already exists on your system, create a symbolic link of the executable to /usr/bin/perl.

Browsers

- Netscape 7.x
- Mozilla 1.4 or greater
- Internet Explorer 5.x
- Internet Explorer 6.x

SUNWstade Requirements

This section identifies the SUNWstade requirements of the product.

- The `SUNWstade` package will be installed at `/opt/SUNWstade/` and logfiles and device information will be located in `/var/opt/SUNWstade`.
- The `SUNWstade` package requires 90 MBytes of disk space in the `/opt` directory.
- The `SUNWstadm` package, if installed, requires between 5 and 20 MBytes of disk space in the `/var/opt/` directory and is dependent on the number of devices being monitored.
- During normal operation, the following processes are active:
  - `rasserv`: Application server will have 1-4 instances running at all times. This process is started upon system boot via the `/etc/rc2.d/S91rasserv` script.

    To restart, issue the following command:

    ```
    /opt/SUNWstade/rasserv/bin/restart
    ```

  - `rasagent`: Probing agent. Will run periodically. To run manually run the following command:

    ```
    /opt/SUNWstade/bin/rasagent -d2
    ```

  - `snmptrapd`: Trap listener on port 1162. This is automatically started by the agent (rasagent) if it is not active or has died.
  - `rashttpd`: This process is started by the application server (rasserv) and will exist when processes are active or in the queue.
  - `Java VM`: This process is started when needed by the probing agent for some devices and is also used for communication with certain applications. This process will be started when needed and will go away after long periods if not needed.
- When the agent is running, the memory consumption will increase to approximately 120 MBytes for the duration of the probing. When the agent is not running the typical memory usage is about 80 MBytes if the JVM instance is needed.

Process	Memory Usage (MBytes)	Description
rasagent	15-40	Probing agent (only during probe)
rashttp	9	Process delegation/queue
JVM	64	JVM for probing some devices
snmptrap	3	SNMP trap listener (port 1162)
rasserv	4	Application server (1-4 instances)

Firmware Upgrades

The Storage Automated Diagnostic Environment Enterprise Edition is a device monitoring tool that probes devices on the ethernet and, for direct attached storage devices, accesses the device in the data path (Fibre Channel).

Stopping Monitoring

Note – For most storage arrays, it is important to stop all monitoring during upgrade operations.

Use the following information that best suits your site for stopping the agent from monitoring:

- Stopping the agent

  There are several ways to accomplish the task of stopping monitoring agents from probing a storage array during an upgrade.

  One way would be to use the management station, if installed, to disable the specific agent from executing. This would allow for the continuing of the monitoring of other types of devices.

- Disabling the agent from the CLI

  One method to prevent the agent from monitoring is to manually remove the cron entry (See crontab(1M)). The entry for the rasagent executable would need to be removed from the root crontab.

  Execute ras_install and select "P" to postpone the execution of rasagent from cron. This will remove the cron entry that starts the agent every 5 minutes.

Note – This will not immediately stop an existing execution of the agent. Use the `ps` command to ensure all agent activity has ended: `ps -ef | grep ras`

Upgrade Information

The following information applies to firmware upgrades:

- Brocade switch 2400 and 2800 must update to at least firmware v2.6.0g Reference Bug ID: 4819138
- All communicating Master and Slave agents must be executing the same version and release level of Sun's Storage Automated Diagnostic Environment Enterprise Edition.
- If upgrading from a version of the product n earlier than the 2.3 release, you must remove the /var/opt/SUNWstade directory after removing the `SUNWstade` package. See Preparing for Installation for instructions.

Installing the Software

Follow the instructions in this section to prepare for software installation and install the SUNWstade base package and, optionally, the SUNWstadm management station package.

Note – If you obtained Storage Automated Diagnostic Environment Enterprise Edition bundled with a device-specific or system specific software package, this section does not apply to you. Refer to the device-specific or system-specific release notes and documentation for installation procedures.

Preparing for Installation

The Storage Automatic Diagnostic Environment does not support an automatic upgrade to version 2.4 from earlier versions. You must remove any existing version before installing SUNWstade version 2.4.

1. **Run ras_install with the -p option to shut down the cron.**

   ```
   # /opt/SUNWstade/bin/ras_install -p
   ```

2. **Determine what version of the Storage Automatic Diagnostic Environment is installed.**

   ```
   # pkgparam SUNWstade VERSION
   ```

   The system responds with the installed version number:

   ```
   2.3
   ```

3. **Remove the SUNWstade package and any installed patches.**

   ```
   # pkgrm SUNWstade
   ```

4. **Remove any files left under the /opt/SUNWstade directory and the /opt/SUNWstade directory itself.**

   ```
   # /bin/rm -fr /opt/SUNWstade
   ```

   After SUNWstade patches are installed they are typically removed by `pkgrm` of the SUNWstade package, but there are instances when some files are left under the /opt/SUNWstade directory.

5. **If the installed version of the Storage Automatic Diagnostic Environment was prior to version 2.3, move the /var/opt/SUNWstade/DATA directory to a backup.**

   ```
   # mv /var/opt/SUNWstade/DATA /var/opt/SUNWstade/DATA.bak
   ```

   You can remove this directory at a later date if you choose.

Installing the SUNWstade Package

Follow the instructions below to install the SUNWstade base package:

Note – You must be logged in as superuser to install these packages and patches.

Find and download any of the packages and patches in the following procedure using the Sun Download Center (SDLC) web site:

http://wwws.sun.com/software/download

To install the SUNWstade package:

1. **If it is not currently installed, download and install Java Runtime Environment (JRE) revision 1.4 or later following its installation instructions.**

Note – If you plan to install the management station package, SUNWstadm, download and install the Java Developer's Kit (JDK) instead. The JDK includes the required JRE.

The Java Runtime Environment (JRE) revision 1.4 or later is required by the SUNWstade Enterprise Edition package and must be installed in `/usr/j2se` or `/usr/java`. The JRE is a subset of the SDK so installation of the SDK satisfies this requirement.

2. **If they are not installed, download and install the following `SUNWsan` package and patches before installing `SUNWstade`.**

   The `SUNWsan` package is a requirement for installation on Solaris Data hosts. The `SUNWsan` package is a component of the San Foundation Software (SFS) kit (www.sun.com/storage/san). There are separate kits for each of Solaris 8 and 9. In addition to the SFS kit, the `luxadm` patches required are:

   - Solaris 8: 111413-xx (current -14) and 109529-xx (current -06)
   - Solaris 9: 113043-xx (current -08)

3. **Do one of the following:**

   To install Storage Automated Diagnostic Environment Enterprise Edition package, SUNWstade, from the Sun Sunsolve web site download site:

Note – You must use `/opt/SUNWstade` as the package base directory.

---

   a. Download the compressed SUNWstade tar image to /tmp.

   b. `# cd /tmp`

c. `# uncompress SUNWstade.tar.Z`

d. `# tar xvf /tmp/SUNWstade.tar`

e. `# pkgadd -d . SUNWstade`

To install Storage Automated Diagnostic Environment Enterprise Edition package, SUNWstade, from an installation CD:

a. `# cd /cdrom/cdrom0/product/packages`

b. `# pkgadd -d .`

c. Select the SUNWstade package and press Return

4. **Locate, download, and install potential patches for the Storage Automated Diagnostic Environment Enterprise Edition on Sun's Sunsolve web site using the Patch Portal at http://sunsolve.sun.com:**

   `Patch Portal -> PatchFinder -> 117650`

5. **After installation, set the environment variables PATH and MANPATH to include the directories `/opt/SUNWstade/bin` and `/opt/SUNWstade/man`.**

   To verify that the MANPATH is correct:

   # man ras_install

Installing the SUNWstadm Package

Follow the instructions below to install the optional SUNWstadm management station package:

If you intend to install only the English Language management station package, complete the following procedure only:

Installing the English Language Package

If you intend to install one or more localized management station packages, complete the following procedure also:

Installing One or More Localized Packages

Installing the English Language Package

Follow the instructions below to install the english language management station package:

Note – You must be logged in as superuser to install these packages and patches.

Find and download any of the following packages and patches using the Sun Download Center (SDLC) web site:

http://wwws.sun.com/software/download

To install the SUNWstadm package:

1. **If you haven't done so, install the SUNWstade base package. Refer to Installing the SUNWstade Package.**
2. **The Sun (TM) Management Console (Lockhart) revision 2.1.1 or later is required by the SUNWstadm Management Station package.**

   The Java Software Development Kit (SDK) revision 1.4.2_04 or later is required by the Sun (TM) Management Console (Lockhart) and is provided in the Sun (TM) Management Console download when it is not located on the system.

   On Solaris 8 systems, patches 110380-04 and 110934-16 or later must be installed in order to install the Sun (TM) Management Console (Lockhart).

   If they are not installed, download and install the above packages and patches before installing SUNWstadm.
3. **Do one of the following:**

   To install Storage Automated Diagnostic Environment Enterprise Edition management station package, SUNWstadm, from the Sun Sunsolve web site download site:

   a. Download the compressed SUNWstadm tar image to /tmp.

   b. `# cd /tmp`

   c. `# uncompress SUNWstadm.tar.Z`

   d. `# tar xvf /tmp/SUNWstadm.tar`

   e. `# pkgadd -d . SUNWstadm`

   To install age the Diagnostic Environment Enterprise Edition management station package, SUNWstadm, from an installation CD:

   a. `# cd /cdrom/cdrom0/product/packages`

   b. `# pkgadd -d .`

   c. Select `SUNWstadm` and press Return.

4. **The /opt/SUNWstade/bin/ras_install is run during the SUNWstade package installation. If you need to change the default settings of Master, Cron enabled, or the default locale; rerun ras_install program and choose the desired settings:**

   ```
   # /opt/SUNWstade/bin/ras_install
   ```

Note – Steps 4, 5, and 6 are unnecessary if you performed them during installation of the base package, SUNWstade.

---

5. **Locate, download, and install potential patches for the Storage Automated Diagnostic Environment Enterprise Edition management station on Sun's Sunsolve web site using the Patch Portal at http://sunsolve.sun.com:**

   Patch Portal -> PatchFinder -> 117650

6. **Set the environment variables `PATH` and `MANPATH` to include the directories `/opt/SUNWstade/bin` and `/opt/SUNWstade/man`.**

   To verify the MANPATH: `# man ras_install`

7. **Define the sa_admin role and administrative users**

   Users can log into the Storage Automated Diagnostic Environment Enterprise Edition management station using their standard UNIX account, but they will be limited in what they are permitted to do unless they have the assigned role of `sa_admin`.

   Discovery, management of remote devices, and running diagnostics are restricted operations that are only permitted for users associated with the sa_admin role.

   The following example creates the sa_admin role and assigns the password "`diags`" to that role:

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

   b. `# passwd sa_admin    ### Use password diags`

   The following example creates a user named admin, also with password "diags," and assigns the user the sa_admin role:

   a. `# useradd -c “SA Admin” -s /bin/csh -R sa_admin -A “solaris.*” admin`

   b. `# passwd admin    ### Use password diags`

   The following example assigns the sa_admin role to an existing user named olduser and verifies the user's role:

   a. `# usermod -c “SA Admin” -R sa_admin -A “solaris.*” olduser`

   b. `# roles olduser sa_admin`

Note – If a network nameserver such as NIS or NIS+ is being used to supplement the local /etc/passwd file with additional entries, roleadd or rolemod cannot change the information provided by the network nameserver.

Refer to roleadd(1M), rolemod(1M), roledel(1M), and roles(1M) for more information on role management. Refer to useradd(1M), usermod(1M), and userdel(1M) for information on user login management.

Installing One or More Localized Packages

Follow the instructions below to install one or more localized management station package:

Note – You must be logged in as superuser to install these packages and patches.

Find and download any of the required packages and patches using the Sun Download Center (SDLC) web site:

http://wwws.sun.com/software/download

Or get the CD that contains Storage Automated Diagnostic Environment Enterprise Edition localized software.

This release of Storage Automated Diagnostic Environment Enterprise Edition software supports English, French, Japanese, Korean, Simplified Chinese and Traditional Chinese locales.

Note – Man pages are available only in English and Japanese. Release notes are available in English, French, Japanese, Korean, Simplified Chinese and Traditional Chinese.

The software package names of the supported locales are listed below:

- French (fr):SUNWstafr
- Japanese (ja):SUNWstaja
- Korean (ko):SUNWstako
- Simplified Chinese (zh):SUNWstazh
- Traditional Chinese (zh_TW):SUNWstazt

Note – Any combination of the five localized packages can be installed in your system.

To install a localized version of the Storage Automated Diagnostic Environment Enterprise Edition:

1. **Stop the agent from polling:** `# /opt/SUNWstade/bin/ras_install -p`
2. **Remove any package currently installed using one of the following commands:**

   # pkgrm SUNWstafr

   # pkgrm SUNWstaja

   # pkgrm SUNWstako

   # pkgrm SUNWstazh

   # pkgrm SUNWstazt
3. **If you haven't done so, install the English language version of the Storage Automated Diagnostic Environment Enterprise Edition. Refer to the *Storage Automated Diagnostic Environment Enterprise Edition Release Notes* for instructions.**
4. **If you haven't done so, install the English language version of the Storage Automated Diagnostic Environment management station. Refer to Installing the English Language Package for instructions.**
5. **Do one of the following:**

   - To install a localized Storage Automated Diagnostic Environment Enterprise Edition package from the Sun Sunsolve web site download site:

     a. Download the compressed tar image for the package to /tmp.

     b. `# cd /tmp`

     c. `# uncompress <packagename>.tar.Z`

     d. `# tar xvf /tmp/<packagename>.tar`

     e. `# pkgadd -d . <packagename>`

     where packagename is the name of the localized package you are installing.

   - To install the localized Storage Automated Diagnostic Environment Enterprise Edition package from a CD:

     a. `# cd /cdrom/cdrom0/product/`**L10N**

     `# pkgadd -d . <packagename>`

     where packagename is the name of the localized package you are installing.

Getting Started

If you installed the SUNWstade base package only, use the following CLI-based procedure to complete initial set up requirements:

Setting Up the Software With the CLI

If you installed the SUNWstadm management station package, you have the option to use the following GUI-based procedure to complete initial set up requirements:

Setting Up the Software With GUI

Note – If there are existing problems with a storage device when the package is installed, these problems may not be detected or reported. They will, however, generate an event (type of event is based on the type of failure) when the error condition is corrected.

Setting Up the Software With the CLI

Note – If you obtained Storage Automated Diagnostic Environment Enterprise Edition bundled with a device-specific or system specific software package, this section does not apply to you. Refer to Setting Up the Software With GUI or refer to the device-specific or system specific release notes for setup procedures.

The following procedure allows the user to set up Storage Automated Diagnostic Environment Enterprise Edition on a host server that does not have the GUI management package installed (SUNWstadm). This procedure will guide the user through the steps necessary to properly initialize the product using Command Line Interface (CLI) commands.

To set up the Storage Automated Diagnostic Environment Enterprise Edition from the CLI:

Note – In the example procedures that follow, the name of the host where the Storage Automated Diagnostic Environment Enterprise Edition is installed is referred to as acmetw4.

---

1. **Enter Site Information**

   a. **Change to the /opt/SUNWstade/bin directory:**

      # root@acmetw4 cd /opt/SUNWstade/bin

   b. **Execute the ras_admin command specifying the function argument `site_info_upd`.**

      # root@acmetw4 ./ras_admin site_info_upd

   c. **Follow the prompts to supply the information requested.**

Note – Prompts marked with an asterisk (*) are required fields.

A typical set of Site Information prompts is shown below.

```
Enter Customer*            : ACME Tools and Die Inc.
Enter Contract             :
Enter Ticker               : ACME
Enter Cust no              :
Enter Site name*           : ACME Tool Works Site #4
Enter Site address         : 123 Anystreet Blvd.
Enter Site city*           : Hometown
Enter Site state           : Colorado
Enter Site zip*            : 80000
Enter Site country*        : USA
Enter Site contact*        : John Smith
Enter Site contact phone : (888) 555-9876
Enter Site email*          : john.smith@acme.com
Do you want to save these values [y=yes, n=no, q=quit]: y
```

   a. Enter y to save the specified Site Information.

2. **Discover Devices**

You can discover devices in one or more of three ways:

- Discover devices out-of-band using a device configuration file

  The device configuration file is /etc/deviceIP.conf. It looks a great deal like a hosts definition file. The`/etc/deviceIP.conf` file may be utilized for discovery of all supported fibre channel devices that have ethernet connectivity and whose IP address and device types are known.

- Discover devices out-of-band using the search subnet method

  To use this method, you must specify the device names as they are defined in the /etc/hosts file or specify IP addresses to discretely discover those devices. An alternative is to blindly search the subnet - but this takes much longer and may add devices that are not part of this systems configuration (requiring you to manually remove them later).

Note – Devices that due not have out-of-band connectivity cannot be discovered using the device configuration file or subnet search method. These devices include the Sun StorEdge 3120 JBOD Array, the Sun StorEdge 3310 JBOD Array, the Sun A5x00 Array, and the Sun 3500FC Array. You must discover these devices using the in-band discovery method.

- Discover devices in-band

  Some devices do not provide out-of-band management paths, discovery must use the in-band path to find the device. Typically, devices such as HBAs, and JBOD arrays without out-of-band management must be discovered this way.

Note – This method is not required if you choose one of the previous methods to discover your devices, it will not add any new information about those devices.

To discover devices using the a device configuration file:

a. Change your directory to the /etc directory:

```
# root@acmetw4 cd /etc
```

b. Use a text editor to open the /etc/deviceIP.conf file.

```
# root@acmetw4 vi deviceIP.conf
```

c. For each device to be discovered, specify the device IP, device name, device type, and comments using the following syntax:

```
device_ip device_name [device_type] #comments
```

The device_name will be used if the device name cannot be retrieved from the device itself.

The device_type is required for devices that do not support SNMP, including Sun StorEdge 3xx0 devices such as the Sun StorEdge 3510/3310 devices, and SAM-QFS.

Some examples of device entries follow.

```
IP Addr   Name    Type      Comments
10.0.0.1  t3-1a              # My T3a array
10.0.0.2  fc3510            # My SE-3510 (uses SNMP for
discovery)
10.0.0.3  3900     se       # My SE-3910 array
10.0.0.4  sam      samfs    # SAM-QFS
```

Valid device type entries are:

• mcdata	• 5210	• 9900	• 6130
• samfs	• t3	• 6020	• 6120
• se	• se2	• switch	• switch2
• 3310	• 3510	• 3511	• inrange
• brocade			

d. Save the updated device configuration file.

e. Change your directory to the /opt/SUNWstade/bin directory:

```
# root@acmetw4 cd /opt/SUNWstade/bin
```

f. Execute the ras_admin command specifying the function argument `discover_deviceIP` **to use the** `/etc/deviceIP.conf` **file:**

```
# root@acmetw4 ./ras_admin discover_deviceIP
```

The following is a typical execution of the discovery process using `/etc/deviceIP.conf`:

```
Reading deviceIP: 172.20.35.175 acmetw4-480a # Test Host
Start Discover::fromIP on 172.20.35.175
- snmp sysDesc is Sun SNMP Agent, Sun-Fire-480R
- found 1 device(s) using Discover::6130
Reading deviceIP: 172.20.35.32 etw4-lsi8 # Single SE-6130 Array
Tray
Start Discover::fromIP on 172.20.35.32
- found 1 device(s) using Discover::6130
Reading deviceIP: 172.20.35.102 etw4-sw102 # 2Gb 16 port Qlogic
Switch
Start Discover::fromIP on 172.20.35.102
- snmp sysDesc is QLogic SANBox2 FC Switch
- found 1 device(s) on Discover::Switch
Reading deviceIP: 172.20.35.192 acmetw4-sw192 # 1Gb 8 port Qlogic
Switch
Start Discover::fromIP on 172.20.35.192
- snmp sysDesc is SANbox1-8
- found 1 device(s) on Discover::Switch
Adding devices from deviceIP.local to configuration:
adding device : acmetw4-480a/200600a0b816f5f4/ip=172.20.35.32
merging device : acmetw4-lsi8/200600a0b816f5f4/ip=172.20.35.32
adding device : acmetw4-sw102/100000c0dd00bfda/ip=172.20.35.102
adding device : acmetw4-sw192/100000c0dd005732/ip=172.20.35.192
```

To discover devices using the search subnet method:

a. Change your directory to the `/opt/SUNWstade/bin` **directory**

```
# root@acmetw4 cd /opt/SUNWstade/bin
```

b. Execute the `ras_admin` **command specifying the function argument** `discover_subnet` **with the argument** `-I ipaddr,ipaddr...ipaddr`

```
# root@acmetw4 ./ras_admin discover_subnet -I 'acmetw4-480a,172.20.35.32,acmetw4-sw102,acmetw4-sw192'
```

A typical discovery process using the subnet method follows.

```
Start Discover::fromIP on 172.20.35.175
- snmp sysDesc is system.sysDescr.0 = Sun SNMP Agent, Sun-Fire-480R
- found 1 device(s) using Discover::6130
Start Discover::fromIP on 172.20.35.32
- found 1 device(s) using Discover::6130
Start Discover::fromIP on 172.20.35.102
- snmp sysDesc is system.sysDescr.0 = QLogic SANBox2 FC Switch
- found 1 device(s) on Discover::Switch
Start Discover::fromIP on 172.20.35.192
- snmp sysDesc is system.sysDescr.0 = SANbox1-8
- found 1 device(s) on Discover::Switch
Adding devices from subnet.local to configuration:
adding device : acmetw4-480a/200600a0b816f5f4/ip=172.20.35.32
adding device : acmetw4-sw102/100000c0dd00bfda/ip=172.20.35.102
adding device : acmetw4-sw192/100000c0dd005732/ip=172.20.35.192
merging device : acmetw4-lsi8/200600a0b816f5f4/ip=172.20.35.32
device : acmetw4-lsi8/200600a0b816f5f4/ip=172.20.35.32
```

To discover devices in-band:

a. Change your directory to the `/opt/SUNWstade/bin` directory

```
# root@acmetw4 cd /opt/SUNWstade/bin
```

b. Execute the `ras_admin` command specifying the function argument `discover_inband`:

```
# root@acmetw4 ./ras_admin discover_inband
```

A typical discovery process using the inband method follows:

```
Discover::inband: trying Discover::3310
Discover::inband: trying Discover::6130
- found 1 device(s) using Discover::6130
Discover::inband: trying Discover::A3500FC
Discover::inband: trying Discover::Luxadm
Discover::inband: trying Discover::HBAApi
-> INBAND TOPO dis_hba
-> INBAND TOPO dis_luxadm
-> INBAND TOPO dis_devinfo
Start Discover::fromIP on 172.20.35.102
- snmp sysDesc is QLogic SANBox2 FC Switch
- found 1 device(s) on Discover::Switch
Start Discover::fromIP on 172.20.35.192
- snmp sysDesc is SANbox1-8
- found 1 device(s) on Discover::Switch
- found 2 device(s) using Discover::HBAApi
Adding devices from inband.local to configuration:
adding device : acmetw4-sw102/100000c0dd00bfda/ip=172.20.35.102
adding device : acmetw4-sw192/100000c0dd005732/ip=172.20.35.192
merging device : acmetw4-lsi8/200600a0b816f5f4/ip=172.20.35.32
```

3. Initialize all agents to report in to the Storage Automated Diagnostic Environment Enterprise Edition. This step is required to be run on all slave hosts that will report into the master agent.

```
example: # /opt/SUNWstade/bin/ras_install -s <hostname>
```

where hostname is the IP name or IP address of the host on which the master agent is installed.

4. **Setup Notification Providers**

   Notification setup is required to ensure that should something adverse occur to your storage network, the Storage Automated Diagnostic Environment Enterprise Edition can notify someone about the problem. There are two classes of notification providers: local notification and remote notification. Local notification methods include local Email, SNMP traps, and SunMC. Remote notification methods are specifically targeted at Sun Service and include NSCC email and Net Connect.

   To set up local Local Email notification:

   a. **Change your directory to the /opt/SUNWstade/bin directory**

      ```
      # root@acmetw4 cd /opt/SUNWstade/bin
      ```

   b. **Execute the ras_admin command specifying the function argument** `email_add` **with the argument** `-e <email address of user>`

      ```
      #root@acmetw4-480a ./ras_admin email_add -e employee1@acmetw2.com
      ```

   c. **Repeat Step b. for each email notification recipient you want to add.**

      A list of the current email notification recipients is displayed.

      ```
      Entry Email/Events            Type     Device Priority Events
      ------------------------------------------------------------------
      1     employee1@acmetw4.com    Email    All   All     All
      2     employee2@acmetw2.com    Email    All   All     All
      ```

      To set up SunMC notification:

   a. **Change your directory to the /opt/SUNWstade/bin directory**

      ```
      # root@acmetw4 cd /opt/SUNWstade/bin
      ```

   b. **Execute the** `ras_admin` **command specifying the function argument** `provider_on` **with the argument** `-p sunmc -f <report frequency> -i <sunmc server address>`**.**

      In the following example, the SunMC host is `acmetw4-sunmc` and the reporting frequency is 1 hour.

      ```
      # root@acmetw4-480a ./ras_admin provider_on -p sunmc -f 1 -i
      acmetw4-sunmc
      ```

To set up an SNMP Trap notification recipient:

a. Change your directory to the `/opt/SUNWstade/bin` **directory**

```
# root@acmetw4 cd /opt/SUNWstade/bin
```

b. Execute the `ras_admin` **command specifying the function argument** `provider_on` **with the argument** `-p trap -i <SNMP receiver address> -o <SNMP port> -l <notification level> -t <trap slot number>.`

In the following example, the SNMP trap receiver host is `acmetw4-openview`, the trap port number is 1992, the desired reporting level is 'error' and this is the first of five possible definitions in the SNMP traps table.

```
# root@acmetw4-480a ./ras_admin provider_on -p trap -i acmetw4-
openview -o 1992 -l error -t 1
```

To enable NSCC notification:

a. Change your directory to the `/opt/SUNWstade/bin` **directory**

```
# root@acmetw4 cd /opt/SUNWstade/bin
```

b. Execute the `ras_admin` **command specifying the function argument** `provider_on` **with the argument** `-p nscc_email`**.**

```
# root@acmetw4-480a ./ras_admin provider_on -p nscc_email
```

To enable Net Connect notification:

a. Change your directory to the `/opt/SUNWstade/bin` **directory**

```
# root@acmetw4 cd /opt/SUNWstade/bin
```

b. Execute the `ras_admin` **command specifying the function argument** `provider_on` **with the argument** `-p netconnect`**.**

```
# root@acmetw4-480a ./ras_admin provider_on -p netconnect
```

5. **Check the revision of devices:**

   ```
   # root@acmetw4-480a ./ras_revcheck -h acmetw4-480a -M ALL -p
   ```

   The following is a typical revision report display:

```
Type                Name                                Status     Curr_Ver        Expect_Ver        Curr_Patch     Expect_Patch     Comments

6130_Controller     acmetw4-480a.firmrev                DOWNREV    06.10.05.11     06.10.09.11       N/A            no patch information
available, please contact your sun representative
6130_NVSRAM_FW      acmetw4-480a.nvsram.                DOWNREV    N2882-610843-010 N2882-610843-011 N/A    no patch information available,
please contact your sun representative
6130_DISK_FW        acmetw4-480a.Tray.0.Drive.1         PASS       0307            0307
6130_DISK_FW        acmetw4-480a.Tray.0.Drive.10        PASS       0307            0307
6130_DISK_FW        acmetw4-480a.Tray.0.Drive.11        PASS       0307            0307
6130_DISK_FW        acmetw4-480a.Tray.0.Drive.12        PASS       0307            0307
6130_DISK_FW        acmetw4-480a.Tray.0.Drive.13        PASS       0307            0307
6130_DISK_FW        acmetw4-480a.Tray.0.Drive.14        PASS       0307            0307
6130_DISK_FW        acmetw4-480a.Tray.0.Drive.2         PASS       0307            0307
6130_DISK_FW        acmetw4-480a.Tray.0.Drive.3         PASS       0307            0307
6130_DISK_FW        acmetw4-480a.Tray.0.Drive.4         PASS       0307            0307
6130_DISK_FW        acmetw4-480a.Tray.0.Drive.5         PASS       0307            0307
6130_DISK_FW        acmetw4-480a.Tray.0.Drive.6         PASS       0307            0307
6130_DISK_FW        acmetw4-480a.Tray.0.Drive.7         PASS       0307            0307
6130_DISK_FW        acmetw4-480a.Tray.0.Drive.8         PASS       0307            0307
6130_DISK_FW        acmetw4-480a.Tray.0.Drive.9         PASS       0307            0307
Driver                                                  DOWNREV    114478-04       114478-05                        SNIA Sun Fibre Channel
Host Bus Adapter Library
Driver                                                  PASS       113044-05       113044-05                        cfgadm fp plug-in and
required by Brocade switch. This patch requires the packages SUNWswan, SUNWcfpl and SUNWcfplx.
Driver                                                  PASS       113043-08       113043-08                        MPxIO luxadm, liba5k and
libg_fc patch. Required by Brocade switch
Driver                                                  PASS       111847-08       111847-08                        SAN foundation kit patch
Driver                                                  PASS       113039-07       113039-07                        leadville, Sun StorEdge
Traffic Manager patch
Driver                                                  PASS       113040-09       113040-09                        MPxIO fctl/fp/fcp/usoc
driver patch and required by Brocade switch
Driver                                                  DOWNREV    113041-06       113041-07                        MPxIO fcip driver and adb
macros patch. Required by Brocade switch
Driver                                                  DOWNREV    114476-03       114476-04                        fcsm driver patch
Driver                                                  PASS       114477-01       114477-01                        Common Fibre Channel HBA
API Library
Driver                                                  OWNREV     113277-24       113277-25                        st driver for tape devices
Driver                                                  DOWNREV    113042-07       113042-08                        MPxIO qlc driver patch and
required by Brocade switch
HBA                 /devices/pci@8,600000/SUNW,qlc@1/fp@0,0:devctl   PASS       1.14.09  1.14.09     114873-02      Gb HBA
HBA                 /devices/pci@8,600000/SUNW,qlc@2/fp@0,0:devctl   PASS       1.14.09  1.14.09     111853-03      1Gb HBA
HBA                 /devices/pci@9,600000/SUNW,qlc@2/fp@0,0:devctl   DOWNREV    1.14     1.14.09     111853-03      1Gb HBA
Switch              diag192                             PASS       40242           40242             112429-08      FC-SW2 compliant 1G switch
Switch              diag102                             UPREV      V2.0.0.5-0      V1.3.60.00        112429-08      G switch
```

6. **Run the Agent (Optional)**

   Once Storage Automated Diagnostic Environment Enterprise Edition is installed, a cron job is set up to run the agent automatically.

   This optional step may be performed to force an agent run out of cycle, but is not required since the monitoring agent cron runs once every five minutes by default. Running the agent now will cause notification to occur from the previous setup steps.

   ```
   # root@acmetw4-480a ./rasagent -d2
   ```

   ```
   Agent running /opt/SUNWstade/DATA/rasagent.conf on 09-24 11:02:01,
   MASTER acmetw4-480a
   ```

7. Examine the Topology details (Optional)

Review your topology details by first getting the name of the topology to view using `topo_list` argument to `ras_admin` then displaying the details of that topology using `ras_admin topo -t <topo_name>`.

In the following example, we view the topology for our newly installed system, `acmetw4-480a`.

```
# root@acmetw4-480a ./ras_admin topo_list
Name               Date
------------------------------------------------------------
acmetw4-480a       2004-09-24 11:15:03
MERGE-MASTER       2004-09-24 11:15:04
Done.
# root@acmetw4-480a ./ras_admin topo -t acmetw4-480a.
host 'acmetw4-480a' SUNW,Sun-Fire-480R
     hba-0: 210000e08b19edcb
/devices/pci@8,600000/SUNW,qlc@1/fp@0,0:devctl
           Connected to acmetw4-sw102 port-2
     hba-1: 210000e08b032701
/devices/pci@8,600000/SUNW,qlc@2/fp@0,0:devctl
           Connected to acmetw4-sw192 port-1
     hba-2: 21000003ba7b104e
/devices/pci@9,600000/SUNW,qlc@2/fp@0,0:devctl
           Connected to 500000e0109404d0 port-0
switch2 'acmetw4-sw102/'    Switch2-16
    port-0: 200700a0b816f5f5  F_Port
           Connected to acmetw4-480a port-2
    port-2: 210000e08b19edcb  F_Port
          Connected to host 'acmetw4-480a.               ' hba-0
switch2 'acmetw4-sw192/'    Switch1-8
    port-1: 210000e08b032701  F_Port
          Connected to host 'acmetw4-480a.               ' hba-1
    port-3: 200600a0b816f5f5  F_Port
           Connected to acmetw4-480a port-0
6130 'acmetw4-480a'   SUN Sun 6130
    port-0: 200600a0b816f5f5
           Connected to acmetw4-sw192 port-3
```

```
    port-2: 200700a0b816f5f5
           Connected to acmetw4-sw102 port-0
hbastorage '500000e0109404d0'  FUJITSU MAP3735F SUN72G
    port-0: 500000e0109404d1
/devices/pci@9,600000/SUNW,qlc@2/fp@0,0:devctl
         Connected to host 'acmetw4-480a.               ' hba-2
```

Setting Up the Software With GUI

Follow the instructions in this section to get started setting up the Storage Automated Diagnostic Environment using the GUI.

Note – After logging in, refer to the online help for more information on the steps in this section.

---

1. **From a web browser, log in the Sun Web Console using URL** `https://<hostname>:6789`**.**
   a. **Enter the User Name that was defined in the Installation Instructions, Step 7.**
   b. **Enter the Password that was defined in the Installation Instructions, Step 7.**
   c. **Select the** `sa_admin` **role from the pull-down list.**
   d. **Enter the Password that was defined for the** `sa_admin` **role in the Installation Instructions, Step 7.**
   e. **Click Log In.**
2. **Click Storage Automated Diagnostic Environment**
3. **Enter your Site Information**
   a. **Click Storage Automated Diagnostic Environment.**
   b. **Complete the required fields on the Site Information page.**
   c. **Click Save.**

Note – Fields marked with a red asterisk are mandatory. You will be unable to continue until this page is completed and saved successfully.

---

4. **Review hosts**

   a. **Select the Inventory Tab**

   b. **Verify that host information is entered correctly and that all expected hosts are present.**

Note – Peer hosts are added by running the following CLI command on the peer host: `# ras_install -s <IPofMaster>`

where IPofMaster is the IP address or IP name of the host running the master instance of Storage Automated Diagnostic Environment Enterprise Edition.

---

5. **Discover Devices**

   Three methods of device discovery are available:

   - In-Band
   - Out-of-Band searching for specified IP addresses or device names
   - Out-of-Band searching for devices specified in a preconfigured device configuration file

   To discover devices using the In-Band method:

   a. **Select the Inventory Tab -> Discovery.**

   b. **Select the appropriate agent or All Agents from pull-down list. (Note: The selected agents must have in-band access to the desired devices.)**

   c. **Select Inband from the Discovery Mechanism pull-down list.**

   d. **Optionally, choose a device-naming convention by making a Prefix selection.**

   e. **Accept the remaining defaults and click Start Discovery.**

   To discover devices using the Out-of-Band (IP) method:

   a. **Select the Inventory Tab -> Discovery.**

   b. **Select the appropriate agent or All Agents from pull-down list. (Note: The selected agents must have intranet access to the desired devices.)**

   c. **Select IP from the Discovery Mechanism pull-down list.**

   d. **Specify the IP addresses to be discovered.**

   e. **Optionally, choose a device-naming convention by making a Prefix selection.**

   f. **Accept the remaining defaults and click Start Discovery.**

To discover devices using the Out-of-Band (File) method:

a. Enter the desired devices into the selected agents `/etc/deviceIP.conf` file.

b. Select the Inventory Tab -> Discovery.

c. Select the appropriate agent or All Agents from pull-down list. (Note: The selected agents must have intranet to the desired devices.)

d. Select File from the Discovery Mechanism pull-down list.

e. Click Start Discovery.

6. Run Revision Analysis

Revision Analysis should be run after installation and whenever new components are added to the system. Updating all firmware and software components to the current revisions ensures that the devices have the capabilities required to be discovered, monitored and diagnosed properly.

a. Select the Administration tab.

b. From the Actions pull-down list, select Run Revision Analysis.

c. Select the Host on which Revision Analysis is to run, the Revision Matrix to be used for revision checking, All modules, and, if desired, enter an email address to which the results will be sent.

d. Click Run.

7. Setup Notification

You can configure a number of methods for generating notification of alarm conditions:

- Notification to one or more Email addresses
- Notification to one or more of remote Sun notification recipients and SNMP trap recipients

To configure Email recipients:

a. Select Administration -> Notification -> Setup.

b. To enable Local email, add the desired SMTP server under the Email Notification Setup section called "Use this SMTP server for Email".

Note – If the host running this software has the `sendmail` daemon running, you can enter `localhost` or the name of this host in this field.

---

c. Click Save to verify the email configuration.

d. Click the Email tab.

e. Enter one or more email addresses for local notification. Specified addresses receive email notifications when events occur. Emails can be customized to specific severity, event-type, or product type.

To configure SNMP trap recipients:

a. Select Administration -> Notification -> Setup.

b. In the Remote Notification Setup section, check SNMP Trap.

c. Click the SNMP tab.

d. Click New.

e. For each SNMP recipient you want to add, specify the name or IP Address of the recipient, the port on which to send traps, and, optionally, the minimum alert level for which you want SNMP notification, and click OK.

To configure remote notification recipients:

a. Select Administration -> Notification -> Setup.

b. Check the box next to each Remote Notification provider you want to enable.

c. Complete the setup parameters for any remote notification recipient that you enable.

d. Click Save.

8. **Run the Agents:**

   You can manually run the monitoring agents.

   a. Select the Administration Tab -> Agents.

   b. Click the check box for the agent you want to run.

   c. Click Run Agent.

Note – If you do not click Run Agent, the selected agents will automatically run after 5 minutes.

---

   d. Repeast steps b and c for each agent.

9. **Review Topology:**

   e. Select Topology.

   f. Display the topology from each agent as well as a master view.

Device and Product Use Information

This section provides general and device- and product-specific information for using the product.

Browser

- System administrators should know about security risks associated with installing a web server. Take the appropriate actions to protect access to the Storage Automated Diagnostic Environment port 6789.
- Some browsers such as Netscape 7 will prompt for a username/password when applets are loaded. Enter the same username/password which was used to initially log in.
- Support for Inrange switches includes topology and port status only.

Localization

The following information applies to localization of the product.

- For the online help content of the Korean locale, the default font size in the Netscape or Mozilla browsers may be too small to read.

  You can select your choice of font size in Netscape or Mozilla browser by: selecting an appropriate “Minimum font size” in the Edit -> Preferences -> Appearance -> Fonts menu of your browser. For example, you can select “12” or “14” as “Minimum font size”.

  Or you can select an appropriate “Text Zoom” choice in the browser's View menu.
- You can update your Shell Environment to display Japanese man pages.

  To display the man pages in Japanese using the man page command, you must use ja locale and update your MANPATH variable with one of the following procedures.

  To update your MANPATH Variable in a Bourne or Korn Shell:

  i. **Update your .profile file `MANPATH` statement to include `/opt/SUNWstade/man` and make sure your `MANPATH` is exported.**

  ```
  # MANPATH=$MANPATH:/opt/SUNWstade/man
  # export MANPATH
  ```

  ii. **Save this file and exit the editor.**

iii. Reload your `.profile` file for your shell session.

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

To update Your MANPATH Variable in a C Shell:

i. Add `/opt/SUNWstade/man` to your `MANPATH` statement in your `.login` file:

```
setenv MANPATH $MANPATH:/opt/SUNWstade/man
```

ii. Save this file and exit the editor.

iii. Reload your `.login` file for your shell session.

```
# source .login
```

- You can display Simplified Chinese version of the user interface in Netscape Navigator by selecting zh-cn as the Navigator Language Preference option using Edit > Preferences > Navigator > Languages.
- This release does not support localization of Email, Pager, and SNMP notification messages. However, site information that is included in notification messages can be localized if you:
  - Enter localized characters in the text input fields of the Site Information page (Administration > General Setup > Site Information).
  - Use an Email system that supports UTF-8 encoding.

  Otherwise, notification messages are received with garbled characters in place of the site information fields. If you are not sure if your Email system supports UTF-8 encoding, enter and save only ASCII characters in the Site Information text fields.
- The localized characters of one language may not display correctly in another language version browser if the browser does not fully support UTF-8 encoding and have the required language fonts.

Sun StorEdge 5210 NAS

Use this procedure for setting up the SE 5210 device to send SNMP traps to the Storage Automated Diagnostic Environment Enterprise Edition host:

1. **Start up the SE 5210 device Web Admin application by entering the IP address of the device in your web browser and pressing Return.**
2. **Enter the device password and click Apply.**
3. **From the Web Admin sidebar, select Monitoring and Notification -> Configure SNMP.**
4. **Check the Enable SNMP check box.**

5. **Enter “public” in the Server SNMP Community Field.**
6. **Enter the IP address of the Storage Automated Diagnostic Environment Enterprise Edition host in the Destination IP address column.**
7. **Enter “1162” in the corresponding Port # column. Port 1162 is the port on which the Storage Automated Diagnostic Environment Enterprise Edition listens for SNMP traps.**
8. **Enter “2” in the Version column.**
9. **Enter “public” in the Community column.**
10. **Check the Enable check box.**
11. **Click Apply.**

    Your SNMP changes are saved.

Sun StorEdge 3310, 3510, and 3511 Arrays

This release provides limited password support for 3310, 3510 and 3511 devices. You can monitor the 3310/3510/3511 devices with password setup but be aware of the following:

- Password setup has no effect on in-band discovery or monitoring.
- If you monitor the devices Out-Of-Band (OOB) consider: the following:
  - Before the 3310/3510/3511 device is added in the Storage Automated Diagnostic Environment Enterprise Edition, if the password has been set up on the device either through the firmware GUI or sccli command line (or some other management software), when you add the device you must supply the correct password.
  - If the device is already being monitored by the Storage Automated Diagnostic Environment Enterprise Edition (rasagent has been run at least one time), you must change the 3310/3510/3511 password through the firmware GUI or sccli (or some other management software). Then you must update the device password using the Storage Automated Diagnostic Environment Enterprise Edition GUI. Failure to do this will result in Lost Communication.

    To update the password:

    # /opt/SUNWstade/bin/ras_admin password_change -i <ipaddress> -p <password>

    where ipaddress is the IP address of the device and password is the password you are assigning to the device.

Note – If you want to run the out-of-band diagnostic functions (ex. write/read buffer test, loopback test, echo test, etc.) for the 3510 device you must disable the password first. There are no diagnostic functions for the 3310/3511 arrays at this time.

- You cannot set up the password directly for the 3310/3510/3511. When you update the device password from the Storage Automated Diagnostic Environment Enterprise Edition GUI it only updates the password information used by the Storage Automated Diagnostic Environment Enterprise Edition. It does not change the password on the array. You must use the array GUI or sccli command (or some other management software) to configure the password on the array.
- The 3120 and 3310 JBOD do not support passwords. Passwords only apply to an array with controller.

- The following Sun StorEdge firmware levels are required before installing this release:
  - Sun StorEdge 3510 FC RAID f/w 3.27r SES 1040 or greater. Patch ID 113723-07
  - Sun StorEdge 3310 SCSI Raid 3.25s SAF-TE 1159 or greater. Patch ID 113722-05
- The 3510/3310 implements a disk probe utility “Periodic Drive Check Time” to periodically check drive availability.

  Set this value to 30 seconds.

Brocade

Brocade FC Switch configurations using QuickLoop ports can be monitored and diagnosed but the topology views will not show connections between devices.

SAM-FS/QFS

The following information applies to the SAM-FS/QFS product.

- `SUNWsamfs` version 4.1 or higher is required for the SAM-QFS SNMP feature.
- `SUNWsamfs` version 4.2 or higher is required for the SNMP traps, Asset/Health Instrumentation, Log Parsing and Device Firmware Revision Checking.
- This process must be implemented from a root login.
- By default SNMP alerts are turned on. To ensure this check the /etc/opt/SUNWsamfs/defaults.conf file for a line that reads 'alerts=off'. If necessary change it to 'alerts=on'.

- If you needed to turn 'alerts on' in Step 2 then you must restart SAM-QFS as follows:

  i. `/opt/SUNWsamfs/sbin/samd stop`

  ii. `/opt/SUNWsamfs/sbin/samd config`

  iii. `/opt/SUNWsamfs/sbin/samd start`

- Set the trap destination in `/etc/opt/SUNWsamfs/scripts/sendtrap`. By default it is set to the local host as follows:

  TRAP_DESTINATION=`hostname`

  Change TRAP_DESTINATION to read:

  `TRAP_DESTINATION=`hostname`:1162`

  Example: `TRAP_DESTINATION=172.20.35.00:1162`

  or: `TRAP_DESTINATION=Fido:1162`

  Sets the trap destination to the NIS named host “Fido” port 1162.

  or: `TRAP_DESTINATION=`hostname`:1162`

  Sets the trap destination to the local host port 1162.

Note – Port 1162 is the general SNMP trap listener for the Storage Automated Diagnostic Environment Enterprise Edition and for this patch it cannot be changed. This port is shared by other agents who receive traps processed by the Storage Automated Diagnostic Environment Enterprise Edition.

- For full functionality of Storage Automated Diagnostic Environment Enterprise Edition with SAM-QFS 4.2 it is required that Storage Automated Diagnostic Environment Enterprise Edition (master or slave) be installed on the same host as the SAM-QFS 4.2 that you wish to monitor. If you chose to monitor SAM-QFS 4.1 or 4.2 remotely (meaning that Storage Automated Diagnostic Environment Enterprise Edition master is installed on a host other than that of the SAM-QFS installation) then only the SNMP trap support described for SAM-QFS 4.1 will be in affect.

Solaris

If the Solaris host that the Master is installed on uses 'compat' in the `/etc/nsswitch.conf` file, the Administrator must manually set the User Password. Checking the “NIS Password” box does not work in conjunction with '`compat`'.

HDS

In order to monitor HDS, the monitoring host must be given SNMP access to the HDS array.

JNI HBAs

If you had JNI HBA cards installed with the previous version of SUNWstade, you will need to run topology discovery again in order for this release to see the JNI HBA cards.

Known Issues

This section identifies known issues with the SUNWstade and SUNWstadm product components.

SUNWstade Issues

This section identifies known issues with the SUNWstade base package.

- Diagnostic tests on slaves with Perl 5.8+ do not function correctly. The user must login to the slave and execute the diagnostics from the CLI.

  Reference BugId: 5076153

- Alarms generated when components are removed, are not automatically cleared from the Alarm page when the component is reinstalled. You must clear the alarm manually.

  Reference BugId: 5090092

- Alarms which have the Type of "Log" are not automatically removed when the condition that caused the alarm is corrected. You must remove them manually when they no longer apply.

  Reference BugId: 6186308

- Removal of an SFP will result in the SFP no longer appearing in the GUI (FRU Summary page). When the SFP in replaced it will reappear in the GUI.

  Reference BugId: 5089234

- When using Mozilla, and you use multiple tabs in one session, you may experience incorrect linking. To avoid this, do not use multiple tabs.

  Reference BugId: 5092555

- The 3120/3310 JBOD revision check only supports a safe firmware check (1159). A sccli F/W problem (listed below) prevents the disk revision check on both of these devices.

  Reference BugId: 5044120 "`3310/3120 JBOD - Not displaying disk information`"

- The 3511 revision check supports the following:
  - System firmware rev check. (3.27R)
  - SES check (P296)
  - pld check (0C00)
  - SR-1216 router check (0548)
  - pc-150 FC-SATA MUX (0100)
  - Disk SUPPORT: HDS72252 / 5VLSA80 (A660) [vendor / model # (version)]
- The SAM-QFS product does not provide a means (remotely) for the Storage Automated Diagnostic Environment Enterprise Edition to determine when, on which host, or what version of SAM-QFS is installed. It is therefore possible for the user to add an instance SAM-QFS to the Storage Automated Diagnostic Environment Enterprise Edition that either does not exist or is of some version lower then 4.1.

  No adverse conditions or errors will occur, however the Storage Automated Diagnostic Environment Enterprise Edition would never receive an SNMP trap or post an alarm for that instance of SAM-QFS.

- The Storage Automated Diagnostic Environment Enterprise Edition instruments the SAM-QFS application and not tape drives and libraries themselves. Therefore, it only has knowledge of issues with hardware devices after SAM-QFS has attempted to access them. For example, if a tape drive loses power, the Storage Automated Diagnostic Environment Enterprise Edition will not issue an alarm or notify the user until SAM-QFS has attempted to use or perform I/O to that tape drive. It is possible that SAM-QFS may go for several hours without accessing a tape drive or library.
- The Administrator needs to ensure that only real instances of SAM-QFS version 4.1 or 4.2 are added. The IP number displayed on the Devices page must be accurate. This IP is not used to communicate with the SAM-QFS host, but it is necessary in order for the Storage Automated Diagnostic Environment Enterprise Edition to determine which host an SNMP trap came from. Multiple instances of SAM-QFS are supported in the Storage Automated Diagnostic Environment Enterprise Edition.
- CLI tests `switchtest` and `linktest` may not provide diagnostics for fibre channel links between downrevisioned HBAs and/or downrevisioned switches as well as fibre channel links between switches and virtualization engines (VE). This is a result of the lack of support for the fabric ECHO test command in these products.

SUNWstadm Issues

This section identifies known issues with the SUNWstadm management station package.

- The installation of SUNWstadm may fail after the installation when SUNWstadm attempts to start the Sun(TM) Management Console for the first time on the system. If you encounter one of the following errors you will need to make the suggested changes and start the console manually.
  - ```
    SUNWstadm: Starting the Sun(TM) Web Console.
    Starting Sun(TM) Web Console Version 2.1.1...
    Startup failed: cannot assume user identity "noaccess".
    Check to make sure "noaccess" has a valid login shell.
    ```

    Workaround: Remove the /usr/bin/true entry from the /etc/passwd with the following command:

    ```
    # passmgmt -m -s "" noaccess
    ```
  - ```
    SUNWstadm: Starting the Sun(TM) Web Console.
    Starting Sun(TM) Web Console Version 2.1.1...
    su: No shell
    Startup failed: cannot assume user identity "noaccess".
    Check to make sure "noaccess" has a valid login shell.
    ```

    Workaround: Modify the permissions on the root directory so that "others" (noaccess) have both read and execute permissions.
  - ```
    SUNWstadm: Starting the Sun(TM) Web Console.
    Starting Sun(TM) Web Console Version 2.1.1...
    Startup failed. See /var/log/webconsole/console_debug_log for
    detailed error information.
    ```

    ```
    # tail -2 /var/log/webconsole/console_debug_log
    Error occurred during initialization of VM
    java.lang.Error: Properties init: Could not determine current
    working directory.
    ```

    Workaround: Modify the permissions on the root directory so that "others" (noaccess) have both read and execute permissions.

  Once the workaround is applied start the Sun(TM) Web Console using the following command:

  ```
  # /usr/sadm/bin/smcwebserver start
  ```

  Reference BugId: 5109055 Web Console startup fails when the root directory restricts other access
- If you select Update Monitoring and Setup Data or attempt to launch a configured supporting application on the Devices page, you must have pop-ups enabled in your browser.
  ```

- The Sun(TM) Management Console may report the following error when you select the advance sort button under Administration of the Storage Automated Diagnostic Environment Enterprise Edition management station:

  ```
  java.io.IOException: Illegal to flush within a custom tag
  ```

  If this occurs you will need to upgrade Tomcat to version 4.0.3 or later.

- The Sun (TM) management station (Lockhart) package, SUNWstadm, requires the Java Software Development Kit (SDK) revision 1.4.2_04 or later. Currently the installation of Lockhart may detect that the Java Runtime Environment (JRE) is installed and use this rather than the SDK. When this occurs, attempts to log into the Storage Automated Diagnostic Environment Enterprise Edition management station fail.

  If this occurs, inspect Lockhart's `java.home` setting using the Lockhart `smreg(1M)` command as follows:

  ```
  # /usr/sbin/smreg list -p | grep java.home
  ```

  If it does not point to the SDK location or if it incorrectly references the JRE or an earlier version of the SDK, update it using smreg(1M) and restart the Sun (TM) Management Console using the smcwebserver(1M) command as follows:

  ```
  # /usr/sbin/smreg add -p -c java.home=/usr/j2se
  ```

  ```
  # /usr/sadm/bin/smcwebserver restart
  ```

- l18N: Diagnostic Setup Pages are not internationalized. Text is displayed in English. Reference Bug Id: 5074536.

- l18N: On the Topology page, the buttons and menu in the Interactive Applet view are not internationalized. They are displayed in English. Reference Bug Id: 4990031

- l18N: Warning messages in Java Script application dialog boxes that are generated by diagnostic Setup Pages are not internationalized. Text is displayed in English. Reference Bug Id: 5074549

Resolved Issues

The following table lists the issues that have been resolved with the product.

Bug ID	Brief Description
4514574	t3 state-status from unknown to ready-substituted should only be a warning.
4698376	Help does not indicate that user names must start with a letter.
4702688	Netscape 6.2.1 turn off frames, discovery of T3, log is displayed above header.
4732156	Storade needs to facilitate explorer-like output
4761515	References to non relevant device/host names in event grid
4813741	Make switch category a single category and let storade figure out what to run.
4819096	generate a specific event for sense key code 0x4 with asc=ANY
4836528	With Netscape 7.0, right clicking on devices in topology is missing functions
4847616	need a start-all and stop-all in start/stop devices
4873997	don't change the status of KILLED to DONE in volverify only go to start or %
4879973	Monitor topology zone filter should display only assigned ports and ISL ports
4891628	topology grouping > unable to release device from group
4907831	I18N: using “am” and “pm” for the time format causes i18n support problems
4936163	Master host shows up under slave(s) table.
4947104	RFE: Add favorite icon for browsers
4948048	Diagnose->Utilities: Go button is unnecessary
4953214	RFE: Notification Provider setup difficult to navigate
4953285	RFE: Notify user of stale topology
4956090	StorADE should take advantage of the ESM data host agent
4958666	HELP: Move or Remove 'Notification->Local Email->Clear Maximums' button

Bug ID	Brief Description
4959839	the snmp trap provider does not include a selection for Actionable only
4963152	se2_configcheck on depkg, test mgr does not receive verbose output
4964555	RFE: Topic field in advisor is vague
4970579	hostIpno in Master rasagent.conf not always populated after ras_install on slave
4971361	diagnose->test from list should be an action table
4975777	some reports do not consistently show devices included in rasagent.conf
4975894	UIRB: Table buttons not HCI 2.0 compliant
4976876	Files are created that are world writable
4977202	Cron entry should have a comment
4981454	Inband, subnet and from file should be the only discover methods
4983643	M2b11:Debug messages displayed when deleting a host under Admin > Maintain hosts
4984461	UIRB: Some tables lack headers/column names
4984469	UIRB: Remove exclamation points (!) from text and hyphens (-) from button labels
4984473	UIRB: Detail pages have no backwards navigation
4985905	ssl in storade does not work with server certificates that have pass phrases
4989881	Link labels are not consistent between right and left frames
4992397	undocumented commands in diagnostics directory
4999618	Change “Zip Code” to read “Zip/Postal Code”
5003163	When the page auto refreshes the running diag goes away.
5004612	Report page: GO button is unneeded.
5005028	Selecting reload on Admin->General M->Discover takes me to the home page
5006487	non-lockhart style buttons / menu Report > System Report >Switch Data
5007137	non-lockhart buttons Maintain Devices > Select Device link
5010993	mcdata switch discovered as brocade
5012565	Continuous Volume Verify: Report not presenting accurate data

Bug ID	Brief Description
5013497	discovery from deviceIP.conf file not using device name specified in deviceIP.co
5023560	Diagnostic List page - Ascending and Descending Sort links are not working
5023598	message above masthead when archiving diagnostic tests
5025184	Base Release Notes reference StorADE
5025406	3310: Running agent manually to slave: Error on 172.20.35.232: 500 unexpected EO
5026664	no “Completed” message when using Erase Cache
5029128	A5K: 3.5.23 has no PC or RA or enough specifics for auto case generation
5029161	A5K: 3.5.22 has no PC and the RAs are out of order and is potential for ACG
5031818	rashttpd is spinning on a slave machine
5038632	masthead is lost when viewing an archived test report
5039929	discovery error appears above masthead with “no frames” option
5044069	show sub-events: no frames option: sub-events are not displayed
5044554	topology: create status = no errors, but 2 errors are displayed
5044590	Inband discovery started message misleading.
5047038	M2b19:Host-side Storade - device summary report doesn't display all HBA connections
5047625	no frames option: discovery command start shows above masthead
5049068	no frames option: Basic Steps in popup opens up new windows
5051003	SUNWstade pkg should not set permissions on standard files
5051949	recommended action lists action and then indicates not action required
5052010	delete device result screen cryptic
5052076	add device: lost masthead when clicking on 'Discovery' type devices
5052640	secondary sort on alarms pages
5055757	no frames: alarm details link does not bring up alarm details
5056569	<><> in data host 6920 report above dsp volumes table
5062539	Topology graphics are not displayed on IE
5063328	SAM-QFS discovery should be available is a standard form

Bug ID	Brief Description
5064289	Details table in Inventory->Devices->Device Details contains too many items
5066234	ras_install program prompts for non-supplied parameters in CLI reconfiguration
5066896	User should be able to determine StorADE build number from BUI
5068036	5210 Missing OS information
5069470	5210 Remove “SecRead” attribute reports for disks
5071354	disk under process of replacement should not generate alarms
5074390	ras_install crontab warning in not started
5075993	ras_admin switch_add discovers McData as Brocade
5076717	device passwords do not work for slave devices
5077102	Event Code: 21.3.76 - NO Recommended action.
5077104	Event Code: 5.26.35 - No Probable cause
5077796	need message for No supported version of perl found
5079592	Mcdata discovery not resolving IP address for report
5080140	ras_admin host_list run from slave shows role as master
5081447	ras_admin host_list run from slave shows role as master
5081583	CommunicationEstablishedEvent not shown from slave devices
5081654	3310: received actionable alert for restored fru
5083286	minnow: diags: cannot get shutdown status
5083294	6130: Need Insert and Delete events for volume changes
5086136	5210 events 47.20.234, 235, and 236 should have same PC and RA as 5210 diag info
5086292	vol verify device summary showing old data
5087355	5210 Re-insertion of disk drive shows sn# a second time with blank info
5088573	5210, events show state changes on ports 2/3, 5210 diag info shows ports 1/2
5089459	Update deviceIP.conf for samfs
5091467	5210, event 47.26.19 advises replacement of Fan in JBOD, change to power supply
5092006	running slave agent from GUI fails
5092010	storade crashes in FSA module

Bug ID	Brief Description
5092021	Transport Methods of StorADE should be NetConnect only
5092032	Converting slave to master rasagent fails
5094073	5210, Add check EU power as a PC/RA to event 47.41.13
5094721	5210, Update PC of event 47.41.13 to include interface board
5094864	NSCC: 5210 ComponentRemoveEvent TOC file missing CIM_PhysicalPackage Tag info.
5095318	5210, event 47.41.13 has mis-spelled word (cabling) vs. cabling
5095367	5210 DeviceID for NWS_DiskDrive & NWS_Fru is incorrect
5095755	5210, Logical components for 5210 not showing up in NSCC
5097889	5210, misspelling in event 47.20.394
5097895	5210, Item 1 in Recommended Action is truncated
5097915	5210, Clarify event 47.20.384 to check UPS power supplies, check grammar
5097935	5210, Update Recommended action of event 47.20.385
5098009	5210, 1st Recommended action refers to UPS, does not apply
5098016	5210, Actionable RaidFanFail event 47.20.393 should suggest replacing fan
5098019	5210, Actionable event 47.20.396 should suggest checking airflow, room temp
5098432	5210, Update PC and RA of actionable MirrorLinkDown event 47.20.388
5098436	5210, Update PC and RA of actionable MirrorLinkDown event 47.20.388
5098442	5210, PC and RA of actionable event 47.20.390 needs updating
5098447	5210, Update PC and RA of actionable MirrorLogAlert event 47.20.406
5098452	5210, update Recommended Action #3 on event 47.20.380
5099529	5210, No event from Storade when cache mode changes from wrt-back to wrt-through
5099533	5210, Event 47.20.402 should be actionable, update PC and RA
5099883	DPL: Inconsistent naming of vdisk between EM(1, 2, etc..) and StorADE(vdisk+wwn)
5076717	Device passwords do not work for slave devices

Release Documentation

This section lists the documentation provided with this product and lists other related documentation.

Product Documentation

The product includes online help for all functions and the following Man Page documentation is delivered with this product:

- `6120ondg.1m`
- `6120test.1m`
- `6120volverify.1m`
- `a3500fctest.1m`
- `a5ksestest.1m`
- `a5ktest.1m`
- `brocadetest.1m`
- `checkcron.1m`
- `clearcache.1m`
- `config_solution.1m`
- `d2disktest.1m`
- `daksestest.1m`
- `daktest.1m`
- `dex.1m`
- `discman.1m`
- `disk_inquiry.1m`
- `disktest.1m`
- `echotest3510.1m`
- `fcdisktest.1m`
- `fctapetest.1m`
- `ifptest.1m`
- `jnitest.1m`
- `lbf.1m`
- `linktest.1m`

- loopmap3510.1m
- looptest3510.1m
- ondg.1m
- qlctest.1m
- ras_admin.1m
- ras_discover.1m
- ras_install.1m
- ras_patchlist.1m
- ras_remote.1m
- ras_revcheck.1m
- ras_upgrade.1m
- rasagent.1m
- sanbox.1m
- save_password.1m
- sccli.1m
- se2_configcheck.1m
- se_configcheck.1m
- showBypassDevice3510.1m
- socaltest.1m
- stresstest.1m
- switch2test.1m
- switchtest.1m
- t3command.1m
- t3test.1m
- t3volverify.1m
- testt3.1m
- vediag.1m
- veluntest.1m
- volverify.1m
- wrbtest3510.1m

Related Documentation

The following table lists all related documentation.

Title/Product	Location
Best Practices for Deploying the Storage Automated Diagnostic Environment to Monitor Storage	http://www.sun.com/blueprints/0104/817-5205.pdf
Sun StorEdge 6130 documentation	http://docs.sun.com/db/coll/6130
Sun StorEdge 5210 NAS documentation	http://docs.sun.com/db/coll/5210_NAS
Sun StorEdge 6920 documentation	http://docs.sun.com/db/coll/6920
Sun StorEdge 3310 documentation	http://docs.sun.com/db/coll/3310SCSIarray
Sun StorEdge 3510 documentation	http://docs.sun.com/db/coll/3510FCarray
Sun StorEdge 3511 documentation	http://docs.sun.com/db/coll/3511FCarray
Sun StorEdge 3120 documentation	http://docs.sun.com/db/coll/3120SCSIarray
Sun StorEdge SAM-FS 4.1 documentation	http://docs.sun.com/db/coll/21083.1
Sun StorEdge QFS 4.1 documentation	http://docs.sun.com/db/coll/21083.2
Sun StorEdge QFS 4.2 documentation	http://docs.sun.com/db/coll/QFS_4.2
Sun StorEdge T3 and T3+ array documentation	http://docs.sun.com/db/coll/T3_Array
Sun StorEdge A5000 array documentation	http://docs.sun.com/db/coll/847.1
Sun StorEdge PCI FC-100 Host Adapter Installation Manual	http://docs.sun.com/db/doc/805-3682-10
Sun StorEdge PCI Dual Fibre Channel host adapter documentation	http://docs.sun.com/db/prod/storedge#hic
Sun StorEdge 2Gb PCI Single Fibre Channel host adapter documentation	http://www.sun.com/products-n-solutions/hardware/docs/Network_Storage_Solutions/Adapters/index.html
Sun StorEdge 2Gb PCI Dual Fibre Channel host adapter documentation	http://www.sun.com/products-n-solutions/hardware/docs/Network_Storage_Solutions/Adapters/index.html
Sun StorEdge 2Gb Compact PCI Dual Fibre Channel host adapter documentation	http://www.sun.com/products-n-solutions/hardware/docs/Network_Storage_Solutions/Adapters/index.html
Sun StorEdge A3500/A3500FC documentation	http://docs.sun.com/db/coll/842.1

Title/Product	Location
Sun StorEdge RAID Manager 6.22 documentation	http://docs.sun.com/db/coll/846.1
Sun StorEdge Network FC Switch-8 and Switch-16 documentation	http://www.sun.com/products-n-solutions/hardware/docs/Network_Storage_Solutions/Hubs_and_Switches/index.html
Sun StorEdge Network 2 GB FC Switch-8, Switch-16, and Switch-64 documentation	http://www.sun.com/products-n-solutions/hardware/docs/Network_Storage_Solutions/Hubs_and_Switches/index.html
McData ED6064 and ES3232 FC switch documentation	www.mcdata.com
Sun StorEdge 3900 and 6900 documentation	http://docs.sun.com/db/coll/Porsche2.0
Solaris Handbook for Sun Peripherals	http://docs.sun.com/db/doc/816-4468-10

Service Contact Information

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

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