Sun StorEdge™ Enterprise Storage Manager 1.2 Topology Reporter Release Notes

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Release Notes

These release notes describe the following topics:

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- "Product Changes" on page 3
- "System Requirements" on page 4
- "Known Issues and Bugs" on page 7
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Features In This Release

The Sun StorEdge™ Enterprise Storage Manager 1.2 Topology Reporter software enables you to view and manage your storage area network (SAN) or direct-attached storage (DAS) environment. Using a Web-browser user interface (UI) or the command-line interface (CLI), you can:

- View hardware assets such as hosts, host bus adapters, switches, and storage devices, including a graphical view of your environment
- Manage users, alarms, and assets
- Configure user email notification and network host notification
- Manage asset reporting (also known as discovery)
- Launch other management software applications related to devices in your environment

The software includes agent, management, and database software installed on host machines in your environment. The agent software continuously collects information from devices in your environment and stores the information in a database. This database contains the information needed to build a data model of your environment. The agent software updates the data model depending on discovered changes in device status.

You can view and manage this information at any time by using a Web browser or CLI. For example, you can view a graphic representing your environment and click parts of the graphic to see details about that host machine or device.

Product Changes

The version 1.2 software includes, but is not limited to, the following changes or improvements from versions 1.0 and 1.1:

- Integrated installation and configuration: the software is installed and configured with scripts integrated with other Sun StorEdge Enterprise Storage Manager 1.2 software components
- Support for the Solaris 8 and Solaris 9 operating environments
- Support for additional devices; see TABLE 2
- Additional topological views for SAN and DAS devices in the web-browser user interface
- Single installation guide for all software components

System Requirements

The software packages require that you have the latest network, switch, and host bus adapter software packages and updates. These packages and updates are available from:

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

Patches are available at
`http://sunsolve.sun.com/`

TABLE 1 shows the required software operating environment and SAN software for the topology reporter, configuration services, and diagnostic expert software.

TABLE 1 Required Operating Environment and SAN Software

Required SAN Software	The Sun StorEdge Enterprise Storage Manager 1.2 software requires that you have installed the Sun SAN Foundation Kit software, version 4.2. The `SUNWsan` software, related software, and updates are available from:
	`http://www.sun.com/storage/san`
	Patches are available from:
	`http://sunsolve.sun.com/`

Required Operating Environment	Solaris™ 8 10/01 (also known as Update 6) with the latest patch cluster, including patches for the Java™ 2 SDK v1.4.0, available at: http://java.sun.com/j2se/1.4/install-solaris-patches.html Solaris 9
Required Web Browser (minimum version)	Netscape Navigator version 4.79 Microsoft Internet Explorer version 5.0

TABLE 2 shows supported and required hardware.

TABLE 2 Supported and Required Hardware

CD-ROM Requirement	A CD-ROM drive connected to the host machine where the software is to be installed.
Host Machines, Supported	The software is supported on host machines using the Solaris operating environment. Hosts include but are not limited to: • Sun Enterprise™ server models 220R, 250, 420R, 450 • Sun Enterprise server models 3500, 4500, 5500, 6500 • Sun Fire™ server models 280R, 3800, 4800, 4810, and 6800 Management stations include the above list and the following workstations: • Sun Ultra workstation models 5, 10, 60, and 80
Supported and Discoverable Attached Storage	Sun StorEdge T3 arrays, minimum firmware release 1.17[1] Sun StorEdge T3+ arrays, minimum firmware release 2.0[1] Sun StorEdge 3510 FC array Sun StorEdge 3900 and 6900 Series storage subsystems Sun StorEdge 6120 Series arrays[1] Sun StorEdge 6320 Series systems[1] Sun StorEdge 9900 Series systems (includes the Sun StorEdge 9910 and Sun StorEdge 9960 system arrays)
Switches, Supported	Sun StorEdge Network FC Switch8 and Switch-16 Brocade Communications Systems SAN switches McDATA Corp. 2 Gbyte per second 16, 32, and 64 port SAN switches
Disk and Memory Space Requirements, Total	1 Gbyte total disk space in the `/opt` directory for all packages 256 Mbytes system memory (512 Mbytes preferred)

1. The configuration service software supports these storage arrays or subsystems

TABLE 2 Supported and Required Hardware *(Continued)*

Disk and Memory Space Requirements, Topology Reporter	
	Management station installation and operation: • 640 Mbytes of disk space • 256 Mbytes system memory (512 Mbytes preferred) Agent station installation and operation: • 71 Mbytes of disk space • 256 Mbytes system memory (512 Mbytes preferred) **If the management and agent station is a single machine:** • 711 Mbytes of disk space • 256 Mbytes system memory (512 Mbytes preferred)
Disk and Memory Space Requirements, Configuration Service	
	200 Mbytes of disk space
Disk and Memory Space Requirements, Diagnostic Expert	
	20 Mbytes of disk space in the `/opt` directory (default installation directory) 10 Mbytes of disk space in the `/var/opt` directory (default installation directory) 100 Mbytes system memory

Known Issues and Bugs

The following paragraphs describe known issues and software bugs.

- "Known Issues" on page 8
- "Known Bugs" on page 16

Known Issues

This section includes the following known issues:

- "Using JNI Host Bus Adapters" on page 9
- "Updating or Changing an HTTPS Site Certificate" on page 9
- "Security" on page 12
- "If Sun StorEdge Component Manager Software is Installed on Your Host" on page 13
- "Possible Port Conflicts" on page 14
- "Web Browser Requires the Correct Java Plug-in Application for Switch Software" on page 15
- "Moving Connectors on Switch Ports" on page 15
- "Documentation Errata" on page 16

Using JNI Host Bus Adapters

If your storage network configuration includes a JNI host bus adapter card, ensure that you have the latest version of your card's `JNIsnia` package for the Solaris operating environment. This package is available at the following URL:

`http://www.jni.com`

Also ensure that your JNI HBA card drivers are current. The latest package and drivers are required if you are using the topology reporter software.

Updating or Changing an HTTPS Site Certificate

The topology reporter software includes a sample secure web server (HTTPS) `.keystore` site certificate in the `/etc/var/SUNWnsm/etc/` directory. This file provides authentication when you use a secure HTTP (HTTPS) connection to the topology reporter web browser user interface. The default URL for this connection is `https://hostname:8543/`.

Note – A certificate is a digitally signed statement vouching for the identity and public key of an entity (person, company, and so on). Certificates can be self-signed or issued by a Certification Authority (CA). Certification Authorities are entities that are trusted to issue valid certificates for other entities. Well-known CAs include VeriSign, Entrust, and GTE CyberTrust.

You can update the certificate or use an existing certificate on the topology reporter management station. Perform the following procedures at the machine you designate as a management station.

▼ To Update the .keystore File

1. **Log in to the management station as superuser.**
2. **Type the following command on a single line to update the `.keystore` file:**

```
# keytool -keystore -genkey -alias ESM_TR -keypass changeit -storepass
changeit -keyalg RSA -validity valDays
```

where *valDays* is the length of time in days that the certificate remains valid. The certificate will expire after the number of days specified.

The program displays the following prompts:

```
What is your first and last name?
  [Unknown]:
What is the name of your organizational unit?
  [Unknown]:
What is the name of your organization?
  [Unknown]:
What is the name of your City or Locality?
  [Unknown]:
What is the name of your State or Province?
  [Unknown]:
What is the two-letter country code for this unit?
  [Unknown]:
Is CN=<first and lastname>, OU=<unit>, O=<organization>, L=<city>,
ST=<state>, C=<country> correct?
  [no]:  yes
```

3. **Respond to each prompt.**
4. **Ensure that the topology reporter software is running:**

```
# /opt/SUNWnsm/bin/sstr_ctl --status
```

The following messages are displayed:

```
Status of Sun StorEdge(TM) Topology Reporter Components

Core Components:

PostgreSQL for SSTR............running.
The CRE for SSTR...............running.
Tomcat for SSTR................running.

Supporting Applications:

SLP............................running.
iPlanet iMQ....................running.
```

- If the status messages show that any component is `...not running`, try the following:

```
# /etc/init.d/sstrd stop
# /etc/init.d/sstrd start
# /opt/SUNWnsm/bin/sstr_ctl --status
```

5. **Test the certificate by entering the following URL in a web browser such as Netscape Navigator™:**

```
https://hostname:8543/
```

6. **Click View in the certificate acceptance pop-up window to display the certificate information.**
7. **Click Accept if the certificate information is correct.**

▼ To Use an Existing Certificate

1. **Log in to the management station as superuser.**
2. **Stop the topology reporter software:**

```
# /opt/SUNWnsm/bin/sstr_ctl stop
```

Note – Also stop the software on each agent station.

---

3. **Edit the** `/opt/SUNWnsm/util/tomcat/conf/server.xml.default` **file using a text editor such as** `vi`**(1M).**
4. **Search for the word** `keystoreFile`**.**

   The bold text indicates the lines to edit:

```
keystoreFile="/etc/opt/SUNWnsm/etc/.keystore"
keystorePass="changeit"
```

5. **Change the** `keystore=` **directory path to the path of your** `.keystore` **file.**
6. **Change the** `keystorePass=` **password to your** `.keystore` **file's password**
7. **Save and exit the file.**

8. **Configure the topology reporter software:**

```
# /opt/SUNWnsm/bin/sstr_ctl -c
```

9. **Respond to the prompts with a yes (y) answer, including the prompt to restart the software.**

   The topology reporter web server is now reconfigured and restarted using the new information.

Security

Note – This security issue results from the use of the Remote Method Invocation (RMI) registry and is not particular to the Sun StorEdge Enterprise Storage Manager 1.2 software.

The RMI Registry used in the Sun StorEdge Enterprise Storage Manager 1.2 software to register look up middle-tier services is unprotected. This situation implies that a malicious user can carry out attacks against the software by using the RMI Registry as the initial point of attack. Possible attacks include, but are not limited to, the following:

- Denial of service - implemented by removing service proxies from the RMI registry; the attack can be launched from the machine hosting the management station software
- Capture of information - implemented by replacing service proxies in the RMI registry; the attack can be launched from the machine hosting the management station software
- Unauthorized access of services - implemented by retrieving service proxies from the RMI registry; the attack can be launched from a remote host

If Sun StorEdge Component Manager Software is Installed on Your Host

If the Sun StorEdge Component Manager 2.2 software is already installed on the host you have chosen as the management station (including configurations where the management station and agent station are the same host), you might have to select a different web server port number for the topology reporter software.

The default Component Manager non-secure web server port is 8180. The 8180 port is also the default for the topology reporter non-secure (non-SSL) server. *Make sure that the topology reporter software non-secure Tomcat web server port is different from the Component Manager web server port.*

If the already-installed Component Manager non-secure web server port is 8180, respond to the `/opt/SUNWstm/bin/esmconfig` configuration script prompts for the topology reporter software as follows. User responses are in **bold text** in this example showing the port choice as 8280:

```
Run Tomcat non-SSL server on port 8180 [y,n,?] n

Please enter the Tomcat non-SSL server port: 8280

Run Tomcat SSL server on port 8543 [y,n,?] y

Do you want to use the SLP scope nsmscope [y,n,?] y

Configuration successful.
End: TR configuration.
```

See also "Possible Port Conflicts" on page 14 and TABLE 3.

The *Sun StorEdge Enterprise Storage Manager 1.2 Software Installation Guide* (part number 817-1037-10) describes the installation and configuration procedures in detail.

Possible Port Conflicts

Generally, you can use the default values for web server, telnet, and other ports when prompted by the `/opt/SUNWstm/bin/esmconfig` configuration script. Ensure that the default port numbers do not conflict with any other software you might have installed.

TABLE 3 lists the default ports for the topology reporter, configuration services, and diagnostic expert software located on the Sun StorEdge Enterprise Storage Manager 1.2 product CD.

TABLE 3 Default Ports, Sun StorEdge ESM 1.2 Software

Sun StorEdge ESM 1.2 Software	Non-Secure Socket Layer Port	SSL Port	Apache HTTP Server Port	Postgres SQL Port	Additional Default Ports
Topology reporter	8180	8543	1024	5437	Not applicable
Configuration service	8080	9443	1024	Not applicable	CLI telnet port - 8023 ssh proxy - 8514 Sun StorEdge 9900 Series software - 2001 Solaris CIM/WBEM port - 8181
Diagnostic Expert	8088	8443	Not applicable	Not applicable	Not applicable

Web Browser Requires the Correct Java Plug-in Application for Switch Software

To launch the Brocade Communications Systems WebTools switch software in a web browser from the topology reporter software, ensure that you have the correct Java™ web browser plug-in software installed. For example, the Netscape Communicator web browser might display a blank browser page or issue an error message such as:

```
This page contains information of a type (application/x-java-applet;
version=1.2.2) that can only be viewed with the appropriate Plug-in.
Click OK to download Plugin.
```

See the documentation for your Brocade Communications System switch and web browser for more information about web browser configuration requirements.

Moving Connectors on Switch Ports

If your environment includes a QLogic switch and you have moved a connector to a different switch port, the connector type information is not reflected in the topology reporter database. That is, the connector type information is not updated on the topology reporter web browser interface or in the command-line output and does not show the move to a different port.

- **To show the correct information, reboot the switch after moving connectors.**

  Use the Assets page or the `sstr` command-line interface to see switch port information.

Documentation Errata

- *Sun StorEdge Enterprise Storage Manager 1.2 Topology Reporter Administration and Operations Guide*

  In Chapter 4, on page 125, Specifying the Sun StorEdge T3 Array Application and page 126 Specifying the Sun StorEdge 6000 Family Application, the Sun StorEdge Configuration Service software selection *app-name* is referred to as SCCS.

  The correct *app-name* is SSCS.

Known Bugs

This section describes the following known bugs and workarounds, if applicable:

- "Bug 4642875 (P3/S2) Topology Reporter Software Fails if One or More Supporting Software Components Fail" on page 17
- "Bug 4796475 (P2/S2) Device Information Might Not Appear Correctly for Sun StorEdge T3 Arrays That Include Partner Pairs with Multiple Device Paths" on page 18
- "Bug 4799847 (P2/S2) Zones are Not Being Discovered and Displayed" on page 18
- "Bug 4810797 (P2/S2) Long Asset Discovery Time When the SAN Includes Many Switches" on page 18
- "Bug 4812840 (P3/S3) The Sun StorEdge 6320 System Might Be Displayed as a Sun StorEdge 6120 Array" on page 19
- "Bug 4815158 (P3/S3) Device Status Reported Incorrectly When Two Management Stations are Configured in the SAN" on page 19
- "Bug 4816105 (P3/S4) "Device not connected to SAN" Message Might Be Displayed for Switches Connected to a Sun StorEdge 6910 System" on page 19
- "Bug 4816295 (P3/S4) The Management Station Does Not Find Agents on When the Agent Stations are Multi-homed" on page 20
- "Bug 4817377 (P3/S2) Software Might Not Discover Remote Switches or Local Switches" on page 20

Bug 4642875 (P3/S2) Topology Reporter Software Fails if One or More Supporting Software Components Fail

If any of the supporting topology reporter software components (such as the database or Apache software) fails or crashes, the topology reporter software stops functioning with no alarms generated or notifications sent to the user. Error messages are written to the `/var/sadm/install/logs/SUNWnsm.log` log file.

Workaround

1. **Check the log files if a component is not running.**
2. **Stop the software on the management and agent stations:**

Note – `sstrd start` also starts the SLP service (`slpd`). However, `sstrd stop` does not stop the SLP service. To stop the SLP service, type:
`/etc/init.d/slpd stop`

```
# /etc/init.d/sstrd stop
# /opt/SUNWnsm/bin/sstr_ctl --status
```

3. **Fix any errors shown in the log files.**
4. **Start the software and check its status:**

```
# /etc/init.d/sstrd start
# /opt/SUNWnsm/bin/sstr_ctl --status
```

Bug 4796475 (P2/S2) Device Information Might Not Appear Correctly for Sun StorEdge T3 Arrays That Include Partner Pairs with Multiple Device Paths

When Sun StorEdge T3 storage arrays are configured as partner pairs with multiple device paths (“multipath”), the software might periodically fail to display the device paths in the web browser user interface.

Workaround

Use the `format`(1M) command without options to view device path information for these arrays.

Bug 4799847 (P2/S2) Zones are Not Being Discovered and Displayed

The software does not support zone discovery for McDATA Corporation switches. For example, if you have configured zones with any devices using these switches, the zone does not display or get reported in any UI pages or CLI commands where you can view zone information. However:

- The topology reporter software does discover the McDATA switch and any devices attached to it.
- McDATA Corp. switch management software such as the Enterprise Fabric Connectivity Manager (EFCM) can displays zones configured using this software.

Workaround

Use the McDATA Corp. switch management software to view zones configured using the switch management software.

Bug 4810797 (P2/S2) Long Asset Discovery Time When the SAN Includes Many Switches

The software might take a long period of time to discover assets in your storage area network (SAN) if:

- The SAN includes devices attached to many cascaded switches (for example, more than 15 switches with multiple levels of cascading)
- You have reached the maximum amount of telnet, SNMP, and other logins for a switch

Workaround

None.

Bug 4812840 (P3/S3) The Sun StorEdge 6320 System Might Be Displayed as a Sun StorEdge 6120 Array

The software web browser user interface might display the Sun StorEdge 6320 system as a Sun StorEdge 6120 array. This Vendor and Model information can be viewed from the Storage Details page under the Asset tab. The interface might also incorrectly report the device Status as Lost Comm (lost communication).

Workaround

None.

Bug 4815158 (P3/S3) Device Status Reported Incorrectly When Two Management Stations are Configured in the SAN

When two management stations are configured in the SAN and have two different Service Locator Protocol (SLP) scopes, devices common to each station are reported incorrectly. In this case, the two management stations share a common agent station reporting this information.

Workaround

None. Two management stations sharing a common agent station to report device status is an unsupported configuration.

Only one machine per SLP scope can be a management station. Do not install the software on more than one machine designated as a management station per scope. The management station and agent stations are considered to be in the same SLP scope when each machine has the same scope setting and locale. The *Sun StorEdge Enterprise Storage Manager 1.2 Installation Guide*, part number 817-1037-10, describes how to configure the SLP scope settings and rules.

Bug 4816105 (P3/S4) “Device not connected to SAN” Message Might Be Displayed for Switches Connected to a Sun StorEdge 6910 System

The Show SAN Connectivity feature in the web browser user interface might report a status of Device not connected to SAN for host-side switches connected to a Sun StorEdge 6910 storage system.

Workaround

None.

Bug 4816295 (P3/S4) The Management Station Does Not Find Agents on When the Agent Stations are Multi-homed

The topology reporter management station cannot receive information from an agent station machine if the agent station machine has more than one network interface (that is, it is a multihomed machine). This situation occurs if the default network defined on the agent station is not the same default network defined on the management station.

Workaround

None.

Bug 4817377 (P3/S2) Software Might Not Discover Remote Switches or Local Switches

The software might not discover the local and remote switches in your SAN. This bug occurs when the remote switches are connected to your SAN through a longwave intersite link and the remote switches do not have an IP address.

Workaround

- Some switches do not require an assigned IP address. In this case, assign an IP address to each switch in your SAN so that the software can discover them.
- Perform the following steps:

a. Increase the default timeout period in the `/opt/SUNWnsm/util/apache/conf/httpd.conf.default` **file located on each agent station from 5 minutes to a longer period (as appropriate for the switch distance on your longwave intersite link connection).**

b. After you update the `httpd.conf.default file`**, run the** `/opt/SUNWstm/bin/esmconfig` **configuration script tool.**

Respond to each prompt with a yes (**y**) answer. See *Sun StorEdge Enterprise Storage Manager 1.2 Software Installation Guide* for more information about configuring the software.

Release Documentation

Application	Title	Part Number

Man pages	`sstr`
	`ssde`
	`sscs`
		Not applicable

Release and product information	*Sun StorEdge Configuration Service 1.2 Release Notes*	817-0998
	Sun StorEdge Diagnostic Expert 1.2 Release Notes	817-0197
	Sun StorEdge Enterprise Storage Manager 1.2 Roadmap	817-1039
	Sun StorEdge SAN Foundation Release Notes	817-0071
	Sun StorEdge Traffic Manager Software Release Notes	817-0385
Installation	*Sun StorEdge SAN Foundation Kit Installation Guide*	817-1244
	Sun StorEdge Enterprise Storage Manager 1.2 Installation Guide	817-1037
	Sun StorEdge SAN Foundation Kit Configuration Guide	817-1245
	Sun StorEdge Traffic Manager Software Installation and Configuration Guide	816-1420
System administration	*Sun StorEdge Enterprise Storage Manager 1.2 Topology Reporter Administration and Operations Guide*	817-1112
	Sun StorEdge Configuration Service 1.2 Administrator's Guide	817-0997
	Service Location Protocol Administration Guide	806-1412
User and diagnostic	*Sun StorEdge Diagnostic Expert 1.2 User's Guide*	817-0195

Service Contact Information

If you need help installing or using this product, call 1-800-USA-4SUN, or go to the following web site:

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