Sun StorEdge™ Component Manager 2.0 Installation Guide

For the Solaris™ Operating Environment

THE NETWORK IS THE COMPUTER™

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Preface

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

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.

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:

- AnswerBook™ online documentation for the Solaris™ operating environment
- Other software documentation that you received with your system

Typographic Conventions

TABLE P-1 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

TABLE P-2 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

TABLE P-3 Related Documentation

Application	Title	Part Number
Install	*Sun StorEdge Component Manager Installation Guide: For the Microsoft Windows NT Operating Environment*	806-4145
User	*Sun StorEdge Component Manager User's Guide*	806-1579
Release	*Sun StorEdge Component Manager Release Notes*	806-1580
Help	Sun StorEdge Component Manager Online Help	

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CHAPTER 1

Installing Sun StorEdge Component Manager

This chapter contains the following topics for installing the Sun StorEdge Component Manager software:

- "Introduction to Sun StorEdge Component Manager" on page 2
- "Pre-installation Requirements" on page 2
- "Upgrading to Component Manager 2.0" on page 5
- "Uninstalling the Software" on page 5
- "Installing the Software" on page 8
- "Starting Component Manager" on page 12

Note – You should read this chapter before attempting to install or operate Sun StorEdge Component Manager on a Sun StorEdge A5000, Sun StorEdge A5100, Sun StorEdge A5200, or T300 subsystem. (All supported subsystems, that is A5000, A5100, or A5200 are referred to as "A5*x*00" within this document. Similarly, all T301 T310 disk trays are referred to as the "T300". "Managed Station" refers to daemons used by Component Manager.)

Introduction to Sun StorEdge Component Manager

Sun StorEdge Component Manager is a graphical interface that enables you to monitor and manage subsystem storage enclosures. Component Manager 2.0 supports Sun StorEdge A5*x*00 and T300 components and operates under the Solaris 2.6 and Solaris 7 operating environments.

Specifically, Sun StorEdge Component Manager provides status monitoring, alarm notification, email and remote service support functionality, and control capability for a single enclosure or multiple enclosures where management information is accessible by a single host via FC-cable or ethernet.

Note – This release does not support StorEdge A5*x*00 subsystem is attached to multiple hosts. In the case where the A5*x*00 loop is split (one half goes to one host and the other half goes to another host), this release can manage only the portion that is visible from the host on which Component Manager is running.

Pre-installation Requirements

Before installing the Sun StorEdge Component Manager software, verify that you have met the following requirements:

- If you are running under the Solaris 2.6 operating environment, the `SUNWses` package must already be installed (see TABLE 1-1).
- The required patches and firmware for your operating environment have been installed (see "A5x00 Firmware Requirements" on page 4).
- A *minimum* of 140MB has been allotted for Sun StorEdge Component Manager virtual memory usage. Each additional component requires approximately 3MB of virtual memory.
- You have allotted enough disk space:
  - `/etc` — a minimum of 1MB
  - `/var` — a minimum of 2MB
  - `/usr/opt` — 35MB
- The Sun StorEdge A5*x*00 configuration must be correct (and all the valid `ses` entries for the A5*x*00 are in the `/dev/es` directory). Refer to the *Sun StorEdge A5x00 Configuration Guide* for more details.

- The Sun StorEdge T300 configuration must be correct. Refer to the *Sun StorEdge T300 Installation,Operation and Service Manual* and the *Sun StorEdge T300 Administrator's Guide* for more details.
- The required patches are installed for your particular Solaris 2.6 or Solaris 7 operating environment, as indicated in TABLE 1-1 (all patches must be at the specified level or higher). For the latest patch information see each of the *Release Note*s for both the A5x00 and the T300.

TABLE 1-1 Sun StorEdge Component Manager Patch Requirements

Solaris Operating Environment	Required Patches for Component Manager[1]	Required Patches for A5x00[2]
Solaris 2.6	105181-15 105210-22 105357-04 105490-07 105568-13 105633-22 105669-08	103346-xx 105356-10 105357-04 105375-17 106129-08 106219-03 108102-02 108104-01
Solaris 7	106980-05 107078-18 107636-02	103346-xx 106129-08 107458-05 107469-04 107472-01 107473-01 108102-02 108104-01

1. The Sun StorEdge 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.
2. To download the latest revision level of these patches, refer to the following web site: http://sunsolve.sun.com

- You have the correct firmware levels as shown in TABLE 1-2 (all firmware must be at the specified level or higher). Refer to the following web site for the latest A5*x*00 Software/Firmware Configuration Matrix:

  `http://sunsolve.sun.com`

TABLE 1-2 A5x00 Firmware Requirements

Solaris Operating Environment	IB Firmware Level	SBus Host Adapter Firmware Level	Disk Firmware Level	On Board Host Adapter Firmware Level	Required Patches for PCI Bus Host Adapter Firmware
Solaris 2.6	1.09	1.11	034A (9GB) 0929 (9GB) 7Dxx (9GB) D44A (18GB) F454 (18GB)	1.8.7	105357-04 105375-18 107280-04
Solaris 7	1.09	1.11	034A (9GB) 0929 (9GB) 7Dxx (9GB) D44A (18GB) F454 (18GB)	1.8.7	107292-03 107474-01

Upgrading to Component Manager 2.0

To upgrade from Component Manager 1.0 to Component Manager 2.0,

1. **De-install Component Manager 1.0.**

   See “Uninstalling the Software” on page 5.

2. **Install Component Manager 2.0.**

   See “Installing the Software” on page 8.

Uninstalling the Software

If you are using SYMON, you must remove it before uninstalling Component Manager.

▼ To Remove SYMON

1. **To determine whether SYMON is present, enter the following script:**

```
# pkginfo -l SUNWesmon
```

1. **To remove SYMON:**

```
# pkgrm -l SUNWesmon
```

▼ To Remove Component Manager

If you need to de-install 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 de-install 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 SUNWj2rt
```

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 de-installation 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 De-installation Session

```
cafejapan# ./uninstall_cm

An uninstall log can be found at /var/tmp/
cm_uninstall.log.06Aug99-17:16:15


Do you want to remove Sun StorEdge Component Manager? [yes or no]
yes
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 <SUNWesmru> was successful.
Removal of <SUNWesmrt> was successful.
Removal of <SUNWdaert> was successful.
Removal of <SUNWesm> was successful.
Removal of <SUNWj2rt> was successful.
cafejapan#
```

You can verify your de-installation 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 de-installation 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 /cdrom
# mount -F hsfs -o ro /dev/dsk/cXtXdXsX /cdrom
```

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):**

```
# ./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 2.6 operating environment.

CODE EXAMPLE 1-2 Example Installation Session

```
# ./install_cm
                        Sun StorEdge Component Manager

This product provides a graphical interface to the monitoring and
configuring of Component Manager. It is assumed that you agree to 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?

Do you agree to the above license terms? [yes or no]
yes
Checking for required patch 106980-05
Checking for required patch 107078-12

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.06Aug1999-17:07:56



Starting installation of Sun StorEdge Platform packages.

Installation of <SUNWj2rt> was successful.
Installation of <SUNWesm> was successful.
Installation of <SUNWdaert> was successful.
Installation of <SUNWesmrt> was successful.
Installation of <SUNWesmru> was successful.
Installation of <SUNWmjacf> was successful.
Installation of <SUNWmjmai> was successful.
Installation of <SUNWmjhlp> was successful.


Starting installation of Component Manager Core packages

Installation of <SUNWencl> was successful.


Starting installation of Component Manager packages
```

CODE EXAMPLE 1-2 Example Installation Session *(Continued)*

```
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
```

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 de-installation script named `uninstall.cm` is automatically created and placed in the `/var/tmp` directory.

Adding SYMON

If you plan to use SYMON, add the SYMON package after installing component manager.

```
# pkgadd -l SUNWesmon
```

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 2.0 - Component table
#
# Each component entry is specified by its IP address and name,
#   IP address Name
#   129.150.151.69 cafejapan
#
129.150.82.48 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 12).

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.

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”
```

4. **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”
```

5. **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 &
```

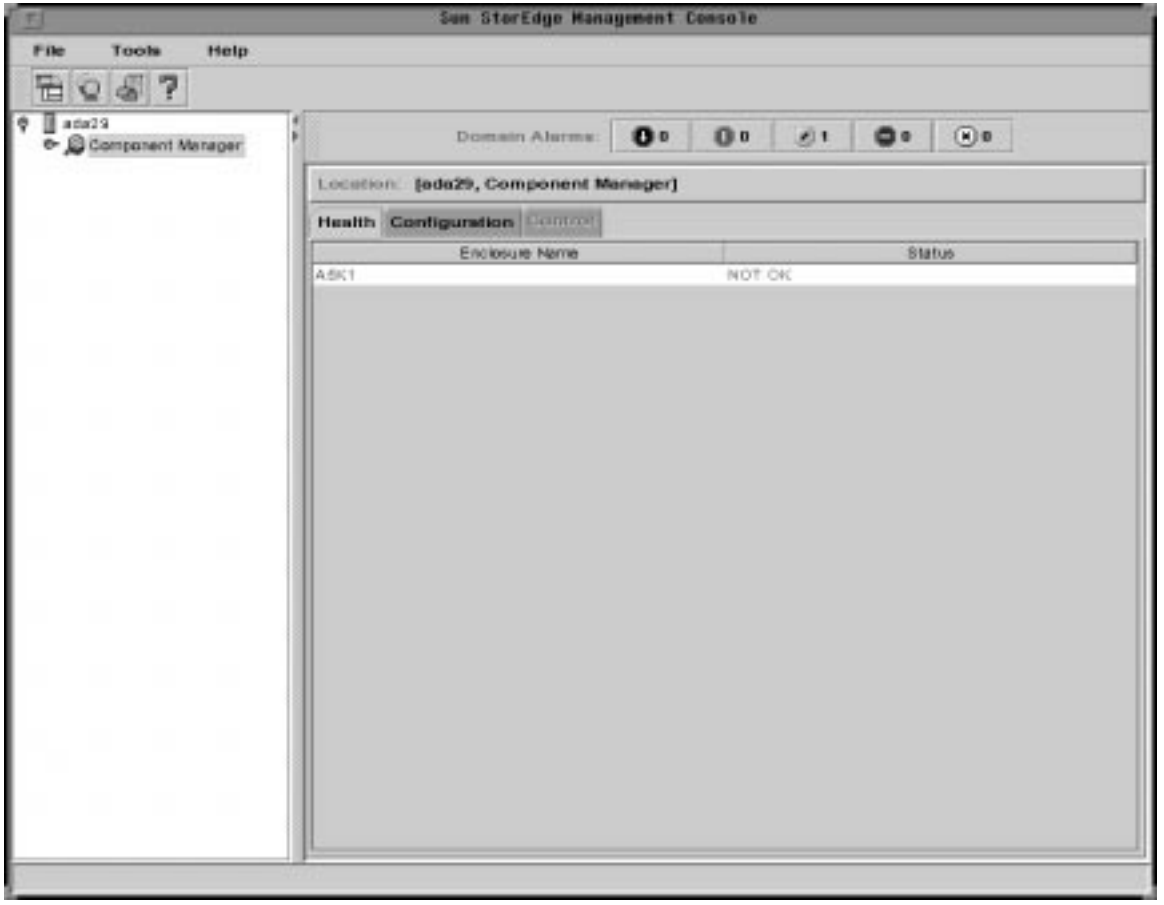

FIGURE 1-1 Sun StorEdge Management Console and Component Manager

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 12 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`" on page 18
- "`InvocationTargetException: Inappropriate ioctl for device`" on page 19

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 “Pre-installation 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.