Sun StorEdge™ 3310 SCSI Diagnostic Reporter User Guide

Version 1.0

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Preface

The *Sun StorEdge 3310 SCSI Diagnostic Reporter Version 1.0 User Guide* explains how to install and use Diagnostic Reporter as a companion utility to Configuration Service.

This manual is written for experienced system administrators who are already familiar with Sun's hardware and software products.

How This Book Is Organized

This book contains the following topics:

Chapter 1 introduces Diagnostic Reporter and provides an overview description on how it operates.

Chapter 2 provides steps on how to install, set up, and uninstall Diagnostic Reporter.

Using UNIX Commands

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

See one or more of the following for this information:

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

Typographic Conventions

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

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

Shell Prompts

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

Related Documentation

Application	Title	Part Number
Late-breaking news	*Sun StorEdge 3310 SCSI Array Release Notes*	816-7292
Installation and service	*Sun StorEdge 3310 SCSI Array Installation, Operation, and Service Manual*	816-7290
Best practices	*Sun StorEdge 3310 SCSI Array Best Practices Manual*	816-7293
Safety and compliance	*Sun StorEdge 3310 SCSI Array Safety, Regulatory, and Compliance Manual*	816-7291
Firmware	*Sun StorEdge 3310 SCSI RAID Firmware Guide*	816-7296
Monitoring and configuration software	*Sun StorEdge 3310 SCSI Configuration Service User Guide*	816-7298
Command line interface tools	*Sun StorEdge 3310 SCSI CLI Version 1.0 User Guide*	816-7297

Technical Support

For late-breaking news and troubleshooting tips, review the *Sun StorEdge 3310 SCSI Array Release Notes* located at:

`http://www.sun.com/products-n-solutions/hardware/docs/Network_Storage_Solutions/Workgroup/3310`

For 24-hour access to web-based support solutions, visit the Online Support Center at:

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

To initiate or check on a USA-only service request, contact Sun support at:

1-800-USA4SUN

To obtain international technical support, contact the sales office of a specific country at:

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

Accessing Sun Documentation Online

All Sun StorEdge 3310 SCSI Array online documentation is located at:

`http://www.sun.com/products-n-solutions/hardware/docs/Network_Storage_Solutions/Workgroup/3310`

You can order printed copies of the Sun StorEdge 3310 SCSI array manuals at:

`http://corppub.iuniverse.com/marketplace/sun`

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CHAPTER 1

Overview

This chapter introduces Diagnostic Reporter. Topics covered in this chapter include:

- "What is Diagnostic Reporter?" on page 1
- "How Diagnostic Reporter Operates" on page 2

What is Diagnostic Reporter?

Instead of keeping the Configuration Service Console program running in the foreground, you can use Diagnostic Reporter as a companion utility of Configuration Service running as a background service that sends messages from the hosts and Sun StorEdge™ arrays to specified email addresses. Using Diagnostic Reporter, you can:

- Define the types of message traps sent
- Define the timing of messages sent
- Send encrypted messages
- Receive messages and decrypt encrypted messages on the Mail Receiver Tool (which functions as an email viewing program if you do not have a program such as Microsoft Outlook on the receiving computer)

To use Diagnostic Reporter throughout the storage data network, install it as a service on each computer that has a controlling Configuration Service Agent (a controlling agent is the only agent that talks to a specific Sun StorEdge array).

One major benefit of installing Diagnostic Reporter on all host computers is that it can be configured to ping each computer periodically, and will send a single-point-of-failure message from a Configuration Service Agent to the specified email addresses when a host fails.

Diagnostic Reporter is composed of the following components:

- Diagnostic Reporter Agent (daemon) – operates in background mode continuously on the computer where it is installed. The daemon can be installed and used on any computer where Configuration Service is running.
- Diagnostic Reporter Config Tool (UI) – a utility that configures the types of message traps that are sent to the Configuration Service Agent and that are sent to a specific email address as an alert or for informational purposes. Also known as the UI (user interface).
- Diagnostic Reporter Mail Receiver Tool – displays the messages that are collected. Also known as the POP3 Mail Receiver.

How Diagnostic Reporter Operates

After connecting to a Configuration Service Agent, Diagnostic Reporter receives any event from the agent; if the event is assigned a TRAP condition, then Diagnostic Reporter emails the event to the user-specified email address.

If Diagnostic Reporter cannot connect to any agent or the agent is offline, then it tries to discover the agent every five minutes. This prevents Diagnostic Reporter from being disconnected from the agent when network traffic is congested.

In the typical setup shown in the following figure, the Sun StorEdge array hosts (computers #1, #2, and #3) are used with the Sun StorEdge array devices (#A, #B, and #C respectively). Each host contains a Configuration Service Agent and a Diagnostic Reporter daemon. Each Diagnostic Reporter daemon can be configured by the Config Tool to send event messages to any email address (shown as computer #5, which uses the Mail Receiver Tool to download the messages).

The Diagnostic Reporter Config Tool and the Configuration Service Console program can be located on any computer on the network and are located on one computer (#4) for convenience only.

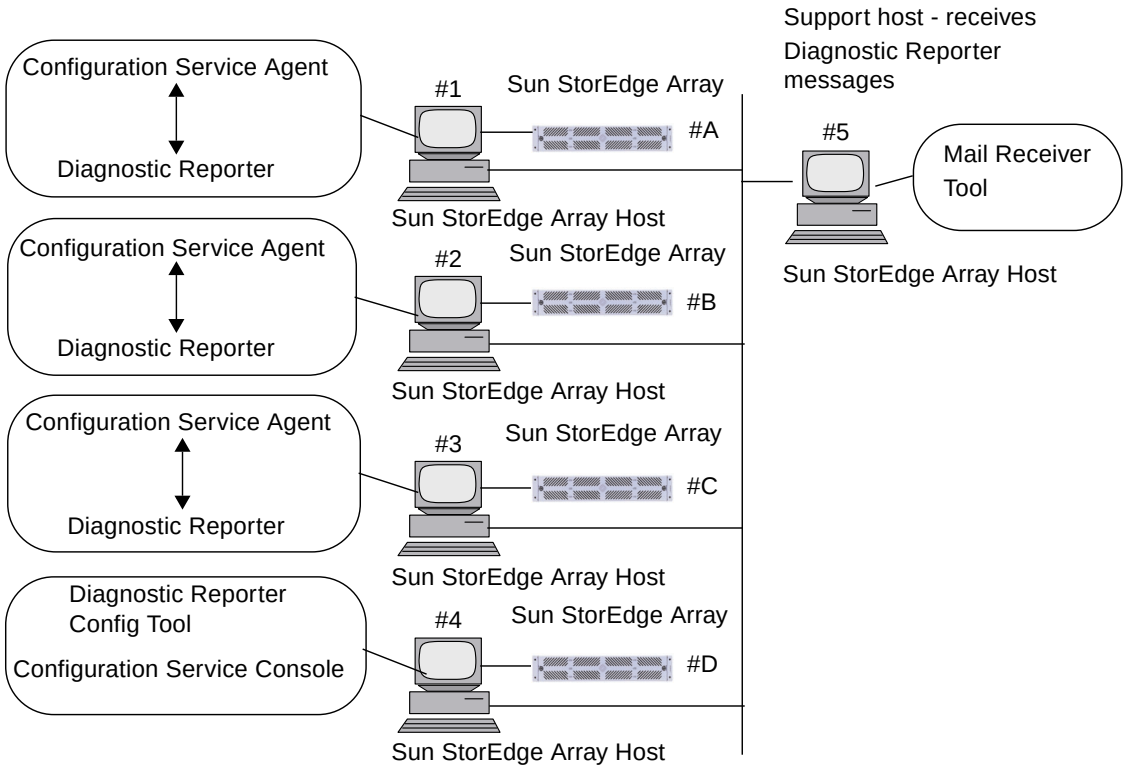


FIGURE 1-1 Typical Diagnostic Reporter and Configuration Service Setup

CHAPTER 2

Installing and Using Diagnostic Reporter

This chapter provides steps on installing and using Diagnostic Reporter including the Report Tool and the Mail Receiver Tool. Topics covered in this chapter include:

- "Installation Packages" on page 5
- "To Install Diagnostic Reporter" on page 6
- "To Manually Start / Stop the Diagnostic Reporter" on page 8
- "Setting Up the Diagnostic Reporter Configuration" on page 9
- "To Set Up the Configuration" on page 9
- "To Set Up and Use the Report Tool" on page 16
- "To Uninstall Diagnostic Reporter" on page 18

Installation Packages

Diagnostic Reporter installation packages are contained on the Sun StorEdge Professional Storage Manager CD, and include the following files

Solaris Operating Environment

- `SUNWscsa` – Diagnostic Reporter Agent
- `SUNWscui` – Diagnostic Reporter Config Tool (UI)

Microsoft Windows Operating System

- `SUNWscsa.exe` - Diagnostic Reporter Agent and Config Tool (UI)

▼ To Install Diagnostic Reporter

Solaris Operating Environment

Note – You must install the Configuration Service Agent before installing the Diagnostic Reporter Agent and Config Tool.

Note – Make sure Java runtime environment 1.2 or higher is installed on the computer or workstation on which you will be installing Configuration Service.

Note – You must have superuser privileges to install Diagnostic Reporter.

---

1. **Insert the Sun StorEdge Professional Storage Manager CD and type**

```
# cd /cdrom/cdrom0/product/solaris
```

2. **To install the Diagnostic Reporter Agent (daemon), type**

```
# pkgadd -d SUNWscsa
```

   To install the Diagnostic Reporter Config Tool (UI), type

```
# pkgadd -d SUNWscui
```

3. **Provide appropriate responses to each of the standard installation prompts.**

   The installation prompts are standard `pkgadd -d` prompts regarding which packages to install and how to process scripts (with superuser privileges).

4. **When the installation procedure is complete, reboot to activate the driver and the server daemons.**

   Diagnostic Reporter software is installed in the following directories:

   - `/opt/SUNWsscs/ssdiagreporterd`
   - `/opt/SUNWsscs/ssdiagreporterui`

Microsoft Windows NT/2000 Operating System

Note – You must install the Configuration Service Agent before installing the Diagnostic Reporter Agent and Config Tool.

Note – Make sure Java runtime environment 1.2 or higher is installed on the computer or workstation on which you are installing Configuration Service.

Note – You must have administrative privileges to install Diagnostic Reporter.

---

1. **To make sure the software installation utility functions optimally, close all open Windows applications.**

1. **Insert the Sun StorEdge Professional Storage Manager CD and go to the** `\product\windows` **directory.**

2. **Either double-click or copy** `SUNWscsa.exe` **to a local drive, and proceed through the series of prompts and windows to complete the installation of the agent software.**

3. **On the Welcome window, click Next.**

4. **On the Choose Destination Location window, install the default folder,** `C:\Program Files\Sun\ssdgrpt`**, and click Next.**

   To install to a different folder, click Browse, select another folder, and click Next.

5. **When the next window is displayed, click Full Installation and click Next.**

   - Full Installation – installs all three software components (Service, Config Tool, and Mail Receiver Tool)
   - Service Installation – installs only the background Service software; note that the Service function can be configured remotely from the Config Tool
   - UI Installation – installs only the Config and Mail Receiver Tools (not the Service)

Note – If you are not the administrator or you did not install the Java runtime environment, error messages that the Diagnostic Reporter Service is not running or is failing are displayed and you are unable to complete installation.

---

6. **After the components are installed, click Finish to complete the installation.**

▼ To Manually Start/Stop the Diagnostic Reporter

Solaris Operating Environment

Note – To start/stop the daemons, you must have superuser privileges and you must be using the Bourne shell.

---

1. **To start the Diagnostic Reporter Agent, type**

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

2. **To stop the Diagnostic Reporter Agent, type**

```
# /etc/init.d/ssdgrptd stop
```

Microsoft Windows NT Operating System

Note – To start/stop the daemons, you must have administrator privileges.

To start the Diagnostic Reporter Agent software on the server, you must either reboot the server or start the Diagnostic Reporter Service under Settings → Control Panel → Services.

To stop the Configuration Service Agents, go to Settings → Control Panel → Services and select the agent you want to stop and click Stop.

Microsoft Windows 2000 Operating System

Note – To start/stop the daemons, you must have administrator privileges.

---

1. **To start the Diagnostic Reporter Agent software on the server, you must click Start → Administrative Services → Computer Management.**
2. **Click Services & Applications.**

3. **Select the Diagnostic Reporter Server and right-click the service you want to start or stop.**

   Alternatively, you can use Start → Settings → Control Panel → Admin Tools → Computer Management.

Setting Up the Diagnostic Reporter Configuration

Only one instance of the Diagnostic Reporter Config utility can be open at a time. The configuration information is saved in a file named `ssdgrpt_cfg.xml`.

Note – To implement any configuration change to a Diagnostic Reporter service, you must be connected to a Diagnostic Reporter server and you must click Save Configuration after you have completed the changes.

▼ To Set Up the Configuration

1. **Start Diagnostic Reporter.**

   On a Solaris operating environment, type

```
# ssdgrptui
```

   On a Microsoft Windows NT/2000 operating system, select Start → Programs → Sun StorEdge 3000 Family → Diagnostic Reporter Config Tool.

   If you have previously configured and connected to one Diagnostic Reporter daemon, the Config Tool automatically connects to the server that you last used.

2. **For the first-time installation, you must first set up a connection between the Config Tool and a server where a Diagnostic Reporter daemon is running.**

   a. **To create a server connection, select Servers → Server List Setup.**

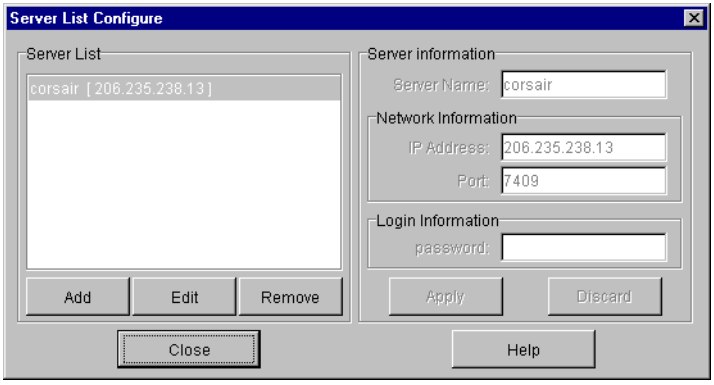
   b. **In the Server List Configure dialog box, click Add and enter the Diagnostic Reporter daemon server name and IP address.**

c. **Keep the default port number (which is displayed automatically and is used by the Diagnostic Reporter Config Tool (UI) to communicate with the Diagnostic Reporter daemon).**

d. **Type the `ssconfig` login password for the server.**

This is the same login password that was set when you installed Configuration Service. If this password has not already been set, you must set it before continuing. Refer to the *Sun StorEdge 3310 SCSI Configuration Service User Guide* for details.

e. **Click Apply.**

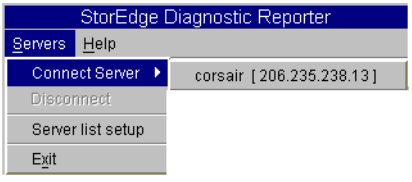


The Diagnostic Reporter server Name and IP Address appear in the Server List. The Diagnostic Reporter Config Tool can access multiple servers, but can only connect to one server and one Diagnostic Reporter service at a time.

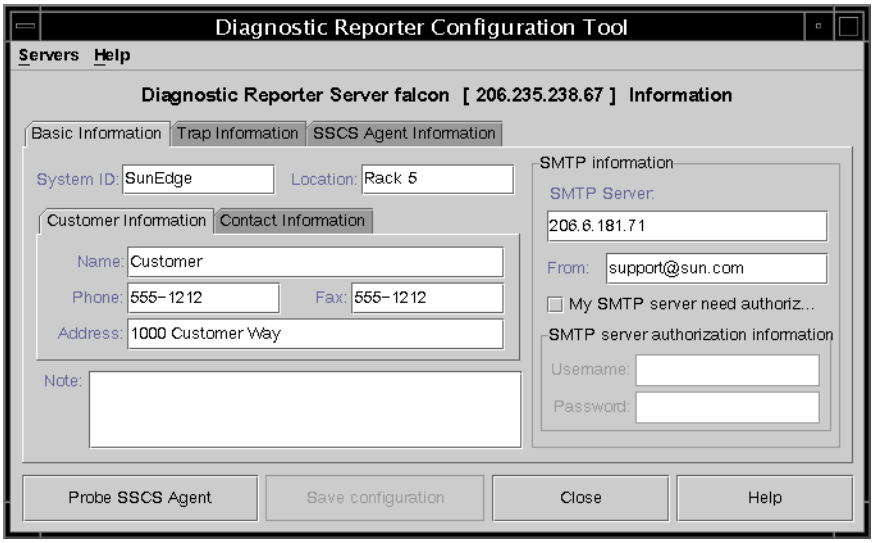
If you do not specify a password for each server, you are asked for a password each time you reconnect to a server.

3. **Click Close.**

4. **To connect to a Diagnostic Reporter server, select Servers → Connect Servers and then select the desired server from the list that is displayed.**



5. **Click the Basic Information tab to enter information used for the email server and provided with event messages.**



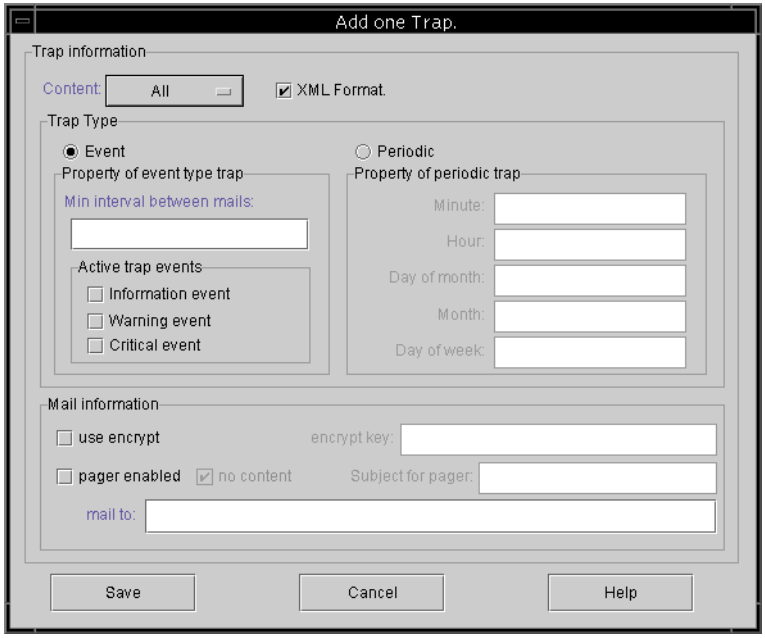
- System ID and Location – descriptive fields for the server where the Diagnostic Reporter service resides.
- Customer and Contact Information – provides information to be attached to the event emails, which is particularly helpful when the event messages are sent to multiple email locations.
- SMTP Server – the IP address or domain name for the server that Diagnostic Reporter uses to send email. If you enter an incorrect address (or domain name), Diagnostic Reporter cannot find it and mail messages are not sent. If the SMTP server needs authorization, you must enter the necessary information to log in to the SMTP server.

6. **You must configure the From field using the following format**

name@domain

7. **To specify the trap messages to be reported, select the Trap Information tab and click Add.**

   In the Add one Trap dialog box, select the desired parameters.

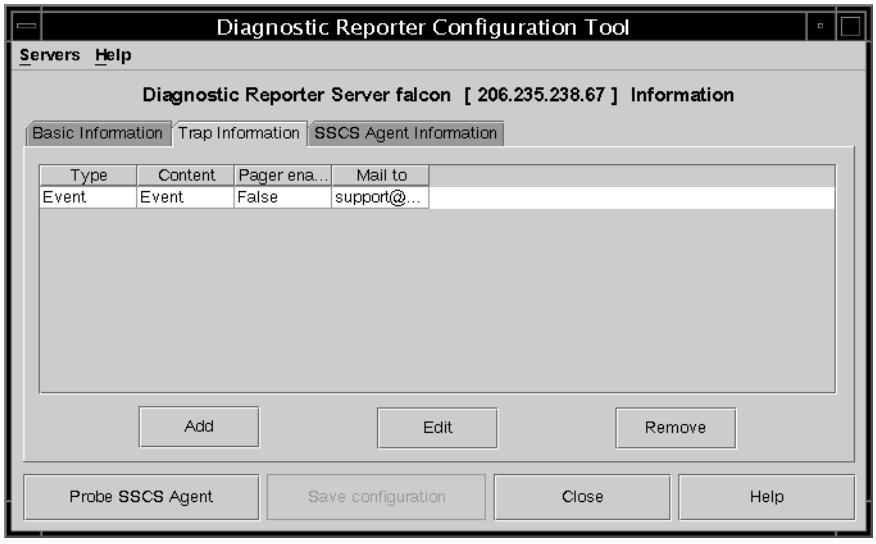


As a minimum, select a trap event, enter the minimum interval between mails, and enter one email address. To enter multiple email addresses, separate each address with a space, comma, or semicolon.

TABLE 2-1 Trap Information Parameters

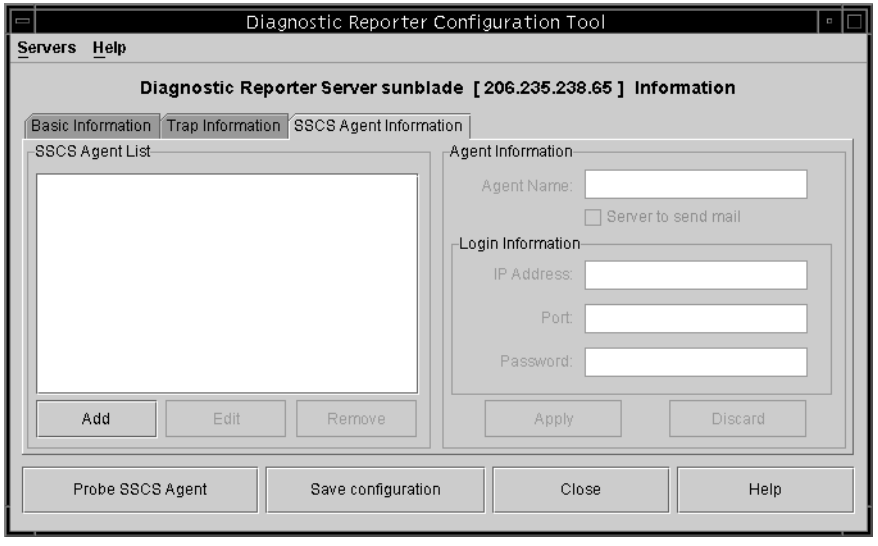
Parameter	Values/Description
Content	Specifies the information to include in the email body. Values: `all/ event /log /report /hosteventlog` If you select an event trap and Minimum interval is 0 or *, the Content must be Event. To select periodic trap, Content cannot be Event.
Trap type	Select trap type Property of event type trap or Property of periodic trap.
Minimum interval between mails	For the interval between emails for an event type trap, specify the desired values: * - reports all events as they occur 0 - reports all events as they occur HH[:MM] - sets a specific time of day in hour:minute format, for reporting the last event message delivered during the time interval, using a 24-hour clock. Example: 16:30 = 4:30PM
Active trap events	An event trap is activated by an event, with a choice of any three kinds of event.
Periodic trap type	Use crontab format to define when to send emails: minute (0-59) hour (0-23) day of month (1-31) month (1-12) day of week (0-6 with 0=Sunday)
Checkbox – use encrypt	If checked, sends encrypted emails. To encrypt the email sent to Sun, select use encrypt. The encrypt key is an identifier (optional) that is displayed when you download event messages.
Checkbox – pager enabled	To send mail to a pager-enabled mail address, check this box and enter the mail subject in Subject for Pager. If you do not want this mail to include any content, select no content.
Checkbox – no content	
mail to:	Define the email address for mail. You can specify several mail addresses, separated by " ", ",", ";".

In the following example, all events were selected and sent to `support@sun.com`..



8. **Diagnostic Reporter can connect to multiple Configuration Service Agents at the same time.**

   To connect to one or more Configuration Service Agents, click the SSCS Agent Information tab and click Add.



For each Configuration Service Agent, specify the Agent Name, Agent IP Address, Port and Password for the `ssconfig` user accessing that agent.

- Agent Name – name that is included in emails. You can use the real machine host name or an alias.
- Port – the Configuration Service Agent listener port number. Keep the default value 1270 (other valid values are 1271, 1272, and 1273). If you cannot connect to the agent, change the value and try again.
- Password – the password for the `ssconfig` user. Before the Diagnostic Reporter daemon can connect to the Configuration Service Agent, the Service must provide the correct password for the `ssconfig` user.

After you have entered the agent parameters, click Discard to cancel changes, or click Apply to save the configuration. Each agent listed in the agent sends the specified event messages to the Diagnostic Reporter Service where this configuration has been saved.

9. **After you create or edit any configuration, click Save Configuration in the main window to save the configuration to the Diagnostic Reporter.**

   The Diagnostic Reporter Service restarts to read the configuration file again.

10. **To see the current status of each agent at a specific moment, click Probe Configuration Service Agent in the main window.**

    In the Agent Information window, the colored status buttons indicate if the Diagnostic Reporter Service is active with the Configuration Service Agent on each agent server.

    - Red – Diagnostic Reporter cannot connect to the Configuration Service Agent.
    - Yellow – Diagnostic Reporter is seeking the Configuration Service Agent.
    - Green – Diagnostic Reporter is connected to the Configuration Service Agent.
    - None – The Configuration Service Agent information has not been saved.

    The color and text of this button can change every 20 seconds.

▼ To Set Up and Use the Report Tool

On systems running the Solaris operating environment, Diagnostic Reporter's Report capability enables you to generate a report that contains the configuration of all locally attached Sun StorEdge arrays.

1. **Configure the local host to monitor the locally attached Sun StorEdge arrays.**

   a. **From the main Configuration Service window, click Array Administration → Controller Assignment.**

      The Assign Server to Manage a RAID Controller window is displayed.

   b. **Select a server from the Server to manage this controller list and click Apply.**

      This enables the selected server to manage an array controller. It also disables all other servers listed from managing the same array.

   c. **Click Close to close the view.**

2. **Add the local server to the** `ssdgrcli.cfg` **file by typing**

```
# /usr/sbin/ssdgrptd -c -s password@ip address
```

   You are prompted for the `ssconfig` password.

3. **Run the following command to generate the report**

```
# /usr/sbin/ssdgrptd -r
```

▼ To Set Up and Use the Mail Receiver Tool

The Mail Receiver Tool is optional and can be used in place of your regular email application. It can be used to receive and forward unencrypted and encrypted email.

1. **Start the Mail Receiver Tool.**

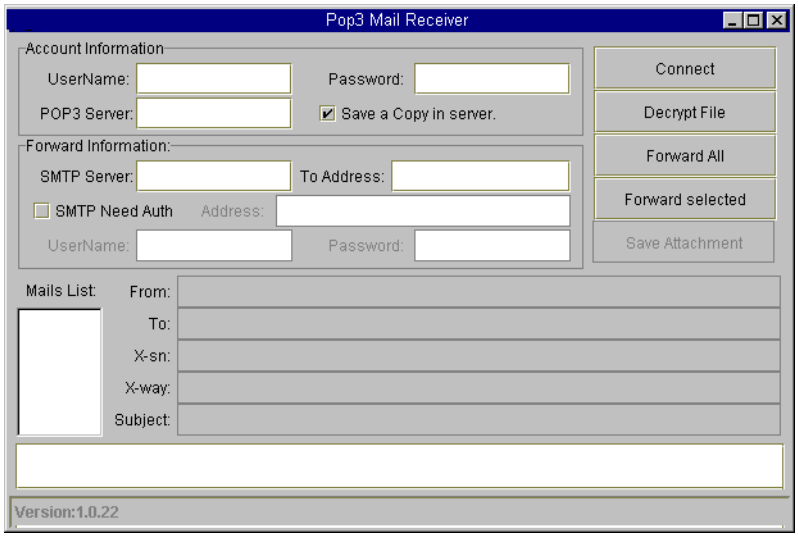
   On a Solaris operating environment, type

```
# ssdgrptpop
```

   On a Microsoft NT/2000 operating system, select Start → Programs → Sun StorEdge 3000 Family → Diagnostic Reporter Mail Receiver Tool.

2. **In the POP3 Mail Receiver window, identify the UserName, Password, and email server IP address (POP Server) where the event messages will be sent.**

   If needed, specify the appropriate SMTP information.



   a. **To receive event messages, click Connect.**

   b. **If decryption is necessary, click Decrypt File.**

   c. **For event information or alerts that need to be sent to additional staff, click Forward All or Forward Selected and specify the destination address(es).**

▼ To Uninstall Diagnostic Reporter

Solaris Operating Environment

Use `pkgrm` (with the package names) to remove either or both portions of Diagnostic Service. The package names are:

- `SUNWscsa` – Diagnostic Reporter Agent
- `SUNWscui` – Diagnostic Reporter Config Tool (UI)

Microsoft Windows NT/2000 Operating Environment

Use the Windows Add/Remove Programs utility to remove Diagnostic Reporter from a Windows Console.

1. **Go to Start → Settings → Control Panel → Add/Remove Programs.**
2. **Select the Diagnostic Reporter application and select Add/Remove.**

   Respond appropriately to the Windows prompts.

Troubleshooting

If you stop receiving email messages from Diagnostic Reporter, it may no longer be working and may need to be stopped and restarted.

(Solaris OE) There are three conditions under which Diagnostic Reporter stops working and does not report its condition. The workaround is to stop and restart Diagnostic Reporter as explained in "To Manually Start/Stop the Diagnostic Reporter" on page 8.

- If the Configuration Service Agent fails or is stopped and restarted, Diagnostic Reporter stops working.
- If the Diagnostic Reporter Config Tool is running and the Diagnostic Reporter daemon is stopped and restarted, a condition may occur whereby the Diagnostic Reporter Config Tool can no longer communicate with the daemon.
- If the Configuration Service Agent fails or is stopped, the Diagnostic Reporter daemon does not detect it, stops sending email messages, and continues to show that the Diagnostic Reporter is still connected by displaying a green status.