Sun StorEdge™ Component Manager 2.1 Installation Guide

For the Solaris Operating Environment

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Preface

The *Sun StorEdge Component Manager Installation Guide* provides instructions for installing the Sun StorEdge™ Component Manager 2.1 software, verifying the installation, launching the software, and uninstalling the software.

Before You Read This Book

For the latest Component Manager information, please see the *Sun StorEdge Component Manager 2.1 Release Notes.*

How This Book Is Organized

Chapter 1 describes the steps needed to install the software, as well as how to stop and restart the software.

Chapter 2 addresses potential error messages that may require troubleshooting.

Appendix A discusses installation issues with the Sun Management Center.

Using UNIX Commands

This document may 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:

- 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	Read Chapter 6 in the *User's Guide*. These are called *class* options. You *must* be superuser to do this.
	Command-line variable; replace with a real name or value	To delete a file, type `rm` *filename*.

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
Install	*Sun StorEdge Component Manager2.1 Installation Guide: For the Microsoft Windows NT Operating Environment*	806-4814
User	*Sun StorEdge Component Manager 2.1 User's Guide*	806-4812
Release	*Sun StorEdge Component Manager 2.1 Release Notes*	806-4813
Help	Sun StorEdge Component Manager 2.1 Online Help	
Install / User	*Switch Management Installer's/User's Manual*	875-1890
User	*SANbox-8 Fibre Channel Switch User's Manual*	875-1881

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```
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```

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CHAPTER 1

Installing Sun StorEdge Component Manager

This document contains important information about the installation and operation of the Sun StorEdge™ Component Manager software. You should read this document before attempting to install or operate Sun StorEdge Component Manager 2.1 on a StorEdge A5000, A5100, A5200 subsystem in addition to StorEdge T300 disk trays. (Unless a specific subsystem is uniquely identified, all supported subsystems are referred to as “A5x00” within this document.)

The following topics are covered in this chapter:

- Solaris Releases Supported
- Software Requirements
- Upgrading to Component Manager 2.1
- Uninstalling the Software
- Installing the Software
- Starting Component Manager

Solaris Releases Supported

Sun StorEdge Component Manager 2.1 software supports the Solaris™ 2.6, Solaris 7, and Solaris 8 operating environments.

Software Requirements

Before installing the Component Manager software, verify that your system meets the following requirements:

- If you are running under the Solaris 2.6 operating environment, the SUNWses package must already be installed.
- The required patches and firmware for your operating environment have been installed (see “Required Patches and Firmware” on page 5). All patches must be at the specified level or higher.
- You have allotted enough disk space:
  - /etc — a minimum of 2MB
  - /var — a minimum of 50MB
  - /usr/opt — 35MB

Memory Guidelines

Component Manager requires a minimum of 174MB of virtual memory, and 0.5MB of virtual memory for each additional enclosure or disk tray. Also, Component Manager requires 8% of the CPU capacity, with an 18% increase for each additional enclosure.

As a guideline, you should have approximately 50MB of available physical memory. (Use the `vmstat` command to check the Memory/Free.)

If Component Manager performance is an issue due to system resource requirements, we recommend you move the Component Manager application to another server with less load and monitor the Sun StorEdge T300 disk trays from that server. As the monitoring of the Sun StorEdge T300 disk trays is done through the ethernet, Component Manager does not have to run on the same host to which the Sun StorEdge T300 disk trays are attached.

If necessary (that is, a mixed environment of Sun StorEdge T300 disk trays and Sun StorEdge A5x00 enclosures) you may partition the monitoring by utilizing another host for monitoring the disk trays and continuing to monitor the enclosures from the initial host. Sun StorEdge A5x00 enclosures may be monitored from any host on the same FC loop.

Required Solaris 2.6 Package

Before installing Component Manager, you must have the SUNWses package already installed on your system if you are running under the Solaris 2.6 operating environment. If it is not already installed, the SUNWses package can be found on the Solaris 2.6 software CD. Once you have accessed the package, type the following command to install the package:

```
# pkgadd -d . SUNWses
```

Required Patches and Firmware

The following table lists the patches required for Solaris 2.6, Solaris 7, or Solaris 8 operating environments (all patches must be at the specified level or higher).

TABLE 1 Component Manager Patch Requirements

Operating Environment	Required Patches for Component Manager[1]
Solaris 2.6	105181-19 105210-27 105284-31 105490-07 105568-16 105633-36 105669-10 106040-13 108091-03
Solaris 7	106541-10 106980-10 107544-03 107636-03 107081-11 108376-03
Solaris 8	None

1. The Component Manager installation script (install_cm) checks for these patches during the installation process, and will automatically install these patches if they are not already on your system.

Required Firmware

Refer to the following web site for the latest StorEdge A5*x*00 & T300 Software/ Firmware Configuration Matrix:

```
http://sunsolve.sun.com
```

Upgrading to Component Manager 2.1

To upgrade from Component Manager 1.0 to Component Manager 2.1,

1. **Uninstall Component Manager 1.0 or 2.0.**

   See “Uninstalling the Software” on page 5.

2. **Install Component Manager 2.1.**

   See “Installing the Software” on page 8.

Uninstalling the Software

If you are using the Sun Management Center, you must remove the agent module before uninstalling Component Manager.

Checking for the Sun Management Center Agent Module for Sun StorEdge

- **To determine whether Sun Management Center agent module is present, enter the following script:**

```
# pkginfo -l SUNWesmon
```

To remove the Sun Management Center, please refer to the documentation accompanying the Sun Management Center.

▼ To Remove Component Manager

If you need to uninstall the Sun StorEdge Component Manager software, perform *either* Step 1 or Step 2 below.

1. **Run the appropriate uninstall script:**

   a. To uninstall Component Manager 1.0

```
# cd /var/tmp/
# ./uninstall_cm.ksh
```

   b. To uninstall Component Manager 2.0

```
# cd /var/tmp/
# ./uninstall_cm
```

2. **If the script is unavailable, use the `pkgrm` command to uninstall the software.**

   a. Remove the Sun StorEdge Component Manager packages in the following order:

```
# pkgrm SUNWencu SUNWenccr SUNWencc SUNWencmr SUNWencm SUNWencl
```

   b. Remove the other platform packages in the following order:

```
# pkgrm SUNWesmru SUNWesmrt SUNWdaert SUNWmjhlp SUNWmjmai
SUNWmjacf SUNWesm
```

Note – If the `uninstall_cm` script is available, you do not need to run any `pkgrm` commands. Use `pkgrm` *only* if the `uninstall_cm` script is unavailable.

The following uninstallation session is an example of the output you will see and the questions you will be asked when running the `uninstall_cm` script.

CODE EXAMPLE 1-1 Example Uninstallation Session

```
# ./uninstall_cm

An uninstall log can be found at /var/tmp/
cm_uninstall.log.04May00-09:13:33


Do you want to remove Sun StorEdge Component Manager? [yes or no]
y
Removal of <SUNWenccr> was successful.
Removal of <SUNWencmr> was successful.
Removal of <SUNWencu> was successful.
Removal of <SUNWencc> was successful.
Removal of <SUNWencm> was successful.
Removal of <SUNWencl> was successful.
Removal of <SUNWmjhlp> was successful.
Removal of <SUNWmjmai> was successful.
Removal of <SUNWmjacf> was successful.
Removal of <SUNWesmrt> was successful.
Removal of <SUNWdaert> was successful.
Removal of <SUNWesm> was successful.
The uninstallation of the Component Manager is successful.
#
```

You can verify your uninstallation by looking at the log file from the `uninstall_cm` script, located in `/var/tmp`:

```
# vi /var/tmp/Component_Manager_uninstall.log.date-time
```

Note the uninstallation procedure will not remove entries in the `/etc/opt/SUNWesm/mo/hosts` file. See “Configuring the `hosts` File” on page 11.

Installing the Software

1. **Load the CD-ROM with the label-side facing up into the CD-ROM drive.**
2. **Mount the CD-ROM drive.**
   a. **If the Solaris volume manager daemon (`vold`) is running, the CD-ROM drive should be available at the `/cdrom/cdrom0` mount point. Proceed to Step 3.**
   b. **If `vold` is *not* running, create the following mount point and mount the CD-ROM drive by typing:**

```
# mkdir -p /cdrom/cdrom0
# mount -F hsfs -o ro /dev/dsk/cXtXdXsX /cdrom/cdrom0
```

   Where *`cXtXdXsX`* is the device node of the CD-ROM (for example, `c0t6d0s0`) and `/cdrom` is the mount point.

3. **Run the `install_cm` script, and answer the questions when prompted (see "Running the Installation Script" on page 9):**

```
# cd /cdrom/cdrom0
# ./install_cm
```

Note – For T300 installations, you must configure the `hosts` file. See "Configuring the `hosts` File" on page 11.

Running the Installation Script

The following installation session is an example of the output you will see and the questions you will be asked when running the `install_cm` script under the Solaris 2.7 operating environment.

CODE EXAMPLE 1-2

```
springcreek# ./install_cm

                        Sun StorEdge Component Manager

This product provides a graphical interface to the monitoring and
configuration of Component Manager. It is assumed that you agree to
the legal terms explained in
        http://www.sun.com/share/text/SMICopyright.html



DO YOU AGREE TO THE ABOVE TERMS AND WISH TO INSTALL THIS ON TO YOUR
SYSTEM
[y/n] (y)? y
Checking for required patch 105357-04
Checking for required patch 105181-19
Checking for required patch 105490-07
Checking for required patch 105210-27
Checking for required patch 105568-16
Checking for required patch 105633-36
Checking for required patch 105669-10
Checking for required patch 106040-13
Checking for required patch 108091-03
Checking for required patch 105284-31

By default Component Manager and Sun StorEdge platform are
installed in /usr/opt
An install log can be found at /var/tmp/cm_install.log.31May2000-
14:37:55


Starting installation of Java packages.
A current or later version of SUNWj2rt exists on the system
Version: 1.2.2,REV=2000.03.17.13.20 of SUNWj2rt has been installed
Installation of SUNWj2rt was skipped: newer version installed
```

CODE EXAMPLE 1-2 *(Continued)*

```
Starting installation of Sun StorEdge Platform packages.
Installation of SUNWesm was successful.
Installation of SUNWdaert was successful.
Installation of SUNWesmrt was successful.
Installation of SUNWmjacf was successful.
Installation of SUNWmjmai was successful.
Installation of SUNWmjhlp was successful.
Installation of SUNWesmru was successful.


Starting installation of Component Manager Core packages
Installation of SUNWencl was successful.


Starting installation of Component Manager packages
Installation of SUNWencm was successful.
Installation of SUNWencc was successful.
Installation of SUNWencu was successful.
Installation of SUNWencmr was successful.
Installation of SUNWenccr was successful.

Installation of Sun StorEdge Component Manager was successful.



An un-install script has been generated to aid in the removal of
this software.
The location of the un-install script is:
        /var/tmp/uninstall_cm

You must now install patch 105375-20 if you are using Component
Manager to manage A5x00. This patch can be found in:

./Component_Mgr/Solaris_2.6/Patches/105375-20

You must read the patch installation instructions from the
following Readme file before installing this patch:

 ./Component_Mgr/Solaris_2.6/Patches/105375-20/Readme.105375-20
```

Verifying the Installation

You can verify your installation by looking at the log file from the `install_cm.ksh` script, which is located in `/var/tmp`:

```
cm_install.log.date-time
```

Note – After successful installation, a uninstallation script named `uninstall.cm` is automatically created and placed in the `/var/tmp` directory.

Adding the Sun Management Center Agent Module

If you plan to use the Sun Management Center with Component Manager, add the Sun Management Center agent module after installing Component Manager.

```
# pkgadd -d /cdrom/cdrom0/Component_Mgr/platform
```

Use **`Solaris_2.6`** or **`Solaris_2.7`** or **`Solaris_8`** for *platform*.

Configuring the `hosts` File

Note – You must add the IP address and the component names of T300 subsystems to the `/etc/opt/SUNWesm/mo/hosts` file in order for Component Manager to communicate with the StorEdge T300.

- **Use an editor to make an entry.**

```
ada45# vi /etc/opt/SUNWesm/mo/hosts
```

The entry format is shown below.

```
# Component Manager 2.1 - Component table
#
# Each component entry is specified by its IP address and name,
#   IP address Name
#   129.150.151.69 cafejapan
#
123.456.78.90 ada48
```

Now you can reboot the system (and proceed directly to “Starting the Sun StorEdge Management Console” on page 14) or manually start the Component Manager daemons(“Starting Component Manager” on page 13).

Starting Component Manager

For Component Manager to start, the Component Manager daemons must be running, which they will, after a reboot. Under such circumstances, you would simply start Component Manager (see “Starting the Sun StorEdge Management Console” on page 14).

However, there may be situations when you will want to manually stop and start the Component Manager daemons without rebooting. Under such circumstances, use the procedure below.

Manually Starting the Managed Object Station

The managed object station will automatically start after each reboot or if you wish you can start the managed station with the following procedure. If you have rebooted the system you may now proceed directly to starting the management console. Please see “Starting the Sun StorEdge Management Console” on page 14.

1. **To manually start the managed object station:**

```
# /usr/opt/SUNWesm/sbin/esm_moboot -v start
```

Wait until you see the following message before proceeding to the next step:

```
“MOBoot: INFO: realm “StoreX” on station “MOStation” - booted”
```

2. **Start the management class station:**

```
# /usr/opt/SUNWesm/sbin/esm_mcboot -v start
```

Wait until you see the following message before proceeding to the next step:

```
“MCBoot: INFO: realm “StoreX” on station “MCStation” - booted”
```

3. **Type the following commands**:

```
# /usr/opt/SUNWesm/sbin/esm_em_moboot start
```

```
# /usr/opt/SUNWesm/sbin/esm_em_mcboot start
```

You are now ready to start the console.

Starting the Sun StorEdge Management Console

After the Component Manager daemons have been started (either manually or automatically after a reboot), start Component Manager.

```
# /usr/opt/SUNWesm/bin/esm_gui &
```

Restarting the Software

Use the following steps to stop and restart the management stations if the software fails to start automatically.

Note – The steps below must be performed in the order shown.

---

1. **Become root.**
2. **Stop any currently running Component Manager daemons**:

```
# /usr/opt/SUNWesm/sbin/esm_mcboot stop
# /usr/opt/SUNWesm/sbin/esm_moboot stop
```

3. **Perform the steps shown in “Manually Starting the Managed Object Station” on page 13 followed by the step in “Starting the Sun StorEdge Management Console” on page 14.**

CHAPTER 2

Error Messages

This chapter addresses potential error messages that may require troubleshooting:

InvocationTargetException: Cannot open device

```
java.lang.reflect.InvocationTargetException Cannot open device /dev/es/ses**
```

Description

Bad and/or outdated device entries are located in the `/dev/es` directory.

User Action

Clear the `/dev/es` tree by removing old device entries. Reboot the host with *either* of the following commands.

From the open boot prompt:

```
ok boot -r
```

Or from root:

```
# touch /reconfigure; init 6
```

InvocationTargetException: Inappropriate ioctl for device

```
java.lang.reflect.InvocationTargetException
    Inappropriate ioctl for device

java.lang.reflect.InvocationTargetException:
com.sun.esm.library.encl.LibenclException: Inappropriate ioctl for device at
com.sun.esm.library.encl.SESElement.SESElementproxy_get_elements(Native
Method)
        at com.sun.esm.library.encl.SESElement.getElements(Compiled Code)
        at com.sun.esm.mo.a5k.A5kEnclMOImpl.fetchSubelements(Compiled Code)
        at com.sun.esm.mo.ses.SESEnclMOImpl.<init>(Compiled Code)
        at com.sun.esm.mo.a5k.A5kEnclMOImpl.<init>(Compiled Code)
        at com.sun.esm.mo.host.HostMOImpl.discoverEnclosures(Compiled Code)
        at com.sun.esm.mo.host.HostMOImpl.<init>(Compiled Code)
        at java.lang.reflect.Constructor.newInstance(Native Method)
        at com.sun.esm.mo.MOBootstrap.initiateMO(Compiled Code)
        at com.sun.esm.mo.MOBootstrap.instantiateMO(Compiled Code)
        at com.sun.esm.mo.MOBootstrap.<init>(Compiled Code)
        at com.sun.esm.mo.MOBoot.boot(Compiled Code)
        at com.sun.esm.mo.MOBoot.main(Compiled Code)
MOBoot: WARN: problem while instantiating Managed Objects
MOBoot: INFO: invocation target exception on class
com.sun.esm.mo.host.HostMOImpl com.sun.esm.library.encl.LibenclException:
Inappropriate ioctl for device
```

Description

`Inappropriate ioctl for device` message appears when starting the Component Manager daemons. This is the result of the SES driver patch not being installed, or the SES driver is not loaded into the kernel.

User Action

Be sure the SES driver patch is installed if you are running the Solaris 2.6 operating environment. Refer to “Software Requirements” on page 2 for all required patch IDs. If you are certain the SES driver patch has already been installed, reboot your system to ensure that the driver is loaded into the kernel.

APPENDIX **A**

Configuring with the Sun Management Center

Sun Management Center (previously known as SyMON) is the management framework for the Solaris operating environment. Sun StorEdge Manager is the management framework for storage systems and the SAN (Storage Area Network).

There are two procedures to ensure configuration between these two products:

- Resolving JTG Version Conflicts
- Updating the Discovery Module

A.1 Resolving JTG Version Conflicts

When a user runs Sun Management Center after installing Component Manager, Sun Management Center will fail to run because of the different versions of JTG. StorEdge Management Console version 1.2.0.4 is based on JTG 1.2.2_05a. But Sun Management Center allows only JTG 1.2.1_04 for it to run.

To avoid this JTG version problem, the JTG 1.2.1_04 which comes with the Sun Management Center needs to be installed in a private directory, such as under `/opt/SUNWsymon`. When Sun Management Center is already installed in the system and JTG 1.2.1_04 is located under the`/usr` directory, installing Sun StorEdge Management Console will replace JTG 1.2.1_04 with JTG 1.2.2_05a and Sun Management Center will no longer work properly. If so, Sun Management Center needs to be reconfigured or reinstalled to use its own JTG 1.2.1_04 from, for example, `/opt/SUNWsymon`.

A.2 Updating the Discovery Module

When the Sun Management Center console application is started, the agent module will load the StorEdge Module if the module was previously loaded. If the module is being loaded for the first time, it can be loaded from the Tools/Load Module menu.

The first time the module is loaded, the user needs to run the discovery mechanism to discover the module. The discovery mechanism should be run only after loading the Sun StorEdge module in Sun Management Center. If you have specified a different port number, for example 1101, for the Sun Management Center agent during the setup of Sun Management Center agent, you have to specify the port number in the discovery panel before you start the discovery process.

Once the discovery request succeeds, icons for Sun StorEdge Group will be displayed in the Topology view of the Sun Management Center console. There will be two icons displayed that represent the Sun StorEdge modules in Sun Management Center. A small icon in the Navigation pane on the left side, and a large icon in the topology view pane on the right side.

Expand the Sun StorEdge Group in either navigation or topology view by double clicking and the Sun StorEdge Manager icon will be displayed. When you double clicks on the Sun StorEdge Manager icon, it launches the Sun StorEdge Console in a separate window. Any operation with the Sun StorEdge Console should be done through this interface only.