

**Lucent Technologies**  
Bell Labs Innovations



***CentreVu*<sup>®</sup> Call Management System**  
Software Installation and Maintenance

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Issue 2  
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#### Acknowledgment

This document was developed by the Lucent Technologies Customer Training and Information Products organization.

# CentreVu<sup>®</sup> Call Management System Software Installation and Maintenance

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## Index

# Preface

## Overview

This document is written for technicians and Lucent Technologies call center customers who install and maintain the *CentreVu*<sup>®</sup> Call Management System (CMS) using the *Solaris*<sup>\*</sup> 2.5.1 operating system.

This document assumes a minimum level of technical knowledge on the part of its readers. It assumes, for example, that a reader knows how to load a CD into a CD-ROM drive, but does not assume the reader knows the *UNIX*<sup>†</sup> commands required to use the CD once it is loaded.

## Reasons for Reissue

This document is being reissued for the following reasons:

- Add information about the *Sun*<sup>‡</sup> *Ultra*<sup>§</sup> 5 computer
- Add information about the Release 3 Version 5 *Ultra* (R3V5u) CMS software load
- Make corrections to erroneous information.

## Organization

This document is organized as follows:

- **Chapter 1 — Introduction**  
Provides an overview of the supported *CentreVu* CMS software, supported hardware platforms, required software, and supported switch releases. It also includes support contact information.
- **Chapter 2 — Setting Up *CentreVu* CMS and Installing Feature Packages**  
Explains how to set up the *CentreVu* CMS application and install additional *CentreVu* CMS feature packages.

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- **Chapter 3 — Turning the System Over to the Customer**  
Provides the procedures that a technician performs before system cutover and a worksheet that the technician fills out for the customer.
- **Chapter 4 — Troubleshooting**  
Discusses how to fix various software installation problems.
- **Chapter 5 — Maintenance**  
Discusses file system backups and other maintenance procedures.
- **Appendix A — CMSADM and CMSSVC Menus**  
Provides an overview of the CMS Administration commands (`cmsadm`) and the CMS Services commands (`cmssvc`).
- **Appendix B — Factory Software Installation**  
Outlines the factory software installation procedures. A technician can use these procedures at a customer site if problems occur that require a complete software reinstall.
- **Glossary**  
Lists and defines technical terms, acronyms and abbreviations used in this and related *CentreVu* CMS documents.
- **Index**  
Lists topics discussed in this document and provides specific page references.

## Conventions

The following conventions are used in this document:

- Unless specified otherwise, all information and procedures in this document apply to the *Sun SPARCserver*<sup>\*</sup> computers, the *Sun Enterprise*<sup>†</sup> 3000 computer, and the *Sun Ultra 5* computer.
- The R3V5u CMS software load is a companion version of the R3V5 CMS software load. The R3V5u load is used on *Enterprise* 3000 and *Ultra 5* computers; the R3V5 load is used on *SPARCserver* computers and is documented in *Sun SPARCserver Installation and Maintenance* (585-215-827). In this document, the term R3V5 is used to refer to the R3V5u software load.
- Commands you enter from the console are shown in `courier` font.

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<sup>\*</sup>*SPARCserver* is a trademark of SPARC International, Inc.

<sup>†</sup>*Enterprise* is a trademark of Sun Microsystems, Inc.

- Screens are shown to represent responses from the system. Because of display constraints in this document, some screen representations are not identical to the screens on your system.
- *Italic* text in screen displays represent variable information.
- Many procedures in this document instruct you to “Enter” a command or some data. What is meant is that you must type the command or data as shown, and then press Enter or Return on your keyboard.
- Automatic Call Distribution (ACD) is a feature on the *DEFINITY*<sup>®</sup> switch. The ACD feature is used to route incoming calls to groups of agents in what is called a “split.” When the term “ACD” is used in this document, it is generally referring to an “ACD split.”

## Related Documents

When using the Software Installation and Maintenance document, the following documents should be referenced when using an *Ultra 5*, *Enterprise 3000*, or *SPARCserver* computer with Release 3 Version 6 (R3V6), or an *Ultra 5* or *Enterprise 3000* computer with R3V5:

- *CentreVu Call Management System Release 3 Version 6 Administration* (Volumes 1 and 2) (585-215-850)
- *CentreVu Call Management System Release 3 Version 6 Open Database Connectivity* (585-215-852)
- *CentreVu Call Management System Release 3 Version 6 Upgrades and Migrations* (585-215-856)
- *CentreVu Call Management System Release 3 Version 6 Sun SPARCserver Computers Hardware Installation* (585-215-857)
- *CentreVu Call Management System Release 3 Version 6 Sun SPARCserver Computers Connectivity Diagram* (585-215-858)
- *CentreVu Call Management System Hardware Maintenance and Troubleshooting* (585-215-861)
- *CentreVu Call Management System Release 3 Version 6 Sun Enterprise 3000 Computer Connectivity Diagram* (585-215-865)
- *CentreVu Call Management System Release 3 Version 6 Sun Enterprise 3000 Computer Hardware Installation* (585-215-867)
- *CentreVu Call Management System Sun Ultra 5 Computer Hardware Installation* (585-215-871)
- *CentreVu Call Management System Sun Ultra 5 Computer Connectivity Diagram* (585-215-872)

The following documents should be referenced when using a SPARCserver computer with R3V5 CMS:

- *CentreVu Call Management System Release 3 Version 5 Administration* (Volumes 1 and 2) (585-215-820)
- *CentreVu Call Management System Release 3 Version 5 Real-Time and Historical Reports* (585-215-821)
- *Lucent Call Center Change Description* (585-215-823)
- *CentreVu Call Management System Release 3 Version 5 External Call History Interface* (585-215-824)
- *CentreVu Call Management System Release 3 Version 5 Upgrades and Migrations* (585-215-826)
- *CentreVu Call Management System Release 3 Version 5 Sun SPARCserver Installation and Maintenance* (585-215-827)
- *CentreVu Call Management System Release 3 Version 5 Sun SPARCserver Connectivity Diagram* (585-215-828)
- *CentreVu Call Management System Release 3 Version 5 Open Database Connectivity* (585-215-839)

The following documents are also available to support the CentreVu CMS product (Release 3, Versions 5 and 6):

- *CentreVu Call Management System Release 3 Version 5 Custom Reports* (585-215-822)
- *CentreVu Call Management System Release 3 Version 5 Forecast* (585-215-825)
- *Lucent Call Center Change Description* (585-215-853)
- *CentreVu Call Management System Release 3 Version 6 External Call History Interface* (585-215-854)
- *CentreVu Call Management System Release 3 Version 6 Planning, Configuration, and Implementation* (585-215-879)
- *Lucent Call Center Documentation CD-ROM* (585-215-892).

The following documents are available for other *CentreVu* products:

- *CentreVu Explorer Installation and Getting Started* (585-215-835)
- *CentreVu Explorer User Guide* (585-215-840)
- *CentreVu Supervisor Version 6 Reports* (585-215-851)
- *CentreVu Advocate User Guide* (585-215-855)
- *CentreVu Report Designer Version 6 User Guide* (585-215-859)
- *CentreVu Supervisor Version 6 Installation and Getting Started* (585-215-860).

To order any of these documents, call the BCS Publications Center at 1-800-457-1235 or +1-317-361-5353.



# Introduction

## Overview

*CentreVu*<sup>®</sup> Call Management System (CMS) is a software application offered in association with the Automatic Call Distribution (ACD) feature of Lucent Technologies switches. The *CentreVu* CMS application provides monitoring and recording of ACD calls, agents handling these calls, and the use of Vector Directory Numbers (VDNs) for these calls to measure system and agent performance.

*CentreVu* CMS software supports the following features, which Lucent Technologies can enable at installation:

- Expert Agent Selection (EAS) (switch feature)
- Call Vectoring (switch feature and *CentreVu* CMS feature package)
- Forecasting Feature Package (*CentreVu* CMS)
- Graphics Package (*CentreVu* CMS)
- External Call History Package (*CentreVu* CMS)
- Report Designer (*CentreVu* CMS)
- Multiple ACDs (*CentreVu* CMS; up to eight).

## Supported Hardware Platforms

*CentreVu* CMS R3V5 is certified to run on the following platforms:

- *Sun*<sup>\*</sup> *Enterprise*<sup>†</sup> 3000 computer
- *Sun Ultra*<sup>‡</sup> 5 computer.

*CentreVu* CMS R3V6 is certified to run on the following platforms:

- *Sun Enterprise* 3000 computer
- *Sun Ultra* 5 computer
- *Sun SPARCserver*<sup>§</sup> 5 computer
- *Sun SPARCserver* 10 computer
- *Sun SPARCserver* 20 computer.

---

\**Sun* is a registered trademark of Sun Microsystems, Inc.

†*Enterprise* is a trademark of Sun Microsystems, Inc.

‡*Ultra* is a trademark of Sun Microsystems, Inc.

§*SPARCserver* is a trademark of SPARC International, Inc.

## Software

To operate properly, *CentreVu* CMS requires the following software packages (optional packages are noted as such):

- *Sun Solaris*<sup>\*</sup> 2.5.1 operating system (Hardware: 11/97 version)
- Common Desktop Environment (CDE) 1.0.2
- *Sun* Validation Test Suite (VTS) 2.1.1
- High-Speed Serial Interface (HSI) (optional; for systems having multiple ACDs)
- Serial Asynchronous Interface/PCI (SAI/P) drivers (optional; *Ultra 5* only)
- Bay Networks Annex R10.0-R4.2 *Network Terminal Server*<sup>†</sup> (NTS) drivers (optional)
- *Solstice*<sup>‡</sup> for Server Connect X.25 Version 9.1 drivers
- *INFORMIX*<sup>§</sup>
  - Structured Query Language (SQL) (optional)
  - Standard Engine (SE)
  - International Language Supplement (ILS) (R3V6 only)
- *Solstice DiskSuite*<sup>¶</sup> 4.1
- *Sun Solaris* patches
- *CentreVu* CMS
- CMS patches
- CMS Supplemental Services (R3V6 only)
- Open Database Connectivity (ODBC) (optional)
- Aurora Ports Card drivers (optional; *SPARCserver* only).

More details about these software packages, including release and platform dependencies, are given in Appendix B, "Factory Software Installation."

---

\**Solaris* is a registered trademark of Sun Microsystems, Inc.

†*Network Terminal Server* is a trademark of Sun Microsystems, Inc.

‡*Solstice* is a trademark of Sun Microsystems, Inc.

§*INFORMIX* is a registered trademark of Informix Software, Inc.

¶*Solstice DiskSuite* is a trademark of Sun Microsystems, Inc.

## Supported Switch Releases

The *CentreVu* CMS is certified to run with the following Lucent Technologies switches:

- *DEFINITY* Communications System Generic 2.2 Release 3.0 and later (QPPCN 696DR)
- *DEFINITY* Communications System Generic 3i Release 13.3 and later (QPPCN 576)
- *DEFINITY* Communications System Generic 3r Release 8.5 and later
- *DEFINITY* Communications System Generic 3s Release 14.2 and later
- *DEFINITY* Communications System Generic 3 Version 1
- *DEFINITY* Communications System Generic 3 Version 2 Load 82 and later
- *DEFINITY* Communications System Generic 3 Version 3
- *DEFINITY* Communications System Generic 3 Version 4
- *DEFINITY* Enterprise Communications Server (ECS) Release 5
- *DEFINITY* ECS Release 6.

## Roles and Responsibilities

This document was written for:

- Lucent Technologies on-site technicians
- Lucent Technologies Technical Service Center (TSC) personnel
- *CentreVu* CMS customer administrators.

The installation of the prerequisite hardware and software should have been completed by the factory before the computer was shipped. The factory software installation procedures are in Appendix B.

The following table lists the major software installation tasks, who is responsible for performing each task, and the chapter where the task is described.

Chapter	Task	Technician	TSC	Customer
2	Set authorizations		X	
2	Set up data storage parameters		X	
2	Set up the <i>CentreVu</i> CMS application		X	
2	Install the Forecasting feature package			X
2	Install the External Call History package			X
3	Verify the system date and time	X		X
3	Test the connection to the TSC		X	
3	Assign passwords		X	
3	Test the ACD link	X		
3	Test the <i>CentreVu</i> CMS software	X		
3	Turn the system over to the customer	X		
4	Solve installation-related problems	X	X	
4	Check error logs	X	X	
5	Perform backups	X		X
5	Perform restores			X
5	Check installed software packages	X	X	
5	Back out a <i>Solaris</i> patch	X	X	
5	Remove <i>INFORMIX</i>	X	X	

## CentreVu CMS Helplines

If an installation problem arises that requires assistance, Lucent Technologies technicians or the customer may call the numbers shown below.

---

### Customer Number

**1-800-242-2121**

By calling this number, the customer reports the problem and generates a trouble ticket so that the problem can be escalated through the services organization.

The customer will be prompted to identify the type of problem (ACD, hardware, or *CentreVu CMS*) and will be connected to the appropriate service organization.

---

### Technician Number

**1-800-248-1234**

The technician should provide the TSC personnel with the customer's name, the password for the *root* login ID on the *Sun* system, the phone number of the dial-in port, and a description of the problem.

If TSC personnel cannot solve the problem, they will escalate it to the Customer Support Organization of Lucent Technologies.

---

### International Support

For international support, contact your Lucent Technologies representative or distributor for more information.



# Setting Up *CentreVu*<sup>®</sup> CMS and Installing Feature Packages

## Overview

Once the on-site technicians have finished the hardware installation, Technical Service Center (TSC) personnel set up the *CentreVu*<sup>®</sup> Call Management System (CMS) application to work with the customer's configuration. If the customer has ordered additional *CentreVu* CMS feature packages, these need to be installed as well.

This chapter describes how to do the following:

- Set authorizations
- Set up data storage parameters
- Set up the *CentreVu* CMS application
- Install the External Call History and Forecasting feature packages.

TSC personnel verify authorizations, set up data storage parameters, and set up the *CentreVu* CMS application remotely. On-site technicians should call the TSC to coordinate this process. Customers can install any additional *CentreVu* CMS feature packages that have been authorized.

---

## Prerequisites

The TSC should verify that the on-site technicians have completed the following tasks:

- Connected the console to the *Sun*<sup>\*</sup> computer
- Connected the *Sun* computer to the TSC's Remote Maintenance Center (remote console)
- Connected additional terminals and printers to the *Network Terminal Server*<sup>†</sup> (NTS)

---

<sup>\*</sup>*Sun* is a registered trademark of Sun Microsystems, Inc.

<sup>†</sup>*Network Terminal Server* is a trademark of Sun Microsystems, Inc.

- Connected the link between the *Sun* computer and the switch

⇒ **NOTE:**

If the hardware link or the Automatic Call Distribution (ACD) feature and CMS is not properly administered, the *CentreVu* CMS software cannot communicate with the switch. For switch administration procedures, see the switch administration appendixes in *CentreVu* CMS R3V6 *Sun SPARCserver*<sup>\*</sup> Computers Hardware Installation (585-215-857), *CentreVu* CMS R3V6 *Sun Enterprise*<sup>†</sup> 3000 Computer Hardware Installation (585-215-867), or *CentreVu* CMS *Sun Ultra*<sup>‡</sup> 5 Computer Hardware Installation (585-215-871) as appropriate.

- Connected the NTS and your CMS platform to the network hub unit. See *CentreVu* CMS R3V6 *Sun SPARCserver* Computers Connectivity Diagram (585-215-858), *CentreVu* CMS R3V6 *Sun Enterprise* 3000 Computer Connectivity Diagram (585-215-865), or *CentreVu* CMS *Sun Ultra* 5 Computer Connectivity Diagram (585-215-872).

---

## Things to Know Before You Start

Throughout the setup, you will be prompted to enter values specific to the system being installed. These values differ between CMS software releases and switch releases. For each question, an appropriate range is displayed, usually in the format of 0-XXXXX (or some variation of this). These values represent the limits of each range.

With some applications, the sequence in which they are installed is important. For example, the *CentreVu* CMS application must be installed before you can install the Forecasting or External Call History feature packages.

---

<sup>\*</sup>*SPARCserver* is a trademark of SPARC International, Inc.

<sup>†</sup>*Enterprise* is a trademark of Sun Microsystems, Inc.

<sup>‡</sup>*Ultra* is a trademark of Sun Microsystems, Inc.

# Set Authorizations

---

## Overview

Before setting up *CentreVu* CMS, TSC personnel need to set authorizations for *CentreVu* CMS features purchased by the customer. Authorizations apply to all administered ACDs.

You can use the `auth_set` option in the *CentreVu* CMS Services menu (`cmssvc`) to do the following:

- Set the purchased version of *CentreVu* CMS
- Authorize the following packages and features:
  - Forecasting (if the package is not already installed)
  - Vectoring (if no administered ACDs use vectoring)
  - Graphics
  - External Call History (if the package is not already installed)
  - Expert Agent Selection (EAS) (if no administered ACDs use EAS)
  - External Application
  - More than 2000 Vector Directory Numbers (VDNs) (R3V6 only)
  - *CentreVu* Supervisor
  - *CentreVu* Report Designer.
- Change the number of agents, ACDs, or Supervisor logins.

## Procedure

1. Access the *CentreVu* CMS Services menu by entering the following command:

```
cmssvc
```

The program responds as follows:

```
Lucent Technologies CentreVu(R) Call Management System Services
Menu
```

```
Select a command from the list below.
```

```
1) auth_display Display feature authorizations
2) auth_set      Authorize capabilities/capacities
3) run_cms       Turn CentreVu CMS on or off
4) setup         Set up the initial configuration
5) swinfo        Display switch information
6) swsetup       Change switch information
7) patch_inst    Install a single CMS patch from CD
8) patch_rmv     Backout an installed CMS patch
9) load_all      Install all CMS patches found on CD
10) back_all     Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit:
```

2. Enter `2` to select the `auth_set` option. The program responds as follows:

```
Password:
```

3. Enter the appropriate password. This password is available only to authorized personnel.

**⇒ NOTE:**

Some of the following questions may not appear if the authorization cannot be changed at this time.

The program responds as follows:

```
Is this an upgrade? (y/n):
```

**⇒ NOTE:**

This question only occurs the first time you run `auth_set` on the machine.

If this is not an upgrade and you enter `n`, the program responds as follows:

```
Purchased version is R3VX. Is this correct? (y/n):
```

4. Enter `y`.

**⇒ NOTE:**

The program uses the above information to populate the “Purchased CMS Release” field of the *System Setup:Switch Setup* screen.

The program continues with the following questions:

```
Authorize installation of forecasting package? (y/n):(default: n)
```

5. Enter `y` if the customer purchased Forecasting; otherwise, press Enter. The program responds as follows:

```
Authorize installation of vectoring package? (y/n): (default: n)
```

6. Enter `y` if the customer purchased vectoring; otherwise, press Enter. The program responds as follows:

```
Authorize use of graphics feature? (y/n): (default: n)
```

7. Enter `y` if the customer purchased Graphics; otherwise, press Enter. The program responds as follows:

```
Authorize use of external call history feature? (y/n): (default: n)
```

8. Enter `y` if the customer purchased the External Call History feature; otherwise, press Enter. The program responds as follows (if the vectoring package is authorized):

```
Authorize use of expert agent selection feature? (y/n): (default: n)
```

9. Enter `y` if the customer purchased the Expert Agent Selection feature; otherwise, press Enter. The program responds as follows:

```
Authorize use of external application feature? (y/n): (default: n)
```

10. Enter `y` if the customer purchased the External Application feature; otherwise, press Enter. The program responds as follows (R3V6 only; for R3V5, skip to the response after Step 11):

```
Authorize use of more than 2000 VDNs (yes turns off VDN
permission checking)? (y/n): (default: n)
```

11. Enter `y` if the customer needs to use more than 2000 VDNs; otherwise, press Enter. The program responds as follows:

```
Enter the number of simultaneous Lucent Technologies CentreVu(R)
Supervisor logins the customer has purchased
(X-250): (default: X)
```

12. Enter the number of simultaneous logins purchased. The program responds as follows:

```
Has the customer purchased Lucent Technologies CentreVu(R)
Report Designer? (y/n): (default: n)
```

13. Enter `y` if the customer purchased report designer; otherwise, press Enter. The program responds as follows:

```
Enter the maximum number of split/skill members that can be
administered (1-10000): (default: 1)
```

14. Enter the maximum possible number of split or skill members that the customer might use based on the switch agent size purchased.

For R3V6 only, “split or skill members” are defined as the number of CMS-measured agent-split and agent-skill combinations logged in at the same time. Each split an agent logs into is an agent-split combination. Each skill assigned to an agent while logged in is an agent-skill combination. The recommended numbers for Expert Agent Selection (EAS) and nonEAS systems are shown in the following table.

Switch Agent Size Range Purchased	Number of Split or Skill Members	
	NonEAS	EAS
0-12	100	500
0-25	100	500
0-50	200	1000
0-75	300	1500
0-100	400	2000
0-200	800	4000
0-300	1200	6000
0-400	1600	8000
0-500	2000	10000
0-600	2400	10000
0-max. agents	10000	10000

**⇒ NOTE:**

The minimum size configuration for CMS is 0-25; that is the reason groups 0-12 and 0-25 have the same provisioning. You should also note that the customer will be able to limit the split or skill random access memory (RAM) allocation to the size actually needed for the current configuration of agents and splits or skills. That is accomplished by the “Total split/skill members summed over all splits/skills” field, which is accessed through the `setup` option of the `cmsvc` command.

The program responds as follows:

```
Enter the maximum number of ACDs that can be installed (1-8):  
(default: 1)
```

15. Enter the number of ACDs the customer purchased.

The prompt displays and all authorizations have been set.

16. Verify that authorizations were set by entering the following:

```
tail /cms/install/logdir/admin.log
```

The `admin.log` file contains information relating to *CentreVu* CMS administration procedures. The file should display the following message:

```
Capabilities/capacities authorized <date/time>
```

You can also verify the authorizations by using the `auth_display` option of the `cmsvc` command. See Appendix A, “CMSADM and CMSSVC Menus” for more information.

## Set Up Data Storage Parameters

---

### Overview

TSC personnel modify specific data storage parameters on the *Sun* computer so that the *CentreVu* CMS application can operate properly. The `storage.def` file contains these data storage parameters which are default values.

The default values may not correspond to the system you are installing. Use the values determined by the Account Executive, System Consultant, and Design Center based on the customer configuration.

---

### Procedure

1. Change to the CMS installation directory by entering the following:

```
cd /cms/install/cms_install
```

**⇒ NOTE:**

If you delete or damage the `storage.def` file, you can find a copy of this file (`storage.sk1`) in the same directory.

2. Edit the `storage.def` file by entering the following command:

```
vi storage.def
```

3. As needed, change the default values for each parameter. Place the value for each parameter on the line below the parameter. The following example shows the defaults for this file. The values you can change are shown in bold.

```
# Information for ACD 1 and any ACDs created using acd_create
# command
# Intrahour interval (15, 30, 60 minutes):
30
# Week start day (Sunday, Monday, Tuesday, Wednesday, Thursday,
  Friday, Saturday):
Sunday
# Week end day (Sunday, Monday, Tuesday, Wednesday, Thursday,
  Friday, Saturday):
Saturday
# Daily start time (regular time):
12:00 AM
# Daily stop time (data will be collected for seconds of last
  minute):
11:59 PM
# Number of agent login/logout records (0-999999):
10000
# Number of agent trace records:
10000
# Number of call records (0-5000 internal or 0-99999 external):
0
# Number of exceptions records (1-2000):
250
# Days of intrahour for splits (1-62):
31
# Days of daily splits (1-1825):
387
# Weeks of weekly splits (1-520):
0
# Months of monthly splits (1-120):
0
# Days of intrahour for agents (1-62):
31
# Days of daily agents (1-1825):
387
# Weeks of weekly agents (1-520):
0
# Months of monthly agents (1-120):
0
# Days of intrahour for trunk groups (1-62):
31
# Days of daily trunk groups (1-1825):
387
# Weeks of weekly trunk groups (1-520):
0
# Months of monthly trunk groups (1-120):
0
# Days of intrahour for trunks (1-62):
31
```

```
# Days of daily trunks (1-1825):
387
# Weeks of weekly trunks (1-520):
0
# Months of monthly trunks (1-120):
0
# Days of intrahour for call work codes (1-62):
0
# Days of daily call work codes (1-1825):
0
# Weeks of weekly call work codes (1-520):
0
# Months of monthly call work codes (1-120):
0
# Days of intrahour for vectors (1-62):
31
# Days of daily vectors (1-1825):
387
# Weeks of weekly vectors (1-520):
0
# Months of monthly vectors (1-120):
0
# Days of intrahour for VDNs (1-62):
31
# Days of daily VDNs (1-1825):
387
# Weeks of weekly VDNs (1-520):
0
# Months of monthly VDNs (1-120):
0
# Information for ACD 2
.
.
.
.
```

***(The file repeats the same parameters for each ACD.)***

4. After entering the appropriate values, enter `:wq` to write and quit the file.

After the *CentreVu* CMS application is running, the System Administrator can change the data storage parameters using the Data Storage Allocation window and the Storage Intervals window in the CMS System Setup menu. See the CMS System Setup chapter in *CentreVu* CMS R3V6 Administration (585-215-850) or *CentreVu* CMS R3V5 Administration (585-215-820) for more information.

# Set Up the *CentreVu* CMS Application

---

## Overview

Use the procedures in this section to set up the *CentreVu* CMS application.

---

## Prerequisites

- You must be logged in as *root*
  - The computer must be in run-level 3 (check this with the command `who -r`)
  - *CentreVu* CMS must be turned off
  - All file systems must be mounted.
- 

## Setup Methods

You can set up the *CentreVu* CMS feature package using one of two methods:

- a. **Interactively from a Terminal** — Using the interactive option, the program prompts you for the necessary information to set up the *CentreVu* CMS application (for example, system type, number of agents, trunks, vectors, VDNs, and so on).

To set up the *CentreVu* CMS application using this option, see “Set Up CentreVu CMS Interactively from a Terminal” in this chapter.

- b. **UNIX\* System Flat File** — Using the flat file option, you edit a *UNIX* System flat file containing the necessary information (for example, system type, number of agents, trunks, vectors, VDNs, and so on) to set up the *CentreVu* CMS application. When you execute the program, it runs in the background and uses the *UNIX* System flat file data to set up the *CentreVu* CMS application. To set up the *CentreVu* CMS application using this option, see “Set Up CentreVu CMS Using a UNIX Flat File” in this chapter.

---

\**UNIX* is a registered trademark in the United States and other countries, licensed exclusively through X/Open Company Limited.

## Set Up *CentreVu* CMS Interactively from a Terminal

### Overview

Using the interactive option, the program prompts you for the necessary information.

### Procedure

1. Access the *CentreVu* CMS Services menu by entering the following:

```
cmssvc
```

The program responds as follows:

```
Lucent Technologies CentreVu(R) Call Management System Services Menu

Select a command from the list below.
 1) auth_display Display feature authorizations
 2) auth_set     Authorize capabilities/capacities
 3) run_cms     Turn CentreVu CMS on or off
 4) setup       Set up the initial configuration
 5) swinfo     Display switch information
 6) swsetup    Change switch information
 7) patch_inst Install a single CMS patch from CD
 8) patch_rmv  Backout an installed CMS patch
 9) load_all   Install all CMS patches found on CD
10) back_all   Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit:
```

2. Enter 4 to select the `setup` option.

#### NOTE:

If system setup has already been done, the program responds as follows:

```
Warning!!! Setup has already been performed.
Running this command will remove all CMS data in the database.
Do you wish to proceed and re-configure CMS? (y/n): (default: n)
```

3. Enter `y` to continue with the setup, or enter `n` to exit setup. If you enter `y`, the program responds as follows (for R3V6 only; for R3V5, skip to the response of Step 4):

```
Select the language for this server:
```

```
All languages are ISO Latin except Japanese. Selection of the
server language assumes that existing customer data is
compatible. (Upgrade from any ISO Latin language to any ISO
Latin language or from Japanese to Japanese is supported).
```

- 1) English
- 2) Dutch
- 3) French
- 4) German
- 5) Italian
- 6) Portuguese
- 7) Spanish
- 8) Japanese

```
Enter choice (1-8): (default: 1)
```

4. Enter the number for the language used on this system. If setup has been done previously, the customer CMS data is now initialized, which can take up to 30 minutes. When finished, the program responds as follows:

```
Enter a name for this UNIX system (up to 256 characters):
(default: XXXXXX)
```

5. Enter the host name of the computer. This name was assigned during the factory installation procedures and is used by the TSC to maintain and identify this specific system. The program responds as follows (this screen is slightly different between R3V5 and R3V6):

```
Select the type of backup device you are using
```

- 1) SCSI QIC-150 cartridge tape - 150MB tape
- 2) SCSI QIC-60 cartridge tape - 60MB tape
- 3) 14.0 Gbyte 8mm tape
- 4) 5.0 Gbyte 8mm tape
- 5) SCSI QIC-2.5 cartridge tape - 2.5GB tape
- 6) SCSI 4-8 SLR cartridge tape - 4GB tape (8GB compressed)

```
Enter choice (1-6):
```

6. Enter the number to specify the type of cartridge tape you are using as the backup device. If you are not sure of the device path, do the following:

- a. Insert a tape into the tape drive.
- b. In another xterm window, enter the following commands:

```
mt -f /dev/rmt/0c status  
mt -f /dev/rmt/1c status
```

The correct device path will show information similar to the following:

```
Tandberg 2.5 Gig QIC tape drive:  
sense key(0x0)= No Additional Sense   residual= 0   retries  
file no= 0   block no= 0
```

**⇒ NOTE:**

If you do not have another xterm window available, enter `^Z` to temporarily suspend the current command. You can then use the `mt` command to determine the correct device path. After determining the correct device path, enter `fg` to resume the command session.

After you enter the correct device path, the program responds as follows:

```
Enter the default backup device path:  
(default: /dev/rmt/0c)
```

7. Press Enter to select the default. The program responds as follows:

```
Enter number of ACDs being administered (1-8):
```

8. Enter the number of ACDs to be administered. This number may be less than the number of ACDs authorized. The program responds as follows:

```
Information for ACD 1
```

```
Enter switch name (up to 20 characters):
```

9. Enter the name for the switch associated with ACD 1. The program responds as follows (the ECS R6 option is not available for R3V5):

```
Select the model of switch for this ACD
```

- 1) Definity-G2.1
- 2) Definity-G2.2
- 3) Definity-G3i
- 4) Definity-G3r
- 5) Definity-G3V2
- 6) Definity-G3V3
- 7) Definity-G3V4
- 8) Definity-G3V5
- 9) Definity ECS R6

```
Enter choice (1-9):
```

10. Enter the number that represents the switch model associated with this ACD. If the switch supports vectoring and vectoring is authorized, the following message appears; otherwise, go to Step 13:

```
Is Vectoring enabled on the switch? (y/n):
```

11. Enter `y` if vectoring is enabled on this switch; otherwise, enter `n`. The following message appears if vectoring is enabled, the switch supports EAS, and EAS is authorized. If the message does not appear, go to Step 13.

```
Is Expert Agent Selection enabled on the switch? (y/n):
```

12. Enter `y` if EAS is enabled on this switch; otherwise, enter `n`. The program responds as follows:

```
Does the Central Office have disconnect supervision?  
(y/n): (default: y)
```

13. Enter `y` if the *CentreVu* CMS is located in the U.S., then go to Step 15. If you answer `n`, the program responds as follows:

```
ACD calls shorter than the Phantom Abandon Call Timer value  
will be counted as abandoned.  
Enter the Phantom Abandon Call Timer value in seconds  
(1-10): (default:10)
```

14. Enter the Phantom Abandon Call Timer value.

**⇒ NOTE:**

The Phantom Abandon Call Timer value can be changed through the `cmssvc` menu using the `swsetup` option.

The program responds as follows:

```
Enter the local port assigned to switch. (1-64):
```

15. Enter the local port or channel number on the switch. The program responds as follows:

```
Enter the remote port assigned to switch (1-64):
```

16. Enter the remote port or channel number on the switch. The program responds as follows (for example):

```
Select the device used for x.25 connectivity to the switch
1) Serial Port A
2) Serial Port B
3) HSI link 0
4) HSI link 1
5) HSI link 2
6) HSI link 3
7) HSI link 4
8) HSI link 5
9) HSI link 6
10) HSI link 7
11) Software loopback link 0
12) Software loopback link 1
Enter choice (1-12):
```

17. Enter the number that corresponds to the device used for x.25 connectivity.

**⇒ NOTE:**

Except for the loopback links, which are for testing only, the choices on the menu correspond to the hardware connections that can be made between the *CentreVu* CMS and the switch.

If you choose a serial port, but you have a High-Speed Serial Interface (HSI) card, you receive an error message as follows:

```
Choose one of the HSI links for your x.25 connectivity.
Re-enter your selection.
```

If you choose an HSI link but do not have an HSI card, you receive an error message as follows:

```
Without an HSI card you must use serial port X for your
x.25 connectivity.
Re-enter your selection.
```

If you choose a loopback link, the program responds as follows:

```
This choice is used for testing only. If you make this
selection, you will not be able to collect data from your
ACD. Is this what you want to do (y/n)?
```

If you choose `y`, the selection takes effect. If you choose `n`, the system redisplay the menu. When you have entered an acceptable choice, the program responds as follows:

```
Number of splits/skills (0-XXX):
```

18. Enter the number of splits/skills in this ACD. The program responds as follows:

```
Total split/skill members, summed over all splits/skills
(0-XXXX):
```

19. Enter the maximum number of split/skill members that will be logged into this ACD simultaneously, considering shift overlap.
- For nonEAS, sum all agent-split combinations, counting each split an agent will log into (maximum is 4) as a split member.
  - For EAS, sum all agent-skill combinations that will be logged in at the same time, counting the maximum number of skills the supervisors expect to assign to each agent (up to 20) during a shift.

If it is not possible to sum the number of splits/skills for each agent, you can determine the capacity needed by multiplying the total number of agents times the average number of splits/skills per agent. The program responds as follows:

```
Number of shifts (1-4):
```

20. Enter the number of shifts. The program responds as follows:

```
Enter the start time for shift 1 (hh:mmXM):
```

21. Enter the start time for shift 1; for example, 08:00am. The program responds as follows:

```
Enter the stop time for shift 1 (hh:mmXM):
```

22. Enter the stop time for shift 1; for example, 05:00pm. The program responds as follows:

```
Number of agents logged into all splits/skills during  
shift 1 (0-XXX):
```

23. Enter the number of agents logged in during the shift.

**⇒ NOTE:**

Steps 21 through 23 repeat for the number of shifts entered in Step 20.

When all shift have been set up, the program responds as follows:

```
Number of trunk groups (0-XXX):
```

24. Enter the number of trunk groups associated with this ACD. The program responds as follows:

```
Number of trunks (0-XXXX):
```

25. Enter the number of trunks associated with this ACD. The program responds as follows:

```
Number of unmeasured facilities (0-XXXX):
```

26. Enter the number of unmeasured trunk facilities associated with this ACD. If the switch supports call work codes, the program responds as follows:

```
Number of call work codes (X-XXXX):
```

27. Enter the number of call work codes. The program responds as follows:

```
Creating database tables  
.....
```

After a few minutes, if vectoring is enabled on the switch (that is, if a *y* was entered in Step 11), the program responds as follows:

```
Enter number of vectors (0-XXXX):
```

28. Enter the number of vectors. The program responds as follows:

```
Enter number of VDNs (0-XXXX):
```

29. Enter the number of VDNs.

The program repeats Steps 9 through 28 for each ACD entered in Step 8. After you define the last ACD, the program continues as follows:

```
Updating database.  
  
Computing space requirements and file system space  
availability.  
  
Setup completed successfully.
```

If the setup determines that you do not have enough file space, you will get the following warning message:

```
You do not currently have sufficient file space for your  
existing CMS data. At this point you should turn on CMS, go  
to the "Data Storage Allocation" screen, and verify/modify  
the administration, or go to the "Free Allocation" screen  
and verify/modify your existing free space.
```

30. Verify that the installation completed successfully by entering the following:

```
tail /cms/install/logdir/admin.log
```

All failure messages are logged in this file. The *CentreVu* CMS software is successfully set up when you see a message similar to the following:

```
File systems/space available:  
  /cms      12994480  
  
File systems/current blocks free:  
  /cms      12994480  
/cms: VDN,TKGRP,VECTOR,TRUNK,AGENT_LOG_REC,  
AGENT_TRACE_REC,SPLIT,AGENT,EXCEPTIONS_REC,WORKCODE,  
CALL_REC,  
Number of calls to fill_fs():12  
Setup completed successfully <data/time>
```

You may edit this file and add comments about the packages that were installed or authorized.

If you need to install additional *CentreVu* CMS-related feature packages (Forecasting or External Call History), go to the appropriate section in this chapter and follow the procedures.

If you are not installing any other feature packages, do the following to turn on CMS:

1. Access the *CentreVu* CMS Services menu by entering `cmssvc`.  
The menu appears.
2. Enter `3` to select the `run_cms` option.
3. Enter `1` to turn on *CentreVu* CMS.  
CMS turns on.

## Set Up *CentreVu* CMS Using a *UNIX* Flat File

### Overview

Setting up the *CentreVu* CMS feature package using a *UNIX* flat file consists of editing a copy of the `cms.inst.sk1` file and starting the install program.

### Edit the File

1. Change to the CMS installation directory by entering the following:

```
cd /cms/install/cms_install
```

2. Make a copy of the CMS installation file by entering the following:

```
cp cms.inst.sk1 cms.install
```

3. Change permissions on the copied CMS installation file by entering the following:

```
chmod 644 cms.install
```

4. Edit the copied CMS installation file by entering the following:

```
vi cms.install
```

The file contains a series of questions and value ranges for the ACD/switch configuration. The following pages show a sample file with example values in bold. There is a separate example for R3V6 and R3V5.

## R3V6 Example

```
# Enter a name for this UNIX system (up to 256 characters):
cms3
# Select the type of backup device you are using
# 1) SCSI QIC-150 cartridge tape - 150MB tape
# 2) 14.0 Gbyte 8mm tape
# 3) 5.0 Gbyte 8mm tape
# 4) SCSI QIC-2.5 cartridge tape - 2.5GB tape
# 5) SCSI 4-8 SLR cartridge tape - 4GB tape (8GB compressed)
# Enter choice (1-5):
4
# Default backup device paths based on device type:
# Device                                Default backup path
# SCSI QIC-150 cartridge tape - 150MB tape /dev/rmt/0
# SCSI QIC-60 cartridge tape - 60MB tape /dev/rmt/0
# 14.0 Gbyte 8mm tape /dev/rmt/0c
# 5.0 Gbyte 8mm tape /dev/rmt/0
# SCSI QIC-2.5 cartridge tape - 2.5GB tape /dev/rmt/0c
# SCSI 4-8 SLR cartridge tape - 4GB tape (8GB compressed) /dev/rmt/0c
# Enter the default backup device path:
/dev/rmt/0c
# Enter number of ACDs being administered (1-8):
3
# The following information is required per ACD:
# Information for ACD 1:
# Enter switch name (up to 20 characters):
retail1
# Select the model of switch for this ACD
# 1) Definity-G2.1
# 2) Definity-G2.2
# 3) Definity-G3i
# 4) Definity-G3r
# 5) Definity-G3V2
# 6) Definity-G3V3
# 7) Definity-G3V4
# 8) Definity-G3V5
# 9) Definity ECS R6
# Enter choice (1-9):
9
# Is Vectoring enabled on the switch? (y/n):
Y
# Is Expert Agent Selection enabled on the switch? (y/n):
Y
# Does the Central Office have disconnect supervision? (y/n):
Y
# If the Central Office has disconnect supervision, enter 0. Otherwise,
# ACD calls shorter than the Phantom Abandon Call Timer
# value will be counted as abandoned.
# Enter the Phantom Abandon Call Timer value in seconds (0-10):
0
# Enter the local port assigned to switch (1-64):
1
# Enter the remote port assigned to switch (1-64):
2
```

```

# Select the device used for x.25 connectivity to the switch
# 1) Serial port A
# 2) Serial port B
# 3) HSI link 0
# 4) HSI link 1
# 5) HSI link 2
# 6) HSI link 3
# 7) HSI link 4
# 8) HSI link 5
# 9) HSI link 6
# 10) HSI link 7
# 11) Software loopback link 0
# 12) Software loopback link 1
# Enter choice (1-12):
3
# Skip the next question if you did not enter choices 11 - 12. These
are used for testing only. If you select one of these, you will not be
able to collect data from your ACD.
# Are you sure you want to do this? (y/n):

# Maximum number of splits/skills based on switch type:
# Release(s)                               Value
# Definity-G2.1/Definity-G2.2                60
# Definity-G3i/Definity-G3r                  99
# Definity-G3V2/Definity-G3V3/Definity-G3V4 255
# Definity-G3V5/Definity ECS R6/Definity-G2.2(EAS) 600
# Number of splits/skills (0-Maximum):
100
# Maximum number of split/skill members based on switch type:
# Release(s)                               Value
# Definity-G3i                              500
# Definity-G2.1/Definity-G2.2/Definity-G3r 1023
# Definity-G2.2(EAS)                        5115
# Definity-G3V2/Definity-G3V3/Definity-G3V4 5200
# Definity-G3V5/Definity ECS R6             10000
# Total split/skill members, summed over all splits/skills (0-Maximum):
1000
# Number of shifts (1-4):
1
# Enter the start time for shift 1 (hh:mmXM):
08:00AM
# Enter the stop time for shift 1 (hh:mmXM):
05:00PM
# Number of agents logged into all splits/skills during shift 1
(1-Maximum):
100
# Enter the start time for shift 2 (hh:mmXM):

# Enter the stop time for shift 2 (hh:mmXM):

# Number of agents logged into all splits/skills during shift 2
(1-Maximum):
# Enter the start time for shift 3 (hh:mmXM):

# Enter the stop time for shift 3 (hh:mmXM):

```

```
# Number of agents logged into all splits/skills during shift 3 (1-Maximum):

# Enter the start time for shift 4 (hh:mmXM):

# Enter the stop time for shift 4 (hh:mmXM):

# Number of agents logged into all splits/skills during shift 4 (1-Maximum):

# Maximum number of trunk groups based on switch type:
# Release(s)                               Value
# Definity-G3i                              99
# Definity-G2.1/Definity-G2.2/Definity-G3r   255
# Definity-G3V2/Definity-G3V3/Definity-G3V4  666
# Definity-G3V5/Definity ECS R6             666
# Number of trunk groups (0-Maximum):
20
# Maximum number of trunks based on switch type:
# Release(s)                               Value
# Definity-G3i                              400
# Definity-G2.1/Definity-G2.2/Definity-G3r   4000
# Definity-G3V2/Definity-G3V3/Definity-G3V4  4000
# Definity-G3V5/Definity ECS R6             4000
# Number of trunks (0-Maximum):
100
# Number of unmeasured facilities (0 to (Maximum trunks - Number of trunks)):
10
# Minimum number of call work codes based on switch type:
# Release(s)                               Value
# Definity-G2.1                             0
# Definity-G2.2/Definity-G3i/Definity-G3r/Definity-G3V2  1
# Definity-G3V3/Definity-G3V4/Definity-G3V5  1
# Definity ECS R6                           1
# Maximum number of call work codes based on switch type:
# Release(s)                               Value
# Definity-G2.1                             0
# Definity-G2.2/Definity-G3i/Definity-G3r/Definity-G3V2  1999
# Definity-G3V3/Definity-G3V4/Definity-G3V5  1999
# Definity ECS R6                           1999
# Number of call work codes (Minimum-Maximum):
100
# Maximum number of vectors based on switch type:
# Release(s)                               Value
# Definity-G2.1                             128
# Definity-G3i                              256
# Definity-G2.2                             511
# Definity-G3r/Definity-G3V2/Definity-G3V3   512
# Definity-G3V4/Definity-G3V5/Definity ECS R6 512
# Enter number of vectors (0-Maximum):
20
```

```
# Maximum number of VDNs based on switch type:
# Release(s)                               Value
# Definity-G3i                              500
# Definity-G2.1/Definity-G2.2/Definity-G3r  2000
# Definity-G3V2/Definity-G3V3/Definity-G3V4 2000
# Definity-G3V5                              2000
# Definity ECS R6                            8000
# Enter number of VDNs (0-Maximum):
10

# Information for ACD 2:
```

*(the file repeats preceding statements for ACDs 2 through 8;  
enter data for only the required number of ACDs)*

## R3V5 Example

```

# Enter a name for this UNIX system (up to 256 characters):
cms3
# Select the type of backup device you are using
# 1) SCSI QIC-150 cartridge tape - 150MB tape
# 2) SCSI QIC-60 cartridge tape - 60MB tape
# 3) 14.0 Gbyte 8mm tape
# 4) 5.0 Gbyte 8mm tape
# 5) SCSI QIC-2.5 cartridge tape - 2.5GB tape
# 6) SCSI 4-8 SLR cartridge tape - 4GB tape (8GB compressed)
# Enter choice (1-6):
5
# Default backup device paths based on device type:
# Device                                Default backup path
# SCSI QIC-150 cartridge tape - 150MB tape      /dev/rmt/0
# SCSI QIC-60 cartridge tape - 60MB tape        /dev/rmt/0
# 14.0 Gbyte 8mm tape                          /dev/rmt/0c
# 5.0 Gbyte 8mm tape                          /dev/rmt/0
# SCSI QIC-2.5 cartridge tape - 2.5GB tape      /dev/rmt/0c
# SCSI 4-8 SLR cartridge tape - 4GB tape (8GB compressed) /dev/rmt/0c
# Enter the default backup device path:
/dev/rmt/0c
# Enter number of ACDs being administered (1-8):
2
# The following information is required per ACD:
# Information for ACD 1:
# Enter switch name (up to 20 characters):
retail2
# Select the model of switch for this ACD
# System 85-R2V4 and Definity-G1.1 are only valid if this load is being
# used as a bugfix
# Definity-G3V5 is only valid if the CMS release is R3V5 or greater.
# 1) System85-R2V4
# 2) Definity-G1.1
# 3) Definity-G2.1
# 4) Definity-G2.2
# 5) Definity-G3i
# 6) Definity-G3r
# 7) Definity-G3V2
# 8) Definity-G3V3
# 9) Definity-G3V4
# 10) Definity-G3V5
# Enter choice (1-10):
10
# Is Vectoring enabled on the switch? (y/n):
y
# Is Expert Agent Selection enabled on the switch? (y/n):
y
# Does the Central Office have disconnect supervision? (y/n):
y
# If the Central Office has disconnect supervision, enter 0. Otherwise,
# ACD calls shorter than the Phantom Abandon Call Timer
# value will be counted as abandoned.
# Enter the Phantom Abandon Call Timer value in seconds (0-10):
0
# Enter the local port assigned to switch (1-64):
3

```

```

# Enter the remote port assigned to switch (1-64):
4
# Select the device used for x.25 connectivity to the switch
# 1) Serial port A
# 2) Serial port B
# 3) HSI link 0
# 4) HSI link 1
# 5) HSI link 2
# 6) HSI link 3
# 7) HSI link 4
# 8) HSI link 5
# 9) HSI link 6
# 10) HSI link 7
# 11) Software loopback link 0
# 12) Software loopback link 1
# Enter choice (1-12):
8
# Skip the next question if you did not enter choices 11 - 12. These are
used for testing only. If you select one of these, you will not be able to
collect data from your ACD.
# Are you sure you want to do this? (y/n):

# Maximum number of splits/skills based on switch type:
# Release(s)                                Value
# System85-R2V4/Definity-G2.1/Definity-G2.2    60
# Definity-G1.1/Definity-G3i/Definity-G3r      99
# Definity-G3V2/Definity-G3V3/Definity-G3V4    255
# Definity-G3V5/Definity-G2.2(EAS)            600
# Number of splits/skills (0-Maximum):
100
# Maximum number of split/skill members based on switch type:
# Release(s)                                Value
# Definity-G1.1                                400
# Definity-G3i                                  500
# System85-R2V4/Definity-G2.1/Definity-G2.2/Definity-G3r 1023
# Definity-G2.2(EAS)                            5115
# Definity-G3V2/Definity-G3V3/Definity-G3V4    5200
# Definity-G3V5                                10000
# Total split/skill members, summed over all splits/skills (0-Maximum):
1000
# Number of shifts (1-4):
1
# Enter the start time for shift 1 (hh:mmXM):
08:00AM
# Enter the stop time for shift 1 (hh:mmXM):
05:00PM
# Number of agents logged into all splits/skills during shift 1 (1-Maximum):
100
# Enter the start time for shift 2 (hh:mmXM):

# Enter the stop time for shift 2 (hh:mmXM):

# Number of agents logged into all splits/skills during shift 2 (1-Maximum):

# Enter the start time for shift 3 (hh:mmXM):

```

```

# Enter the stop time for shift 3 (hh:mmXM):

# Number of agents logged into all splits/skills during shift 3 (1-Maximum):

# Enter the start time for shift 4 (hh:mmXM):

# Enter the stop time for shift 4 (hh:mmXM):

# Number of agents logged into all splits/skills during shift 4 (1-Maximum):

# Maximum number of trunk groups based on switch type:
# Release(s)                                Value
# Definity-G1.1/Definity-G3i                99
# System85-R2V4/Definity-G2.1/Definity-G2.2/Definity-G3r    255
# Definity-G3V2/Definity-G3V3/Definity-G3V4/Definity-G3V5    666
# Number of trunk groups (0-Maximum):
30
# Maximum number of trunks based on switch type:
# Release(s)                                Value
# Definity-G1.1/Definity-G3i                400
# System85-R2V4/Definity-G2.1/G2.2/G3r/G3V2/G3V3/G3V4/G3V5    4000
# Number of trunks (0-Maximum):
150
# Number of unmeasured facilities (0 to (Maximum trunks - Number of trunks)):
10
# Minimum number of call work codes based on switch type:
# Release(s)                                Value
# System85-R2V4/Definity-G1.1/Definity-G2.1                0
# Definity-G2.2/G3i/G3r/G3V2/G3V3/G3V4/G3V5                1
# Maximum number of call work codes based on switch type:
# Release(s)                                Value
# System85-R2V4/Definity-G1.1/Definity-G2.1                0
# Definity-G2.2/G3i/G3r/G3V2/G3V3/G3V4/G3V5                1999
# Number of call work codes (Minimum-Maximum):
100
# Maximum number of vectors based on switch type:
# Release(s)                                Value
# Definity-G1.1                                           0
# System85-R2V4/Definity-G2.1                             128
# Definity-G3i                                           256
# Definity-G2.2                                           511
# Definity-G3r/Definity-G3V2/Definity-G3V3/Definity-G3V4/Definity-G3V5    512
# Enter number of vectors (0-Maximum):
20
# Maximum number of VDNs based on switch type:
# Release(s)                                Value
# Definity-G1.1                                           0
# Definity-G3i                                           500
# System85-R2V4/Definity-G2.1/G2.2/G3r/G3V2/G3V3/G3V4/G3V5    2000
# Enter number of VDNs (0-Maximum):
10
# Information for ACD 2:

```

*(the file repeats preceding statements for ACDs 2 through 8;  
enter data for only the required number of ACDs)*

5. Enter the appropriate values for your configuration. As shown in bold in the examples, the entries must be added on the blank lines after each question.

**! CAUTION:**

*Use the computer's host name for the UNIX system name. The computer's host name was assigned during the factory installation.*

After you have entered all the appropriate values, enter `:wq` to write and quit the file.

## Start the Install Program

1. Enter `cd` to change to the root directory.
2. Access the *CentreVu* CMS Services menu by entering the following:

```
cmssvc
```

The program responds as follows:

```
Lucent Technologies CentreVu(R) Call Management System Services
Menu

Select a command from the list below.
 1) auth_display Display feature authorizations
 2) auth_set     Authorize capabilities/capacities
 3) run_cms     Turn CentreVu CMS on or off
 4) setup       Set up the initial configuration
 5) swinfo      Display switch information
 6) swsetup     Change switch information
 7) patch_inst  Install a single CMS patch from CD
 8) patch_rmv   Backout an installed CMS patch
 9) load_all    Install all CMS patches found on CD
10) back_all    Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit:
```

3. Enter `4` to select the `setup` option. If setup has been done previously, the program responds as follows:

```
Warning!!! Setup has already been performed.
Running this command will remove all CMS data in the database.
Do you wish to proceed and re-configure CMS? (y/n): (default: n)
```

4. Enter `y`. The program responds as follows (R3V6 only; for R3V5, skip to the response of Step 5):

```
Select the language for this server:
```

```
All languages are ISO Latin except Japanese. Selection of the
server language assumes that existing customer data is
compatible. (Upgrade from any ISO Latin language to any ISO
Latin language or from Japanese to Japanese is supported).
```

```
1) English
2) Dutch
3) French
4) German
5) Italian
6) Portuguese
7) Spanish
8) Japanese
Enter choice (1-8): (default: 1)
```

5. Enter the number for the language used on this system. The program responds as follows:

```
The input will be read from
 1) the terminal
 2) a flat file
Enter choice (1-2):
```

6. Enter `2` to select the `flat file` option. The program responds as follows:

```
*** The rest of this command is running in the background ***
```

7. Verify that the installation completed successfully by entering the following:

```
tail -f /cms/install/logdir/admin.log
```

The `-f` option in the `tail` command updates the console as messages are written to the `admin.log` file. All failure messages are logged in this file. The *CentreVu* CMS software is successfully set up when you see a message similar to the following:

```
File systems/space available:
  /cms      12994480

File systems/current blocks free:
  /cms      12994480
/cms: VDN,TKGRP,VECTOR,TRUNK,AGENT_LOG_REC,
AGENT_TRACE_REC,SPLIT,AGENT,EXCEPTIONS_REC,WORKCODE,
CALL_REC,
Number of calls to fill_fs():12
Setup completed successfully <data/time>
```

You may edit this file and add comments about the packages that were installed or authorized.

8. Press Delete to break out of the `tail -f` command.

If you need to install additional *CentreVu* CMS-related feature packages (Forecasting or External Call History), go to the appropriate section in this chapter and follow the procedures.

If you are not installing any other feature packages, do the following to turn on CMS:

1. Access the *CentreVu* CMS Services menu by entering `cmssvc`.  
The menu appears.
2. Enter `3` to select the `run_cms` option.
3. Enter `1` to turn on *CentreVu* CMS.  
CMS turns on.

# Install the Forecasting Feature Package

---

## Overview

Use the procedure in this section to install the Forecasting feature package.

---

## Prerequisites

- You must be logged in as *root*
  - The computer must be in run-level 3 (check this with the command `who -r`)
  - All file systems must be mounted
  - *CentreVu* CMS must be turned off.
- 

## Procedure

1. Access the *CentreVu* CMS Services menu by entering the following command:

```
cmssvc
```

The program responds as follows:

```
Lucent Technologies CentreVu(R) Call Management System Services
Menu

Select a command from the list below.
 1) auth_display Display feature authorizations
 2) auth_set     Authorize capabilities/capacities
 3) run_cms      Turn CentreVu CMS on or off
 4) setup        Set up the initial configuration
 5) swinfo       Display switch information
 6) swsetup      Change switch information
 7) patch_inst   Install a single CMS patch from CD
 8) patch_rmv    Backout an installed CMS patch
 9) load_all     Install all CMS patches found on CD
10) back_all     Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit:
```

2. Enter 1 to select the `auth_display` option. The system lists the current authorizations:

```

Version purchased:      R3VX

Capability/Capacity    Authorization
-----
vectoring              authorized
forecasting            authorized
graphics               authorized
external call history  authorized
expert agent selection authorized
external application   authorized
More than 2000 VDNs measured authorized
Lucent Technologies CentreVu(R) Supervisor authorized
Lucent Technologies CentreVu(R) Report Designer authorized
Maximum number of split/skill members 10000
Maximum number of ACDs 2
Simultaneous CentreVu Supervisor logins 250

```

3. Verify that the system is authorized to install the Forecasting package.

**⇒ NOTE:**

If Forecasting is not authorized but should be, go to “Set Authorizations” on Page 2-3 in this chapter and follow those procedures.

4. Access the *CentreVu* CMS Administration menu by entering the following command:

```
cmsadm
```

The program responds as follows:

```

Lucent Technologies CentreVu(R) Call Management System
Administration Menu
Select a command from the list below.
 1) acd_create  Define a new ACD
 2) acd_remove  Remove all administration and data for an ACD
 3) backup      Filesystem backup
 4) diskmap     Estimate disk requirements
 5) memory      Estimate memory requirements
 6) realtime    Estimate real-time report refresh rate
 7) pkg_install Install a feature package
 8) pkg_remove  Remove a feature package
 9) run_cms     Turn CentreVu CMS on or off
Enter choice (1-9) or q to quit:

```

5. Enter 7 to select the `pkg_install` option. The program responds as follows:

```
The CMS Features that can be installed are
  1) forecasting
  2) external call history
Enter choice (1-2) or q to quit:
```

**⇒ NOTE:**

The program displays only feature packages that are authorized and not yet installed.

6. Enter the number that corresponds to the Forecasting package (in this example, 1). The program responds as follows:

```
Creating database tables
.....
```

The dots continue to appear as the program sets up the Forecasting tables. After the Forecasting tables are completed, the program responds as follows:

```
Computing space requirements and file system space
availability.

Forecasting package installed.
```

7. Verify that the installation completed successfully by entering the following:

```
tail /cms/install/logdir/admin.log
```

The Forecasting package is successfully installed when you see this message:

```
.  
.  
Forecasting package installed <date/time>
```

You may edit this file and add comments about the packages that were installed or authorized.

If you need to install External Call History, go to the appropriate section in this chapter and follow the procedures.

If you are not installing any other feature packages, do the following to turn on CMS:

1. Access the *CentreVu* CMS Services menu by entering `cmssvc`.

The menu appears.

2. Enter `3` to select the `run_cms` option.

3. Enter `1` to turn on *CentreVu* CMS.

CMS turns on.

# Install the External Call History Package

---

## Overview

Use the procedure in this section to install the External Call History feature package.

---

## Prerequisites

- The customer must have a separate computer for the storage and reporting of call records
- Both the storage machine and the *CentreVu* CMS machine must be administered in *UNIX-to-UNIX* copy (UUCP)
- If the storage machine is not running the *UNIX* system, use a DOS version of UUCP
- You must be logged in as *root*
- The computer must be in run-level 3 (check this with the command `who -r`)
- All file systems must be mounted
- *CentreVu* CMS must be turned off.

 **NOTE:**

Once the External Call History package is installed, you will no longer be able to access any call record data from *CentreVu* CMS. For more information, see *CentreVu* CMS R3V6 External Call History Interface (585-215-854). This document explains how to administer the UUCP link port on an NTS.

## Procedure

Do these steps to install the External Call History feature package:

1. Access the *CentreVu* CMS Services menu by entering the following:

```
cmssvc
```

The program responds as follows:

```
Lucent Technologies CentreVu(R) Call Management System Services
Menu

Select a command from the list below.
 1) auth_display Display feature authorizations
 2) auth_set     Authorize capabilities/capacities
 3) run_cms      Turn CentreVu CMS on or off
 4) setup        Set up the initial configuration
 5) swinfo       Display switch information
 6) swsetup      Change switch information
 7) patch_inst   Install a single CMS patch from CD
 8) patch_rmv    Backout an installed CMS patch
 9) load_all     Install all CMS patches found on CD
10) back_all     Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit:
```

2. Enter 1 to select the `auth_display` option. The program responds by displaying the current authorizations:

```

Version purchased:  R3VX
Capability/Capacity  Authorization
-----
vectoring           authorized
forecasting         installed
graphics            authorized
external call history authorized
expert agent selection authorized
external application authorized
More than 2000 VDNs measured authorized
Lucent Technologies CentreVu(R) Supervisor authorized
Lucent Technologies CentreVu(R) Report Designer authorized
Maximum number of split/skill members 10000
Maximum number of ACDS 2
Simultaneous CentreVu Supervisor logins 250
```

3. Verify that the system is authorized for the External Call History package.

**⇒ NOTE:**

If External Call History is not authorized but should be, go to “Set Authorizations” on Page 2-3 in this chapter and follow those procedures.

4. Access the *CentreVu* CMS Administration menu by entering the following:

```
cmsadm
```

The program responds as follows:

```
Lucent Technologies CentreVu(R) Call Management System
Administration Menu
Select a command from the list below.
 1) acd_create  Define a new ACD
 2) acd_remove  Remove all administration and data for an ACD
 3) backup      Filesystem backup
 4) diskmap     Estimate disk requirements
 5) memory      Estimate memory requirements
 6) realtime    Estimate real-time report refresh rate
 7) pkg_install  Install a feature package
 8) pkg_remove  Remove a feature package
 9) run_cms     Turn CentreVu CMS on or off
Enter choice (1-9) or q to quit:
```

5. Enter 7 to select the `pkg_install` option. The program responds as follows:

```
The CMS Features that can be installed are
 1) forecasting
 2) external call history
Enter choice (1-2) or q to quit:
```

**⇒ NOTE:**

The system displays only feature packages that are authorized and not yet installed.

6. Enter the number that corresponds to the External Call History package (in this example, 2). The program responds as follows:

```
Enter name of computer to which to send call records  
(up to 256 characters):
```

7. Enter the name of the computer where call records will be collected. The program responds as follows:

```
Enter full path of the program to transmit the external  
call history files: (default: /cms/dc/chr/uucp_copy)
```

8. Press Enter. The program responds as follows:

```
Enter full path of the program to check the external call  
history file transmission: (default:  
/cms/dc/chr/uucp_check)
```

9. Press Enter. The program responds as follows:

```
Enter password for nuucp login on computer (up to 8  
characters)
```

10. Enter the password for `nuucp` of the Call History Reporting machine that was administered in `uucp`. The program responds as follows:

```
Enter CMS port for connection to computer (s_pdevxxx):
```

11. Enter the *CentreVu* CMS port administered for the Call History Reporting machine. This port can either be on one of the NTS patch panels or on one of the 8- or 16-port NTSs. For more information on administering the ports on the NTS, see “Installing Terminals, Printers, and Modems” in *CentreVu* CMS R3V6 *Sun SPARCserver* Computers Hardware Installation (585-215-857), *CentreVu* CMS R3V6 *Sun Enterprise 3000* Computer Hardware Installation (585-215-867), or *CentreVu* CMS *Sun Ultra 5* Computer Hardware Installation (585-215-871). The program responds as follows:

```
Select a speed for this connection
1) 19200
2) 38400
Enter choice (1-2):
```

12. Enter the speed that the connection between the *CentreVu* CMS and Call History Reporting machine will be using. The program responds as follows:

```
Number of call segments to buffer for ACD xxxxxx (0-99999):
```

13. Enter the number of call records to be held in the buffer if the Call History machine cannot accept the data. (This step reserves disk space; therefore, sufficient disk space must be available.)

**⇒ NOTE:**

This step is repeated for each administered ACD.

The program responds as follows:

```
Computing space requirements and file system space
availability.
```

```
External Call History package installed.
```

14. Verify that the installation completed successfully by entering the following:

```
tail /cms/install/logdir/admin.log
```

The External Call History package is installed successfully when you see this message:

```
External Call History package installed <date/time>
```

You may edit this file and add comments about the packages that were installed or authorized.

If you need to install Forecasting, go to the appropriate section in this chapter and follow the procedures.

If you are not installing any other feature packages, do the following to turn on CMS:

1. Access the *CentreVu* CMS Services menu by entering `cmssvc`.  
The menu appears.
2. Enter `3` to select the `run_cms` option.
3. Enter `1` to turn on *CentreVu* CMS.  
CMS turns on.



# Turning the System Over to the Customer

## Overview

This chapter describes how to test the *CentreVu*<sup>®</sup> Call Management System (CMS) software to ensure that the application is working properly. In addition, a worksheet is provided at the end of this chapter for turning the system over to the customer. You should do these tests after:

- Completing the initial computer installation and *CentreVu* CMS setup
- Completing a *CentreVu* CMS software package upgrade.

Before you begin the procedures described in this chapter, the switch technicians must complete the following:

- Connect the computer to the switch
- Translate the switch with the *CentreVu* CMS feature enabled
- Connect the switch to an active link.

The procedures in this chapter comprise of the following:

- Verify the system date and time
- Test the connection between the computer and the Technical Service Center (TSC)
- Assign passwords
- Test the link configuration between the computer and the switch
- Test the *CentreVu* CMS software
- Turn the system over to the customer.

If you encounter a problem that you cannot solve, escalate the problem through standard procedures.

# Verify the System Date and Time

---

## Overview

This section describes how to verify that the *Solaris*\* 2.5.1 system time and the current local time are the same.

---

## Check the Solaris System Date and Time

Verify that the system time is correct by entering `date`.

If the system time is correct, go to the “Test the Connection to the TSC” section in this chapter. Otherwise, continue with the “Set the System Date and Time” and “Set the System Country and Time Zones” sections in this chapter.

---

## Set the System Date and Time

1. Log in as *root*.
2. Change to an OpenBoot mode by entering the following:

```
/usr/sbin/shutdown -i0 -g0 -y
```

**⇒ NOTE:**

The `-i0` portion of the `shutdown` command string changes the system to an OpenBoot mode.

3. At the `ok` prompt, enter the following:

```
boot -s
```

The system responds as follows:

```
.\n.\nResetting.....\nType Ctrl-d to proceed with normal startup\n(or give root password for system maintenance):
```

---

\**Solaris* is a registered trademark of Sun Microsystems, Inc.

4. Enter the *root* password. The system responds:

```
Entering System Maintenance Mode
Enter Terminal Type: (default is 615):
```

5. At the prompt, enter the type of terminal, and press Enter.
6. As *root*, enter the command `date mmddHHMM[[cc]yy]` to set the time and date. For example:
  - **mm (month)**: Enter the month (numeric). Range: 01-12 (01=January, 02=February, and so on).
  - **dd (day)**: Enter the day of the month. Range: 01-31.
  - **HH (Hour)**: Enter the current hour of the day, military time. Range: 00-23.
  - **MM (minute)**: Enter the minute of the hour. Range: 00-59.
  - **cc (century)**: Enter the century minus 1 (for example, 19 for the 20th century).
  - **yy (year)**: Enter the last two digits of the current year (for example, 98 for 1998).
7. Continue with the “Set the System Country and Time Zones” section.

## Set the System Country and Time Zones

1. Edit the `/etc/default/init` file and set the `TZ` variable to equal the appropriate value in the `/usr/share/lib/zoneinfo` directory, as shown in the following example:

```
# vi /etc/default/init
<contents of the file is displayed>
# @(#)init.dfl 1.2 92/11/26
#
# This file is /etc/default/init. /etc/TIMEZONE is a symlink to this file.
# This file looks like a shell script, but it is not. To maintain
# compatibility with old versions of /etc/TIMEZONE, some shell constructs
# (i.e., export commands) are allowed in this file, but are ignored.
#
# Lines of this file should be of the form VAR=value, where VAR is one of
# TZ, LANG, or any of the LC_* environment variables.
#
TZ=US/Mountain ← This is the line you modify.
```

As an example for Mountain Standard Time, the `TZ` variable can be set to `MST` or `US/Mountain`. The entry in the `init` file is essentially a relative path name from the `/usr/share/lib/zoneinfo` directory. `MST` is a file in the `/usr/share/lib/zoneinfo` directory, and `Mountain` is a file in the `/usr/share/lib/zoneinfo/US` directory.

2. Write the read-only file using the `:w!` command.
3. Quit the file using the `:q` command.
4. Reboot the machine by entering `init 6`.

# Test the Connection to the TSC

## Overview

The information in this section is used to verify that the TSC is properly connected to the computer. This connection allows the TSC to do remote maintenance.

## Test the Remote Access Port

Use the information in this section to verify that the TSC can dial in remotely and perform routine maintenance procedures on the computer.

This section describes how to redirect the remote console port using the *Solaris* software package. Redirecting the console allows the TSC to dial in and do remote maintenance. The location of the remote console port differs depending on the hardware platform:

Hardware Platform	Port A	Port B
<i>SPARCserver</i> <sup>*</sup> and <i>Enterprise</i> <sup>†</sup> 3000	Remote Console	Switch Link
<i>Ultra</i> <sup>‡</sup> 5	Switch Link	Remote Console

<sup>\*</sup>*SPARCserver* is a trademark of SPARC International, Inc.

<sup>†</sup>*Enterprise* is a trademark of Sun Microsystems, Inc.

<sup>‡</sup>*Ultra* is a trademark of Sun Microsystems, Inc.

Test the remote console port on the back of the computer by redirecting the console from the local console to the remote console, and then redirecting the console from the remote console back to the local console.

## Redirect the Console to the Remote Console

1. Dial in from the remote console to the remote console modem (port A on a *SPARCserver* or *Enterprise 3000*, port B on an *Ultra 5*), and log in as *root*.

2. Remove the port monitor by entering the following:

```
/cms/install/bin/abcmadm -r ttyX (where X is a or b)
```

The program responds as follows:

```
ttyX is currently set to be incoming
Are you sure you want to change it? [y,n,?]
```

3. Enter *y*. The program responds as follows:

```
ttyX administration removed
```

4. To check the speed of the modem, enter the following:

```
/cms/install/bin/abcmadm -k
```

**⇒ NOTE:**

All remote access ports have a default speed of 9600 bps.

5. Redirect the console to the remote console port by entering the following:

```
/cms/install/bin/abcmadm -c -b 9600 ttyX (where X is a or b)
```

The program responds as follows:

```
This change requires a reboot to take affect
Are you ready to reboot? [y,n,?]
```

6. Enter `y`. The program responds as follows:

```
Starting port monitor.  
Setting console parameters.  
Proceeding to reboot.
```

The system automatically reboots. As the system reboots, shutting down, reset, and rebooting messages appear on the local console. When the system starts to come back up, the local console should go blank, and the system boot diagnostics should appear on the remote console. After the system reboots, a `console login:` prompt should appear on the remote console.

7. Log in to the remote console as *root*. At this time, an XDM login window for the *OpenWindows*<sup>\*</sup> interface appears on the local console.

 **CAUTION:**

*If you enter Control-D from the remote console to exit the system without first redirecting control back to the local console, you may lock yourself from using the console locally or remotely.*

---

<sup>\*</sup>*OpenWindows* is a trademark of Sun Microsystems, Inc.

## Redirect the Console Back to the Local Console

1. Redirect the console back to the local console by entering the following:

```
/cms/install/bin/abccadm -c local
```

The program responds as follows:

```
Console set to local

This change requires a reboot to take affect

Are you ready to reboot? [y,n,?]
```

2. Enter `y`. The system automatically reboots and the remote console port comes up as the console. As the system reboots, shutting down messages appear on the remote console. When the system starts to come back up, the system boot diagnostics should appear on the local console. After the system reboots, a `console login:` prompt should appear on the local console. A `login:` prompt should appear on the remote console.
3. Log in to the local console as *root*.
4. Log in to the remote console as *root*.

The console has been redirected from the remote console back to the local console.

---

# Assign Passwords

## Overview

This section describes how to assign passwords to each login on the *Sun* computer. Prior to testing the *CentreVu* CMS software, you must assign passwords to each of the following logins:

- root
- cms
- any other administration logins you normally add for a customer.

**⇒ NOTE:**

Record the passwords for each login on the provided “System Acceptance Worksheet” at the end of this chapter.

---

## Procedure

1. Log in as *root*.
2. At the system prompt, enter the following:

```
passwd <login>
```

where *<login>* is *root*, *cms*, and so on. The system responds as follows:

```
New password:
```

3. Enter the new password. The system responds as follows:

```
Re-enter new password:
```

4. Enter the password again.

## Test the ACD Link

---

### Overview

The following procedure should be completed by the on-site technician after the *CentreVu* CMS software has been installed or upgraded to verify the link to the from the CMS to the Automatic Call Distribution (ACD).

---

### Prerequisites

- The Common Desktop Environment (CDE) must be active.
  - *CentreVu* CMS must be turned on.
- 

### Procedure

1. In one of the windows at a console, log into the system by using a *CentreVu* CMS administrator's login ID (`su - cms`). Supply the correct password if prompted.
2. Access the *CentreVu* CMS main menu by typing `cms` and entering the correct terminal type.

The *CentreVu* CMS Main Menu has indicators that show if the link to the ACD is active. The link indicator consists of the “carets” (“^” and “v”) at the right side of the banner line. There should be one caret for each ACD, and all should be **up** (^). If you have four ACDs, for example, the link indicator should look like this: ^^^^v. That means that all four ACDs are up and running.

3. To further test the ACD link, select Maintenance from the *CentreVu* CMS Main Menu.
4. Select Connection Status from the Maintenance menu. The Connection Status should display the following:
  - The name of the ACD
  - That the application is in data transfer
  - That the session is in data transfer
  - That the connection is operational
  - The date, time, and any errors.
5. Return to the *CentreVu* CMS Main Menu by pressing the **Exit** screen-labeled key (SLK) once.
6. Continue with the next section, “Test the *CentreVu* CMS Software.”

# Test the *CentreVu* CMS Software

---

## Overview

The following procedure should be completed by the on-site technician after the *CentreVu* CMS software has been installed or upgraded to verify the sanity of *CentreVu* CMS software.

### NOTE:

If any of the steps in this test fail, see Chapter 4, “Troubleshooting,” and try to solve the problem associated with the step that failed. If you encounter a problem that you cannot solve, escalate the problem through normal procedures.

---

## Prerequisites

- The Common Desktop Environment (CDE) must be active
  - *CentreVu* CMS must be turned on.
- 

## Procedure

1. Test the Real-Time Reports subsystem by doing the following from the *CentreVu* CMS Main Menu:
  - a. Select the `Reports` option.
  - b. Select the `Real-time` option.
  - c. Select the `Split/Skill` option.
  - d. Select the `Split Status` or `Skill Status` option.
  - e. Verify that the Split/Skill Status Report Input window appears.
  - f. Enter a valid split number in the `Split:` or `Skill:` field.
  - g. Select the `Run` action list item, and run the report.
  - h. Verify that the Split or Skill Status Report window appears.

If the switch link is down, the report fields will be blank and the status line reads “Switch link down.”
  - i. Press the `Commands` SLK.
  - j. Select the `Print window` option to send the report to the printer.
  - k. Look at the message line near the bottom of the window, and verify that there is a confirmation message about sending the report to the printer.



4. Test the Exceptions subsystem by doing the following from the *CentreVu* CMS Main Menu:

- a. Select the `Exceptions` option.
- b. Select the `Real-time Exception Log` option.
- c. Verify that the window is accessible.

**⇒ NOTE:**

For a new installation, this window may be blank.

- d. Return to the *CentreVu* CMS Main Menu by pressing the `Exit` SLK once.

5. Test the Call Center Administration subsystem by doing the following from the *CentreVu* CMS Main Menu:

- a. Select the `Call Center Administration` option (R3V6) or the `ACD Administration` option (R3V5).
- b. Select the `Call Work Codes` option.
- c. Press Enter.
- d. Select the `List all` action list item, and list all the call work codes currently defined.
- e. Verify that the displayed information is correct (on a new system, the fields will be blank).
- f. Return to the *CentreVu* CMS Main Menu by pressing the `Exit` SLK twice.

6. Test the Custom Reports subsystem by doing the following from the *CentreVu* CMS Main Menu:

- a. Select the `Custom Reports` option.
- b. Select the `Real-time` option, and verify that the names of existing custom reports are listed. If there are no reports, you receive a message saying the submenu is empty.
- c. Return to the *CentreVu* CMS Main Menu by pressing the `Exit` SLK once.

7. Test the User Permissions subsystem by doing the following from the *CentreVu* CMS Main Menu:
  - a. Select the `User Permissions` option.
  - b. Select the `User Data` option.
  - c. Verify that the User Data Input window appears.
  - d. Return to the *CentreVu* CMS Main Menu by pressing the **Exit** SLK once.
8. Test the System Setup subsystem by doing the following from the *CentreVu* CMS Main Menu:
  - a. Select the `System Setup` option.
  - b. Select the `CMS state` option.
  - c. Verify that *CentreVu* CMS is operating in the `Multi-user` mode.
  - d. Return to the *CentreVu* CMS Main Menu by pressing the **Exit** SLK once.
9. Test the Maintenance subsystem by doing the following from the *CentreVu* CMS Main Menu:
  - a. Select the `Maintenance` option.
  - b. Select the `Printer Administration` option.
  - c. Enter a valid printer name in the `CMS printer name:` field.
  - d. Select the `List all` action list item, and list the printer parameters.
  - e. Verify that the printer has been administered correctly.
  - f. Return to the *CentreVu* CMS Main Menu by pressing the **Exit** SLK twice.
10. If the Graphics feature package has been enabled, test the Graphics subsystem by doing this from the *CentreVu* CMS Main Menu:
  - a. Select the `Graphics` option.
  - b. Verify that a Real-time Graphics screen can be accessed.
  - c. Return to the *CentreVu* CMS Main Menu by pressing the **Exit** SLK once.
11. At each *CentreVu* CMS terminal, log in as `cms` and choose the correct terminal type to verify that the terminals are working properly. To log off, select the `Logout` option from the *CentreVu* CMS Main Menu.

# Turn the System Over to the Customer

---

## Overview

This section contains the final procedures done before turning the system over to the customer.

---

## Procedure

1. There are two sets of backup tapes delivered with a new system: the original set from the factory and the set done after provisioning has been completed. Set these tapes to write-protect mode and store them in a safe place.
2. If you have not already done so, back up the file systems by following the procedures outlined in the “Perform a CMSADM File System Backup” section in Chapter 5, “Maintenance.”

 **CAUTION:**

*Use a new set of backup tapes for this CMSADM File System backup. Do **NOT** use the original set of factory backup tapes or provisioning backup tapes.*

3. If you have not already done so, back up the customer’s historical data by doing a full maintenance backup from the Maintenance subsystem in *CentreVu CMS*. See the “Backup Strategy” section of *CentreVu CMS R3V6 Administration (585-215-850)* or *CentreVu CMS R3V5 Administration (585-215-820)*.
4. Give the customer all of the CMS documentation, software CDs, and X.25 license information.
5. Copy and complete the System Acceptance Worksheet from the following page, attach the indicated printouts and screen dumps, and give the resulting package to the customer’s *CentreVu CMS* administrator.

 **CAUTION:**

*For system security, the CentreVu CMS administrator must store written passwords, INFORMIX<sup>®</sup> serial numbers and key license information, and X.25 license information in a secure place.*

---

\*INFORMIX is a registered trademark of Informix Software, Inc.

**System Acceptance Worksheet**

**Passwords for system login IDs:**

Login ID:     root     Password: \_\_\_\_\_  
Login ID: \_\_\_\_\_ Password: \_\_\_\_\_  
Login ID: \_\_\_\_\_ Password: \_\_\_\_\_  
Login ID: \_\_\_\_\_ Password: \_\_\_\_\_

**CentreVu CMS administrator login IDs and passwords:**

Login ID:     cms     Password: \_\_\_\_\_  
Login ID: \_\_\_\_\_ Password: \_\_\_\_\_  
Login ID: \_\_\_\_\_ Password: \_\_\_\_\_  
Login ID: \_\_\_\_\_ Password: \_\_\_\_\_

**df -t results** (attach screen dump showing df -t command results, or record results here):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**X.25 Password:**

Enter the X.25 password: \_\_\_\_\_

**Printer administration:**

Print out the CMS Maintenance - Printer Administration - List all window

**Free Space Allocation:**

Print out the CMS System Setup - Free Space Allocation window

**Data Storage Allocation parameters:**

Print out the CMS System Setup - Data Storage Allocation window for each ACD

**Storage Intervals parameters:**

Print out the CMS System Setup - Storage Intervals window for each ACD

# Troubleshooting

## Overview

This chapter contains troubleshooting information about the *CentreVu*<sup>®</sup> Call Management System (CMS) application. You should use the information to clear problems that may arise during and after the *CentreVu* CMS software installation.

The troubleshooting sections in this chapter are:

- Solve Installation-Related Problems
- Respond to a Small Computer System Interface (SCSI) Probe “Hang” Warning
- *Sun*<sup>\*</sup> Validation Test Suite
- Check Error Logs.

See *CentreVu* CMS R3V6 Administration (585-215-850) or *CentreVu* CMS R3V5 Administration (585-215-820) for information about restoring data, using backup strategies, accessing error logs, and using error messages.

### NOTE:

When executing commands remotely that may take a long time to complete (such as `cpio` and `/olds` commands), use the `nohup` command to ensure that the command will complete without interruption in case the data line disconnects. An example using the `nohup` command is shown below:

```
nohup cpio -icmudf -C 10240 -I /dev/rmt/0c "/cms" | tee
```

---

<sup>\*</sup>*Sun* is a registered trademark of Sun Microsystems, Inc.

# Solve Installation-Related Problems

---

## Overview

This section provides some suggestions for solving problems that could arise during an installation. The following installation-related problems are described:

- Troubleshoot a *Solstice DiskSuite*\* Software Installation
- Fix a *Solaris*† Patch Installation
- List Pkgchk Errors
- Solve X.25 License Installation Problems
- Check Installed *Solaris* Patches
- Recognize New Hardware Devices.

## Troubleshoot a *Solstice DiskSuite* Software Installation

The *Solstice DiskSuite* software package allows multiple disk partitions to be logically combined to create a single large partition. Using the *Solstice DiskSuite* package allows CMS databases to span multiple disks, and therefore grow quite large.

In order to troubleshoot problems with the *Solstice DiskSuite* software or the `/cms` file system, you must understand two basic concepts of *Solstice DiskSuite* operation: **state databases** and **metadevices**.

A state database contains the *Solstice DiskSuite* configuration information for the system, and is stored on a raw disk partition created for that purpose. At boot time, the operating system accesses the state database to configure the system. Typically, a system contains multiple copies of the state database.

A metadevice is a logical device that consists of a set of physical disk partitions. A system controlled by *Solstice DiskSuite* software can contain any number of metadevices; the state database contains a record of which disk partitions belong to which metadevices. Once a metadevice has been set up, the underlying disk partitions can be accessed only through the metadevice.

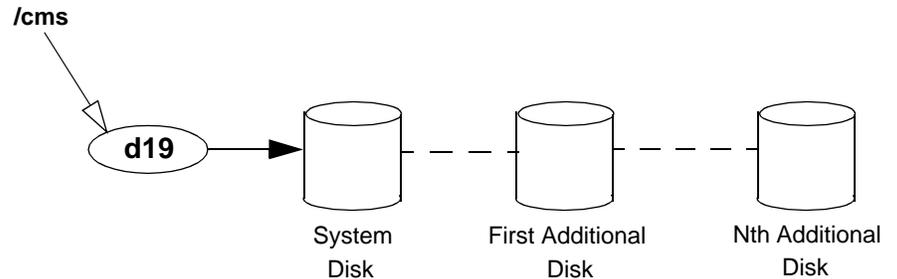
For a complete description of *Solstice DiskSuite* software and its basic technical concepts, see the *Solstice DiskSuite 4.1 Administration Guide*, published by Sun Microsystems, Inc.

---

\**Solstice DiskSuite* is a registered trademark of Sun Microsystems Inc.

†*Solaris* is a registered trademark of Sun Microsystems, Inc.

CMS uses the *Solstice DiskSuite* software to set up three state databases, and to create a single metadvice containing all the disk partitions used to store CMS data. See the following illustration.



## Identify Problems

Use the procedures and hints in this section to help identify and resolve problems with the CMS scripts that administer *Solstice DiskSuite* software, with the physical disks, with the state databases, with the metadvice, or with the `/cms` file system.

## Problems with CMS Administration Scripts

Use the `pkginfo -l SUNWmd` command to verify that the *Solstice DiskSuite* software is installed.

If it has not been installed, you may have to reinstall the operating system and repartition your disks. Once the software has been installed, you must use the `olds` script to set up the environment so CMS can access the disks. See Appendix B “Factory Software Installation” for a step-by-step description of installing *Solstice DiskSuite* software and using the `olds` script. If you receive an error message from the `olds` script, see “Common Error Messages” in this chapter.

## Disk I/O Problems

Check the system console and the `/var/adm/messages` log for messages that indicate problems with a specific hard disk. If a disk is generating errors, it may need to be replaced. For procedures related to recovering from disk crashes and replacing hard disk drives, see *CentreVu CMS Hardware Maintenance and Troubleshooting* (585-215-861).

## State Database Problems

Check the system console and the `/var/adm/messages` log for messages that indicate problems with a state database. Be aware that on a multiple-disk system, there should always be two copies of the state database on the first internal disk drive, and a third copy on the second internal disk drive. On a single-disk system, there should be three copies of the state database on the single disk.

Use the `/usr/opt/SUNWmd/sbin/metadb -i` command to check the status of the state database.

If the response indicates a state database problem, you must remove and re-create the state database that is causing the problem. Follow these steps:

1. Check whether the error is caused by an underlying disk problem. If it is, recover or replace the disk. See *CentreVu CMS Hardware Maintenance and Troubleshooting (585-215-861)*.
2. If you find no disk problem, or if the state database problem persists after the disk has been repaired, use the `metadb` command to remove and re-create the state database causing the problem. For example, use the following commands:

```
/usr/opt/SUNWmd/sbin/metadb -d mddb01
```

```
/usr/opt/SUNWmd/sbin/metadb -a mddb01
```

## Metadevice Problems

Use the `/usr/opt/SUNWmd/sbin/metastat` command to verify that the metadevice is set up correctly. The program responds as follows:

```
d19: Concat/Stripe
Size: 1819440 blocks
Stripe 0:
  Device                Start Block  Dbase
  c0t3d0s3                0           No
```

To verify the metadevice setup, you must examine the response to the command. You are looking for two things:

- a. All your disk drives must be accounted for.

You can verify that simply by checking the Size figure (it should roughly equal the total capacity of all your disks) and counting the number of devices listed (there should be a “Stripe” section for every drive). If some of your drives seem to be missing, verify that all your drives are plugged in and turned on, and that each external drive has a unique target number. In the example above, there is a single 2.1 GB disk drive.

- b. The device names must reflect the appropriate slice numbers.

The slice numbers are represented by the final two characters of the device name. A properly set up `/cms` file system begins with slice 3 of the first internal disk, and slice 1 of each of the remaining disk drives. Consequently, the device name of the first internal disk drive must end with s3 (for example, `c0t0d0s3`); all other device names must end in s1 (for example, `c2t1d0s1`).

If there is any discrepancy between reality and the output of the `metastat` command, you will have to set up your disk drives again.

## Problems with the /cms File System

Use the following steps to check the `/cms` file system for errors:

1. Log in as *root*.
2. Enter the following:

```
vi /etc/vfstab
```

The file will look similar to the following:

```
#device      device      mount      FS      fsck  mount  mount
#to mount    to fsck     point      type    pass  at boot options
#
#/dev/dsk/c1d0s2 /dev/rdisk/c1d0s2 /usr      ufs     1     yes    -
fd          -          /dev/fd fd      -      no     -
/proc      -          /proc  proc    -      no     -
/dev/dsk/c0t3d0s4 -          -        swap    -      no     -
/dev/dsk/c0t3d0s0 /dev/rdisk/c0t3d0s0 /          ufs     1     no     -
/dev/md/dsk/d19 /dev/md/rdisk/d19 /cms      ufs     2     yes    -
```

3. Add a pound sign (#) at the beginning of the `/dev/md/dsk/d19` line. This “comments out” that line.
4. Write and quit the file.
5. Reboot the system by entering `init 6`.
6. When the system is back up, log in as *root*.
7. Check the `/cms` file system by entering the following:

```
fsck -y /dev/md/rdisk/d19
```

The file will look similar to the following:

```
** /dev/md/rdisk/d19
** Last Mounted on /cms
** Phase 1 - Check Blocks and Sizes
** Phase 2 - Check Pathnames
** Phase 3 - Check Connectivity
** Phase 4 - Check Reference Counts
** Phase 5 - Check Cyl groups
1952 files, 156146 used, 698956 free (516 frags, 87305 blocks, 0.0%
fragmentation)
```

8. Enter the following:

```
vi /etc/vfstab
```

The file will look similar to the following:

```
#device      device      mount      FS      fsck  mount  mount
#to mount    to fsck     point      type    pass  at boot options
#
#/dev/dsk/c1d0s2 /dev/rdisk/c1d0s2 /usr      ufs     1      yes    -
fd          -          /dev/fd fd      -      no     -
/proc      -          /proc  proc   -      no     -
/dev/dsk/c0t3d0s4 -          -        swap   -      no     -
/dev/dsk/c0t3d0s0 /dev/rdisk/c0t3d0s0 /          ufs     1      no     -
#/dev/md/dsk/d19 /dev/md/rdisk/d19 /cms      ufs     2      yes    -
```

9. Delete the pound sign (#) at the beginning of the `/dev/md/dsk/d19` line. This “uncomments” that line.

10. Write and quit the file.

11. Mount the CMS file system by entering the following:

```
mount /cms
```

If the check fails, examine the system for problems with the metadvice, state databases, or disks. If you find no other problems, you may need to `recover /cms`.

If you have trouble mounting `/cms`:

- Verify that the `/cms` directory exists by entering the following:

```
ls -ld /cms
```

- If `/cms` does not exist, use the following to create it:

```
mkdir /cms
```

- Use the `metastat` command to determine the metadvice being used. Then verify that the entry for `/cms` in the `/etc/vfstab` file is correct. If you find any errors, correct them.

## Common Error Messages

This section presents, in alphabetical order, the messages commonly associated with installing and setting up the *Solstice DiskSuite* software to work with a CMS system. Each message is accompanied by its probable cause and the likely solution.

Message	Cause	Solution
/cms: Deadlock situation detected/avoided	Both CMS and the operating system are trying to access the swap file, leading to a deadlock.	Turn off CMS, deactivate all the swap files residing on /cms ( <code>swap -d /cms/swap</code> ), and reenter the command. Remember to reactivate the swap files when the <code>growfs</code> command completes ( <code>swap -a /cms/swap</code> ).
device: c0t6d0 will not be used	Warning that c0t6d0 will not be set up for <i>Solstice DiskSuite</i> .	Since c0t6d0 is the CD-ROM drive, that is not a problem.
device: <i>devicename</i> cannot be setup, or does not exist...	The disk you are trying to attach is turned off, does not exist, or was removed from the system.	Power-up the disk drive, or verify the correct name for the disk (see “Respond to a SCSI Probe Hang Warning” on Page 4-14), or attach the disk to the system and reboot with a <code>boot -r</code> command from the open boot prompt.
Disk <i>devicename</i> already attached, exiting...	You are trying to attach a disk that is already attached.	Verify the name of the disk (see “Respond to a SCSI Probe Hang Warning” in this chapter). Look at the target number on the back of the disk drive if possible, or consult the device documentation.
disk: <i>devicename</i> partition 1 is not partitioned correctly	You need to repartition disk <i>devicename</i> .	Use the <code>format</code> command. See <i>CentreVu CMS Hardware Maintenance and Troubleshooting</i> (585-215-861).
DiskSuite must be installed	You must install the <i>Solstice DiskSuite</i> software package.	See Appendix B, “Factory Software Installation.”
In order to attach disk, /cms must already be mounted, exiting...	The /cms file system was not mounted.	Execute a <code>mount /cms</code> command and rerun the command that failed.
metadb: <i>systemname</i> : <i>devicename</i> : has a metadvice database replica	There are already state database replicas existing on the indicated system and device.	No further action is required.

Message	Cause	Solution
metainit: <i>systemname:</i> /etc/opt/SUNWmd/md .tab line 12: d19: unit already set up	An initial setup of the file system has already been performed.	If you are trying to attach a new disk, execute an <code>olds -setup</code> command for that device. To attach device <code>c0t2d0</code> , for example, you would enter <code>/olds/olds -setup c0t2d0</code> . If you need to do an initial setup, use these commands: <pre> /olds/olds -cleanup &lt;reboot when command completes&gt; /olds/olds -check_disks /olds/olds -mk_files /olds/olds -metadbs /olds/olds -setup           </pre> Then restore all your swap files and their <code>/etc/vfstab</code> entries.
metainit: syntax error	This is the <code>olds</code> general failure message. The most likely cause is that the <code>/etc/opt/SUNWmd.tab</code> file disagrees with your configuration. (The file, for example, says you have seven disks in a given metadvice, but your configuration only has six.)	Verify that <code>/etc/opt/SUNWmd.tab</code> is accurate. As a last resort, use an old <code>md.tab</code> file or do an initial <code>olds</code> setup.
newfs of cms metadvice failed	There is an internal problem with one of your disks.	Enter a <code>/usr/opt/SUNWmd/sbin/metaclear d19</code> command, and then rerun the <code>olds -setup</code> script. If the same error recurs after doing this, repartition your disks or call Lucent Technologies National Customer Care Center at 1-800-242-2121.
prtvtoc: /dev/rdisk/c0t6d0: Device busy	This message usually implies that the device probed by the script is not to be used as a disk because it is a read-only disk (that is, a CD-ROM drive).	This is not a problem.

Message	Cause	Solution
Warning: Current Disk has mounted partitions	The format command is warning you that it is probing a mounted disk. A probe, however, is a nondestructive task that poses no danger to your data.	Ignore this message.
You must be root in order to run this command	Superuser privileges are necessary to run this script because most of the commands are related to system administration.	Log in as <i>root</i> .
You need to have at least one disk set up, before attaching one, exiting...	You tried to use olds to attach a disk, but the metadvice has not yet been set up.	To set it up, run the <code>olds -setup</code> command without arguments.

## List Pkgchk Errors

The `pkgchk -n cms` command lists some common error messages that do not signal a problem. The error messages in the following table can be ignored.

Location	Error Message	Occurs
/cms/install/logdir/admin.log	group name <root> expected <cms> actual.	After the installation and before setup.
/usr/lib/cms/pbxtrcflags	path name does not exist.	After the installation and before setup.
/cms/env/cms_mon/State_tbl	group name <bin> expected <other>actual.	After the setup and before running cms.
/cms/install/logdir/admin.log	group name <root> expected <cms>actual.	After the setup and before running cms.
/usr/lib/cms/pbxtrcflags	path name does not exist.	After the setup and before running cms.
/cms/env/cms_mon/State_tbl	group name <bin> expected <cms> actual.	After running cms.
/cms/install/logdir/admin.log	group name <root> expected <cms> actual.	After running cms.
/usr/lib/cms/pbxtrcflags	group name <bin> expected <cms> actual.	After running cms.

## Solve X.25 License Installation Problems

Error messages are generated by the license system if you have problems during the installation.

Message	Cause	Solution
DEMO mode supports only one SERVER host!	An attempt was made to configure a demonstration version of the software for more than one server.	Call <i>Sun</i> license support to obtain a permanent version of the X.25 license.
hostname: Wrong hostid, exiting	The hostid is wrong for the host name. This can happen if the boot ROM or motherboard is replaced.	Call <i>Sun</i> license support and obtain a new X.25 license key for this new hostid name.
Starting the X.25 software - please wait X.25 : Creating link XX.... X.25 : link XX has been started Unable to get license, X.25 exiting The network failed to come up correctly.	<ul style="list-style-type: none"> <li>- The X.25 license password was entered incorrectly</li> <li>- The password was generated for the wrong hostid or hostname</li> <li>- The license manager process (lmgrd) did not start when you started CMS.</li> </ul>	<ul style="list-style-type: none"> <li>- Enter the password correctly</li> <li>- Call Sun to reissue the password for the correct hostid or hostname</li> <li>- Check the license manager with the <code>ps - ef   grep lmgrd</code> command. If the lmgrd process is not running, restart the license manager with <code>/etc/rc2.d/S85lmgrd start</code>.</li> </ul>

## Find Misplaced X.25 Password

If you are reinstalling the X.25 software and license, and have misplaced your X.25 password, enter the following command to display the password:

```
cat /etc/opt/licenses/licenses_combined
```

If this file no longer exists, you must call *Sun* license support and obtain your X.25 password again.

---

## Check Installed Solaris Patches

To verify that the correct *Solaris* patches are installed, do the following:

1. Enter the following:

```
showrev -p
```

The system responds as follows:

```
Patch: 105084-02  Obsoletes:  Packages: SUNWx25a.2 9.1,PATCH=02,
SUNWx25b.2 9.1,PATCH=02
Patch: 105256-01  Obsoletes:  Packages: SUNWcsu
Patch: 103582-14  Obsoletes:  Packages: SUNWcsu, SUNWcsr
Patch: 103594-10  Obsoletes:  Packages: SUNWcsu
.
.
.
```

2. Check the list to verify that all the *Solaris* patches you need are installed. More information about *Solaris* patches is in Chapter 5, “Maintenance” and Appendix B, “Factory Software Installation.”

---

## Recognize New Hardware Devices

During a *Solaris* installation, externally powered devices, such as disk drives and tape drives, may not be recognized if they are not connected to power or not powered up. This is also true if you add a new port board to the computer as part of an upgrade or addition.

If you discover that a hardware device is not being recognized, you must either reboot from CD-ROM and reinstall *Solaris*, or do the following:

1. Enter `init 0` to reboot the system.
2. Enter `boot -r` to force the system to recognize the new components.
3. When the system reboots, log in as *root*.

## Respond to a SCSI Probe Hang Warning

When you are attempting to probe SCSI devices at the boot prom level using either `probe-scsi` or `probe-scsi-all`, you may receive a message similar to the following:

```
This command may hang the system if a Stop-A or halt command has
been executed. Please type reset-all to reset the system before
executing this command. Do you wish to continue?
```

Respond with the following steps:

1. Enter `N` (to prevent the probe from continuing).

2. Enter the following:

```
setenv auto-boot? false
```

This keeps the system from rebooting when you do a reset.

3. On an *Enterprise*<sup>\*</sup> 3000 or *Ultra*<sup>†</sup> 5 computer, enter the following:

```
reset-all
```

On a *SPARCserver*<sup>‡</sup> computer, enter the following:

```
reset
```

These commands may take a minute to complete.

4. You may now do the `probe-scsi` or `probe-scsi-all` and perform any other boot prom level diagnostics.

5. When you have completed your testing, enter the following:

```
setenv auto-boot? true
```

### CAUTION:

*If you fail to enter this command, future reboots will stop at the boot prompt instead of proceeding through the normal boot-up.*

6. Enter `boot -r`. The system reboots.

---

<sup>\*</sup>*Enterprise* is a trademark of Sun Microsystems, Inc.

<sup>†</sup>*Ultra* is a trademark of Sun Microsystems, Inc.

<sup>‡</sup>*SPARCserver* is a trademark of SPARC International, Inc.

## Recover from an IDE Probe Hang

When you are attempting to probe IDE devices at the boot prom level using the `probe-ide` command, your system may hang without any warning message. If this happens, the only recourse you have is to cycle power on the system.

To keep this from happening when using the `probe-ide` command, do the following:

1. Enter the following:

```
setenv auto-boot? false
```

This keeps the system from rebooting when you do a reset.

2. Enter the following:

```
reset-all
```

This command may take a minute to complete.

3. You may now do the `probe-ide` command and perform any other boot prom level diagnostics.

4. When you have completed your testing, enter the following:

```
setenv auto-boot? true
```

### CAUTION:

*If you fail to enter this command, future reboots will stop at the boot prompt instead of proceeding through the normal boot-up.*

5. Enter `boot -r`. The system reboots.

# Sun Online Validation Test Suite (VTS)

---

## Overview

The Sun Online VTS supports diagnostics in the following areas:

- Connection test — Minimal access of device to verify its accessibility and availability.
- Functional test (default) — Detailed tests to thoroughly test the device or system when offline (CMS must be turned off). A stress mode in system/test option can be set only within offline mode. The stress mode is an extension of offline.
- Functional test (from system monitor) — Safe tests that can be executed on the device or system when it is online (CMS can be on, but testing is safer when turned off).

There are many ways you can run VTS. It is recommended that you use one of the following two methods:

- Local access using the Common Desktop Environment (CDE) interface
- Remote access using an ASCII interface.

---

## Prerequisites

CMS must be turned off.

---

## Procedure

1. Enter the following to bypass the file system probe:

```
BYPASS_FS_PROBE=1; export BYPASS_FS_PROBE
```

2. Enter the following:

```
cd /opt/SUNWvts/bin
```

3. To access the CDE interface, enter `sunvts`. To access the TTY mode (ASCII interface), enter `sunvts -t`.

4. For more information about using VTS, see the following files:

```
/opt/SUNWvts/README
```

```
/opt/SUNWvts/bin/vtstty.help
```

# Check Error Logs

---

## Overview

This section describes some common log characteristics and covers information about each of the logs provided.

The following problems will generate an entry into the error log:

- Data conversion problems
  - Start-up and shut-down problems
  - Installation problems
  - Set-up problems
  - Critical or warning messages.
- 

## Wrapping Techniques

Many of the log files use a common, general purpose file wrapping technique to keep a controlled amount of historical log information. It keeps the current log in a file always named the name of the log. For example, the error log is named `elog`, and there may be three older logs kept called `elog.01`, `elog.02`, and `elog.03`.

When the current active log file becomes full, it rolls over and a new log file is started. At the time that the log rolls over, the oldest log is deleted, each of the other logs moves to its new name, and a new log file is started.

The size of the logs is controlled by the file size. If a specific number of hours of log information is needed, some monitoring will be needed to see how much time is covered by a log.

Each log file concludes with a message that the file size limit has been reached and that a new log will be started. This is particularly useful if using the command `tail -f` to monitor ongoing activity in the log. When the message is displayed, a new `tail` command will need to be started. After you finish reviewing log activity, press Delete to exit.

## Administer Options

You can administer the following options:

- Location of the log files
- Number of historical log files
- Size of the Files.

 **CAUTION:**

*Only qualified TSC personnel should administer these log files. Do not delete or change any information in these log files without first contacting the TSC.*

---

## Run Logs

The logs run under a variety of circumstances:

- Always running when *CentreVu* CMS and/or *Solaris* are running and cannot be stopped
- Must be manually started and stopped
- Are also automatically stopped after a reboot and/or restarting *CentreVu* CMS.

Contact the TSC for more information.

---

## Error Log Administrative Data

The administrative data for each error log contains specific information about itself, including defaults, administration information, a description of the contents, and general information about how to interpret the contents of the logs. This administrative log information is found in

`/cms/db/LogAdmin.`

- **Default Location** — the file name of the primary file where log information can be found if no administrative changes have been made.
- **Default Maximum File Size** — the approximate size of each of the log files (primary and historical) that will be saved if no administrative changes have been made.
- **Default Number of Older Files Retained** — the number of historical files that are kept, in addition to the primary file, if no administrative changes have been made.

- Administration File — if the log is controlled by the general purpose file wrapping technique, the location of the file where administrative changes can be made affecting the location of the log file, the size of the logs, and/or the number of historical log files.
- Starting/Stopping — describes the conditions for the log to be running, including any appropriate commands.
- Writing Process — indicates all processes that write into the log.
- Intended Audience — customer (for log information that is useful to the customer, easy to read, and documented) or services (for log information that is intended to aid troubleshooting). Almost all error logs are used exclusively by services.
- First Implemented in Load — indicates the first load when the log is available — an internal load numbering (such as 3.1z) is used.

## Summary of Error Logs

Refer to the following table to identify which error log to use to resolve a problem.

Type of Log	Name of Error Log	Default Location
General Error Logs	elog	/usr/elog/elog
	elog_elog	/usr/elog/elog
	elog_if	/usr/elog/elog_if
	customer elog	<i>INFORMIX</i> * database table customer_log
Link-Related Logs	spi.err	/cms/pbx/acd[1-8]/spi.err
	spi.lnk	/cms/pbx/acd[1-8]/spi.lnk
	spi.log	/cms/pbx/acd[1-8]/spi.log
	ag.log	/cms/pbx/acd[1-8]/ag.log
	sim.err	/cms/pbx/acd[1-8]/sim.err
	sim.lnk	/cms/pbx/acd[1-8]/sim.lnk
	xln.log	/cms/pbx/acd[1-8]/xln.log

Type of Log	Name of Error Log	Default Location
Process-Related Logs	proc_log	/cms/env/cms_mon/proc_log
	mq_clean	/cms/env/cms_mon/mq_clean
	gem_log	/cms/env/gem/gem_log
	rt_gem	/cms/env/gem/rt_gem
Solaris Logs	messages	/var/adm/messages
Special Task Logs	harch.log	/cms/dc/hachiver
	arch.log	/cms/dc/archive/arch.log
	ttlog	/cms/db/journal/timetable/ttlog
	cow_paste.log	/usr/elog/cow_paste.log
	r3mig.log	/cms/migrate/r3mig.log
	back.log	/cms/maint/backup/back.log
	rest.log	/cms/maint/restore/rest.log
	migrate.log	/cms/migrate/migrate.log
	mig.log	/cms/maint/r3mig/mig.log
	baas_db.log	/cms/aas/db/acd[1-8]/baas_db.log
Installation/cmsadm Logs	install.log	/cms/install/logdir/install.log
	backup.log	/cms/install/logdir/backup.log (see also <i>admin.log</i> )
	admin.log	/cms/install/logdir/admin.log
CentreVu Supervisor Specific Logs	.win.log	\$HOME/.win.log
	cman.log	/cms/env/cman/cman.log

\**INFORMIX* is a registered trademark of Informix Software, Inc.

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## Miscellaneous

This section contains miscellaneous troubleshooting information.

---

### Tape Drive Status

For many CMS procedures, you must identify which tape drive, by device path, you will use for the procedure. Tape drives are assigned to particular device paths, usually one of the following:

- /dev/rmt/0
- /dev/rmt/0c
- /dev/rmt/1
- /dev/rmt/1c

**⇒ NOTE:**

The “c” at the end of the device name indicates if the tape device can operate in compressed mode. It is recommended that you use compressed mode at all times.

Do the following to determine which device paths are available on your system:

1. Insert a tape into the tape drive.
2. Enter the following commands:

```
mt -f /dev/rmt/0c status
```

```
mt -f /dev/rmt/1c status
```

The correct device path will show information similar to the following:

```
Tandberg 2.5 Gig QIC tape drive:
sense key(0x0)= No Additional Sense   residual= 0   retries
file no= 0   block no= 0
```

An incorrect device path will show information similar to the following:

```
/dev/rmt/1c: No such file or directory
```



# Maintenance

## Overview

This chapter explains how to maintain the *CentreVu*<sup>®</sup> Call Management System (CMS) software. Refer to *CentreVu CMS Hardware Maintenance and Troubleshooting* (585-215-861) for hardware maintenance information.

This chapter discusses the following maintenance procedures:

- Perform backups and restores
- Change the date and time
- Check installed software packages
- Back out a *Solaris*<sup>\*</sup> patch
- Add *INFORMIX*<sup>†</sup> Structured Query Language (SQL)

Personnel at the Technical Service Center (TSC) will need assistance from an on-site technician or the customer's *CentreVu* CMS administrator to do most of the procedures in this chapter.

### NOTE:

When executing commands remotely that may take a long time to complete (such as `cpio` and `/olds` commands), use the `nohup` command to ensure that the command will complete without interruption in case the data line disconnects. An example using the `nohup` command is shown below:

```
nohup cpio -icmudf -C 10240 -I /dev/rmt/0c "/cms" | tee
```

---

<sup>\*</sup>*Solaris* is a registered trademark of Sun Microsystems, Inc.

<sup>†</sup>*INFORMIX* is a registered trademark of Informix Software, Inc.

# Perform Backups and Restores

---

## Overview

A backup copies the data stored on the *CentreVu* CMS hard disk to a removable tape. Regular backups provide a way to recover data that would otherwise be lost. *CentreVu* CMS provides two different types of backups:

- CMS Administration (CMSADM) File System Backup
- *CentreVu* CMS Maintenance Backup — Full and Incremental.

From backup tape(s) you can restore your system and data. For more information about backups and restores, see *CentreVu* CMS R3V6 Administration (585-215-850) or *CentreVu* CMS R3V5 Administration (585-215-820).

 **CAUTION:**

*Use a designated set of backup tapes when doing a backup. Do **NOT** use the original set of factory or provisioning backup tapes.*

---

## Perform a CMSADM File System Backup

The CMSADM file system backup saves all the file systems on the machine onto a tape. See Appendix B, “Factory Software Installation,” for CMSADM file system backup procedures.

## Check the Contents of the CMSADM Backup Tape

### Procedure

To determine if the a backup tape has saved the correct information, or to see if a particular file has been saved, you can list the files on the backup tape.

⇒ **NOTE:**

It can take a long time to display the file names on the backup tape.

1. Insert the first backup tape.
2. To list the files on the tape, enter the following command on a single line:

```
nohup cpio -ivct -C 10240 -I /dev/rmt/0c -M "Remove current tape, insert tape number %d, and press Enter" | tee
```

The system displays a list of files.

3. If you are not sure of the device path, enter the following commands:

```
mt -f /dev/rmt/0c status
```

```
mt -f /dev/rmt/1c status
```

The correct device path will show information similar to the following:

```
Tandberg 2.5 Gig QIC tape drive:  
sense key(0x0)= No Additional Sense residual= 0 retries= 0  
file no= 0    block no= 0
```

4. After you have seen the files you are looking for, or have confirmed that data on the tape is accurate, press Delete to stop the display.

## Restoring from a CMSADM File System Backup

If CMSADM file system backups are available, the complete file systems can be restored if an accidental loss of data occurs.

### CAUTION:

*Use this procedure only if you have a CMSADM file system backup available.*

## Procedure

1. Obtain the tape(s) that contain the CMSADM file system backups.
2. Obtain the printout of the `/etc/vfstab` file that was stored with the backup tapes.
3. Load the first backup tape.
4. If you have only one backup tape, enter the following command:

```
cpio -icmudf -C 10240 -I /dev/rmt/0c -M "/cms" "/cms/*"
```

If you have more than one backup tape, enter the following command on a single line:

```
cpio -icmudf -C 10240 -I /dev/rmt/0c -M "Remove current tape, insert tape number %d, and press Enter" "/cms" "/cms/*"
```

As the restore proceeds, the light-emitting diode (LED) on the tape drive will alternately flash and light steadily. The program, which can take several hours depending on the amount of data being restored, responds as follows:

```
cpio: Cannot create temporary file, errno 18, Cross-device link
(There is a time delay between the first message and the rest of the
messages)
cpio: Cannot chmod() "/home", errno 89, Operation not applicable
cpio: Unable to reset modification time for "/home", errno 89,
Operation not applicable
cpio: Cannot chmod() "/home", errno 89, Operation not applicable
cpio: Cannot chown() "/home", errno 89, Operation not applicable
cpio: Cannot chmod() "/xfn", errno 89, Operation not applicable
cpio: Unable to reset modification time for "/xfn", errno 89, Operation
not applicable
cpio: Cannot chmod() "/xfn", errno 89, Operation not applicable
cpio: Cannot chown() "/xfn", errno 89, Operation not applicable
602780 blocks
9 error(s)
```

**⇒ NOTE:**

You may see some error messages about the `/home` and `/xfn` directories. These errors display when the directories are already present and can be ignored.

5. If you are not sure of the device path, enter the following commands:

```
mt -f /dev/rmt/0c status
```

```
mt -f /dev/rmt/1c status
```

The correct device path will show information similar to the following:

```
Tandberg 2.5 Gig QIC tape drive:
sense key(0x0)= No Additional Sense residual= 0 retries= 0
file no= 0   block no= 0
```

6. If you have *CentreVu* CMS maintenance backups dated after the latest CDMADM backup, restore the latest maintenance backups. See *CentreVu* CMS R3V6 Administration (585-215-850) or *CentreVu* CMS R3V5 Administration (585-215-820) for more information.

## Perform a CentreVu CMS Maintenance Backup

*CentreVu* CMS maintenance backups save only *CentreVu* CMS data (administration and historical). The *CentreVu* CMS data for each Automatic Call Distribution (ACD) should be backed up as follows:

- After the *CentreVu* CMS is provisioned
- After the *CentreVu* CMS software is upgraded
- On a daily or weekly basis.

You can do these backups within CMS using the “Maintenance: Back Up Data” window. See the Maintenance chapter in *CentreVu* CMS R3V6 Administration (585-215-850) or *CentreVu* CMS R3V5 Administration (585-215-820).

## Perform a CentreVu CMS Maintenance Restore

The *CentreVu* CMS software application allows you to restore *CentreVu* CMS data lost due to system failure, disk crashes, and so on. You can restore all *CentreVu* CMS data that you previously backed up during a *CentreVu* CMS maintenance backup.

If a disk crash does occur, you may have to reinstall the *Solaris* operating system, the supporting *Sun* applications, and *CentreVu* CMS before you can perform a *CentreVu* CMS maintenance restore. See *CentreVu* CMS Hardware Maintenance and Troubleshooting (585-215-861) for more information.

After the CMSADM restore is completed or after you have the system in an operable state, restore the *CentreVu* CMS administration and historical data from the most recent *CentreVu* CMS maintenance backups. See the Maintenance chapter in *CentreVu* CMS R3V6 Administration (585-215-850) or *CentreVu* CMS R3V5 Administration (585-215-820) for more information about backup strategy.

Depending on which backups are available, there are two possible scenarios when doing a *CentreVu* CMS maintenance restore:

- Restoring data when only full maintenance backups are available
- Restoring data when both full and incremental maintenance backups are available.

## Prerequisites

- CMS must be in the single-user state (System Setup:CMS State)
- Data collection must be turned off (System Setup:Data Collection).

## Using Only Full Maintenance Backups

If only full *CentreVu* CMS maintenance backups are available, the following steps are the fastest way to get the system running:

1. Load the most recent full maintenance backup tape.
2. In one of the windows at a console, log into the system by using a *CentreVu* CMS administrator's login ID (`su - cms`). Supply the correct password if prompted.
3. Access the *CentreVu* CMS main menu by typing `cms` and entering the correct terminal type.
4. Select the `Maintenance` option.
5. Select the `Restore Data` option.
6. Do an automatic restore of the system administration data, ACD-specific data, historical data, and non-CMS data by entering `y` in the `Restore from last backup (y/n):` field.

7. After the restore is finished, access the *CentreVu* CMS Services menu by entering `cmssvc`.

The menu appears.

8. Enter `3` to select the `run_cms` option.
9. Enter `2` to turn off *CentreVu* CMS.

CMS turns off.

10. Access the *CentreVu* CMS Services menu again by entering `cmssvc`.

The menu appears.

11. Enter `3` to select the `run_cms` option.
12. Enter `1` to turn on *CentreVu* CMS.

CMS turns on.

## Using Both Full and Incremental Maintenance Backups

If both full and incremental *CentreVu* CMS maintenance backups are available, the following steps are the fastest way to get the system running:

1. Load the most recent full maintenance backup tape.
2. In one of the windows at a console, log into the system by using a *CentreVu* CMS administrator's login ID (`su - cms`). Supply the correct password if prompted.
3. Access the *CentreVu* CMS main menu by typing `cms` and entering the correct terminal type.
4. Select the `Maintenance` option.
5. Select the `Restore Data` option.
6. Do a manual restore of the system administration data, ACD-specific data, historical data, and non-CMS data by entering `n` in the `Restore from last backup (y/n):` field.
7. After the full restore is finished, load the most recent incremental maintenance backup tape.
8. Restore the historical data and non-CMS data.
9. After the incremental restore is finished, access the *CentreVu* CMS Services menu by entering `cmssvc`.  
The menu appears.
10. Enter `3` to select the `run_cms` option.

11. Enter `2` to turn off *CentreVu* CMS.  
CMS turns off.
12. Access the *CentreVu* CMS Services menu again by entering `cmssvc`.  
The menu appears.
13. Enter `3` to select the `run_cms` option.
14. Enter `1` to turn on *CentreVu* CMS.  
CMS turns on.

## Change the Date and Time

### Change the Date, Time, and Time Zone

The switch date and time are displayed at the top of most *CentreVu* CMS screens. If the date or time are not accurate, you must reset them.

**⇒ NOTE:**

Changing the switch time may cause a small distortion in the *CentreVu* CMS data when the change is made. A small amount of data may also be lost when the change occurs. For example, if the *Solaris* system time is advanced, the switch connection is reestablished causing a small amount of data to be lost.

To change the date and time, see “Verify the System Date and Time” in Chapter 3, “Turning the System Over to the Customer.”

---

### Resynchronize the I/O Board Clock

In certain situations, the clock on the input/output (I/O) or I/O graphics board on an *Enterprise* 3000 computer may be different from the clock on the clock board. For example, this may happen when you install a card to use the SBus slot on the I/O graphics board. While the board is out of the computer, the clock is unpowered. When you reinstall the board, its clock will be different from the clock board’s clock, causing a warning message to display each time you reboot.

To resynchronize the clocks, do the following:

1. Access the *CentreVu* CMS Services menu by entering `cms svc`.  
The menu appears.
2. Enter `3` to select the `run_cms` option.
3. Enter `2` to turn off *CentreVu* CMS.  
CMS turns off.
4. Go to the boot prompt. You can do that in one of three ways:
  - a. Enter `init 0`, or
  - b. Enter `/usr/sbin/shutdown -y -g0 -i0`, or
  - c. Press the **Stop** and **A** keys simultaneously.

5. Enter the following:

```
copy-clock-tod-to-io-boards
```

6. Boot the machine by entering `boot -r`.

---

# Check Installed Software Packages

---

## Overview

Use this procedure to verify that the correct software packages have been installed.

---

## Procedure

1. Enter the following:

```
pkginfo | more
```

The system responds as follows:

```
system  AURAacs   Aurora 40X, 80X, WMS 2000/3000 Base Driver
system  AURAacsa   Aurora 40X, 80X, WMS 2000/3000 Asynchronous Driver
system  AURAsiol6   Aurora 1600SE device driver
system  SUNWaccr    System Accounting, (Root)
system  SUNWaccu    System Accounting, (Usr) .
.
```

2. Compare the list generated by the `pkginfo` command to the table listed below, which lists all the basic *Solaris* and *CentreVu CMS* software packages installed on a system. Please note that additional packages not shown here may be installed by the customer or the TSC.

If you need to install any missing packages, see Appendix B, “Factory Software Installation” for more information about installing software packages.

## Check Installed Software Packages

Type of Package	Package Name	Description
system	AURAacs	Aurora 40X, 80X, WMS 2000/3000 Base Driver
system	AURAacsa	Aurora 40X, 80X, WMS 2000/3000 Asynchronous Driver
system	AURAsio16	Aurora 1600SE device driver
system	SUNWaccr	System Accounting, (Root)
system	SUNWaccu	System Accounting, (Usr)
system	SUNWadmap	System administration applications
system	SUNWadmc	System administration core libraries
system	SUNWadmfw	System & Network Administration Framework
system	SUNWadmr	System & Network Administration Root
system	SUNWapppr	PPP/IP Asynchronous PPP daemon configuration files
system	SUNWapppu	PPP/IP Asynchronous PPP daemon and PPP login service
system	SUNWaudio	Audio applications
system	SUNWbcp	<i>SunOS</i> <sup>*</sup> 4.x Binary Compatibility
system	SUNWbnur	Networking UUCP Utilities, (Root)
system	SUNWbnuu	Networking UUCP Utilities, (Usr)
system	SUNWbtool	CCS tools bundled with <i>SunOS</i>
system	SUNWcar	Core Architecture, (Root)
application	SUNWcclit	<i>Solstice</i> <sup>†</sup> Connect Center license information
system	SUNWcg6	GX (cg6) Device Driver
system	SUNWcsd	Core <i>Solaris</i> Devices
system	SUNWcsr	Core <i>Solaris</i> , (Root)
system	SUNWcsu	Core <i>Solaris</i> , (Usr)
system	SUNWdfb	Dumb Frame Buffer Device Drivers
system	SUNWdoc	Documentation Tools
system	SUNWdtbas	CDE base
system	SUNWdtcor	CORE (CDE)
system	SUNWdtdmn	CDE daemons
system	SUNWdtdst	CDE DESKTOP APPS
system	SUNWdtdte	CDE DESKTOP LOGIN ENVIRONMENT

Type of Package	Package Name	Description
system	SUNWdtft	CDE fonts
system	SUNWdthe	CDE HELP RUNTIME
system	SUNWdthev	CDE HELP VOLUMES
system	SUNWdticn	CDE icons
system	SUNWdtim	CDE DESKTOP APPS
system	SUNWdtma	CDE man pages
system	SUNWdtrme	CDE README FILES
system	SUNWdtwm	CDE DESKTOP WINDOW MANAGER
system	SUNWesu	Extended System Utilities
system	SUNWwhsis	HSI/S Driver/Utilities 2.0 v1.6
system	SUNWwhsis.2	HSI/S Driver/Utilities 2.0 Patch 101130-12 v1.37
system	SUNWwhsip	HSI/P Driver/Utilities Patch 106295-01
system	SUNWide	IDE device drivers
system	SUNWinst	Install Software
system	SUNWipc	Interprocess Communications
system	SUNWkey	Keyboard configuration tables
system	SUNWkvm	Core Architecture, (Kvm)
system	SUNWlibC	<i>SPARCcompilers</i> <sup>†</sup> Bundled libC
system	SUNWlibCf	<i>SPARCcompilers</i> Bundled libC (cfront version)
system	SUNWlibms	<i>SPARCcompilers</i> Bundled shared libm
application	SUNWlicsw	FlexLM License System
application	SUNWllc2a	LLC2 kernel modules and include files for <i>Solaris/SPARC</i> <sup>§</sup>
application	SUNWllc2b	LLC2 user programs and man pages for <i>Solaris/SPARC</i>
system	SUNWloc	System Localization
system	SUNWlpmsg	LP Alerts
system	SUNWlpr	LP Print Service, (Root)
system	SUNWlps	LP Print Service - Server, (Usr)
system	SUNWlpu	LP Print Service - Client, (Usr)
system	SUNWm64cf	M64 System Software (Device Driver)
application	SUNWm64cf	M64 Graphics Configuration Software

## Check Installed Software Packages

Type of Package	Package Name	Description
application	SUNWm64w	M64 Window System Support
system	SUNWman	On-Line Manual Pages
system	SUNWmd	<i>Solstice DiskSuite</i> <sup>¶</sup>
system	SUNWmfrun	<i>Motif</i> <sup>**</sup> RunTime Kit
system	SUNWmui	Automatic Maintenance Update Installation
system	SUNWnistr	Network Information System, (Root)
system	SUNWnisu	Network Information System, (Usr)
system	SUNWolaud	<i>OPEN LOOK</i> <sup>††</sup> Audio applications
system	SUNWolbk	<i>OpenWindows</i> <sup>‡‡</sup> online handbooks
system	SUNWoldcv	<i>OPEN LOOK</i> document and help viewer applications
system	SUNWoldst	<i>OPEN LOOK</i> deskset tools
system	SUNWoldte	<i>OPEN LOOK</i> Desktop Environment
system	SUNWolimt	<i>OPEN LOOK</i> imagetool
system	SUNWolrte	<i>OPEN LOOK</i> toolkits runtime environment
system	SUNWowbcp	<i>OpenWindows</i> binary compatibility
system	SUNWowrqd	<i>OpenWindows</i> required core package
system	SUNWpci	PCI Simba device drivers
system	SUNWpd	PCI Drivers
system	SUNWploc	Partial Locales
system	SUNWplow	<i>OpenWindows</i> enabling for Partial Locales
system	SUNWpppk	PPP/IP and IP dialup Device Drivers
system	SUNWsaip	Serial Asynchronous Interface Driver (PCI)
application	SUNWsaipu	Serial Asynchronous Interface Utilities (PCI)
system	SUNWscbcp	<i>SPARCcompilers</i> Binary Compatibility Libraries
system	SUNWscpr	Source Compatibility, (Root)
system	SUNWscpu	Source Compatibility, (Usr)
system	SUNWses	SCSI Enclosure Services Device Driver
system	SUNWsolnm	<i>Solaris</i> Naming Enabler
system	SUNWssadv	<i>SPARCstorage</i> <sup>§§</sup> Array Drivers
system	SUNWssaop	<i>SPARCstorage</i> Array Utility

Type of Package	Package Name	Description
system	SUNWter	Terminal Information
system	SUNWtlk	ToolTalk runtime
system	SUNWtoo	Programming Tools
application	SUNWvlxil	VIS/XIL Support
system	SUNWvolg	Volume Management Graphical User Interface
system	SUNWvolr	Volume Management, (Root)
system	SUNWvolu	Volume Management, (Usr)
system	SUNWvplr	SMCC sun4u new platform links
system	SUNWvplu	SMCC sun4u new usr/platform links
system	SUNWvplxw	Sun4u-platform specific X server supplementary links
system	SUNWvts	Online Validation Test Suite
system	SUNWvtsmn	Online Validation Test Suite Man Pages
application	SUNWx25a	X.25 kernel modules and include files for <i>Solaris/SPARC</i>
application	SUNWx25a.2	X.25 kernel modules and include files for <i>Solaris/SPARC</i>
application	SUNWx25b	X.25 user programs and libraries for <i>Solaris/SPARC</i>
application	SUNWx25b.2	X.25 user programs and libraries for <i>Solaris/SPARC</i>
system	SUNWxcu4	XCU4 Utilities
application	SUNWxgldg	XGL™ Generic Loadable Libraries
application	SUNWxgler	XGL English Localization
application	SUNWxglft	XGL Stroke Fonts
application	SUNWxglrt	XGL Runtime Environment
application	SUNWxildg	XIL Loadable Pipeline Libraries
application	SUNWxiler	XIL English Localization
application	SUNWxilow	XIL Deskset Loadable Pipeline Libraries
application	SUNWxilrt	XIL Runtime Environment
system	SUNWxwcft	X Windows*** common (not required) fonts
system	SUNWxwdv	XWindows Window Drivers
system	SUNWxwfnt	X Windows platform required fonts
system	SUNWxwman	X Windows online user man pages
system	SUNWxwmod	OpenWindows kernel modules

## Check Installed Software Packages

---

Type of Package	Package Name	Description
system	SUNWxwopt	nonessential MIT core clients and server extensions
system	SUNWxwplt	<i>X Windows</i> platform software
system	SUNWxwpsr	Sun4u-platform specific X server auxiliary filter modules
application	cms	Lucent Technologies CentreVu Call Management System
application	spatches	CMS Supplied Solaris Patches

\**SunOS* is a trademark of Sun Microsystems, Inc.

†*Solstice* is a trademark of Sun Microsystems, Inc.

‡*SPARCCompiler* is a registered trademark of SPARC International, Inc.

§*SPARC* is a trademark of SPARC International, Inc.

¶*Solstice DiskSuite* is a trademark of Sun Microsystems, Inc.

\*\**Motif* is a registered trademark of Open Software Foundation, Inc.

††*OPEN LOOK* is a registered trademark of Novell, Inc.

‡‡*OpenWindows* is a trademark of Sun Microsystems, Inc.

§§*SPARCstorage* is a trademark of SPARC International, Inc.

¶¶*XGL* is a trademark of Sun Microsystems, Inc.

\*\*\*The *XWindows* System is a trademark of The Open Group.

---

# Back Out a *Solaris* Patch

---

## Overview

If an update, upgrade, or new installation is administered, you may not need a specific patch.

 **CAUTION:**

*You should perform the following procedures only when instructed by the TSC or upon receipt of a release letter.*

---

## Procedure

To back out a *Solaris* patch, do the following steps.

1. Move to the patch directory by entering the following:

```
cd /var/sadm/patch
```

2. Back out a patch by entering the following:

```
<patch-id>/backout <patch-id>
```

The *<patch-id>* is identified by the TSC or in the release letter. The system responds as follows:

```
@(#) backoutpatch 3.5 93/08/11
Doing pkgrm of SUNWcsr.8 package:

Removal of <SUNWcsr.8> was successful.
Restoring previous version of files
.
.
.
XXXX blocks
Making the package database consistent with restored files:
backoutpatch finished.
#
```

3. Reboot by entering the following:

```
/usr/sbin/shutdown -y -g0 -i6
```

# Remove *INFORMIX* to Add the SQL Package

---

## Overview

This section describes how to remove the *INFORMIX* packages, and then reinstall all *INFORMIX* packages when the *INFORMIX* Structured Query Language (SQL) package was not originally installed.

### NOTE:

The *INFORMIX* SQL package is optional. Only the *INFORMIX* Standard Engine (SE) and International Language Supplement (ILS) (R3V6 only) packages are required for installation.

To install the *INFORMIX* SQL software after the system has been installed, you must complete the following tasks:

### CAUTION:

*If you do not follow these steps, CMS errors will occur.*

1. Copy the `sqlhosts` file to a temporary location.
2. Remove the currently-installed *INFORMIX* software.
3. Install the *INFORMIX* SQL package.
4. Reinstall the *INFORMIX* SE package.
5. Reinstall the *INFORMIX* ILS package (R3V6 only).
6. Restore the `sqlhosts` file to its original location.

---

## Prerequisites

- The *Solaris* operating system must be installed
- Log in as *root* at the console.

## Procedure

1. At the system prompt, enter `cmsadm`.

The CMSADM menu displays.

2. Enter `9` to select the `run_cms` option.
3. Enter `2` to turn off the *CentreVu* CMS.

CMS turns off. You are returned to the system prompt.

4. Enter the following to make a copy of the *INFORMIX* “sqlhosts” file:

```
cp -p /opt/informix/etc/sqlhosts /cms/tmp/sqlhosts
```

### CAUTION:

*The following command removes every file and subdirectory under the *INFORMIX* directory. Make sure that you enter the command accurately.*

5. Remove the existing *INFORMIX* software by entering the following:

```
rm -fr /opt/informix/*
```

The *INFORMIX* software is now removed.

6. Reinstall the appropriate *INFORMIX* packages. See Appendix B, “Factory Software Installation” for *INFORMIX* installation instructions.

7. Enter the following to restore the original “sqlhosts” file:

```
cp -p /cms/tmp/sqlhosts /opt/informix/etc/sqlhosts
```

8. At the system prompt, enter `cmsadm`.

The CMSADM menu displays.

9. Enter `9` to select the `run_cms` option.
10. Enter `3` to turn on the *CentreVu* CMS.

CMS turns on.



# CMSADM and CMSSVC Menus

## Overview

This appendix describes all of the options of the *CentreVu*<sup>®</sup> Call Management System (CMS) Administration Menu (`cmsadm`) and the *CentreVu* CMS Services Menu (`cmssvc`). The differences between the R3V5 and R3V6 versions are noted.

## CentreVu CMS Administration Menu (CMSADM)

---

### Overview

The CMS administration menu (`cmsadm`) is intended for use primarily by the *CentreVu* CMS administrator.

---

### CMSADM Screen

You must log in as *root* to access this menu. To access the `cmsadm` menu, enter `cmsadm` at the prompt. Select from the options on the *CentreVu* CMS administration menu as shown in the example below:

```
Lucent Technologies CentreVu(R) Call Management System
Administration Menu
Select a command from the list below.
  1) acd_create  Define a new ACD
  2) acd_remove Remove all administration and data for an ACD
  3) backup      Filesystem backup
  4) diskmap     Estimate disk requirements
  5) memory      Estimate memory requirements
  6) realtime    Estimate real-time report refresh rate
  7) pkg_install Install a feature package
  8) pkg_remove  Remove a feature package
  9) run_cms     Turn CentreVu CMS on or off
Enter choice (1-9) or q to quit:
```

The *CentreVu* CMS Administrator can do the following from this menu:

- Define a new Automatic Call Distribution (ACD)
- Remove an ACD
- Back up the file systems to tape
- Estimate *CentreVu* CMS disk requirements, memory requirements, and real-time refresh rate
- Install or remove a feature package
- Turn *CentreVu* CMS on or off.

The following sections explain the options on the *CentreVu* CMS Administration menu.

---

## acd\_create

The `acd_create` option on the *CentreVu* CMS Administration menu allows you to define a new ACD. The information you enter here for each ACD is the same as the `setup` option of `cmssvc`.

### ⇒ NOTE:

The ACD must be authorized, and therefore purchased, before it can be added to the *CentreVu* CMS. See Chapter 2, “Setting Up *CentreVu* CMS and Installing Feature Packages,” for details.

1. Before you define a new ACD, you must turn off the *CentreVu* CMS by doing the following:
  - a. Enter `cmsadm`.  
The *CentreVu* CMS Administration menu appears.
  - b. Enter `9` to select `run_cms`.
  - c. Enter `2` to turn off the *CentreVu* CMS.  
CMS turns off. You will see the system prompt.
2. Access the *CentreVu* CMS Administration menu by entering `cmsadm`.  
The menu appears.
3. Enter `1` to choose `acd_create`.  
The next-available ACD is selected for creation. For example, if there are two ACDs already active, ACD 3 is selected.

4. At the prompts, you need to enter the following information:

- Switch name for the new ACD
- Switch model (release)
- Is Vectoring enabled on the switch (if authorized)?
- Is Expert Agent Selection (EAS) enabled on the switch (if authorized)?
- Does the Central Office have disconnect supervision?
- Local port assigned to the switch
- Remote port assigned to the switch
- Device used for x.25 connectivity
- Number of splits/skills
- Total split/skill members, summed over all splits/skills
- Number of shifts
- Start and stop times of all shifts
- Number of agents logged into all splits/skills during all shifts
- Number of trunk groups
- Number of trunks
- Number of unmeasured (trunk) facilities
- Number of call work codes
- Number of vectors (if vectoring is enabled on the switch)
- Number of Vector Directory Numbers (VDNs) (if vectoring is enabled on the switch)

After you have entered the required information, the program responds as follows:

```
Updating database.
```

```
Computing space requirements and file system space availability.
```

```
ACD <name> (X) created successfully.
```

5. Turn *CentreVu* CMS back on by doing the following:

a. Enter `cmsadm`.

The *CentreVu* CMS Administration menu appears.

b. Enter `9` to select `run_cms`.

c. Enter `1` to turn on the *CentreVu* CMS.

CMS turns on.

---

## acd\_remove

The `acd_remove` option on the *CentreVu* CMS Administration menu allows you to remove an existing ACD.

### ⇒ NOTE:

If you are removing the master ACD, you must first designate some other ACD as the master. Use this procedure:

1. From the main CMS menu, select `System Setup - CMS State`.
2. Tab to the `Master ACD` field and enter a new name.
3. Access the action list and select `Modify`.
4. Return to the main menu and select `Logout`.

Use the following procedure to remove an ACD:

1. You must turn off the *CentreVu* CMS by doing the following:

a. Enter `cmsadm`.

The *CentreVu* CMS Administration menu appears.

b. Enter `9` to select `run_cms`.

c. Enter `2` to turn off the *CentreVu* CMS.

CMS turns off. You will see the system prompt.

2. Access the *CentreVu* CMS Administration menu by entering `cmsadm`.

The menu appears.

3. Enter `2` to select the `acd_remove` option.

4. To select the ACD you want to remove, enter your choice (1–8). The program responds as follows:

```
All administration and historical data for this ACD will be
DELETED.
Do you want to continue and delete all data for this ACD? (y/n):
```

5. Enter `y`. The program responds as follows:

```
Removal of data for this ACD started in the background.
A completion message will be logged in
/cms/install/logdir/admin.log.
```

6. Since the ACD is removed in the background, you can turn *CentreVu* CMS back on before the removal is complete by doing the following:

- a. Enter `cmsadm`.

The *CentreVu* CMS Administration menu appears.

- b. Enter `9` to select `run_cms`.

- c. Enter `1` to turn on the *CentreVu* CMS.

CMS turns on.

---

## backup

The `backup` option on the *CentreVu* CMS Administration menu allows you to back up your file systems.

### ⇒ NOTE:

You do not need to turn off *CentreVu* CMS to start the backup. If *CentreVu* CMS is on, the system turns off *CentreVu* CMS during the portion of the backup which needs *CentreVu* CMS off. When that portion completes, the system turns *CentreVu* CMS back on.

See “Perform a CMSADM File System Backup” in Appendix B, “Factory Software Installation,” for more information about this option.

## diskmap

The `diskmap` option on the *CentreVu* CMS Administration menu allows you to estimate *CentreVu* CMS disk requirements.

1. Access the *CentreVu* CMS Administration menu by entering `cmsadm`. The menu appears.
2. Enter `4` to select the `diskmap` option.
3. Answer the prompts that appear on the screen to estimate *CentreVu* CMS disk requirements.

### ⇒ NOTE:

You may back up one prompt at a time by entering any negative number (for example, `-1`).

You will need the following information:

- Customer name
- *CentreVu* CMS host computer type
- Total amount of Random Access Memory (RAM) equipped.
- If you answer `y` to go to the table allocation part of the program, then you must enter the following information (in megabytes):
  - Total amount of disk space
  - Amount of agent, split, and trunk data
  - Amount of trunk group, vector, and VDN data
  - Amount of call work code (CWC), exception, agent trace, and call history data
  - Amount of forecast, agent login/logout, and non-CMS customer data.

You are asked if you want to run another table allocation case.

If you answer `n` to not go directly to the table allocation part of the program, then you will continue by entering the following information:

- Will pseudo-ACD data be added? (y/n)
- Number of ACDs (1-8)

Note that in this procedure, ACD numbering starts with 0 and goes to 7. This corresponds to ACDs 1-8.

- Number of minutes in one interval (15, 30, 60)

- Start and stop times for data collection
- Number of shifts. You must enter the following information for each shift:
  - Number of agents
  - Start time
  - Stop time.
- Amount of agent pseudo-ACD data in MB
- Number of splits, trunk groups, and trunks
- Amount of split, trunk group, and trunk pseudo-ACD data in MB
- Number of vectors, VDNs, and CWCs
- Amount of vector, VDN, and CWC pseudo-ACD data in MB
- Internal or external call history enabled?

If you answer *n*, you will be asked if external call history is enabled, and you must enter the following:

  - Number of exception, agent trace, and call history records
  - Amount of exception, agent trace, and call history pseudo-ACD data in MB.
- Is Internet Call Center enabled (R3V6 only)? If enabled, you must answer the following:
  - Number of Internet VDNs and number of web pages
  - Amount of Internet VDN and web-page pseudo-ACD data in MB.
- Number of days of intrahour data saved for, number of days of daily data saved for, number of weeks of weekly data saved for, and number of months of monthly data saved for splits, agents, trunk groups, trunks, vectors, VDNs, and CWCs.
- Average number of times an agent logs out during a shift
- Amount of agent login/logout pseudo-ACD data in MB
- Is Forecasting enabled? If you answer *y*, then you must enter the following information:
  - Number of days of intrahour data for splits
  - Number of days of intrahour data for trunk groups
  - Number of days of daily data for splits

- Number of special days (average per split)
  - Number of days that current day reports will be saved (averaged per split).
  - Amount of forecast pseudo-ACD data, in MB
4. Table sizes for the first ACD are now displayed. If there are more ACDs to enter data, the preceding procedure must be repeated for each ACD. After data for all ACDs are completed, you must enter the following data:
- Enter any extra disk space that the customer wants for non-CMS activities (in MB)
  - Does the Voice Enhanced Services Platform (VESP) reside on this machine?

The total recommended disk space is now displayed. You are asked if you want to do disk allocations now or if you want to run another case. If you do not run another case, the procedure is finished.

---

## memory

The `memory` option on the *CentreVu* CMS Administration menu allows you to estimate your memory requirements.

1. Access the *CentreVu* CMS Administration menu by entering `cmsadm`. The menu appears.
2. Enter `5` to select the `memory` option.
3. At the prompts, you must supply the requested information:

 **NOTE:**

You may back up one prompt at a time by entering any negative number (for example, -1).

- Customer name
- *CentreVu* CMS host computer type
- Whether you are willing to allow memory paging (paging reduces performance, but requires less memory)
- Number of ACDs

- For each ACD, you must supply the following information:
  - Switch model
  - Maximum number of agents simultaneously logged in

**⇒ NOTE:**

If an agent logs in to multiple splits or skills, count that agent multiple times.

- Number of splits or skills, trunk groups, and trunks
  - Number of VDNs and call work codes
  - Whether agent trace is enabled
  - Whether Internet call center is enabled (R3V6 only)
  - Whether internal or external call history is enabled
- Whether Open Database Connectivity (ODBC) is enabled (R3V6 only)
  - Number of terminals simultaneously logged in to CMS
  - Number of CentreVu Supervisor (COW) sessions simultaneously logged in to CMS
  - Average number of real-time reports running per terminal
  - Total number of realtime reports running for different features
  - Number of historical plus forecasting reports running simultaneously during prime time
  - Number of ODBC reports running simultaneously during prime time (R3V6 only)
  - Number of realtime exception reports running simultaneously during prime time
  - Number of windows simultaneously running administration screens during prime time
  - Number of windows simultaneously doing custom report creation or editing during prime time
  - Number of windows simultaneously running call history or agent trace reports during prime time
  - Will backups be done during prime time

An estimate of total memory used displays, along the recommended minimum memory configuration.

You are then prompted to run another case.

4. Enter `y` to run another case or `n` to quit. If you answer `y`, you are returned to entering a *CentreVu* CMS host computer type.

---

## realtime

The `realtime` option on the *CentreVu* CMS Administration menu allows you to estimate the real-time report refresh rate your system needs.

1. Access the *CentreVu* CMS Administration menu by entering `cmsadm`. The menu appears.
2. Enter `6` to select the `realtime` option.
3. At the prompts, you must supply the requested information:

**⇒ NOTE:**

You may back up one prompt at a time by entering any negative number (for example, -1).

- Customer name
- *CentreVu* CMS host computer type

The numbers after the computer type give the speed of the processor and the number of processors. For example, the computer designated as “Sparc 5/170” has one 170 MHz processor. The computer designated as “UE3000/2502” has two 250 MHz processors.

- Number of ACDs
- Number of agents per split and trunks per trunk group
- Number of agents per group report and splits per split report
- Number of vectors per vector report, VDNs per VDN report, and VDNs per VDN skill preference report
- Supply the following for each ACD:
  - Whether Vectoring is enabled
  - Archiving intervals in minutes (15, 30, or 60)
  - Will any of the following be used: agents in multiple splits, without EAS, Generic 2.2 EAS, or G3V4 with Expected Wait Time, rolling Average Speed of Answer, ii-digits, and Automatic Number Identification (ANI).
  - Will most calls be complex (for example, will they involve either a hold, transfer, conference, or supervisor assist)

- Whether Exceptions is enabled
- Whether internal call history is enabled
- Whether external call history is enabled
- Call rate in calls per hour
- Whether agent trace is enabled
- Approximate average agent service time, in minutes
- Number of agents traced simultaneously
- Number of terminals simultaneously logged in to CMS
- Number of CentreVu Supervisor (COW) sessions simultaneously logged in to CMS
- Number of internal call history or agent trace reports that will be run per hour (during prime time)
- Number of historical plus forecasting reports that will be run per hour (during the day)
- Whether Internet call center is enabled (R3V6 only)
- If Internet call center is enabled, the maximum number of hits expected per hour, summed over all web pages being tracked (R3V6 only)
- Whether ODBC is enabled (R3V6 only)
- If ODBC is enabled, the number of ODBC reports that will be run per hour (R3V6 only)
- Enter either the average number of realtime reports running per session (a different refresh period is automatically assigned for each report) or the number of reports of each type that will be running simultaneously (you must manually enter a refresh period for each report).

If you enter `1` to get different periods for different types of reports, you must enter the following information:

- Number of real-time reports running per session
- You can answer `y` to give preferential treatment to running some reports faster at the expense of other reports
- Do you want to change the number of the reports

If you answer `n` to changing the number of reports, do you want to see the list of CPU times so that you can do completely general tradeoffs?

If you answer `y` to changing the number of reports, you are returned to choose either `1` or `2`.

If you enter `2` to get a single period, you must manually enter the number of each type of report that is running.

- Split report
- Split status report
- Split top aggregate status report
- Split auxiliary report
- Split top agent report
- Split call profile report
- Agent report
- Group report
- Queue/agent status report
- Queue/agent top report
- Queue/agent summary report
- Trunk group report
- Event count summary report
- Multi-ACD report
- Multi-ACD top report
- Graph split report
- Graph queue report
- Graph split call profile report
- Graph VDN call profile report
- Vector report
- VDN report
- VDN call profile report
- VDN skill preference report.

You can then change the number of reports if needed.

- Whether you want to see the list of CPU times (the TAUs) so that you can do completely general tradeoffs.

If you answer `y`, the CPU times are displayed.

You are then asked if you want to analyze another case.

4. Enter `y` to run another case or `n` to quit.

If you answer `y`, you are returned to entering a *CentreVu* CMS host computer type.

---

## pkg\_install

The `pkg_install` option on the *CentreVu* CMS Administration menu allows you to install a feature package.

1. Access the *CentreVu* CMS Administration menu by entering `cmsadm`. The menu appears.
2. Enter `7` to select the `pkg_install` option. The program responds as follows:

```
The CMS Features that can be installed are
  1) forecasting
  2) external call history
Enter choice (1-2) or q to quit:
```

### NOTE:

The system displays only feature packages that are authorized and not yet installed.

3. Enter the number that corresponds to the desired package. For more information, see Chapter 2, “Setting Up *CentreVu* CMS and Installing Feature Packages.”

## pkg\_remove

The `pkg_remove` option on the *CentreVu* CMS Administration menu allows you to remove a feature package. This procedure removes all files and database items associated with the feature package.

 **CAUTION:**

*Be careful when removing a package: all features and data associated with that package will be lost.*

1. Access the *CentreVu* CMS Administration menu by entering `cmsadm`. The menu appears.
2. Enter `8` to select the `pkg_remove` option.  
A list of *CentreVu* CMS features that can be removed is displayed.
3. Enter the number corresponding to the feature package that you want to remove.  
A message is displayed telling you when the feature is removed.

---

## run\_cms

The `run_cms` option on the *CentreVu* CMS Administration menu allows you to turn *CentreVu* CMS on or off.

1. Access the *CentreVu* CMS Administration menu by entering `cmsadm`.  
The menu appears.
2. Enter `9` to select the `run_cms` option.
3. Enter `1` to turn on *CentreVu* CMS or `2` to turn off *CentreVu* CMS.  
CMS turns on or off.

## CentreVu CMS Services Menu (CMSSVC)

### Overview

The *CentreVu* CMS Services (`cmssvc`) menu is intended for use primarily by Lucent Technologies services personnel.

### CMSSVC Menu Screen

You must log in as *root* to access this menu. To access the `cmssvc` menu, enter `cmssvc` at the prompt. Select from the options on the *CentreVu* CMS Services menu as shown below:

```
Lucent Technologies CentreVu(R) Call Management System Services
Menu

Select a command from the list below.
 1) auth_display Display feature authorizations
 2) auth_set     Authorize capabilities/capacities
 3) run_cms      Turn CentreVu CMS on or off
 4) setup        Set up the initial configuration
 5) swinfo       Display switch information
 6) swsetup      Change switch information
 7) patch_inst   Install a single CMS patch from CD
 8) patch_rmv    Backout an installed CMS patch
 9) load_all     Install all CMS patches found on CD
10) back_all     Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit:
```

This menu allows services personnel to do the following:

- Display *CentreVu* CMS authorizations
- Authorize *CentreVu* CMS feature packages and capacities
- Turn *CentreVu* CMS on and off
- Set up the initial *CentreVu* CMS configuration
- Display switch information
- Change switch information
- Install a *CentreVu* CMS patch
- Back out an installed *CentreVu* CMS patch

- Install all *CentreVu* CMS patches
- Back out all installed *CentreVu* CMS patches.

The following sections explain the options on the *CentreVu* CMS Services menu.

---

## auth\_display

The `auth_display` option on the *CentreVu* CMS Services menu allows you to display *CentreVu* CMS authorizations.

1. Access the *CentreVu* CMS Services menu by entering `cmssvc`. The menu appears.
2. Enter 1 to select the `auth_display` option.

The purchased version of *CentreVu* CMS and the current authorization status for CMS features and capacities are displayed:

```

Version purchased:  R3VX

Capability/Capacity  Authorization
-----
                    vectoring  authorized
                    forecasting installed
                    graphics    authorized
external call history authorized
expert agent selection not authorized
external application authorized
More than 2000 VDNs measured authorized
Lucent Technologies CentreVu(R) Supervisor authorized
Lucent Technologies CentreVu(R) Report Designer authorized
Maximum number of split/skill members 1000
Maximum number of ACDs 8
Simultaneous CentreVu Supervisor logins 200
    
```

The possibilities for authorization status are as follows:

- Authorized — The feature has been paid for, and authorization has been turned on.
- Not authorized — The feature has not been paid for, or authorization has not been turned on.
- Installed — The feature is authorized, and the software to support the feature has been installed.

For more information on this option, see Chapter 2, “Setting Up *CentreVu* CMS and Installing Feature Packages.”

## auth\_set

The `auth_set` option on the *CentreVu* CMS Services menu allows you to authorize *CentreVu* CMS features and capacities.

1. Access the *CentreVu* CMS Services menu by entering `cmssvc`.  
The menu appears.
2. Enter `2` to select the `auth_set` option. The program responds as follows:



Terminal screenshot showing a password prompt. The text "Password:" is displayed on a line, with a vertical line on the left and a horizontal line above it, forming a partial frame.

3. Enter the appropriate password. This password is available only to authorized personnel.
4. See Chapter 2, "Setting Up *CentreVu* CMS and Installing Feature Packages," for more information about this option.

---

## run\_cms

The `run_cms` option on the *CentreVu* CMS Services menu allows you to turn *CentreVu* CMS on and off.

1. Access the *CentreVu* CMS Services menu by entering `cmssvc`.  
The menu appears.
2. Enter `3` to select the `run_cms` option.
3. Enter `1` to turn on *CentreVu* CMS or `2` to turn off *CentreVu* CMS.  
CMS turns on or off.

## setup

The `setup` option on the *CentreVu* CMS Services menu allows you to set up the initial *CentreVu* CMS configuration. For example, you can set up the type of backup device you want to use (QIC 2.5-GB, 14-GB, and so on).

 **CAUTION:**

*If you run `setup` on an in-service system, you will lose all customer data on that system.*

 **NOTE:**

Do not confuse this option with the `swsetup` option which is used to change the switch information.

See Chapter 2, “Setting Up *CentreVu* CMS and Installing Feature Packages,” for more information about this option.

---

## swinfo

The `swinfo` option on the *CentreVu* CMS Services menu allows you to display the switch options currently assigned for each ACD.

1. Access the *CentreVu* CMS Services menu by entering `cmssvc`. The menu appears.
2. Enter `5` to select the `swinfo` option.
3. Select the ACD you want to show information for.

The following information is displayed:

- Switch name
- Switch model (release)
- If Vectoring is enabled
- If Expert Agent Selection is enabled
- If the Central Office has disconnect supervision
- Local port
- Remote port
- Device used for the x.25 link.

## swsetup

The `swsetup` option on the *CentreVu* CMS Services menu allows you to change the switch options for each ACD.

⇒ **NOTE:**

Do not confuse this option with the `setup` option which is for setting up *CentreVu* CMS.

⇒ **NOTE:**

When you change switch parameters, you should also check the parameters in the *CentreVu* CMS System Setup: Data Storage Allocation window. In particular, if you enable vectoring, you will need to allocate space for VDNs and vectors. Changing the switch release may change the number of measured entities allowed and may also have an impact on the storage allocation for each entity.

1. Turn *CentreVu* CMS off by doing the following:
  - a. Enter `cmssvc`.  
The *CentreVu* CMS Services menu appears.
  - b. Enter `3` to select `run_cms`.
  - c. Enter `2` to turn off the *CentreVu* CMS.  
CMS turns off. You will see the system prompt.
2. After the *CentreVu* CMS is turned off, enter `cmssvc` again.
3. Enter `6` to select the `swsetup` option.
4. Select the ACD you want to change.
5. Answer the prompts that appear on the screen. You need the following information:
  - Switch name
  - Switch model (release)
  - If Vectoring is enabled
  - If Expert Agent Selection is enabled
  - If the Central Office has disconnect supervision
  - Local port

- Remote port
- Device used for the x.25 link.

A display of the information is shown. The system will then ask if the above switch administration is correct.

6. Answer `y` or `n`.
7. Turn *CentreVu* CMS on by doing the following:
  - a. Enter `cmssvc`.

The *CentreVu* CMS Services menu appears.

- b. Enter `3` to select `run_cms`.
- c. Enter `1` to turn on the *CentreVu* CMS.

CMS turns on. You will see the system prompt.

---

## patch\_inst

The `patch_inst` option on the *CentreVu* CMS Services menu allows you to install one or more *CentreVu* CMS patches from the CD-ROM. If you want to install all patches, use the `load_all` command.

1. Load the “*CentreVu* CMS” CD into the CD-ROM drive.
2. Access the *CentreVu* CMS Services menu by entering `cmssvc`. The menu appears.
3. Enter `7` to select the `patch_inst` option.
4. Enter the patch number.

The system installs the patch. As it does so, it displays messages similar to the following:

```
@(#) installpatch 1.0 96/04/01
cmspx-s
Generating list of files to be patched...
Creating patch archive area...
Saving a copy of existing files to be patched...
xxxx blocks
      File compression used
Installing patch packages...

Doing pkgadd of cmspx-s package:
Installation of <cmspx-s> was successful.

Patch packages installed:
      cmspx-s

Patch installation completed.
```

5. After installing all of the required patches, enter `eject cdrom` to eject the CD-ROM.
  6. Remove the CD, place it back in its case, and push the CD-ROM tray in until it closes.
- 

## patch\_rmv

The `patch_rmv` option on the *CentreVu* CMS Services menu allows you to back out a single *CentreVu* CMS patch installed on the machine.

1. Access the *CentreVu* CMS Services menu by entering `cmssvc`.  
The menu appears.
  2. Enter the number for the `patch_rmv` option.
  3. Enter the patch number.  
The system removes the patch.
  4. Repeat Steps 2 and 3 for every patch you wish to remove.
- 

## load\_all

The `load_all` option on the *CentreVu* CMS Services menu allows you to install all *CentreVu* CMS patches from the CD-ROM.

1. Load the “*CentreVu* CMS R3V6” CD into the CD-ROM drive.
2. Access the *CentreVu* CMS Services menu by entering `cmssvc`.  
The menu appears.
3. Enter `9` to select the `load_all` option.

4. Enter `y`.

The system installs the patches. As it does so, it displays — for each patch installed — messages similar to the following:

```
@(#) installpatch 1.0 96/04/01
cmspx-s
Generating list of files to be patched...
Creating patch archive area...
Saving a copy of existing files to be patched...
xxxx blocks
      File compression used
Installing patch packages...

Doing pkgadd of cmspx-s package:
Installation of <cmspx-s> was successful.

Patch packages installed:
      cmspx-s

Patch installation completed.
```

5. After installing all of the patches, enter `eject cdrom` to eject the CD-ROM.

6. Remove the CD, place it back in its case, and push the CD-ROM tray in until it closes.

---

## back\_all

From the `back_all` option on the *CentreVu* CMS Services menu, you can back out all *CentreVu* CMS patches installed on the machine.

1. Access the *CentreVu* CMS Services menu by entering `cmssvc`. The menu appears.
2. Enter the number for the `back_all` option.

The system removes all of the installed patches. As it does so, it displays a message for each patch removed.

# Factory Software Installation

## Overview

This appendix contains the installation procedures used to install the *CentreVu*<sup>®</sup> Call Management System (CMS) software and other required software. These procedures are done at the factory for *Sun*<sup>\*</sup> *Enterprise*<sup>†</sup> 3000 computers, *Sun Ultra*<sup>‡</sup> 5 computers, and *Sun SPARCserver*<sup>§</sup> computers. When done at the factory, these procedures are known as the Assembly, Load, and Test (ALT) procedures.

These procedures can also be used to bring systems in the field up to factory standards after a system reconfiguration or repair. See *CentreVu* CMS Hardware Maintenance and Troubleshooting (585-215-861) for more information about field repairs.

The following table lists each of the factory software installation procedures, to which software release it applies (R3V5, R3V6, or both), and for which computer models it applies (E3000, *Ultra* 5, *SPARCserver*, or some combination). Except where noted, all procedures are required.

Procedure	Software Release	Computer Platform
Apply power to system components	Both	All
Install the <i>Sun Solaris</i> <sup>*</sup> 2.5.1 operating system (Hardware: 11/97 version)	Both	All
Install the Common Desktop Environment (CDE) 1.0.2	Both	All
Install the <i>Sun</i> Online Validation Test Suite (VTS) 2.1.1	Both	All
Install the <i>SunLink</i> <sup>†</sup> High-Speed Serial Interface/Sbus (HSI/S) Version 2.0 drivers (optional)	Both	E3000 <i>SPARCserver</i>
Install the High-Speed Serial Interface/PCI Bus (HSI/P) Adapter 1.0 drivers (optional)	Both	<i>Ultra</i> 5
Install the Serial Asynchronous Interface/PCI Bus (SAI/P) Adapter 1.0 drivers (optional)	Both	<i>Ultra</i> 5
Install the Bay Networks Annex <i>Network Terminal Server</i> <sup>‡</sup> (NTS) drivers (optional)	Both	All

\**Sun* is a registered trademark of Sun Microsystems, Inc.

†*Enterprise* is a trademark of Sun Microsystems, Inc.

‡*Ultra* is a trademark of Sun Microsystems, Inc.

§*SPARCserver* is a registered trademark of SPARC International, Inc.

Procedure	Software Release	Computer Platform
Install the <i>Solstice</i> <sup>§</sup> for Server Connect X.25 Network Interface Version 9.1	Both	All
Install the <i>INFORMIX</i> <sup>¶</sup> software: - Structured Query Language (SQL) Version 7.20 (optional) - Standard Engine (SE) Version 7.22 - International Language Supplement (ILS) Version 2.11  - SQL Version 6.05 (optional) - SE Version 7.13	R3V6 R3V6 R3V6  R3V5 R3V5	All All All  <i>Ultra 5, E3000</i> <i>Ultra 5, E3000</i>
Install the <i>Solstice DiskSuite</i> <sup>**</sup> 4.1 software	Both	All
Install the <i>Sun Solaris</i> patches	Both	All
Run the <i>Solstice DiskSuite</i> setup scripts	Both	All
Install the <i>CentreVu</i> CMS software	††	All
Install the CMS patches (if needed)	Both	All
Install the <i>CentreVu</i> CMS Supplemental Services software	R3V6	All
Set up the CMS software	Both	All
Install the <i>CentreVu</i> CMS Open Database Connectivity (ODBC) software (optional)	Both	All
Install the Aurora ports card drivers (optional)	Both	<i>SPARCserver</i>
Set up the remote console	Both	All
Administer the NTS (optional)	Both	All
Perform a CMSADM backup.	Both	All

\* *Solaris* is a registered trademark of Sun Microsystems, Inc.

† *SunLink* is a registered trademark of Sun Microsystems, Inc.

‡ *Network Terminal Server* is a trademark of Sun Microsystems, Inc.

§ *Solstice* is a trademark of Sun Microsystems, Inc.

¶ *INFORMIX* is a registered trademark of Informix Software, Inc.

\*\* *Solstice DiskSuite* is a trademark of Sun Microsystems, Inc.

†† For R3V5 systems, the R3V5 software is installed; for R3V6 systems, the R3V6 software is installed.

## Conventions

- When executing commands remotely that may take a long time to complete (such as `cpio` and `/olds` commands), use the `nohup` command to ensure that the command will complete without interruption in case the data line disconnects. An example using the `nohup` command is shown below:

```
nohup cpio -icmudf -C 10240 -I /dev/rmt/0c "/cms" | tee
```

- When doing these procedures remotely, verify that you set your `termtype` to the correct setting after each reboot.

## Apply Power to System Components

Before beginning any of these procedures, you must verify that all components of the system are installed, are plugged into the appropriate power source, and are turned on. This includes port cards, external disk drives, and tape drives. If this is not done, the system hardware will not be recognized during the software installation procedures.

# Install the *Solaris* Operating System

---

## Overview

The *Solaris* installation program is a menu-driven, interactive program that guides you step by step through installing the *Solaris* software. It also has on-line help to answer your questions.

You navigate through the *Solaris* installation program with the mouse. Your keyboard, however, provides similar functionality. For example, you can use the Tab or arrow keys to move through fields and the Enter key to initiate actions.

Installing the *Solaris* 2.5.1 operating system on the *Sun* system consists of the following tasks:

- Boot from the Solaris 2.5.1 Hardware 11/97 CD (Page B-6)
- Identify the system (Page B-7)
- Set the date and time (Page B-12)
- Select the *Solaris* 2.5.1 system files (Page B-14)
- Partition the hard disks (Page B-19)
- Install the selected options (Page B-30)
- Assign a root password (the default is no password) (Page B-32)
- Enable Korn shell and the backspace key (Page B-33)
- Set the EEPROM parameters for the A and B ports (Page B-33)
- Turn on the system activity recorder (Page B-34)
- Remove the CD (Page B-35).

---

## Release and Platform Considerations

- All releases
- All platforms.

## Prerequisites

Obtain or perform the following:

- “Solaris 2.5.1 Hardware: 11/97” CD
- The system’s name (as designated by Lucent Technologies’ Technical Service Center [TSC])
- The system’s Internet Protocol (IP) address (this may be the factory default or an address in a customer’s network)
- The number and size of the disks equipped with the system.
- Verify that all power cords are fully-connected to all hardware devices (such as disk drives and tape drives), and that power is applied to all hardware devices.

## Boot from the Solaris 2.5.1 Hardware 11/97 CD

This section describes how to boot the system from the *Solaris 2.5.1* CD-ROM using the local console.

To perform this operation using a remote terminal, see *CentreVu CMS Hardware Maintenance and Troubleshooting* (585-215-861).

### ⇒ NOTE:

The screens in this section are representative of a typical installation. Not all screens will match your installation. When possible, the recommended selections are shown with boxes highlighting the selection.

1. Apply power to all of the external devices, such as disk drives and tape drives.
2. Turn on the system.
3. As the system begins booting up, press the **Stop** and **A** keys simultaneously. The system responds as follows:

---

ok

4. Load the “Solaris 2.5.1 Hardware: 11/97” CD into the CD-ROM drive.

5. Boot the system from the CD-ROM by entering the following:

```
boot cdrom
```

The boot process takes between 2 to 10 minutes depending upon the platform.

The *Solaris* Installation Program screen appears:

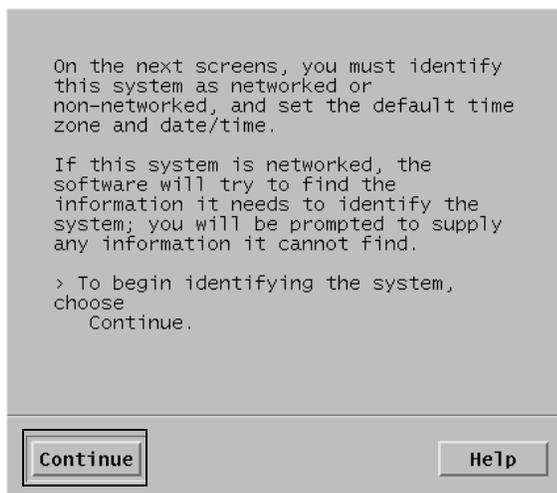


6. Click Continue.

---

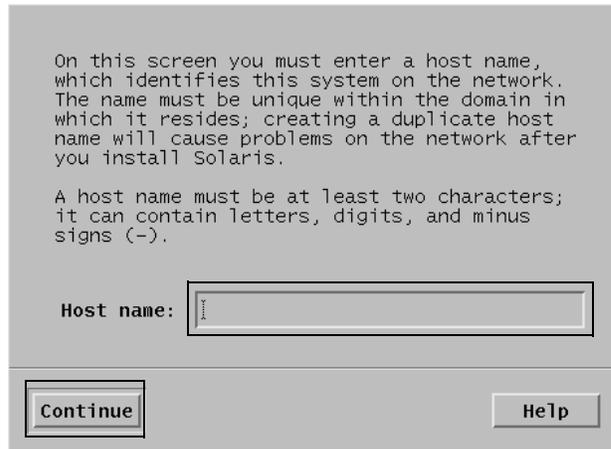
## Identify the System

The Identify This System screen appears:



1. Click Continue.

The Host Name screen appears:



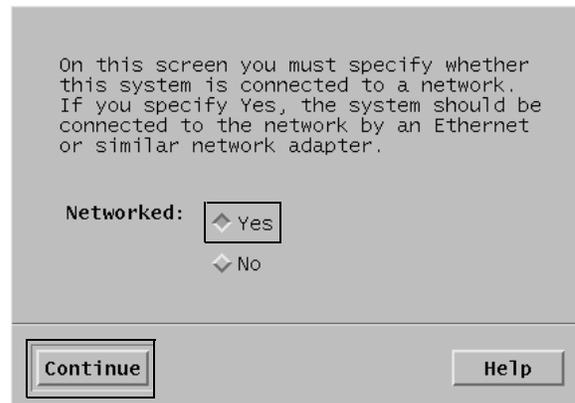
On this screen you must enter a host name, which identifies this system on the network. The name must be unique within the domain in which it resides; creating a duplicate host name will cause problems on the network after you install Solaris.

A host name must be at least two characters; it can contain letters, digits, and minus signs (-).

Host name:

2. Click the Host name box and enter the host name for the system. The host name for a specific system was designated by the TSC Provisioning personnel. Host names are case-sensitive and cannot start with a number. When finished, click Continue.

The Network Connectivity screen appears:

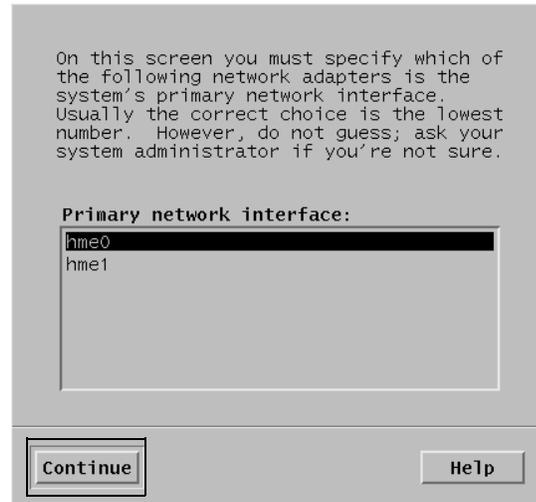


On this screen you must specify whether this system is connected to a network. If you specify Yes, the system should be connected to the network by an Ethernet or similar network adapter.

Networked:  Yes  
 No

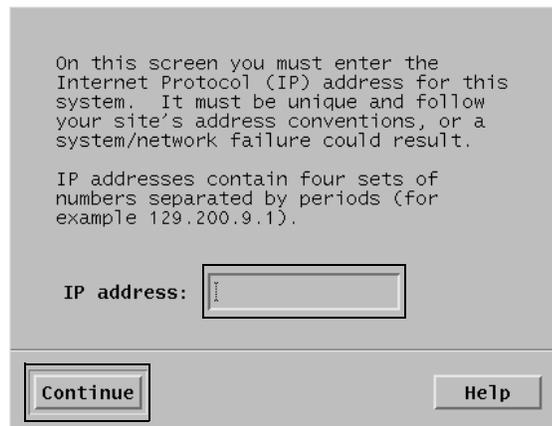
3. Click Yes, and then click Continue.

If the system is equipped with more than one network board, the Primary Network Interface screen appears (otherwise, the IP Address screen appears):



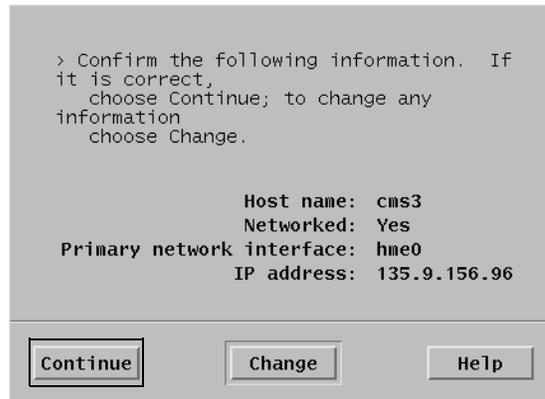
4. Select "hme0" for an *Enterprise 3000* or *Ultra 5* computer, or "le0" for a *SPARCserver* computer, and then click Continue.

The IP Address screen appears:



5. Click the IP address box and enter the IP address. IP address 129.200.9.1 is the factory default. You should enter the factory default address unless there is an actual network address for this site. Click Continue when finished.

The Confirm Information screen appears:



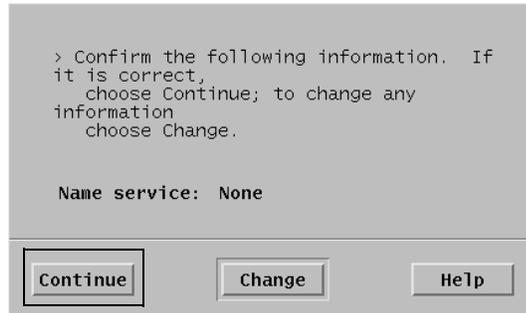
6. Click Continue if the displayed information is correct. If you click Change, the program returns to the Host Name screen.

The Name Service screen appears:



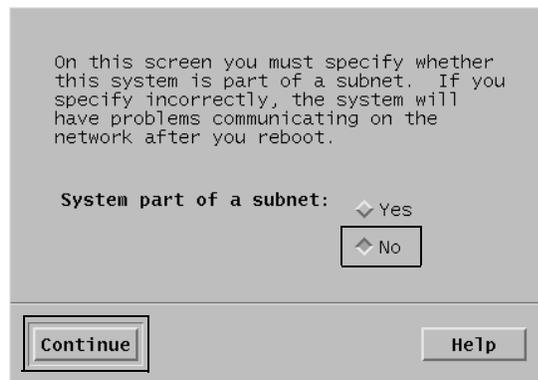
- Click None, and then click Continue.

The Confirm Information screen appears:



- Click Continue if the displayed information is correct. If you click Change, the program returns to the Name Service screen.

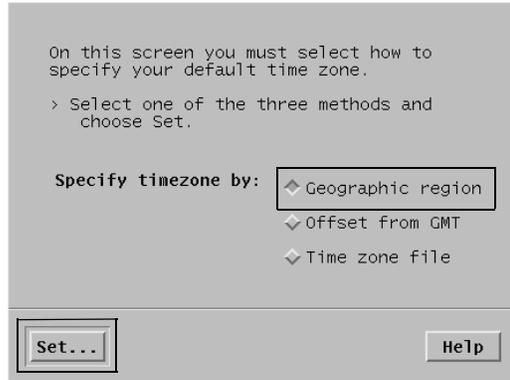
The Subnets screen appears:



- Click No, and then click Continue.

## Set the Date and Time

The Time Zone screen appears:



1. Click Geographic region, and then click Set.

The Geographic Region screen appears:



2. Click to highlight the region and time zone where this system is located, and then click Continue.

The Date and Time screen appears:

> Accept the default date and time or enter new values.

Date and time: 05/29/98 11:23

Year (4 digits) : 1998

Month (1-12) : 05

Day (1-31) : 29

Hour (0-23) : 11

Minute (0-59) : 23

Continue Help

3. Click Continue to accept the displayed date and time, or enter the correct date and time. Click Continue when all the information is correct.

The Confirm Information screen appears:

> Confirm the following information. If it is correct, choose Continue; to change any information choose Change.

System part of a subnet: No

Time zone: US/Mountain

Date and time: 05/29/98 11:23:00

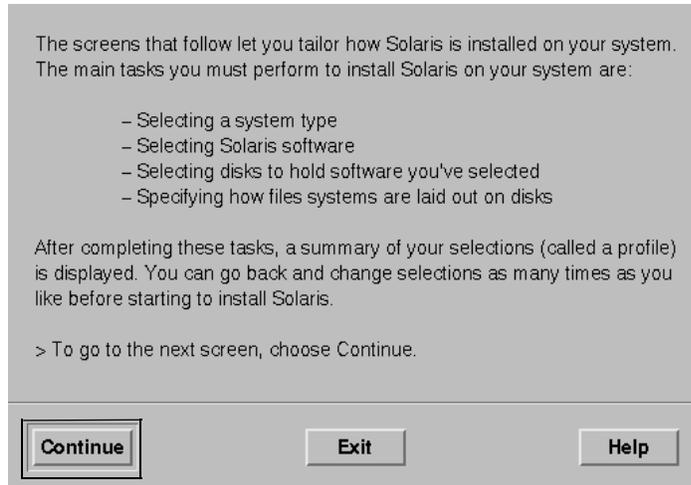
Continue Change Help

4. If the displayed information is correct, click Continue. If you click Change, the program returns to the Subnets screen.

The system date and time are now set. The program continues with the selection of *Solaris 2.5.1* system files.

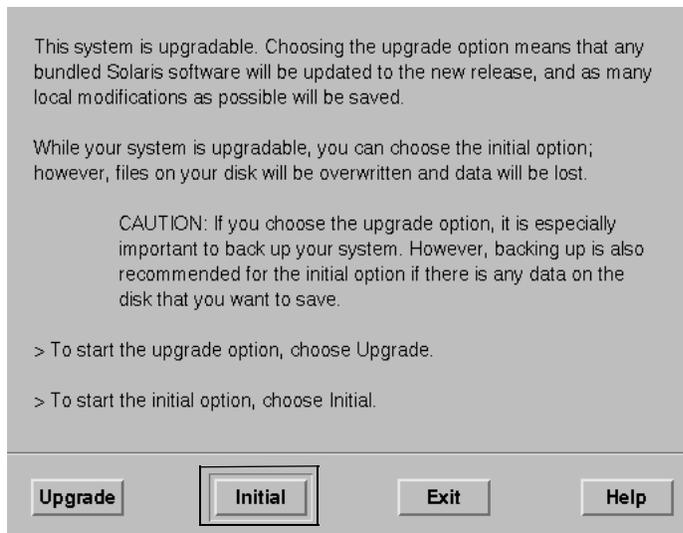
## Select the Solaris 2.5.1 System Files

After a few minutes, the Install *Solaris* Software screen appears:



1. Click Continue.

If *Solaris* is already installed on the machine, which is the case for machines in the field, the Upgrade System screen appears.



2. Click Initial to reinstall the operating system.

The System Type screen appears:

On this screen you must specify one of the following system types. A system type determines where a system will get its directories and file systems, and whether it provides parts of the Solaris software to other systems.

**System type:**  Standalone  
 OS Server  
 Dataless Client

3. Click Standalone, and then click Continue.

The Software screen appears:

On this screen you must select the Solaris software to install on your system. The software groups shown below are bundled and defined by SunSoft. You can accept the default, or select another.

NOTE: After selecting a software group, you can add or remove software from it by selecting Customize. However, this requires understanding of software dependencies and how Solaris software is packaged.

> Select a software group, then choose Customize or Continue.

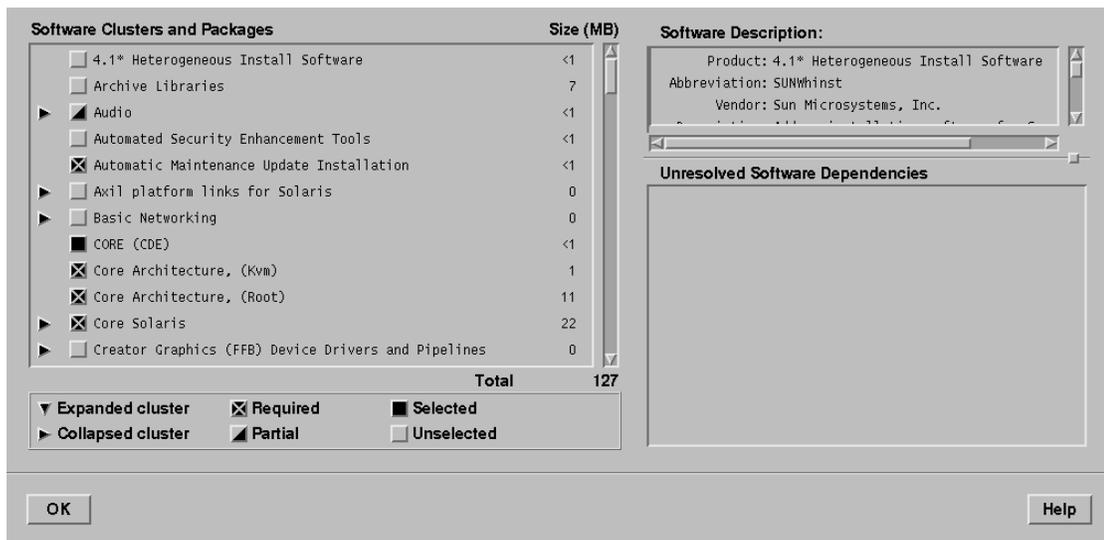
Software Group	Recommended Size
<input type="radio"/> Entire Distribution plus OEM support	476 MB
<input type="radio"/> Entire Distribution	470 MB
<input type="radio"/> Developer System Support	388 MB
<input checked="" type="radio"/> End User System Support	277 MB
<input type="radio"/> Core System Support	170 MB

- Click End User System Support, and then click **Customize** (NOT Continue).

⇒ **NOTE:**

If you click Continue instead of Customize, the Disks screen (shown on Page B-19) appears, which is incorrect. If this happens, click Go Back from the Disks screen.

The Customize Software screen appears:



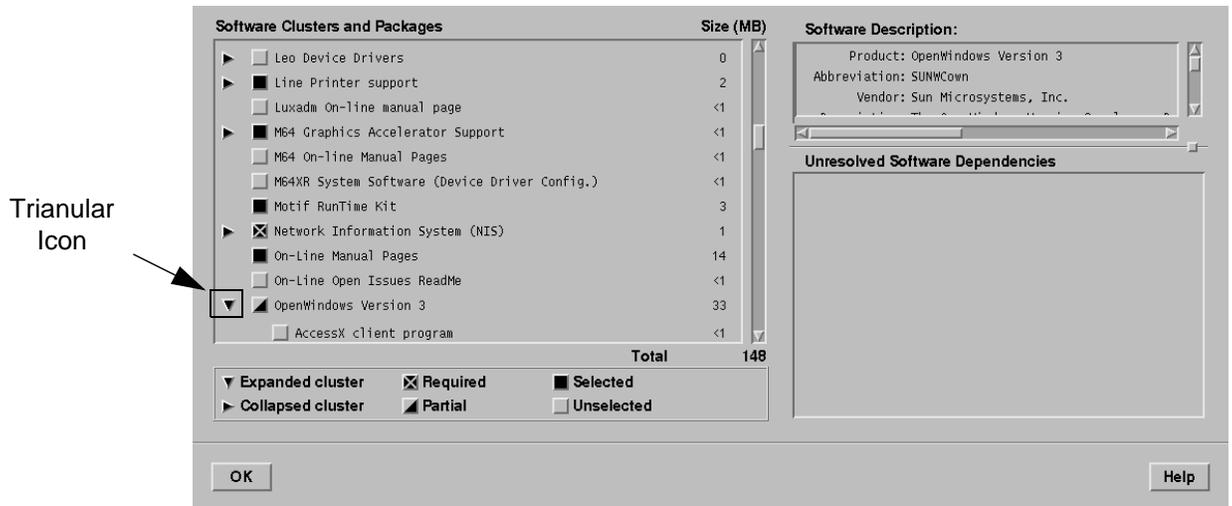
- Click to select the following packages (using the scroll bar when necessary to bring the package names into view):
  - Basic Networking
  - On-Line Manual Pages
  - Point-to-Point Protocol
  - System Accounting
  - Terminal Information.

⇒ **NOTE:**

Packages are “selected” when the box is filled in. Do not deselect any packages that are already selected.

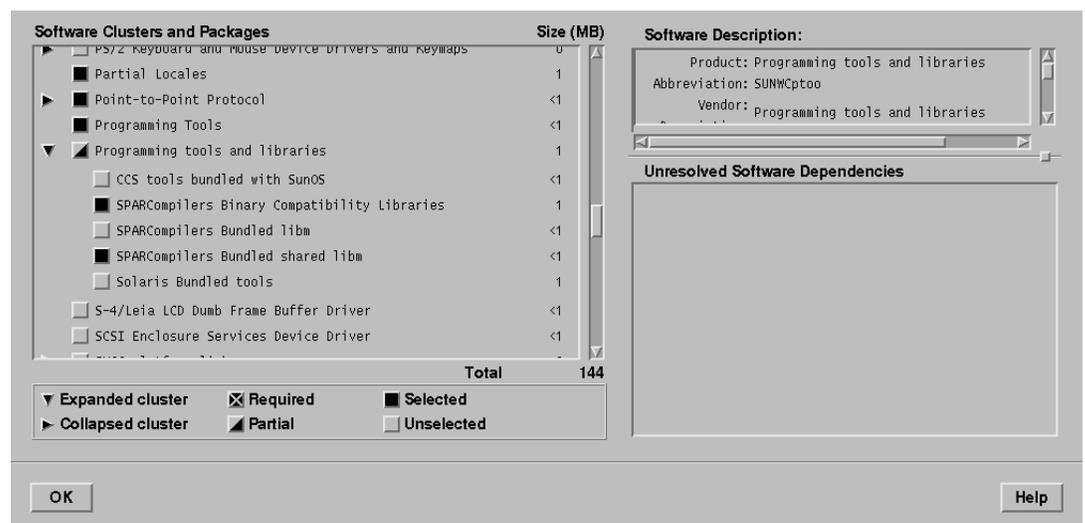
6. Scroll up, and then click the triangular icon to expand the “OpenWindows\* Version 3” cluster.

The program responds as follows:



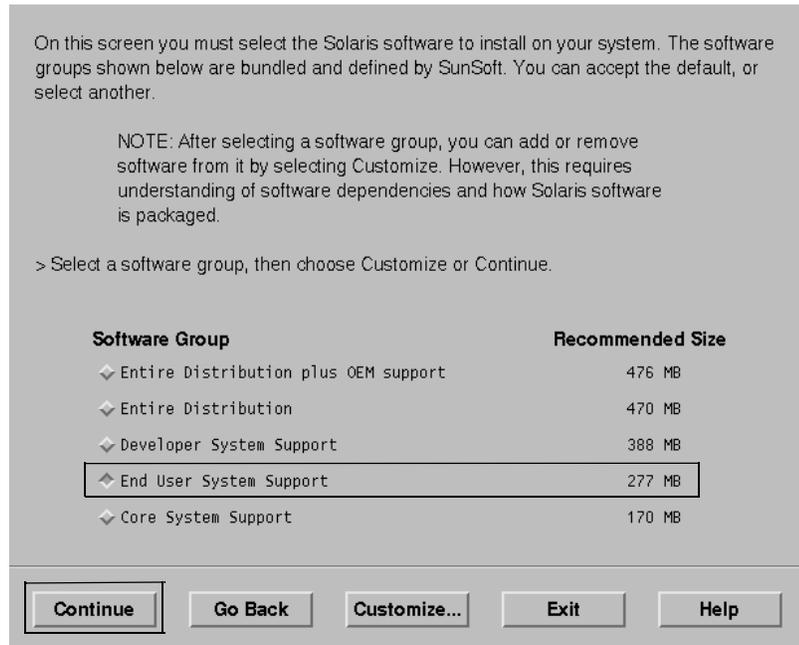
7. Scroll down and select the “X Windows online user man pages” package.
8. Scroll up, then click the triangular icon to collapse the “OpenWindows Version 3” cluster.
9. Scroll down and then click the triangular icon to expand the “Programming tools and libraries” cluster.

The program responds as follows:



\*OpenWindows is a trademark of Sun Microsystems, Inc.

10. Select the “CCS tools bundled with *SunOS*” package.
11. Click the triangular icon to collapse the “Programming tools and libraries” cluster.
12. Click OK. The Software screen appears again.



13. Click Continue.

The *Solaris* 2.5.1 software packages are now selected and will be installed after the disks are partitioned.

## Partition the Hard Disks

The Disks screen appears:

On this screen you must select the disks for installing Solaris software. Start by looking at the Required field; this value is the approximate space needed to install the software you've selected. Keep selecting disks until the Total Selected value exceeds the Required value.

> To add a disk, select it from the list on the left by clicking on it, and choose Add.

> To remove a disk, select it from the list on right by clicking on it, and choose Remove.

Available Disks:		Selected Disks:	
c0t0d0	bootdrive 4102 MB	Add >	
c1t0d0	4092 MB		
		< Remove	
Total Available: 8194		Recommended: 304	Required: 149
		Total Selected: 0	

Continue      Go Back      Exit      Help

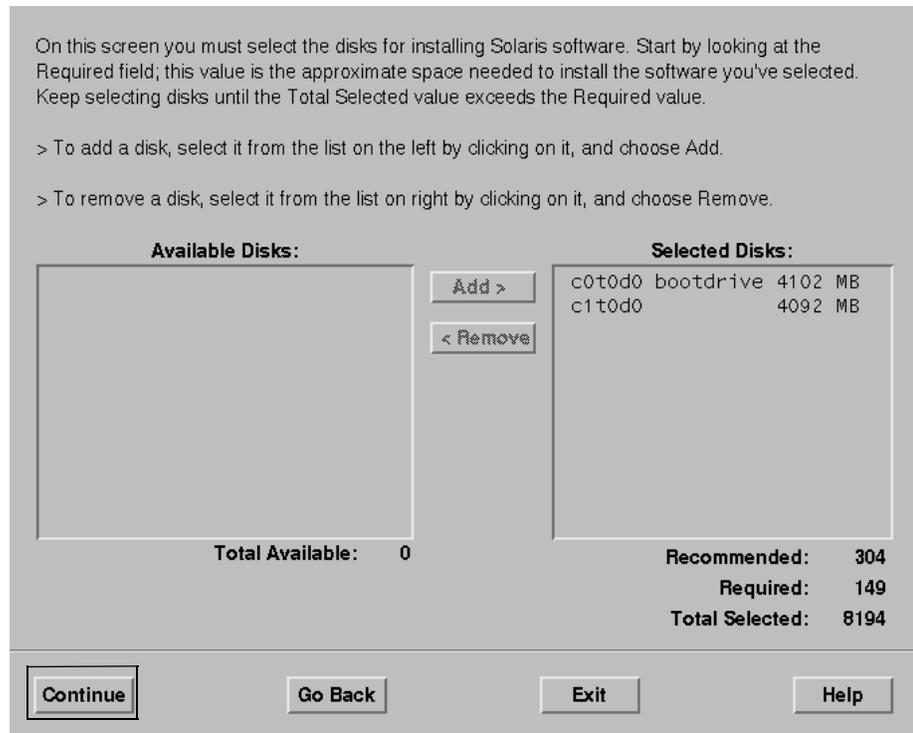
### ⇒ NOTE:

In the above screen, all the disks equipped with the system should be listed as available. If not, you may have a connectivity or power problem. Check all cables and verify that the power is switched on for the disk drives.

The screen examples in this section may differ according to your system's disk configuration. The example above shows one 4.2 GB disk and one 4.3 GB disk.

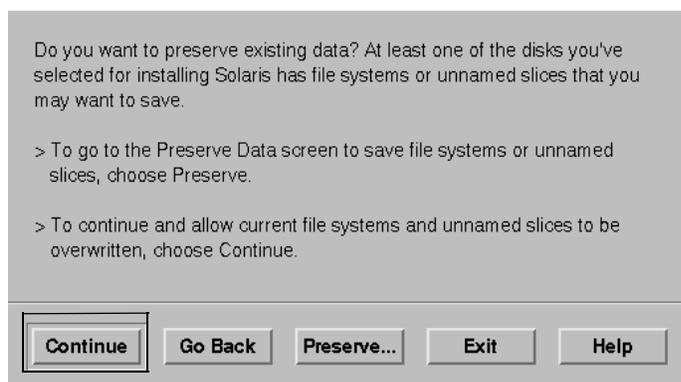
1. Select the first disk in the "Available Disks" column.
2. Click Add so the available disk moves to the "Selected Disks" column.

3. Move all disks into the “Selected Disks” column by repeating Steps 1 and 2. The Disks screen now appears as the following:



4. After all of the disks have been moved to the “Selected Disks” column, click Continue.

The Preserve Data screen appears:

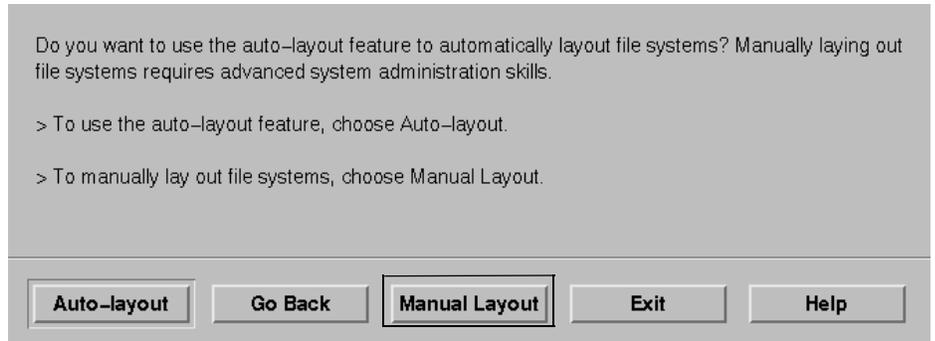


**⇒ NOTE:**

The Preserve Data screen may not display if this is the first time the operating system has been installed on your machine.

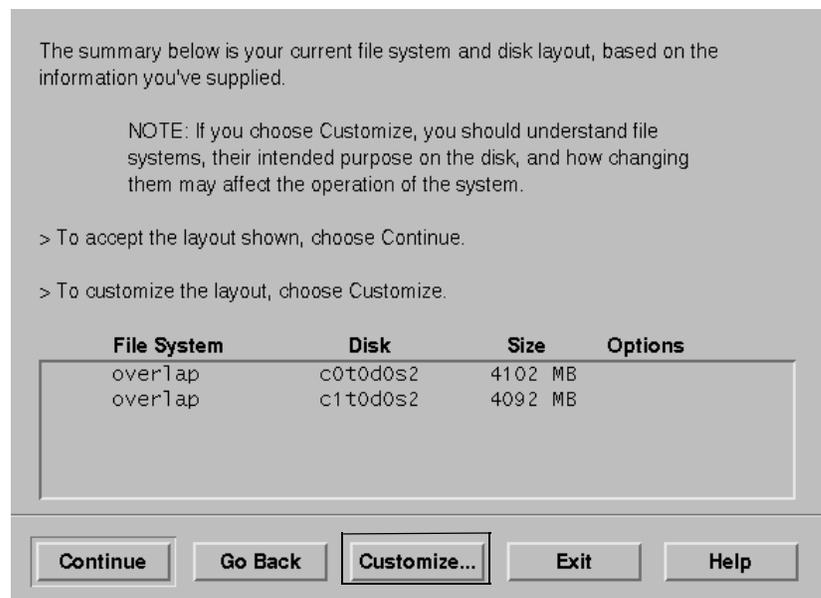
5. Click Continue.

The Automatically Layout File Systems screen appears:



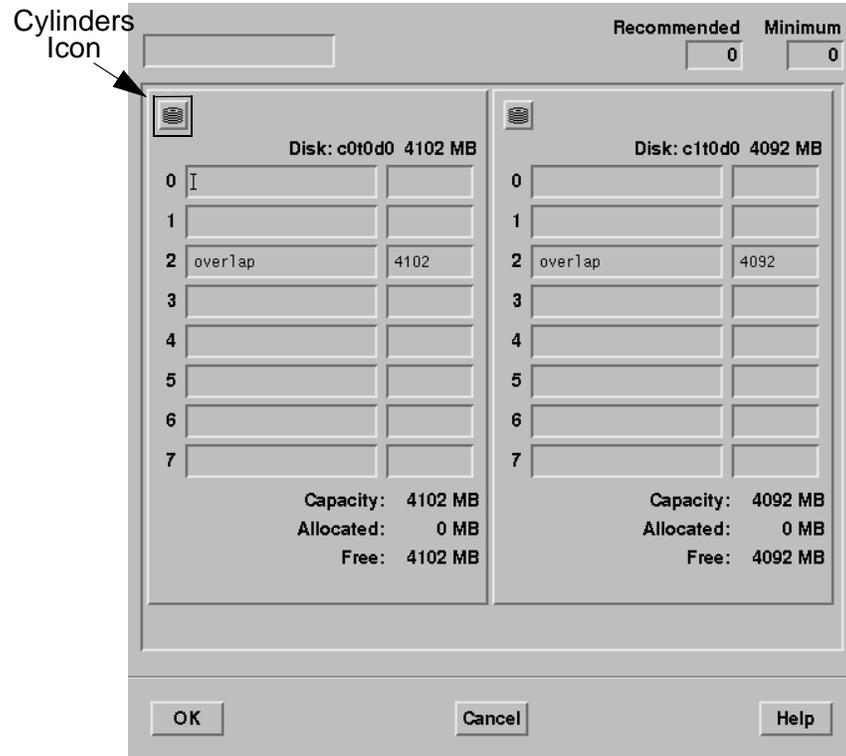
6. Click Manual Layout.

The File System and Disk Layout screen appears:



7. Click **Customize** (NOT Continue).

The Customize Disks screen appears (this example shows one 4.3 GB disk and one 4.2 GB disk):



8. Disk partitioning should be done in cylinders, not MB. To do this, click the cylinders icon in the upper left-hand corner of the disk 1 column.

The Customize Disks by Cylinders screen appears:

		Recommended	Minimum	
		0	0	
Disk: c0t0d0 8892 CYLS				
	Size	Start	End	
0				
1				
2	overlap	8892	0	8891
3				
4				
5				
6				
7				
		Allocated:	0 CYLS	
		Free:	8892 CYLS	
		Capacity:	8892 CYLS	
OK		Load...	Cancel	
Help				

9. Use the information from the following table to partition disk 1 by filling in the file system name and cylinder size for each partition. As you move the cursor to each new partition, notice that the Start and End fields display the computed cylinder values.

**⇒ NOTE:**

The size of the overlap file system always defaults to the size of the entire disk. Do not change this value.

### Disk 1 Partition Values

Partition	File System Name	Size (Cylinders)			
		8.4 GB Disk	4.3 GB Disk* (IDE)	4.2 GB Disk* (SCSI)	2.1 GB Disk
0	/	616	2345	1023	1441
1	(blank)	7	7	7	7
2	overlap	4924	8892	3880	2733
3	(blank)	4263	6398	2788	1197
4	swap	38	142	62	88

\*To identify which type of disk you are partitioning, look at the Capacity figure shown on the Customize Disks by Cylinders screen. The 4.3 GB IDE disk has a total of 8892 cylinders; the 4.2 GB small computer system interface (SCSI) disk has a total of 3880 cylinders.

The following example shows how the Customize Disks by Cylinders screen appears when Disk 1 is a 4.3-GB IDE disk:

		Recommended	Minimum
		0	0

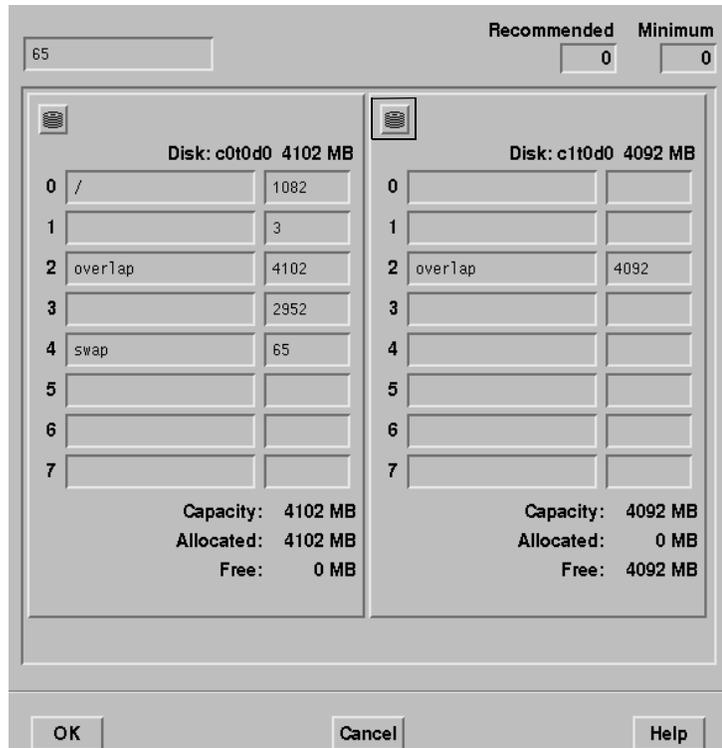
  

Disk: c0t0d0 8892 CYLS				
	Size	Start	End	
0	/	2345		2344
1		7	2345	2351
2	overlap	8892	0	8891
3		6398	2352	8749
4	swap	142	8750	8891
5				
6				
7				

Allocated: 8892 CYLS  
Free: 0 CYLS  
Capacity: 8892 CYLS

OK Load... Cancel Help

- Click OK after setting up the partitions for disk 1.  
The Customize Disks screen appears again:



- If there is another disk, click the cylinders icon for the next disk to be partitioned; otherwise, go to Step 14.

The Customize Disks by Cylinders screen appears for the selected disk:

	Recommended	Minimum
	0	0

Disk: c1t0d0 3880 CYLS

	Size	Start	End
0			
1			
2	overlap	3880	0 3879
3			
4			
5			
6			
7			

Allocated: 0 CYLS  
Free: 3880 CYLS  
Capacity: 3880 CYLS

OK Load... Cancel Help

- Use the information from the following table to partition each additional disk by filling in the file system name and cylinder value for each partition. As you move the cursor to each new partition, notice that the Start and End fields display the computed cylinder values.

**⇒ NOTE:**

The size of the overlap file system always defaults to the size of the entire disk. Do not change this value.

### Additional Disk Partition Values

Partition	File System Name	Size (Cylinders)				
		8.4 GB Disk	4.3 GB Disk* (IDE)	4.2 GB Disk* (SCSI)	2.1 GB Disk	1.05 GB Disk
0	(blank)	2	2	2	2	2
1	(blank)	4922	8890	3878	2731	2034
2	overlap	4924	8892	3880	2733	2036

\*To identify which type of disk you are partitioning, look at the Capacity figure shown on the Customize Disks by Cylinders screen. The 4.3 GB IDE disk has a total of 8892 cylinders; the 4.2 GB SCSI disk has a total of 3880 cylinders.

Properly set up, the Customize Disks by Cylinders screen for a 4.2 GB SCSI disk would appear as follows:

Recommended: 0 Minimum: 0

Disk: c1t0d0 3880 CYLS

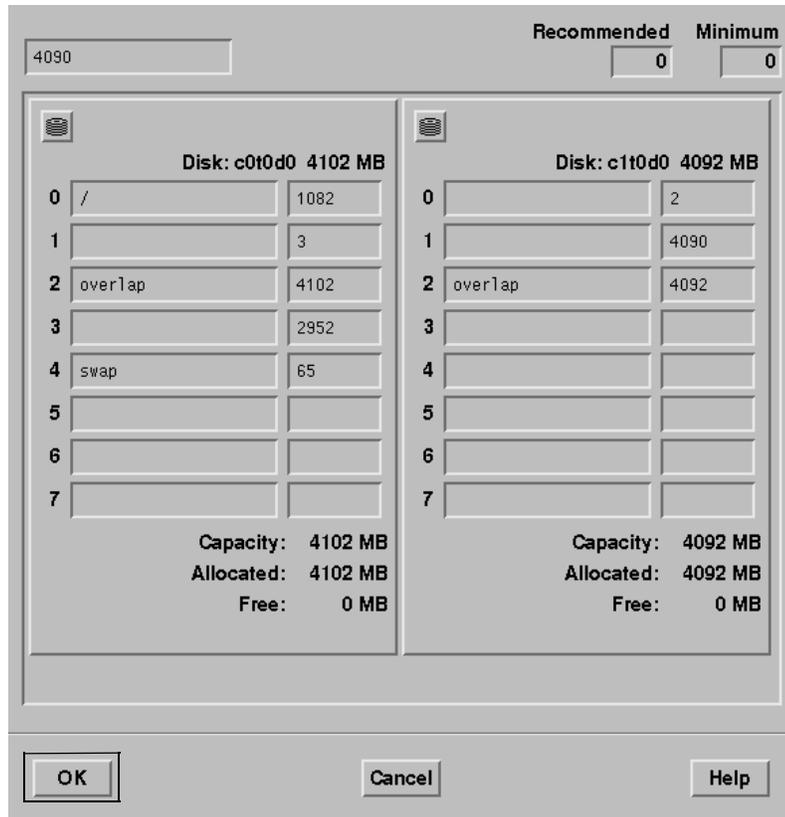
	Size	Start	End
0	2		1
1	3878	2	3879
2	overlap	3880	0 3879
3			
4			
5			
6			
7			

Allocated: 3880 CYLS  
Free: 0 CYLS  
Capacity: 3880 CYLS

OK Load... Cancel Help

13. Click OK.

The Customize Disks screen appears again:

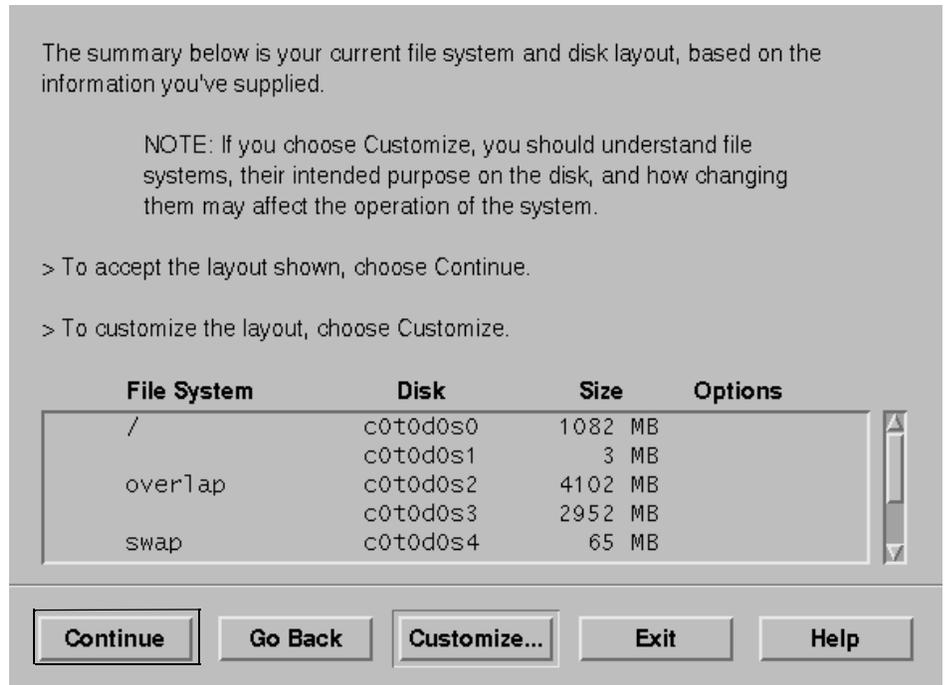


**⚠ CAUTION:**

*If there are more disks installed on your system, repeat Steps 11 through 13 for each additional disk. Use the scroll bar on the screen to display the additional disks. Continue on to Step 14 only when you have partitioned every disk on your system.*

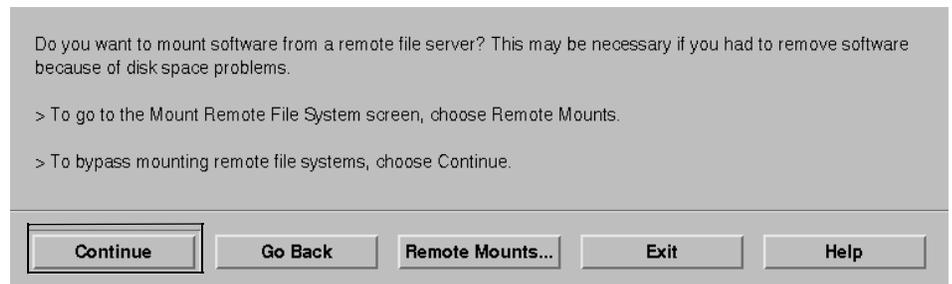
14. Click the OK button on the Customize Disks screen.

The File System and Disk Layout screen appears:



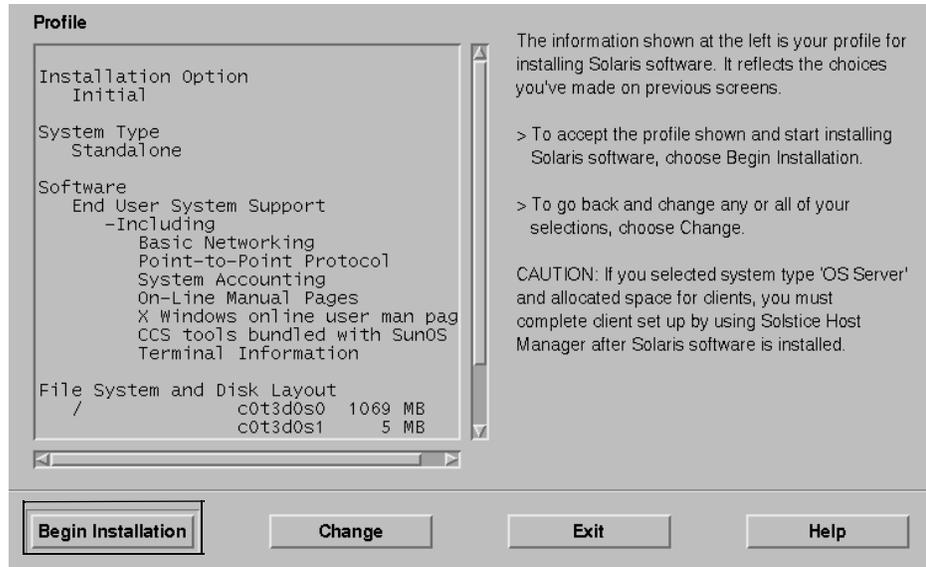
15. Click Continue.

The Mount Remote File Systems screen appears:



16. Click Continue.

The Profile screen appears:

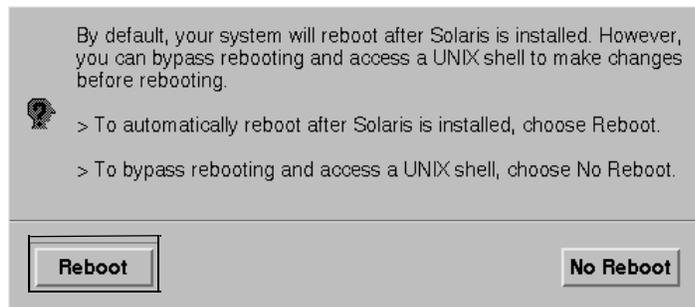


---

## Install the Selected Options

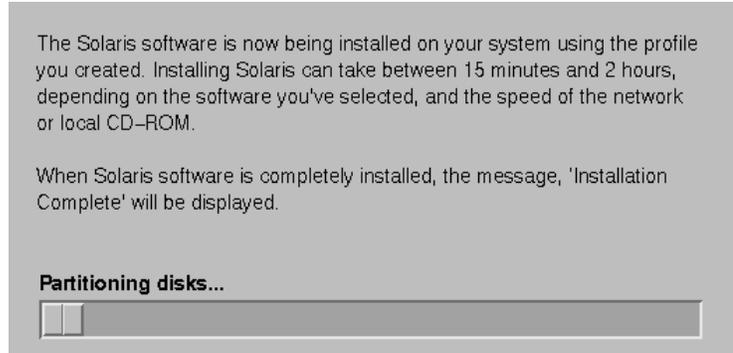
1. Click Begin Installation.

The program responds as follows:



## 2. Click Reboot.

The disk partitioning process begins with the display of the Installing *Solaris* - Progress screen as shown below:



This process may take from one to several hours depending on the number of disks being partitioned, the hardware platform, and the speed of your CD-ROM drive. As the disks are partitioned and *Solaris* 2.5.1 system files are copied to the disk, the progress gauge is updated to indicate the progress of the installation.

The progress screen may disappear during the process. However, the *Solaris* Install Console screen should remain in the upper left hand corner of your monitor screen and keep you posted on the progress of the load.

When the process finishes, the system reboots and the "create a root password" screen appears.

## Assign a Root Password

When the installation completes, the machine reboots and responds as follows:

```
On this screen you can create a root password.
```

```
A root password can contain any number of characters, but only the first eight characters in the password are significant. (For example, if you create 'alb2c3d4e5f6' as your root password, you can use 'alb2c3d4' to gain root access.)
```

```
You will be prompted to type the root password twice; for security, the password will not be displayed on the screen as you type it.
```

```
> If you do not want a root password, press RETURN twice.
```

```
Root password:
```

1. Enter the root password. Until it is time to turn the system over to the customer, it is recommended that you press Enter to assign a blank password. The program responds as follows:

```
Re-enter your root password.
```

```
Press Return to continue.
```

2. Reenter the root password or press Enter for a blank password. The program responds:

```
System identification is completed
Setting default interface for multicast; add net 224.0.0.0:
gateway <hostname>
syslog services starting.
Print services started.
volume management starting.
The system is ready.

hostname console login:
```

3. Log in as *root*. The system prompt displays.

## Enable Korn Shell and the Backspace Key

Enter the following commands to enable Korn shell and the backspace key:

```
ksh -o vi
stty erase ^H
```

The `^H` you enter is done by entering the `^` character followed by the `H` character.

### NOTE:

If you log off and log back in to the system, the Korn shell and the backspace key will not work unless you reenter these commands. After you install the *DiskSuite* software (Page B-91) and reboot the system, these options will work automatically every time you log in.

---

## Set the EEPROM Parameters for the A and B Ports

This section describes how to set the firmware `eeprom` values for the A and B ports. Enter the following commands to set the `eeprom` values for ports A and B:

```
eeprom ttya-rts-dtr-off=true
eeprom ttya-ignore-cd=false
eeprom ttya-mode=9600,8,n,1,-
eeprom ttyb-rts-dtr-off=true
eeprom ttyb-ignore-cd=false
eeprom ttyb-mode=9600,8,n,1,-
```

### NOTE:

The character “1” in the `ttya-mode` and `ttyb-mode` command lines is the number one, not the letter l.

## Turn On the System Activity Recorder

1. Enter the following commands:

```
su - sys (the prompt changes to $)
cd /var/opt
crontab -l > cron.sys
```

2. Edit the `cron.sys` file (`vi cron.sys`). There should be three lines at the end of the file that look similar to the following:

```
#ident "@(#)sys 1.5      92/07/14 SMI" /* SVr4.0 1.2 */
#
# The sys crontab should be used to do performance
collection. See cron
# and performance manual pages for details on startup.
#
# 0 * * * 0-6 /usr/lib/sa/sa1
# 20,40 8-17 * * 1-5 /usr/lib/sa/sa1
# 5 18 * * 1-5 /usr/lib/sa/sa2 -s 8:00 -e 18:01 -i 1200 -A
```

3. Uncomment these three lines by removing the pound signs at the beginning of the lines. That is, change the lines to look like the following:

```
#ident "@(#)sys 1.5      92/07/14 SMI" /* SVr4.0 1.2 */
#
# The sys crontab should be used to do performance
collection. See cron
# and performance manual pages for details on startup.
#
0 * * * 0-6 /usr/lib/sa/sa1
20,40 8-17 * * 1-5 /usr/lib/sa/sa1
5 18 * * 1-5 /usr/lib/sa/sa2 -s 8:00 -e 18:01 -i 1200 -A
```

4. Enter `:wq` to write and quit the file.
5. Enter `id` to confirm that you are using the `sys` id. The program responds as follows:

```
uid=3(sys) gid=3(sys)
```

6. Enter the following commands:

```
crontab -r
crontab cron.sys
```

7. Enter the following to confirm that the changes you made are intact:

```
crontab -l
```

The program responds as follows:

```
#ident "@(#)sys 1.5      92/07/14 SMI" /* SVr4.0 1.2 */
#
# The sys crontab should be used to do performance
# collection. See cron
# and performance manual pages for details on startup.
#
0 * * * 0-6 /usr/lib/sa/sa1
20,40 8-17 * * 1-5 /usr/lib/sa/sa1
5 18 * * 1-5 /usr/lib/sa/sa2 -s 8:00 -e 18:01 -i 1200 -A
```

8. Press Control-D to leave superuser mode (you may have to do this twice).

The prompt changes back to #.

---

## Remove the CD

1. Enter `eject cdrom` to eject the CD-ROM from the computer.
2. Remove the CD-ROM from the disk tray, place the CD-ROM back in its case, and close the CD-ROM tray.

# Install the Common Desktop Environment (CDE) 1.0.2

---

## Overview

The Common Desktop Environment (CDE) 1.0.2 provides the user interface to the *Solaris* operating system.

---

## Release and Platform Considerations

- All releases
  - All platforms.
- 

## Prerequisites

- The *Solaris* 2.5.1 operating system must be installed
  - Log in as *root* at the console
  - Obtain the “*Solaris* Desktop 1.1” CD.
- 

## Procedure

1. Load the “*Solaris* Desktop 1.1” CD into the CD-ROM drive.
2. After about 15 seconds, enter `mount` to verify the name of the CD-ROM. The program responds with a list of devices and file systems currently mounted. The last line should display the installed CD as shown below:

```
.  
.  
.  
/cdrom/solaris_2_5_1_desktop_1_1 on  
/vol/dev/dsk/c0t2d0/solaris_2_5_1_desktop_1_1 read only on  
Wed Feb 4 17:06:27 1998
```

3. Change to the CD's installation directory by entering the following:  
`cd /cdrom/cdrom0/CDE/sparc`
4. Run the installation program by entering the following:  
`./install-cde`

The program responds as follows:

```
Solaris Common Desktop Environment
Installation Script
Main Menu

-----

1. Begin Installation (With Default Configuration Settings)
2. Modify Configuration Settings
3. Cancel Installation

DEFAULT CONFIGURATION SETTINGS
Installation Location:      [ /usr/dt ]
End User CDE Package (28M): [ YES   ]
Developer CDE Packages (24M): [ NO    ]
Answerbook CDE Package (120M): [ NO    ]
Interactive Installation:   [ NO    ]
Solaris Desktop Login
  at System Boot:          [ YES   ]
Installation Locale:      [ EN    ]

-----

SELECT A NUMBER [1]
```

5. Press Enter. The program responds as follows:

```
Begin CDE Installation Now? (Y/N) [Y]
```

6. Press Enter. The program responds as follows:

```
CDE packages will now be automatically installed...
The average install time on a Sparc 2 is 30 minutes...
Cleaning up any existing CDE packages...
Starting Install.....
.
  (copyright and trademark messages)
.
Installation of <SUNWdtft> was successful.
.
.
Installation of <SUNWdtrme> was successful.
```

---

Note: A pkgadd log which contains a complete log of all the output from the "pkgadd" utility can be found at:

```
pkgadd log: /usr/tmp/SunSoft_CDE1.0.1_pkgadd.log <date-time>
```

Note: CDE has been installed on this system, please reboot this machine before starting CDE

The install-cde script has completed.

---

7. Install the CDE manual pages by entering the following:

```
/usr/sbin/pkgadd -d ./cde-developer
```

The program responds as follows:

```
The following packages are available:
 1 SUNWdtab      CDE DTBUILDER
                   (sparc) 1.0.2, REV=10.96.04.12
 2 SUNWdtdem    CDE DEMOS
                   (sparc) 1.0.2, REV=10.96.04.12
 3 SUNWdthed    CDE HELP DEVELOPER ENVIRONMENT
                   (sparc) 1.0.2, REV=10.96.04.12
 4 SUNWdtinc    CDE Includes
                   (sparc) 1.0.2,REV=10.96.04.12
 5 SUNWdtma     CDE man pages
                   (sparc) 1.0.2,REV=10.96.04.12
 6 SUNWdtmad    CDE developer man pages
                   (sparc) 1.0.2,REV=10.96.04.12
 7 SUNWmfdev    Motif Development Kit
                   (sparc) 1.2.3,REV=10.95.09.29
 8 SUNWmfdm     Motif Demos
                   (sparc) 1.2.3,REV=10.95.09.20
 9 SUNWmfman    CDE Motif Development Kit Manuals
                   (sparc) 1.2.3,REV=10.95.09.20
10 SUNWtltkd    ToolTalk CDE developer support
                   (sparc) 3.5.0,REV=10.95.09.20
... 1 more menu choices to follow;
<RETURN> for more choices, <CTRL-D> to stop display:
```

8. Press Enter. The program responds as follows:

```
11 SUNWtltkm    ToolTalk CDE manual pages
                   (sparc) 3.5.0,REV=10.95.09.20
Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,?,q]:
```

9. Enter 5 to select the SUNWdtma option. The program displays Sun licensing information, and then installs SUNWdtma as shown in the following example:

```
Processing package instance <SUNWdtma> from
</cdrom/solaris_2_5_1_desktop_1_1/CDE/sparc/cde-developer>

CDE man pages
(sparc) 1.0.2
.
.
/usr/dt/share/man/man5/dttrashaction.5
/usr/dt/share/man/man6/ttsnoop.6
[ verifying class <none> ]

Installation of <SUNWdtma> was successful
```

When the installation finishes, the program responds as follows:

```
The following packages are available:
 1  SUNWdtab      CDE DTBUILDER
                        (sparc) 1.0.2, REV=10.96.04.12
.
.
.
10  SUNWtltkd    ToolTalk CDE developer support
                        (sparc) 3.5.0,REV=10.95.09.20

... 1 more menu choices to follow:
<RETURN> for more choices, <CTRL-D> to stop display:
```

10. Press Control-D.

The program responds as follows:

```
Select packages you wish to process (or 'all' to process all
packages). (default: all) [?,??,q]:
```

11. Enter q. The system prompt reappears.
12. Enter cd to move to the root directory.
13. Enter eject cdrom to eject the CD-ROM from the computer.
14. Remove the CD-ROM from the disk tray, place the CD-ROM back in its case, and close the CD-ROM tray.

# Install the *Sun* Online Validation Test Suite (VTS) 2.1.1

---

## Overview

Installing the *Sun* Online Validation Test Suite (VTS) 2.1.1 software provides test facilities for the system.

---

## Release and Platform Considerations

- All releases
  - All platforms.
- 

## Prerequisites

- The *Solaris* 2.5.1 operating system and the CDE must be installed
  - Log in as *root* at the console
  - Obtain the “Updates for *Solaris* Operating Environment 2.5.1 Hardware: 11/97” CD.
- 

## Procedure

1. Load the “Updates for *Solaris* Operating Environment 2.5.1 Hardware: 11/97” CD into the CD-ROM drive.
2. After about 15 seconds, enter `mount` to verify the name of the CD-ROM. The program responds with a list of devices and file systems currently mounted. The last line should display the installed CD as shown below:

```
.  
. .  
. .  
. .  
/cdrom/upd_sol_2_5_1_hw1197_smcc on  
/vol/dev/dsk/c0t2d0/upd_sol_2_5_1_hw1197_smcc read only on  
Wed Jan 21 11:08:05 1998
```

3. Enter the following:

```
/usr/sbin/pkgadd -d /cdrom/cdrom0/SMCC SUNWvts SUNWvtsmn
```

The program responds as follows:

```
Processing package instance <SUNWvts> from
</cdrom/upd_sol_2_5_1_hw1197_smcc/SMCC>

Online Validation Test Suite
.
.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with
super-user permission during the process of installing this
package.

Do you want to continue with the installation of <SUNWvts>
[y,n,?] y
```

4. Enter `y`. The program responds with installation feedback for the SUNWvts and SUNWvtsmn packages as follows:

```
Installing Online Validation Test Suite as <SUNWvts>

## Installing part 1 of 1.
/opt/SUNWvts/README
/opt/SUNWvts/bin/.customtest
.
.
/usr/share/man/man1m/vtsui.1m
/usr/share/man/man1m/vtsui.ol.1m
[ verifying class <none> ]

Installation of <SUNWvtsmn> was successful.
#
```

5. Enter `eject cdrom` to eject the CD-ROM from the computer.
6. Remove the CD-ROM from the disk tray, place the CD-ROM back in its case, and close the CD-ROM tray.

# Install the *SunLink* HSI/S Software

---

## Overview

The *SunLink* HSI/S card(s) provides interface ports to the *Sun* system. If your system does not have an HSI/S card, skip this section.

---

## Release and Platform Considerations

- All releases
  - *Enterprise* 3000 and *SPARCserver*.
- 

## Prerequisites

- The *Solaris* 2.5.1 operating system must be installed
  - The HSI/S card(s) must be installed before installing the software
  - Log in as *root* at the console
  - Obtain the “*SunLink* HSI/S 2.0” CD.
- 

## Procedure

1. Load the “*SunLink* HSI/S 2.0” CD into the CD-ROM drive.
2. After about 15 seconds, enter `mount` to verify the name of the CD-ROM. The program responds with a list of devices and file systems currently mounted. The last line should display the installed CD as shown below:

```
.  
. .  
. .  
. .  
/cdrom/unnamed_cdrom on /vol/dev/dsk/c0t2d0/unnamed_cdrom read  
only on Wed Jan 21 11:08:05 1998
```

3. Enter the following:

```
/usr/sbin/pkgadd -d /cdrom/cdrom0
```

4. The program responds as follows:

```
The following packages are available:
1  SUNWhsis      HSI/S Driver/Utilities 2.0 v1.6
                        (sparc) 2.0

Select package(s) you wish to process (or 'all' to
process all packages). (default: all) [?,??,q]:
```

5. Press Enter. The program responds as follows:

```
Processing package instance <SUNWhsis> from
</cdrom/unnamed_cdrom>

HSI/S Driver/Utilities 2.0 v1.6
(sparc) 2.0
    Copyright 1993 Sun Microsystems, Inc. All Rights Reserved.
    . . .
    . . .
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with
super-user permission during the process of installing this
package.

Do you want to continue with the installation of <SUNWhsis>
[y,n,?]
```

6. Enter `y`. The program responds as follows:

```
Installing HSI/S Driver/Utilities 2.0 v1.6 as <SUNWhsis>
## Installing part 1 of 1.
/opt/SUNWconn/hsis/drv/HSI
.
.
NOTE: HSI driver will be loaded when it is referenced

Installation of <SUNWhsis> was successful.

The following packages are available:
  1 SUNWhsis      HSI/S Driver/Utilities 2.0 v1.6
                   (sparc) 2.0

Select package(s) you wish to process (or 'all' to
process all packages). (default: all) [?,??,q]:
```

7. Enter `q`. The program responds with the system prompt.
8. Enter `eject cdrom` to eject the CD-ROM from the computer.
9. Remove the CD-ROM from the disk tray, place the CD-ROM back in its case, and close the CD-ROM tray.

# Install the HSI/P Software

---

## Overview

The HSI/P card(s) provides interface ports to the *Sun* system. If your system does not have an HSI/P card, skip this section.

---

## Release and Platform Considerations

- All releases
  - *Ultra 5*.
- 

## Prerequisites

- The *Solaris 2.5.1* operating system must be installed
  - The HSI/P card(s) must be installed before installing the software
  - Log in as *root* at the console
  - Obtain the “SunHSI/P Adapter 1.0” CD.
- 

## Procedure

1. Load the “SunHSI/P Adapter 1.0” CD into the CD-ROM drive.
2. After about 15 seconds, enter `mount` to verify the name of the CD-ROM. The program responds with a list of devices and file systems currently mounted. The last line should display the installed CD as shown below:

```
.  
. .  
. .  
/cdrom/sunhsip_1_0 on /vol/dev/dsk/c0t2d0/sunhsip_1_0 read only  
on Fri Jun 5 14:11:42 1998
```

3. Enter the following:

```
/usr/sbin/pkgadd -d /cdrom/cdrom0/Product
```

## 4. The program responds as follows:

```
The following packages are available:
 1 SUNWhsip      HSI/P Driver/Utilities for PCI Bus
                  (sparc) 1.0

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

## 5. Press Enter. The program responds as follows:

```
Processing package instance <SUNWhsip> from
</cdrom/sunhsip_1_0/Product>

HSI/P Driver/Utilities for PCI Bus
(sparc) 1.0
SunHSI/P 1.0
.
.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with
super-user permission during the process of installing this
package.

Do you want to continue with the installation of <SUNWhsip>
[y,n,?] y
```

6. Enter `y`. The program responds as follows:

```
Installing HSI/P Driver/Utilities for PCI Bus as <SUNWhsip>

## Installing part 1 of 1.
/opt/SUNWconn/hsip/drv/HSIP
.
.

## Executing postinstall script.

Adding entries to /etc/devlink.tab
.
.
.

Installation of <SUNWhsip> was successful.

The following packages are available:
 1  SUNWhsip      HSI/P Driver/Utilities for PCI Bus
                        (sparc) 1.0

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

7. Enter `q`. The program responds with the system prompt.
8. Enter `eject cdrom` to eject the CD-ROM from the computer.
9. Remove the CD-ROM from the disk tray, place the CD-ROM back in its case, and close the CD-ROM tray.

---

# Install the SAI/P Adapter Drivers

---

## Overview

The SAI/P card(s) provides interface ports to the *Sun* system. If your system does not have an SAI/P card, skip this section.

---

## Release and Platform Considerations

- All releases
  - *Ultra 5*.
- 

## Prerequisites

- The *Solaris 2.5.1* operating system must be installed
  - Log in as *root* at the console
  - Obtain the “SunSAI/P Adapter 1.0” CD.
- 

## Procedure

1. Load the “SunSAI/P Adapter 1.0” CD into the CD-ROM drive.
2. After about 15 seconds, enter `mount` to verify the name of the CD-ROM. The program responds with a list of devices and file systems currently mounted. The last line should display the installed CD as shown below:

```
. . .  
. . .  
. . .  
/cdrom/sunsaip_1_0 on /vol/dev/dsk/c0t2d0/sunsaip_1_0 read  
only on Mon Mar 30 13:38:55 1998
```

3. Enter the following:

```
/usr/sbin/pkgadd -d /cdrom/cdrom0/Product
```

The program responds as follows:

```
The following packages are available:
```

```
1  SUNWsaip      Serial Asynchronous Interface Driver (PCI)
      (sparc) 1.0.0
2  SUNWsaipu     Serial Asynchronous Interface Utilities (PCI)
      (sparc) 1.0.0
```

```
Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

4. Press Enter. The program responds as follows:

```
Processing package instance <SUNWsaip> from
</cdrom/sunsaip_1_0/Product>
```

```
Serial Asynchronous Interface Driver (PCI)
(sparc) 1.0.0
Copyright 1997 Sun Microsystems, Inc. All rights reserved.
```

```
The installation has detected 2 SunSAI/P serial boards.
```

```
Would you like to automatically install the default
configuration?
```

5. Enter `y`. The program responds as follows (this example shows a two-board system):

```
The following has been automatically configured for board 1:
Board Type: 8-port PCI Async Intelligent Board.

      Module  Port Names
-----
      1      term/a000 - term/a007 -- also /dev/cua/axxx
The following has been automatically configured for board 2:
Board Type: 8-port PCI Async Intelligent Board.

      Module  Port Names
-----
      1      term/b000 - term/b007 -- also /dev/cua/bxxx
Using </> as the package base directory.
## Processing package information.
## Processing system information.
   3 package pathnames are already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super
user permission during the process of installing this package.

Do you want to continue with the installation of <SUNWsaip>
[y,n,?]
```

6. Enter `y`. The program responds as follows:

```
Installing Serial Asynchronous Interface Driver (PCI) as
<SUNWsaip>

## Executing preinstall script.
Executing Pre-Installation script...
## Installing part 1 of 1.
.
.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super
user permission during the process of installing this package.

Do you want to continue with the installation of <SUNWsaipu>
[y,n,?]
```

7. Enter `y`. The program responds as follows:

```
Installing Serial Asynchronous Interface Utilities (PCI) as
<SUNWsaipu>

## Installing part 1 of 1.
/opt/SUNWsaipu/saip.7d
/opt/SUNWsaipu/saip.h
/opt/SUNWsaipu/sitty
.
.
/opt/SUNWsaipu/spm_info7
[ verifying class <none> ]
## Executing postinstall script.

Installation of <SUNWsaipu> was successful.

The following packages are available:
  1  SUNWsaip      Serial Asynchronous Interface Driver (PCI)
                        (sparc) 1.0.0
  2  SUNWsaipu    Serial Asynchronous Interface Utilities (PCI)
                        (sparc) 1.0.0

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]: q
```

8. Enter `q`.

9. Enter `eject cdrom` to eject the CD-ROM from the computer.

10. Remove the CD-ROM from the disk tray, place the CD-ROM back in its case, and close the CD-ROM tray.

---

# Install the Bay Networks Annex NTS Drivers

---

## Overview

This procedure installs the NTS drivers. If your system is not using an NTS, skip this section

**⇒ NOTE:**

If you are reinstalling the NTS drivers, the options presented will have minor differences.

---

## Release and Platform Considerations

- All releases
  - All platforms.
- 

## Prerequisites

- The *Solaris 2.5.1* operating system must be installed
  - Log in as *root* at the console
  - Obtain the “Bay Networks Annex Release 10.0 with Release 4.2 Host Tools, Annex Manager 2.3, and Quick2Config 2.3” CD.
- 

## Procedure

1. Load the “Bay Networks Annex Release 10.0 with Release 4.2 Host Tools, Annex Manager 2.3, and Quick2Config 2.3” CD into the CD-ROM drive.
2. After about 15 seconds, enter `mount` to verify the name of the CD-ROM. The program responds with a list of devices and file systems currently mounted. The last line should display the installed CD as shown below:

```
. . .  
. . .  
. . .  
/cdrom/baynet_annex_system on /vol/dev/dsk/c0t2d0/baynet_annex_  
system read only on Wed Feb  4 14:47:40 1998
```

3. Enter the following:

```
/cdrom/cdrom0/unix/install
```

4. The program responds as follows:

```
This command is used to install Comm. Server Software (boot
images, security, command line management) and Annex Manager
(X-Motif GUI management application). The versions that will
be installed are:
```

```
Comm. Server Software   R10.0-R4.2HT
Annex Manager           R2.3
.
.
.
```

```
Do you want to continue (y/n/q=quit) [y]:
```

5. Press Enter. The program responds as follows:

```
After installing one product you will be asked if you want
to install the other product.
```

```
Indicate desired action:
```

- 1) Install Comm.Server Software
- 2) Install Annex Manager
- 3) Quit

```
Enter desired action [1]:
```

6. Press Enter. The program responds as follows:

```
For the installation to proceed, we must copy software to a
directory on a hard disk on the host. Please enter the name
of the directory to be used.
```

```
Enter the name of the Comm. Server Software installation
directory.
```

```
Directory name [/usr/annex/cs_R10.0-R4.2HT]:
```

7. Press Enter. The program responds as follows:

```
Comm. Server Software Installation Script

This installation shell script will examine your system and
possibly ask you questions to generate the needed configuration
to allow you to compile the Comm. Server host utilities.

.
.
.
Type carriage return to continue. Your cursor should be here-->
```

8. Press Enter. The program responds as follows:

```
Locating common programs...

.
.
.
Where do you want the Annex utilities installed?
Utility directory [/usr/annex]:
```

9. Press Enter. The program responds as follows:

```
WARNING: The directory already exists. Host tools in this
directory will be renamed prior to installation of new
versions.

Please indicate the directory where the Comm.Server
operational images and boot files are to be installed. You
will need at least 2408 KB of disk space in this directory
just to install the images. In addition you will need 1 to
3 megabytes for dump files for each Annex serviced by this
file server. Enter "?" for more help.

BFS directory [/usr/spool/erpcd/bfs]:
```

10. Press Enter. The program responds as follows:

```
Do you wish to install manual pages at this time? [y]:
```

11. Press Enter. The program responds as follows:

```
On-line manual pages will be installed in the appropriate
subdirectory (i.e., ANNEX and index) of the manual base
directory.
```

```
What is the the manual page base directory? (q=quit)
[/usr/man]:
```

12. Press Enter. The program responds as follows:

```
Manual pages there will be packed after being installed.
```

```
Binary images exist for this host. You also have a C compiler
so you could also install source code and compile it. The
recommended option is to install binary images only.
```

```
Available installation options are:
```

1. Install binary images only (7MB)
2. Install source code only, but do not compile (11MB)
3. Get both binary images and source code, but do not compile (13MB)
4. Quit

```
Enter installation choice [1]:
```

13. Press Enter. The program responds as follows:

```
To continue with this installation you need 7 MB of disk
space in directory /usr/annex/cs_R10.0-R4.2HT.
Please ensure that this disk space is available.
```

```
You may quit the installation or you may escape to a shell
now to free up disk space and then continue with this
installation (to do this answer "!" at the prompt below).
```

```
Are you ready to continue (y/q=quit) [y]:
```

14. Press Enter. The program responds as follows:

- 1) Com-Server Annex 3
- 2) Com-Server MicroAnnex
- 3) Install all images

```
Please select the annex model(s) you will be using.
You can specify a list separated by spaces or 'N' for none:
```

15. Enter 3 to select the Install all images option. The program responds as follows:

```
Calling command: tar -xf
/cdrom/baynet_annex_system/unix/software.tar bfs/config.annex
bfs/modems.annex bfs/oper.42.enet bfs/oper.52.enet man bin/SOL2
src/examples src/snmp src/erpcd
This may take some time.
*** Installing Comm.Server images ***
*** Installing manual pages ***

Executing "du -s bin/[A-Z]*"
      3386bin/SOL2

To save room on your system, the above directories can be
removed. You may want to enter "?" at the prompt below to get
more help.

Remove these directories (y/n) [n]:
```

16. Enter y. The program responds as follows:

```
The access control protocol server (ACP) that handles
security requests depends on data in a file named acp_regime.
This file does not exist and must be created with a line that
specifies a security policy for your site.

What is your default security regime:
  1) acp
  2) native UNIX
  3) SecureID
  4) safeword
  5) kerberos
  6) deny (access will be denied)
  7) none (access is unconditionally granted)
  8) radius

Enter security regime [1]:
```

17. Enter 7 to select the none option. The program responds as follows:

```
Do you want the host restrictions specified in acp_restrict
to apply to PPP and SLIP (IP) connections as well as CLI
telnet and rlogin connections?

Do you want the restrictions to apply to PPP and SLIP? [n]:
```

18. Press Enter. The program responds:

```
Do you want the erpcd daemon to provide access control (y/n)
[y]:
```

19. Enter n. The program responds as follows:

```
Copies of the following files have been updated:
    service annex-initd
Do you want to install any of these files (y/n) [y]:
```

20. Press Enter. The program responds as follows:

```
Copy file save/modified/service to /etc/services (y/n) [y]:
```

21. Press Enter. The program responds as follows:

```
Copy file save/modified/annex-initd /etc/rc2.d/annex-initd
(y/n) [y]:
```

22. Press Enter. The program responds as follows:

```
WARNING: The file annex-initd will have to be linked or copied
to an appropriate file in /etc/rc2.d to have the erpcd daemon
started and shut-down automatically.
```

```
No more system files to create or update
```

```
Do you want to start-up the new version of the erpcd daemon?
(y/n) [y]:
```

23. Press Enter. The program responds as follows:

```
Starting-up the new version of the erpcd daemon.
    Comm.Server Software Installation Script
*****
***                               ***
*****
Do you wish to install the Annex Manager (y/n/q=quit) [y]:
```

24. Enter `n`. The program responds with the system prompt.

25. Create a link to the annex boot daemon, `erpcd`, by entering the following:

```
ln -s /etc/rc2.d/annex-initd /etc/rc2.d/S99annex-initd
```

26. Enter the following command to change permissions on the startup file:

```
chmod 744 /etc/rc2.d/annex-initd
```

27. Enter the following commands to link the binary files:

```
ln -s /usr/annex/na /usr/bin/na
```

```
ln -s /usr/annex/rtelnet /usr/bin/rtelnet
```

```
ln -s /usr/annex/aprint /usr/bin/aprint
```

28. Enter `eject cdrom` to eject the CD-ROM from the computer.

29. Remove the CD-ROM from the disk tray, place the CD-ROM back in its case, and close the CD-ROM tray.

# Install the *Solstice* for Server Connect X.25 Driver

---

## Overview

This procedure installs the X.25 drivers used for connections to the switch.

---

## Release and Platform Considerations

- All releases
  - All platforms.
- 

## Prerequisites

- The *Solaris* 2.5.1 operating system must be installed
- Log in as *root* at the console
- Obtain the “*Solstice* for Server Connect, Version - March 1997” CD
- Obtain the 21-character password for your X.25 license.

If the password for your X.25 license is not included with your CD, you must contact *Sun* directly. See the Proof of License Certificate that is included with the CD for procedures you must follow to obtain your password. Note that the only way *Sun* will deliver this password is with a FAX or by electronic mail.

## Retrieve System Information

If you already know your `hostname`, `hostid`, and X.25 license password, fill in the table below, skip this procedure, and go to the “Install the Solstice for Server Connect X.25 Driver” procedure. If you do not already know your `hostname` and `hostid`, use this procedure to determine that information:

1. Enter `showrev`.

The program displays something similar to the following:

```

Hostname: XXXXXXXX
Hostid: XXXXXXXX
Release: 5.5.1
Kernel architecture: sun4m
Application architecture: sparc
Hardware provider: Sun_Microsystems
Domain:
Kernel version: SunOS 5.5.1 Generic <number & date>

```

2. Identify the `Hostname` and `Hostid` (similar to that shown in bold on the previous screen). Use the following table to record this information, along with your X.25 password.

Hostname	
Hostid	
X.25 Password	

## Install the Solstice for Server Connect X.25 Drivers

1. Load the “Solstice for Server Connect, Version - March 1997” CD into the CD-ROM drive.
2. After about 15 seconds, enter `mount` to verify the name of the CD-ROM. The program responds with a list of devices and file systems currently mounted. The last line should display the installed CD as shown below:

```

. . .
. . .
. . .
/cdrom/server_connect_397 on /vol/dev/dsk/c0t2d0/server_connect_
397 read only on Wed Jun 10 12:06:06 1998

```

3. Change directories by entering the following:

```
cd /cdrom/cdrom0/products
```

4. Enter the following:

```
/usr/sbin/pkgadd -d x25/Image/sparc
```

The program responds as follows:

```
The following packages are available:
 1  SUNWllc2a    LLC2 kernel modules and include files for Solaris/SPARC
              (sparc) 9.1
 2  SUNWllc2b    LLC2 user programs and man pages for Solaris/SPARC
              (sparc) 9.1
 3  SUNWx25a     X.25 kernel modules and include files for Solaris/SPARC
              (sparc) 9.1
 4  SUNWx25b     X.25 user programs and libraries for Solaris/SPARC
              (sparc) 9.1
 5  SUNWx25h     Solstice X.25 9.1 documentation in HTML
              (all) 1.1

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

5. Enter 1 2 3 4. The program responds as follows:

```
Processing package instance <SUNWllc2a> from
</cdrom/server_connect_397/products/x25/Image/sparc>

.....
.....
.....

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWllc2a> [y,n,?]
```

6. Enter y. The program responds as follows:

```
Installing llc2a

,
,
,

The following files are already installed on the system and are being
used by another package:
*/opt/SUNWconn/man <attricute change only>
*/opt/SUNWconn/man/man7 <attribute change only>

* - conflict with a file which does not belong to any package.

Do you want to install these conflicting files [y,n,?,q]
```

7. Enter `y`. The program responds as follows:

```

Installing LLC2 kernel modules and include files for Solaris/SPARC as <SUNWllc2a>

## Installing part 1 of 1.
.....
.....
.....

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWx25a> [y,n,?]
    
```

8. Enter `y`. The program responds as follows:

```

Installing X.25 kernel modules and include files for Solaris/SPARC as <SUNWx25a>

## Installing part 1 of 1.
.....
.....
.....

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWx25b> [y,n,?]
    
```

9. Enter `y`. The program responds as follows:

```

Installing X.25 user programs and libraries for Solaris/SPARC as <SUNWx25b>

## Installing part 1 of 1.
.....
.....
.....

[verifying class <none>]
## Executing postinstall script.
Make sure to run the license insertion tool or the license configuration scrip
on this machine to install additional licenses.

Installation of <SUNWx25b> was successful.

The following packages are available:
 1  SUNWllc2a   LLC2 kernel modules and include files for Solaris/SPARC
              (sparc) 9.1
 2  SUNWllc2b   LLC2 user programs and man pages for Solaris/SPARC
              (sparc) 9.1
 3  SUNWx25a    X.25 kernel modules and include files for Solaris/SPARC
              (sparc) 9.1
 4  SUNWx25b    X.25 user programs and libraries for Solaris/SPARC
              (sparc) 9.1
 5  SUNWx25h    Solstice X.25 9.1 documentation in HTML
              (all) 1.1

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,?,q]:
    
```

10. Enter `q`.

The program responds with the system prompt.

11. Enter the following:

```
/usr/sbin/pkgadd -d licenses/Image/sparc
```

The program responds as follows:

```
The following packages are available:
 1  SUNWcclit   Solstice Connect Center license information
                   (sparc) 4.1
 2  SUNWlicsw  FlexLM License System
                   (sparc) 4.1

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

12. Press Enter. The program responds as follows:

```
Processing package instance <SUNWcclit> from
</cdrom/server_connect_397/products/Image/sparc>

....
....

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWcclit> [y,n,?]
```

13. Enter `y`. The program responds as follows:

```
Installing Solstice Connect Center license information as <SUNWcclit>

## Installing part 1 of 1.
.....
.....

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWlicsw> [y,n,?]
```

14. Enter `y`. The program responds as follows:

```
Installing FlexLM License System as <SUNwlicsw>

## Installing preinstall script.
## Installing part 1 of 1.
      .....
      .....
Installation of <SUNwlicsw> was successful.

The following packages are available:
  1  SUNWcclit   Solstice Connect Center licence information
                (sparc) 4.1
  2  SUNwlicsw  FlexLM License System
                (sparc) 4.1

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

15. Enter `q`.
16. Enter `cd` to move to the root directory.
17. Enter `eject cdrom` to eject the CD-ROM from the computer.
18. Remove the CD-ROM from the disk tray, place the CD-ROM back in its case, and close the CD-ROM tray. You must now install the X.25 license.

## Install the X.25 License

### CAUTION:

*Do **not** change the host name of your computer after installing the X.25 license. Changing the system's host name disables the X.25 software license.*

1. Enter the following:

```
/etc/opt/licenses/lit_tty
```

The program responds by displaying the following screen:

```
Select Product

[ ] Solstice Frame Relay 2.0 for SPARC
[ ] Solstice Frame Relay 2.0 for x86
[ ] Solstice PPP 3.0.1 for SPARC
[ ] Solstice PPP 3.0.1 for x86
[ ] Solstice OSI (Stack) 8.1 for SPARC
[ ] Solstice OSI (Stack) 8.1 for x86
[ ] Solstice FTAM 8.0.2 for SPARC
[ ] Solstice FTAM 8.0.2 for x86
[x] Solstice x.25 for Solaris 2 SPARC 9.1
[ ] Solstice x.25 for Solaris 2 x86 9.1
[ ] Solstice x.400 MTA 9.0 for SPARC
[ ] Solstice x.400 Message Store 9.0 for SPARC
[ ] Solstice SMTP/x.400 Internet Adaptor 9.0 for SPARC

                                     Page 1 of 2
[ ] Exit - Save Licenses           [ ] Exit - Don't Save License
** x=select product and go to license screen **
** Return=next product **
** n=Next Page    p=Previous Page$
```

2. Press Enter repeatedly (do not use Tab or the arrow keys) until the cursor moves to the brackets in front of the line that reads Solstice X.25 for Solaris 2 SPARC 9.1.

3. Enter an **x** in the brackets. The program responds with the following screen:

```

Solstice X.25 for Solaris 2 SPARC
9.1

Servers: [x] 1 [ ] 3 [ ] 5  **x=select. Tab=next count. Return=server name**

  SERVER NAME                                HOST ID
1: <hostname>                                <hostid>

Phone Number List [ ] USA:      (+1) 800-872-4786
Expiration Date:
Rights to Use: 1                                Data Checksum: aa
Password:                                          Password Checksum: xx

Done setting Up This License [x]      Cancel This License [ ]

** x=select/deselect Return=next field **

```

4. Enter an **x** in the brackets between **Servers:** and **1**. Press Enter.
5. Enter the **SERVER NAME** (Hostname) as recorded earlier in the section "Retrieve System Information." Press Enter.
6. Enter the **HOST ID** (Hostid) as recorded earlier in the section "Retrieve System Information." Press Enter.
7. Pressing Enter, position the cursor on the **Rights to Use:** field. Enter a **1**, and press Enter.
8. With the cursor on the **Password:** field, enter the 21-character password, and press Enter.
9. Before you continue, compare the **Data Checksum** and **Password Checksum** values shown on this screen (in the example on Page B-68, **ce** and **77**). If your X.25 password was entered correctly, these checksum values should match the checksum values that are printed on your license information that you received by FAX or electronic mail. These checksum values are identified on your license as the **DC** and **PC** values, and are found just to the right of your password.

10. Enter an `x` in the brackets for the Done Setting Up This License `[ ]` field. The program displays a popup screen similar to the following:

```
Solstice X.25 for Solaris 2 SPARC
9.1

Server: [ ]
SE
1: pl

ma**
D
70

License information successfully entered for
Solstice X.25 for Solaris 2 SPARC 9.1
Type Any Key to Continue. . .

Phone:
Expiration Date:
Rights to Use: 1
Password: 08BDAD0311158CDAE0E6E

Data Checksum: ca
Password Checksum: 77
```

11. Press Enter.
12. Pressing Enter, move the cursor to the `[ ]` Exit - Save Licenses field. Enter an `x` in that field. The program displays a popup screen as follows:

```
Select Product

[ ] SunLink X.25 8.0.3 for Solaris 2 SPARC 8.0.3
[ ] Solstice Frame Relay 2.0 for SPARC

Licenses are being installed.
Please wait . . .

[ ] Solstice x.400 Message Store 9.0 for SPARC
[ ] Solstice SMTP/x.400 Internet Adaptor 9.0 for SPARC

Page 1 of 2
[X] Exit - Save Licenses      [ ] Exit - Don't Save Licenses
** x=select product and go to license screen **
** Return=next product **
** n=Next Page    p=Previous Page$
```

When the license installation completes, the program responds as follows:

```

Licenses are being installed.
Please wait . . .

[ ] Solstice X.400 Message Store 9.0 for SPARC
[ ] Solstice SMTP/x.400 Internet Adaptor 9.0 for SPARC

Page 1 of 2
[ ] Exit - Save Licenses      [ ] Exit - Don't Save Licenses
** x=select product and go to license screen **
** Return=next product **
** n=Next Page    p=Previous Page
License Successfully Installed for:
Solstice X.25 for Solaris 2 SPARC 9.1
The license daemon log file is located in /tmp/license_log
Now Execute the Script
/etc/opt/license/LIC_CONFIG_SCRIPT
On Any Other Servers Containing the Product Software
#
```

Disregard the Now Execute the Script statement on this screen. This has already been done. The licensing of the X.25 software is complete. Check the `/tmp/license_log` file to verify that the license was installed correctly.

## Install the *INFORMIX* Software

There are two different *INFORMIX* installation procedures in this section: one for R3V6 and one for R3V5. The R3V6 procedure begins on Page B-70; the R3V5 procedure begins on Page B-84. Use the procedure that applies to your CMS software release.

---

### *INFORMIX* for R3V6

#### Overview

Installing the *INFORMIX* software for R3V6 consists of the following tasks:

- Set the environment
- Install the *INFORMIX* Structured Query Language (SQL) 7.20 package (optional)
- Install the *INFORMIX* Standard Engine (SE) 7.22 package (required)
- Install the *INFORMIX* International Language Supplement (ILS) 2.11 package (required).

#### Release and Platform Considerations

- R3V6
- All platforms.

#### Prerequisites

- The *Solaris* 2.5.1 operating system must be installed
- Log in as *root* at the console
- Obtain the “*INFORMIX* SQL Version 7.20” CD, License serial number (S/N), and Serial Number Key (optional)
- Obtain the “*INFORMIX* SE Version 7.22” CD, License S/N, and Serial Number Key (required)
- Obtain the “*INFORMIX* ILS Version 2.11” CD (required).

## Set Up the *INFORMIX* Environment

1. Enter the following commands to set the terminal type:

```
TERM=sun-cmd
export TERM
```

2. Add a new group and user to the system by entering the following commands:

```
groupadd -g 100 informix
useradd -g informix -u 100 -m -d /opt/informix informix
```

3. Set the environment variables by entering the following commands:

```
INFORMIXDIR=/opt/informix
export INFORMIXDIR
PATH=$PATH:$INFORMIXDIR/bin
export PATH
```

The *INFORMIX* installation environment is now set.

## Install the *INFORMIX SQL 7.20* Package (Optional)

This software package is optional and is needed only if you are using custom reports. If you do not need this package, skip this section and go to the “Install the *INFORMIX SE 7.22* Package (Required)” section on Page B-74.

1. Use the following table to record the Serial Number and Serial Number Key for this *INFORMIX* package.

Serial Number	
Serial Number Key	

2. Load the “*INFORMIX SQL 7.20*” CD into the CD-ROM drive.
3. After about 15 seconds, enter `mount` to verify the name of the CD-ROM. The program responds with a list of devices and file systems currently mounted. The last line should display the installed CD as shown below:

```
. . .
. . .
. . .
/cdrom/unnamed_cdrom on /vol/dev/dsk/c0t2d0/unnamed_cdrom read
only on Fri Jun 12 14:05:33 1998
```

4. Change to the *INFORMIX* directory by entering:

```
cd $INFORMIXDIR
```

5. To verify that you are in the *INFORMIX* directory, enter `pwd`. The system should respond as follows:

```
/opt/informix
```

6. Enter the following command to copy the *INFORMIX* SQL files from the CD-ROM to the current directory:

```
tar xvf /cdrom/cdrom0/sql.tar
```

The program responds as follows:

```
x installsql, XXX bytes, XX tape blocks
x bin/cace, XXX bytes, XX tape blocks
. . . . .
. . . . .
. . . . .
x gls/lc11/os/sv.lc, XXX bytes, XX tape blocks
#
```

7. Enter the following to start the installation of the *INFORMIX* SQL software package:

```
./installsql
```

The program responds as follows:

```
INFORMIX-SQL Version 7.20.UC1
Copyright (C) 1984-1996 Informix Software, Inc.

Installation Script

This installation procedure must be run by root (super-
user). It will change the owner, group, and mode of all
files of this package in this directory. There must be a
user "informix" and a group "informix" known to the system.

Press RETURN to continue,
or the interrupt key (usually CTRL-C or DEL) to abort.
```

8. Press Enter to continue with the installation procedure. The program responds as follows:

```
Enter your serial number (e.g.,INF#R999999) >
```

9. Enter the 11-character License S/N (serial number) that is on your license. The program responds as follows:

```
Enter your serial number KEY (uppercase letters only) >
```

10. Enter the 6-character Serial Number Key that is on your license. The program responds as follows:

```
WARNING!
```

```
      This software, and its authorized use and number of
users, are subject to the applicable license agreement with
Informix Software, Inc. If the number of users exceeds the
licensed number, the excess users may be prevented from using
the software.  UNAUTHORIZED USE OR COPYING MAY SUBJECT YOU AND
YOUR COMPANY TO SEVERE CIVIL AND CRIMINAL LIABILITIES.
```

```
Press RETURN to continue,
or the interrupt key (usually CTRL-C or DEL) to abort.
```

11. Press Enter to continue with the installation procedure. The program responds as follows:

```
Installing directory .
. . . . .
. . . . .
. . . . .
Installation of INFORMIX-SQL complete.
#
```

12. Enter `eject cdrom` to eject the CD-ROM from the computer.
13. Remove the CD-ROM from the disk tray, place the CD-ROM back in its case, and close the CD-ROM tray. You must now install the *INFORMIX SE* software.

## Install the *INFORMIX SE 7.22* Package (Required)

1. Use the following table to record the Serial Number and Serial Number Key for this INFORMIX package.

Serial Number	
Serial Number Key	

2. Load the “*INFORMIX SE Version 7.22*” CD into the CD-ROM drive.
3. After about 15 seconds, enter `mount` to verify the name of the CD-ROM. The program responds with a list of devices and file systems currently mounted. The last line should display the installed CD as shown below:

```
. . .  
. . .  
. . .  
/cdrom/unnamed_cdrom on /vol/dev/dsk/c0t2d0/unnamed_cdrom read  
only on Fri Jun 12 14:05:33 1998
```

4. Change to the *INFORMIX* directory by entering the following:

```
cd $INFORMIXDIR
```

5. To verify that you are in the *INFORMIX* directory, enter `pwd`. The system should respond as follows:

```
/opt/informix
```

6. Enter the following command to copy the *INFORMIX SE* files from the CD-ROM to the current directory:

```
tar xvf /cdrom/cdrom0/se.tar
```

The program responds as follows:

```
x installse, XXX bytes, XX tape blocks  
x bin/secheck, XXX bytes, XX tape blocks  
. . . . .  
. . . . .  
. . . . .  
x gls/lc11/os/sv.lc, XXX bytes, XX tape blocks  
#
```

7. Enter the following to start the installation of the *INFORMIX SE* software package:

```
./installse
```

The program responds as follows:

```
INFORMIX-SE Version 7.22.UC1
Copyright (C) 1984-1996 Informix Software, Inc.

Installation Script

This installation procedure must be run by root (super-user).
It will change the owner, group, and mode of all files of this
package in this directory. There must be a user "informix" and
a group "informix" known to the system.

Press RETURN to continue,
or the interrupt key (usually CTRL-C or DEL) to abort.
```

8. Press Enter to continue with the installation procedure. The program responds as follows:

```
Enter your serial number (e.g.,INF#R999999) >
```

9. Enter the 11-character License S/N (serial number) that is on your license. The program responds as follows:

```
Enter your serial number KEY (uppercase letters only) >
```

10. Enter the 6-character Serial Number Key that is on your license. The program responds as follows:

```
WARNING!
```

```
    This software, and its authorized use and number of
users, are subject to the applicable license agreement with
Informix Software, Inc. If the number of users exceeds the
licensed number, the excess users may be prevented from using the
software. UNAUTHORIZED USE OR COPYING MAY SUBJECT YOU AND YOUR
COMPANY TO SEVERE CIVIL AND CRIMINAL LIABILITIES.
```

```
Press RETURN to continue,
or the interrupt key (usually CTRL-C or DEL) to abort.
```

11. Press Enter to continue with the installation. The program responds as follows:

```
Installing directory .  
.....  
.....  
.....  
Installation of INFORMIX-SE complete.  
#
```

12. Enter `eject cdrom` to eject the CD-ROM from the computer.
13. Remove the CD-ROM from the disk tray, place the CD-ROM back in its case, and close the CD-ROM tray. You must now install the *INFORMIX ILS* software

## Install the *INFORMIX ILS 2.11* Package (Required)

1. Load the “*INFORMIX ILS* Version 2.11” CD into the CD-ROM drive.
2. After about 15 seconds, enter `mount` to verify the name of the CD-ROM. The program responds with a list of devices and file systems currently mounted. The last line should display the installed CD as shown below:

```
.....  
.....  
.....  
/cdrom/volume_1 on /vol/dev/dsk/c0t2d0/volume_1 read only  
on Fri Jun 12 14:05:33 1998
```

3. Change to the *INFORMIX* directory by entering the following:  
`cd $INFORMIXDIR`
4. To verify that you are in the *INFORMIX* directory, enter `pwd`. The system should respond as follows:

```
/opt/informix
```

5. Enter the following command to start the *INFORMIX* ILS installation program:

```
sh /cdrom/cdrom0/install
```

The program responds as follows:

```
INTERNATIONAL LANGUAGE SUPPLEMENT USER INTERFACE LANGUAGE

(1) English          (5) Russian
(2) German           (6) Polish
(3) French           (7) Czech
(4) Spanish          (8) Slovak

(9) Help
(10) Exit

Select installer language?
```

6. Enter the number that corresponds with the language you wish to use during the installation program (for example, enter 1 to select English). If you select a language other than English, you must also select a display character set. After you make that selection, the program responds as follows:

```
INFORMIX INTERNATIONAL LANGUAGE SUPPLEMENT (ILS)
INSTALLER FOR ALL UNIX PLATFORMS

Choose install type:
(1) Express Install
    Installs everything relating to one or more languages.

(2) Custom Install
    You specify exactly what you want to install.

Other options:
(3) Help
    Displays information on the contents of this package,
    and explains the options on this screen.

(4) Exit
    Exit this installer.

(E)nglish (D)eutsch/German (F)rancais/French e(S)panol/Spanish
(R)ussian (P)oliski/Polish (C)ekych/Czech s(L)ovych/Slovak

Enter one choice, and hit ENTER:
```

7. Enter 2 to select Custom Install. The program responds as follows:

```
Custom Install
-----

(1) User interface
    Installs a localised user interface for Servers and Tools.

(2) Locale
    Installs locales by language, territory and code page.

(3) Operating System locales
    Installs operating system equivalent locales.

(4) Code set conversion
    Installs code set conversion files between code pages.

(5) Help                (6) GLS source install [Enabled]
(7) Previous Screen    (8) Exit

(E)nglish (D)eutsch/German (F)rancais/French e(S)panol/Spanish
(R)ussian (P)oliski/Polish (C)ekych/Czech   s(L)ovych/Slovak

Select the components to install:
```

8. Enter 2 4 to select the Locale and Code set conversion options. The program responds as follows:

```
LOCALES - LANGUAGES

Install locales and associated character maps for what languages?

(1) Arabic                (11) Greek                (21) Romanian
(2) Bulgarian            (12) Hebrew              (22) Russian
(3) Chinese              (13) Icelandic          (23) Serbo-Croatian
(4) Czech                (14) Italian             (24) Slovak
(5) Danish               (15) Japanese           (25) Spanish
(6) Dutch                (16) Korean              (26) Swedish
(7) English              (17) Latvian             (27) Thai
(8) Finnish              (18) Norwegian          (28) Turkish
(9) French                (19) Polish              (29) Ukrainian
(10) German              (20) Portuguese

(30) Help                (31) All Of The Above
(32) Custom Screen      (33) Exit

(E)nglish (D)eutsch/German (F)rancais/French e(S)panol/Spanish
(R)ussian (P)oliski/Polish (C)ekych/Czech   s(L)ovych/Slovak

Enter one or more choices, separated with spaces, and hit ENTER:
```

9. Enter 7 15 to select English and Japanese. The program responds as follows:

## LOCALES - TERRITORIES

Install English language locales for what territories?

- (1) Australia
- (2) United Kingdom
- (3) United States

- (4) Help
- (5) All Of The Above
- (6) Custom Screen
- (7) Exit

(E)nglish (D)eutsch/German (F)rancais/French e(S)panol/Spanish  
(R)ussian (P)oliski/Polish (C)ekych/Czech s(L)ovych/Slovak

Enter one or more choices, separated with spaces, and hit ENTER:

10. Enter 3 to select United States. The program responds as follows:

## LOCALE - CODESETS

Install English language locales for what codesets?

- (1) ISO 8859-1
- (2) DOS Code Page 850
- (3) Windows CP 1252
- (4) UNICODE
- (5) UTF8

- (6) Help
- (7) All Of The Above
- (8) Custom Screen
- (9) Exit

(E)nglish (D)eutsch/German (F)rancais/French e(S)panol/Spanish  
(R)ussian (P)oliski/Polish (C)ekych/Czech s(L)ovych/Slovak

Enter one or more choices, separated with spaces, and hit ENTER:

11. Enter 5 to select UTF8. The program responds as follows:

```
LOCALE - CODESETS

Install Japanese language locales for what codesets?

(1) Standard-Shift-JIS
(2) Shift-JIS+JISX0212
(3) UJIS/EUC
(4) UTF8

(4) Help                (5) All Of The Above
(6) Custom Screen      (7) Exit

(E)nglish (D)eutsch/German (F)rancais/French e(S)panol/Spanish
(R)ussian (P)oliski/Polish (C)ekych/Czech s(L)ovych/Slovak

Enter one or more choices, separated with spaces, and hit ENTER:
```

12. Enter 4 to select UTF8. The program responds as follows:

```
CODESET CONVERSION REGIONS

Choose the regions for which you require codeset conversion tables.

(1) Arabic                (7) Japanese
(2) Baltic                (8) Korean
(3) Cyrillic              (9) Simplified Chinese
(4) Eastern European     (10) Trad. Chinese
(5) Greek                 (11) Turkish
(6) Hebrew                (12) Western European

(13) Help                 (14) All Of The Above
(15) Custom Screen       (16) Exit

(E)nglish (D)eutsch/German (F)rancais/French e(S)panol/Spanish
(R)ussian (P)oliski/Polish (C)ekych/Czech s(L)ovych/Slovak

Enter one or more choices, separated with spaces, and hit ENTER:
```

13. Enter 7 12 to select Japanese and Western Europe. The program responds as follows:

```

CODESET CONVERSION TABLES - CODESETS
Install Japanese codeset conversion tables for what codesets?

(1) Shift-JIS+JISX0212
(2) Standard-Shift-JIS
(3) UJIS/EUC
(4) UNICODE
(5) UTF8

(6) Help                (7) All Of The Above
(8) Custom Screen      (9) Exit

(E)nglish (D)eutsch/German (F)rancais/French e(S)panol/Spanish
(R)ussian (P)oliski/Polish (C)ekych/Czech   s(L)ovych/Slovak

Select two or more options. All available combinations of the
selected options will be installed.

```

14. Enter 1 2 5 to select Shift-JIS+JISX0212, Standard-Shift-JIS, and UTF8. The program responds as follows:

```

CODESET CONVERSION TABLES - CODESETS
Install Western European codeset conversion tables for what codesets?

(1) ASCII 7-bit          (9) IBM CCSID 00273      (17) IBM CCSID 871
(2) DOS Code Page 437   (10) IBM CCSID 00277   (18) ISO-7-Danish
(3) DOS Code Page 850   (11) IBM CCSID 00278   (19) ISO-7-German
(4) DOS Code Page 860   (12) IBM CCSID 00280   (20) ISO 8859-1
(5) DOS Code Page 863   (13) IBM CCSID 00284   (21) UNICODE
(6) DOS Code Page 865   (14) IBM CCSID 00285   (22) UTF8
(7) EBCDIC              (15) IBM CCSID 00297   (23) Windows CP 1252
(8) HP-Roman8          (16) IBM CCSID 00500

(24) Help                (25) All Of The Above
(26) Custom Screen      (27) Exit

(E)nglish (D)eutsch/German (F)rancais/French e(S)panol/Spanish
(R)ussian (P)oliski/Polish (C)ekych/Czech   s(L)ovych/Slovak

Select two or more options. All available combinations of the
selected options will be installed.

```

15. Enter 20 22 to select ISO 8859-1 and UTF8. The program responds as follows:

```
SUMMARY: You have chosen to install the following
```

```
-----  
Installing locales:
```

```
English           United States     UTF8  
Japanese          Japan             UTF8
```

```
Installing codeset conversion tables:
```

```
Japanese          Shift-JIS+JISX0212  
                  Standard-Shift-JIS  
                  UTF8  
Western European ISO 8859-1  
                  UTF8
```

```
Hit ENTER to confirm or `q` to return to main menu.
```

16. Press Enter to begin installation. The program responds as follows:

```
Installing international software Please wait...
```

```
Installing gls...
```

```
Installation complete.
```

```
See $INFORMIXDIR/ils.log for a list of installed files.
```

```
See $INFORMIXDIR/release/README and
```

```
$INFORMIXDIR/release/ILS_COMPAT for further information.
```

```
Hit ENTER to return to main menu...
```

17. Press Enter. The program responds as follows:

```

                                INFORMIX INTERNATIONAL LANGUAGE SUPPLEMENT (ILS)
                                INSTALLER FOR ALL UNIX PLATFORMS

Choose install type:
  (1) Express Install
      Installs everything relating to one or more languages.

  (2) Custom Install
      You specify exactly what you want to install.
Other options:
  (3) Help
      Displays information on the contents of this package,
      and explains the options on this screen.

  (4) Exit
      Exit this installer.

(E)nglish (D)eutsch/German (F)rancais/French e(S)panol/Spanish
(R)ussian (P)oliski/Polish (C)ekych/Czech   s(L)ovych/Slovak

Enter one choice, and hit ENTER:
```

18. Enter 4 to exit the installation program. The program responds as follows:

```

Exiting the International Language Supplement installer.
```

19. Enter `eject cdrom` to eject the CD-ROM from the computer.

20. Remove the CD-ROM from the disk tray, place the CD-ROM back in its case, and close the CD-ROM tray.

## **INFORMIX for R3V5**

### **Overview**

Installing the *INFORMIX* software for R3V5 consists of the following tasks:

- Set the environment
- Install the *INFORMIX* Structured Query Language (SQL) 6.05 package (optional)
- Install the *INFORMIX* Standard Engine (SE) 7.13 package (required).

### **Release and Platform Considerations**

- R3V5
- *Ultra 5, Enterprise 3000.*

### **Prerequisites**

- The *Solaris 2.5.1* operating system must be installed
- Log in as *root* at the console
- Obtain the “*INFORMIX SQL Version 6.05*” CD, License serial number (S/N), and Serial Number Key (optional)
- Obtain the “*INFORMIX SE Version 7.13*” CD, License S/N, and Serial Number Key (required).

#### **⇒ NOTE:**

This CD also contains the *INFORMIX* ESQL software package. This package is not used and should not be installed.

### **Set Up the *INFORMIX* Environment**

1. Enter the following commands to set the terminal type:

```
TERM=sun-cmd
```

```
export TERM
```

2. Add a new group and user to the system by entering the following commands:

```
groupadd -g 100 informix
```

```
useradd -g informix -u 100 -m -d /opt/informix informix
```

3. Set the environment variables by entering the following commands:

```
INFORMIXDIR=/opt/informix
export INFORMIXDIR
PATH=$PATH:$INFORMIXDIR/bin
export PATH
```

The *INFORMIX* installation environment is now set.

## Install the *INFORMIX* SQL 6.05 Package (Optional)

### ⇒ NOTE:

This software package is optional and is needed only if you are using custom reports. If you do not need this package, skip this section and go to the “Install the *INFORMIX* SE 7.13 Package (Required)” section on Page B-88.

1. Use the following table to record the Serial Number and Serial Number Key for this *INFORMIX* package.

Serial Number	
Serial Number Key	

2. Load the “*INFORMIX* SQL 6.05” CD into the CD-ROM drive.
3. After about 15 seconds, enter `mount` to verify the name of the CD-ROM. The program responds with a list of devices and file systems currently mounted. The last line should display the installed CD as shown below:

```
. . .
. . .
. . .
/cdrom/unnamed_cdrom on /vol/dev/dsk/c0t2d0/unnamed_cdrom read
only on Fri Jun 12 14:05:33 1998
```

4. Change to the *INFORMIX* directory by entering:

```
cd $INFORMIXDIR
```

5. To verify that you are in the *INFORMIX* directory, enter `pwd`. The system should respond as follows:

```
/opt/informix
```

6. Enter the following command to copy the *INFORMIX* SQL files from the CD-ROM to the current directory:

```
tar xvf /cdrom/cdrom0/sql.tar
```

The program responds as follows:

```
x installsql, XXX bytes, XX tape blocks
x bin/isql, XXX bytes, XX tape blocks
. . . . .
. . . . .
. . . . .
x demo/sql2/stock.unl, XXX bytes, XX tape blocks
#
```

7. Enter the following to start the installation of the *INFORMIX* SQL software package:

```
./installsql
```

The program responds as follows:

```
INFORMIX-SQL Version 6.05.UC1
Copyright (C) 1984-1996 Informix Software, Inc.

Installation Script

This installation procedure must be run by root (super-
user). It will change the owner, group, and mode of all
files of this package in this directory. There must be a
user "informix" and a group "informix" known to the system.

Press RETURN to continue,
or the interrupt key (usually CTRL-C or DEL) to abort.
```

8. Press Enter to continue with the installation procedure. The program responds as follows:

```
Enter your serial number (e.g., INF#R999999) >
```

9. Enter the 11-character License S/N (serial number) that is on your license. The program responds as follows:

```
Enter your serial number KEY (uppercase letters only) >
```

10. Enter the 6-character Serial Number Key that is on your license. The program responds as follows:

```
WARNING!
```

```
    This software, and its authorized use and number of
users, are subject to the applicable license agreement with
Informix Software, Inc. If the number of users exceeds the
licensed number, the excess users may be prevented from using
the software.  UNAUTHORIZED USE OR COPYING MAY SUBJECT YOU AND
YOUR COMPANY TO SEVERE CIVIL AND CRIMINAL LIABILITIES.
```

```
Press RETURN to continue,
or the interrupt key (usually CTRL-C or DEL) to abort.
```

11. Press Enter to continue with the installation procedure. The program responds as follows:

```
Installing directory .
. . . . .
. . . . .
. . . . .
Installation of INFORMIX-SQL complete.
#
```

12. Enter `eject cdrom` to eject the CD-ROM from the computer.
13. Remove the CD-ROM from the disk tray, place the CD-ROM back in its case, and close the CD-ROM tray. You must now install the *INFORMIX SE* software.

## Install the *INFORMIX SE 7.13* Package (Required)

1. Use the following table to record the Serial Number and Serial Number Key for this *INFORMIX* package.

Serial Number	
Serial Number Key	

2. Load the “*INFORMIX SE Version 7.13*” CD into the CD-ROM drive.
3. After about 15 seconds, enter `mount` to verify the name of the CD-ROM. The program responds with a list of devices and file systems currently mounted. The last line should display the installed CD as shown below:

```
. . .
. . .
. . .
/cdrom/unnamed_cdrom on /vol/dev/dsk/c0t2d0/unnamed_cdrom read
only on Fri Jun 12 14:05:33 1998
```

4. Change to the *INFORMIX* directory by entering the following:

```
cd $INFORMIXDIR
```

5. To verify that you are in the *INFORMIX* directory, enter `pwd`. The system should respond as follows:

```
/opt/informix
```

6. Enter the following command to copy the *INFORMIX SE* files from the CD-ROM to the current directory:

```
tar xvf /cdrom/cdrom0/se.tar
```

The program responds as follows:

```
x installse, XXX bytes, XX tape blocks
x bin/secheck, XXX bytes, XX tape blocks
. . . . .
. . . . .
. . . . .
x demo/dbaccess/c_trig.sql, XXX bytes, XX tape blocks
#
```

7. Enter the following to start the installation of the *INFORMIX SE* software package:

```
./installse
```

The program responds as follows:

```
INFORMIX-SE Version 7.13.UC1
Copyright (C) 1984-1996 Informix Software, Inc.

Installation Script

This installation procedure must be run by root (super-user).
It will change the owner, group, and mode of all files of this
package in this directory. There must be a user "informix" and
a group "informix" known to the system.

Press RETURN to continue,
or the interrupt key (usually CTRL-C or DEL) to abort.
```

8. Press Enter to continue with the installation procedure. The program responds as follows:

```
Enter your serial number (e.g.,INF#R999999) >
```

9. Enter the 11-character License S/N (serial number) that is on your license. The program responds as follows:

```
Enter your serial number KEY (uppercase letters only) >
```

10. Enter the 6-character Serial Number Key that is on your license. The program responds as follows:

```
WARNING!
```

```
    This software, and its authorized use and number of
    users, are subject to the applicable license agreement with
    Informix Software, Inc. If the number of users exceeds the
    licensed number, the excess users may be prevented from using the
    software. UNAUTHORIZED USE OR COPYING MAY SUBJECT YOU AND YOUR
    COMPANY TO SEVERE CIVIL AND CRIMINAL LIABILITIES.
```

```
Press RETURN to continue,
or the interrupt key (usually CTRL-C or DEL) to abort.
```

11. Press Enter to continue with the installation. The program responds as follows:

```
Installing directory .  
.....  
.....  
.....  
Installation of INFORMIX-SE complete.  
#
```

12. Enter `eject cdrom` to eject the CD-ROM from the computer.
13. Remove the CD-ROM from the disk tray, place the CD-ROM back in its case, and close the CD-ROM tray.

# Install the *Solstice DiskSuite* Software

---

## Overview

The *Solstice DiskSuite* software package allows the disks of the system to be managed as if they were a single file system.

---

## Release and Platform Considerations

- All releases
  - All platforms.
- 

## Prerequisites

- The *Solaris 2.5.1* operating system must be installed
  - Log in as *root* at the console
  - Obtain the “*Solstice DiskSuite 4.1*” CD
  - You must have partitioned the hard disks for the *Solstice DiskSuite* system, as specified in the partitioning tables earlier in this appendix (see “Partition the Hard Disks”).
- 

## Procedure

1. Load the “*Solstice DiskSuite 4.1*” CD into the CD-ROM drive.
2. Enter `cd` to move to the root directory.
3. After about 15 seconds, enter `mount` to verify the name of the CD-ROM. The program responds with a list of devices and file systems currently mounted. The last line should display the installed CD as shown below:

```
.  
.  
/cdrom/disksuite_4_1 on /vol/dsk/c0t2d0/disksuite_4_1 read  
only on Mon Jan 19 12:36:55 1998
```

4. Begin the installation by entering the following:

```
/usr/sbin/pkgadd -d /cdrom/cdrom0/sparc
```

The program responds as follows:

```
The following packages are available:
```

```
1  SUNWadm5r  Solstice AdminSuite root supplement for Solaris
                2.3 and 2.4 (sparc) 6.5, REV=95.10.26.00.11
2  SUNWadm5u  Solstice AdminSuite supplement for Solaris
                2.3 and 2.4 (sparc) 6.5, REV=95.10.26.00.11
3  SUNWadm5m  Solstice AdminSuite Storage Manager Application
                (sparc) 6.5-FCS, REV=96.04.18.16.52
4  SUNWmd     Solstice DiskSuite
                (sparc) 4.1-FCS, REV=6.0
5  SUNWmdg    Solstice DiskSuite Tool
                (sparc) 4.1-FCS, REV=6.0
6  SUNWmdn    Solstice DiskSuite Log Daemon
                (sparc) 4.1-FCS, REV=6.0
7  SUNWsadmc  Solstice AdminSuite Core Method
                (sparc) 6.5, REV=96.04.18.16.51
8  SUNWsadml  Solstice Admintool Launcher.
                (sparc) 6.5, REV=95.10.26.23.04
9  SUNWsadmo  Solstice AdminSuite Object Library
                (sparc) 6.5, REV=96.04.18.16.51
```

```
Select package(s) you wish to process (or 'all' to process
all packages).(default:all)[?,,q]:
```

5. Enter 4 to select the SUNWmd option. The program responds as follows:

```
Processing package instance <SUNWmd> from </cdrom/disksuite_4_1/sparc>
```

```
Solstice DiskSuite.
```

```
.
```

```
10 package pathnames are already properly installed.
```

```
## Verifying disk space requirements.
```

```
## Checking for conflicts with packages already installed.
```

```
## Checking for setuid/setgid programs.
```

```
This package contains scripts which will be executed with super-user
permissions during the process of installing this package.
```

```
Do you want to continue with installation of <SUNWmd> [y,n.?] 
```

6. Enter `y`. The program responds as follows:

```
Installing Solstice DiskSuite as <SUNWmd>

## Executing preinstall script.
## Installing part 1 of 1.
.
.
[ verifying class <preserve> ]
## Executing postinstall script.
Installation of <SUNWmd> was successful.
```

The program responds as follows:

```
The following packages are available:
 1 SUNWadm5r Solstice AdminSuite root supplement for Solaris
      (sparc) 6.5, REV=95.10.26.00.11
 2 SUNWadm5u Solstice AdminSuite supplement for Solaris 2.3
      (sparc) 6.5, REV=95.10.26.00.11
 3 SUNWadm5m Solstice AdminSuite Storage Manager Application
      (sparc) 6.5-FCS, REV=96.04.18.16.52
 4 SUNWmd Solstice DiskSuite
      (sparc) 4.1-FCS, REV=6.0
 5 SUNWmdg Solstice DiskSuite Tool
      (sparc) 4.1-FCS, REV=6.0
 6 SUNWmdn Solstice DiskSuite Log Daemon
      (sparc) 4.1-FCS, REV=6.0
 7 SUNwsadm1 Solstice AdminSuite Core Method
      (sparc) 6.5, REV=96.04.18.16.51
 8 SUNwsadm1 Solstice Admintool Launcher.
      (sparc) 6.5, REV=95.10.26.23.04
 9 SUNwsadm0 Solstice AdminSuite Object Library
      (sparc) 6.5, REV=96.04.18.16.51

Select package(s) you wish to process (or 'all' to process
all packages).(default:all)[? ,??,q]:
```

7. Enter `q`. The program responds as follows:

```
*** IMPORTANT NOTICE ***
This machine must now be rebooted in order to ensure sane
operation. Execute
      shutdown -y -i6 -g0
and wait for the "Console Login:" prompt.
#
```

8. Enter `eject cdrom` to eject the CD-ROM from the computer.

9. Remove the CD-ROM from the disk tray, place the CD-ROM back in its case, and close the CD-ROM tray.
10. Reboot the system by entering the following:  

```
/usr/sbin/shutdown -y -i6 -g0
```

The system comes up with the CDE prompt.
11. Log in as *root*.

# Install the *Sun Solaris* Patches

---

## Overview

The *Sun Solaris* patches are delivered with the *CentreVu* CMS software.

---

## Release and Platform Considerations

- All releases
  - All platforms.
- 

## Prerequisites

- The *Solaris* 2.5.1 operating system must be installed
  - All *Solaris* packages must be installed (HSI/S, HSI/P, SAI/P, X.25)
  - The *Solstice DiskSuite* software must be installed
  - Log in as *root* at the console
  - Obtain the “*CentreVu* Call Management System” CD appropriate for your load (R3V6 or R3V5).
- 

## Procedure

1. Load the “*CentreVu* Call Management System” CD into the CD-ROM drive.
2. Use a right mouse click to display the Workspace Menu.
3. Click on Programs.  
The Programs submenu displays.
4. Click on Console from the submenu.  
A console window displays.
5. In the console window, select **Options/Font Size/13.5** to increase the usable size of the window.

6. After about 15 seconds, enter `mount` to verify the name of the CD-ROM. The program responds with a list of devices and file systems currently mounted. The last line should display the installed CD as shown below:

```
...
...
/cdrom/cms on /vol/dev/dsk/c0t2d0/cms read only on
Mon Jan 19 12:36:55 1998
```

7. Begin the installation by entering the following:

```
/usr/sbin/pkgadd -d /cdrom/cdrom0
```

The program responds as follows:

```
The following packages are available:
1  cms          Lucent CentreVu(R) Call Management System
   (sparc) r3vXxx.x
2  spatches    CMS Supplied Solaris Patches
   (sparc) 1.0
```

```
Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

8. Enter the number that corresponds to the `spatches` option. The program responds as follows:

```
Processing package instance <spatches> from </cdrom/cms>

CMS Supplied Solaris Patches
(sparc) 1.0
Lucent Technologies

## Processing package information.
## Processing system information.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with
super-user permission during the process of installing
this package.

Do you want to continue with the installation of
<spatches> [y,n,?]
```

9. Enter `y` to continue. The program responds as follows:

```

Installing CMS Supplied Solaris Patches as <spatches>

## Installing part 1 of 1.
101130-12 is not needed
Spooling 103461-18
Spooling 103566-24
. . .
. . .
Installation of <spatches> was successful.

The following packages are available:
 1 cms          Lucent CentreVu(R) Call Management System
                  (sparc) r3VX
 2 spatches     CMS Supplied Solaris Patches
                  (sparc) 1.0

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:

```

10. Enter `q`. The program responds with the system prompt.

11. Enter the following to continue installing the patches:

```
/tmp/patches/install_patches
```

The program responds as follows:

```

Checking installed packages and patches...
Generating list of files to be patched...
Verifying sufficient filesystem capacity (exhaustive method)
Installing patch packages...

Patch number 103461-18 has been successfully installed.
See /var/sadm/patch/103461-18/log for details

Patch packages installed:
  SUNWmfrun
  .
  .

```

The program generates various lists of files to be patched. This can take several hours to process, depending on the number of patches and the hardware platform. When it finishes, the program displays the system prompt.

12. Reboot the system by entering the following:

```
/usr/sbin/shutdown -y -i6 -g0
```

The system comes up with the CDE prompt.

13. Log in as *root*. The *Sun Solaris* patches have been successfully installed and the system kernel has been rebuilt. Do *not* remove the “*CentreVu* Call Management System” CD from the CD-ROM drive.

# Run the *Solstice DiskSuite* Setup Scripts

---

## Overview

Running the *Solstice DiskSuite* setup scripts consists of three separate procedures:

1. Prepare the disk subsystem
  2. Run the setup scripts
  3. Set up the swap files.
- 

## Release and Platform Considerations

- All releases
  - All platforms.
- 

## Prerequisites

- The *Solaris* 2.5.1 operating system must be installed
  - The *Solstice DiskSuite* software must be installed
  - The *Solaris* patches must be installed
  - Log in as *root* at the console
  - The “*CentreVu* Call Management System” CD should be loaded in the CD-ROM drive.
- 

## Prepare the Disk Subsystem

1. Use a right mouse click to display the Workspace Menu.
2. Click on Programs.  
The Programs submenu appears.
3. Click on Console from the submenu.  
A console window appears.
4. In the console window, select **Options/Font Size/13.5** to increase the usable size of the window.

5. Prepare to run the *Solstice DiskSuite* setup scripts by entering the following commands:

```
mkdir /olds  
cp /cdrom/cdrom0/cms/reloc/ronly/olds_install/* /olds  
chmod +x /olds/olds
```

6. Create system files for the *Solstice DiskSuite* software by entering these commands:

```
export PATH=$PATH:/usr/opt/SUNWmd/sbin  
/olds/olds -check_disks
```

The system responds as follows:

```
scsi=c1  
number of external scsi controllers with disks is = 1  
number of disks is = 2  
checking device: c0t0d0  
Warning: Current Disk has mounted partitions.  
checking device: c0t2d0  
device: c0t2d0 will not be used  
checking device: c1t0d0  
checking device: c[0-3]t1[0-9]d0  
device: c[0-3]t1[0-9]d0 will not be used  
valid disks are c0t0d0 c1t0d0  
Warning: Current Disk has mounted partitions.  
disk:c0t0d0 is partitioned ok  
disk:c1t0d0 is partitioned ok  
Success, checking disks.
```

7. Enter the following:

```
/olds/olds -mk_files
```

The system responds as follows:

```
scsi=c1  
number of external scsi controllers with disks is = 1  
number of disks is = 2  
Success, creating md.tab.new and/or vfstab.new.
```

**⇒ NOTE:**

If check disks fails, see “Troubleshoot a *Solstice DiskSuite* Software Install” in Chapter 4, “Troubleshooting.”

- When the system prompt reappears, verify that all the disk drives on your system have been recognized. To do that, enter the following:

```
cat /olds/md.tab.new
```

Find the `#/cms` section; it should reflect the precise number of disk drives on your system. The example below shows two disk drives on the system:

```
#state database replicas
mddb00 c0t0d0s1
mddb01 c1t0d0s0

#/cms
d19 2 1 /dev/rdisk/c0t0d0s3 1 /dev/rdisk/c1t0d0s1
d21 -m d19
```

- If everything appears to be correct, continue with Step 10.  
If there is a discrepancy, check for disk recognition errors using the procedure, “Check for Disk Recognition Errors” on Page B-109.”
- Save the original `vfstab` and `md.tab` files with the following commands:

```
cp /etc/vfstab /etc/vfstab.orig
cp /etc/opt/SUNWmd/md.tab /etc/opt/SUNWmd/md.tab.orig
```
- Continue with the “Run the Setup Scripts” section.

## Run the Setup Scripts

Run the *Solstice DiskSuite* setup scripts by entering the commands shown below.

⇒ **NOTE:**

Run the commands in the order shown, and be sure to enter both commands. Otherwise, your system will not be set up to run the *Solstice DiskSuite* software.

1. Enter the following command:

```
/olds/olds -metadb
```

The program responds as follows:

```
scsi=c1
number of external scsi controllers with disks is = 1
number of disks is = 2
checking device: c0t0d0
Warning: Current Disk has mounted partitions.
checking device: c0t2d0
device: c0t2d0 will not be used
checking device: c1t0d0
checking device: c[0-3]t1[0-9]d0
device: c[0-3]t1[0-9]d0 will not be used
valid disks are c0t0d0 c1t0d0
Warning: Current Disk has mounted partitions.
disk:c0t0d0 is partitioned ok
disk:c1t0d0 is partitioned ok
Success, setting up metadb replicas.
```

2. Enter the following command:

```
/olds/olds -setup
```

The `olds -setup` command may take some time. It should take about 1 minute of run time for each gigabyte of hard disk space on your system.

If all the commands succeed, the system responds with a series of lines reflecting the structure of your disk system. Those lines will look something like the following (the specific disk names will vary from system to system):

```
scsi=c1
number of external scsi controllers with disks is = 1
number of disks is = 2
checking device: c0t0d0
Warning: Current Disk has mounted partitions.
checking device: c0t2d0
device: c0t2d0 will not be used
checking device: c1t0d0
checking device: c[0-3]t1[0-9]d0
device: c[0-3]t1[0-9]d0 will not be used
valid disks are c0t0d0 c1t0d0
Warning: Current Disk has mounted partitions.
disk:c0t0d0 is partitioned ok
disk:c1t0d0 is partitioned ok
d19: Concat/Stripe is setup
.
.
```

The program begins to construct the new file system. When the “Success...” message displays and the system prompt reappears, the file system is complete and you are ready to continue with the installation. The program responds as follows:

```
setting optimization for space with minfree less than 10%
/dev/md/rdisk/d19:14422590 sectors in 15262 cylinders of 15 tracks, 63
sectors
    7042.3MB in 954 cyl groups (16 c/g, 7.38MB/g, 3584 i/g)
super-block backups (for fsck -F ufs -o b=#) at:
    32, 15216, 30400, 45584, 60768, 75952, 91136, 106320, 121504, 136688,
    167056, 182240, 197424, 212608, 227792, 241952, 257136, 272320, 287504,
    .
    .
    .
14198416, 14213600, 14228784, 14243968, 14259152, 14273312, 14288496,
14303680, 14318864, 14334048, 14349232, 14364416, 14379600, 14394784,
14409968,
ufs fsck: sanity check: /dev/md/rdisk/d19 okay
Success, system set up successfully
```

If these commands should fail, make a note of the error message and see Chapter 4, “Troubleshooting.”

3. Create and mount `/cms` and verify the disk space by entering the following commands:

```
mkdir /cms  
mount /cms  
df -k
```

The system responds as follows:

Filesystem	kbytes	used	avail	capacity	Mounted on
/dev/dsk/c0t0d0s0	1039785	257252	678563	28%	/
/proc	0	0	0	0%	/proc
fd	0	0	0	0%	/dev/fd
swap	137648	200	137448	1%	/tmp
/vol/dev/dsk/c0t2d0/cms	437878	-1	0	100%	/cdrom/cms
/dev/md/dsk/d19	<b>xxxxxxxx</b>	9	6768599	1%	/cms

The `/cms` “kbytes” figure (shown in bold as **xxxxxxxx**) is a critical number. Use this number to verify that the *Solstice DiskSuite* software is administering all the available disks. Use the following tables to make the necessary calculations for the disk sizes on your system.

Calculation	Result
(1a) Divide the /cms line's "kbytes" figure by 1000 (move the decimal point three places to the left) and record the result.	(1a)
(1b) Enter the figure from the "/cms Size (in MB)" column below corresponding to the type and number of hard disks in your system.	(1b)

Number of Disks	/cms Size (in MB)		
	2.1 GB Disks	4.2/4.3 GB Disks	8.4 GB Disks
1	876	2874	7298
2	2875	6872	15724
3	4874	10870	24150
4	6873	14868	32576
5	8872	18866	41002
6	10871	22864	49428
7	12870	26862	57854
8	14869	30860	66280
9	16868	34858	74706
10	18867	38856	83132
11	20866	42854	91558
12	22865	46852	99984

(1a) and (1b) should be *approximately* equal. The two will not correspond exactly, but they should be reasonably close — within about 10% of each other.

4. A major discrepancy between the two figures usually indicates a connectivity problem. You can check connectivity by entering the following:

```
/usr/opt/SUNWmd/sbin/metastat
```

The system responds by listing the devices making up each metadevice. The relevant metadevice for the purposes of this check is d19 as shown in the following example:

```
.  
. .  
d19: Concat/Stripe  
Size: xxxxxxxx blocks  
Stripe 0:  
Device          Start Block Dbase  
c0t0d0s3        0          No  
Stripe 1:  
Device          Start Block Dbase  
c1t0d0s1        0          No
```

If the stripes of d19 do not account for all the disk drives on your system, check your disk drive connections. If discrepancies persist, telephone the Lucent National Customer Care Center at 1-800-242-2121, or contact your Lucent representative or distributor.

## Set up the Swap Files

The system requires a swap file for the `/cms` file system. You must create the swap file with the `olds` script. The script determines how big the files need to be.

1. Create the files by running the `olds` script with swap file options, as follows:

```
/olds/olds -addswapfile /cms
```

After about one minute, the program responds as follows:

```
Success, Swap file created.
```

2. Reboot the system by entering `init 6`.
3. Log in as `root` at the CDE login screen.
4. Use a right mouse click to display the Workspace Menu.
5. Click on Programs.  
The Programs submenu displays.
6. Click on Console from the submenu.  
A console window displays.
7. In the console window, select **Options/Font Size/13.5** to increase the usable size of the window.
8. Verify that the default disk swap partition has been allocated by entering `swap -l`. The program responds as follows:

```
swapfile          dev  swaplo blocks  free
/dev/dsk/c0t3d0s4  32,28      8 133752 103040
```

9. Enter the following command to create the `/cms` swap file:

```
swap -a /cms/swap
```

10. Reenter the `swap -l` command to verify that the default disk swap partition is intact and that the `/cms` swap file has been created. The program should respond similar to the following:

```
swapfile          dev  swaplo blocks  free
/dev/dsk/c0t3d0s4 32,28    8 133752 103040
/cms/swap         -         8 124920  92512
```

## Check for Disk Recognition Errors

Use this procedure when the /olds scripts indicate there is a disk recognition error. This procedure is different for the different hardware platforms.

### *Ultra 5*

1. Reboot the system with an `init 0` command. The system reboots and displays the `ok` prompt.
2. Turn off the system unit.
3. Turn off the system monitor.
4. Turn off all external devices starting with the device closest to the system unit and working toward the farthest device.
5. Check all disk drive connections to verify that they are secure. Also check the SCSI IDs on the disk drives to verify that no two drives have the same ID.
6. Turn on the power to the system units in the opposite order in which you powered them off. That is, power on the external devices first, working your way toward the system unit. Then power on the system unit itself and, finally, the system monitor.

When you power on the system unit, the system begins to boot. Interrupt the boot by pressing the **Stop** and **A** keys simultaneously. The system responds with the `ok` prompt.

7. Enter the following:

```
setenv auto-boot? false
```

This keeps the system from rebooting when you do a reset.

8. Enter the following:

```
reset-all
```

The system resets and responds with the `ok` prompt.

9. To verify that the system sees all IDE devices, enter the following:

```
probe-ide
```

The program responds similar to the following:

```
Device 0 ( Primary Master )
        ATA Model: ST34342A

Device 1 ( Primary Slave )
        Not present

Device 2 ( Secondary Master )
        Removeable ATAPI Model: CRD-8240B

Device 3 ( Secondary Slave )
        Removeable ATAPI Model:
```

10. Enter the following:

```
reset-all
```

The system resets and responds with the `ok` prompt.

11. To verify that the system sees all SCSI devices, enter the following:

```
probe-scsi-all
```

The program responds similar to the following:

```
/pci@1f,0/pci@1/pci@1/SUNW,isptwo@4
Target 0
  Unit 0 Disk      QUANTUM VK4550J SUN4.2G8610
Target 4
  Unit 0 Removeable Tape      TANDBERG SLR5      0906
```

12. Verify that all of the disk drives are recognized. If the devices are still not recognized, see *CentreVu CMS Hardware Maintenance and Troubleshooting* (585-215-861) for more information.

When you have verified that the system is recognizing all of its disk drives, enter the following:

```
setenv auto-boot? true
```

 **CAUTION:**

*If you fail to enter this command, future reboots will stop at the boot prompt instead of proceeding through the normal boot-up.*

13. Enter `boot -r`. The system reboots.

14. Log in as *root*.
15. Repeat Steps 6 through 8 of “Prepare the Disk Subsystem” on Page B-99.

## ***Enterprise 3000***

1. Reboot the system with an `init 0` command. The system reboots and displays the `ok` prompt.
2. Turn off the system unit.
3. Turn off the system monitor.
4. Turn off all external devices starting with the device closest to the system unit and working toward the farthest device.
5. Check all disk drive connections to verify that they are secure. Also check the SCSI IDs on the disk drives to verify that no two drives have the same ID.
6. Turn on the power to the system units in the opposite order in which you powered them off. That is, power on the external devices first, working your way toward the system unit. Then power on the system unit itself and, finally, the system monitor.

When you power on the system unit, the system begins to boot. Interrupt the boot by pressing the **Stop** and **A** keys simultaneously. The system responds with the `ok` prompt.

7. Enter the following:

```
setenv auto-boot? false
```

This keeps the system from rebooting when you do a reset.

8. Enter the following:

```
reset-all
```

The system resets and responds with the `ok` prompt.

9. To verify that the system sees all SCSI devices, enter the following:

```
probe-scsi-all
```

The program responds similar to the following:

```
/iommu@f,e0000000/sbus@f.e0001000/esp@3,200000
Target 1
  Unit 0 Disk SEAGATE ST14801 SUN04246266 Copyright (C) 1991
Target 3
  Unit 0 Disk SEAGATE ST14801 SUN04246266 Copyright (C) 1991
. . . . .
. . . . .
Target 6
  Unit 0 Disk Removable Read Only Device SONY CD-ROM CDU-8012
```

10. Verify that all of the disk drives are recognized. If the devices are still not recognized, see *CentreVu CMS Hardware Maintenance and Troubleshooting (585-215-861)* for more information.

When you have verified that the system is recognizing all of its disk drives, enter the following:

```
setenv auto-boot? true
```

 **CAUTION:**

*If you fail to enter this command, future reboots will stop at the boot prompt instead of proceeding through the normal boot-up.*

11. Enter `boot -r`. The system reboots.
12. Log in as *root*.
13. Repeat Steps 6 through 8 of “Prepare the Disk Subsystem” on Page B-99.

## **SPARCserver**

1. Reboot the system with an `init 0` command. The system reboots and displays the `ok` prompt.
2. Turn off the system unit.
3. Turn off the system monitor.
4. Turn off all external devices starting with the device closest to the system unit and working toward the farthest device.
5. Check all disk drive connections to verify that they are secure. Also check the SCSI IDs on the disk drives to verify that no two drives have the same ID.
6. Turn on the power to the system units in the opposite order in which you powered them off. That is, power on the external devices first,

working your way toward the system unit. Then power on the system unit itself and, finally, the system monitor.

When you power on the system unit, the system begins to boot. Interrupt the boot by pressing the **Stop** and **A** keys simultaneously. The system responds with the `ok` prompt.

7. Enter the following:

```
setenv auto-boot? false
```

This keeps the system from rebooting when you do a reset.

8. Enter the following:

```
reset
```

The system resets and responds with the `ok` prompt.

9. To verify that the system sees all SCSI devices, enter the following:

```
probe-scsi-all
```

The program responds similar to the following:

```
/iommu@0,10000000/sbus@0,10001000/espdma@5,8400000/esp@5,8800000
Target 3
  Unit 0  Disk      IBM      DORS32160SUN2.1GWA7A96210Z5218
                0933      000116
Target 4
  Unit 0  Removeable Tape  46H6081  07H1118
                TANDBERG TDC 4200  =07:08CREATED053195
Target 6
  Unit 0  Removeable Read Only device  TOSHIBA XM5401...
```

10. Verify that all of the disk drives are recognized. If the devices are still not recognized, see *CentreVu CMS Hardware Maintenance and Troubleshooting (585-215-861)* for more information.

When you have verified that the system is recognizing all of its disk drives, enter the following:

```
setenv auto-boot? true
```

### CAUTION:

*If you fail to enter this command, future reboots will stop at the boot prompt instead of proceeding through the normal boot-up.*

11. Enter `boot -r`. The system reboots.
12. Log in as `root`.
13. Repeat Steps 6 through 8 of “Prepare the Disk Subsystem” on Page B-99.

# Install the *CentreVu* CMS Software

---

## Overview

The following procedures are used to install the *CentreVu* CMS software.

---

## Release and Platform Considerations

The following table shows which CMS releases may be used on which hardware platforms:

CMS Release	Hardware Platform		
	<i>Ultra 5</i>	<i>Enterprise 3000</i>	<i>SPARCserver</i>
R3V5u	Yes	Yes	No
R3V6	Yes	Yes	Yes

---

## Prerequisites

- The *Solaris* 2.5.1 operating system must be installed
  - All the preceding factory software installation requirements in this appendix must be completed
  - Log in as *root* at the console
  - The “*CentreVu* Call Management System” CD should already be loaded in the CD-ROM drive.
- 

## Procedure

1. Enter `who -r` to determine the computer’s state. You should see a message similar to the following:

```
.      run-level 3 <date and time> 3    0 S
```

2. If the computer is *not* in run-level 3, enter the following:

```
/usr/sbin/shutdown -y -i6 -g0
```

3. After the shutdown, log back in as *root*.

4. After about 15 seconds, enter `mount` to verify the name of the CD-ROM. The program responds with a list of devices and file systems currently mounted. The last line should display the installed CD as shown below:

```

. . .
. . .
. . .
/cdrom/cms on /vol/dev/dsk/c0t2d0/cms read only on
Mon Jan 19 12:36:55 1998

```

5. Add the CMS package by entering the following:

```
/usr/sbin/pkgadd -d /cdrom/cdrom0
```

The program responds as follows:

```
The following packages are available:
```

```

1  cms          Lucent CentreVu(R) Call Management System
      (sparc) r3vXxx.x
2  spatches     CMS Supplied Solaris Patches
      (sparc) 1.0

```

```
Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

6. Enter `1` to select the `cms` option. The program responds as follows:

```
Processing package instance <cms> from </cdrom/cms>
```

```
Lucent Technologies CentreVu(R) Call Management System
(sparc) r3vXxx.x
```

```

.
.

```

```
/usr/sbin/mountall
```

```
* /var/crash <attribute change only>
  /var/spool/cron/crontabs/root
```

```
* - conflict with a file which does not belong to any package.
```

```
Do you want to install these conflicting files [y,n,?,q]
```

7. Enter `y`. The program responds as follows:

```
## Checking for setuid/setgid programs.

The following files are being installed with setuid and/or
setgid permissions:
  /cms/bin/mqpeek <setuid root>
  /cms/bin/spi <setuid root>
  /cms/perfbins/memsnap2 <setuid root setgid root>
  /cms/toolsbin/chk_ext <setuid root>
  /cms/toolsbin/cmsu <setuid root>
  /cms/toolsbin/initSimConf <setuid root setgid root>
  /cms/toolsbin/psx <setuid root setgid root>
  /cms/toolsbin/setSimLink <setuid root setgid root>
  /cms/toolsbin/shmdump <setgid sys>
  /usr/spool/lp/cmsternDSR <setuid root setgid lp>

Do you want to install these as setuid/setgid files [y,n,?,q]
```

8. Enter `y`. The program responds as follows:

```
This package contains scripts which will be executed with super-
user permission during the process of installing this package.

Do you want to continue with the installation of <cms> [y,n,?]
```

9. Enter `y`. The program responds as follows:

```
Installing Lucent Technologies CentreVu(R) Call Management
System as <cms>

## Executing preinstall script.
Creating cms group id
Creating cms user id
6 blocks
Assigning a new password for cms
New password:
```

10. Enter the password for the cms login. The program responds as follows:

```
Re-enter new password:
```

11. Reenter the password for cms. The program responds as follows:

```

Creating cmssvc user id
6 blocks
Assigning a new password for cmssvc
New password:

```

12. Enter the password for the cmssvc login. Please note that the cmssvc login is used only by services; protect the cmssvc password. The program responds as follows:

```

Re-enter new password:

```

13. Reenter the password for cmssvc. The program responds as follows:

```

## Installing part 1 of 1.
/usr/elog <symbolic link>
/cms/aas/db/acd1/baas_db.log
/cms/aas/db/acd2/baas_db.log
.
.
.

```

The program takes up to 40 minutes to download the *CentreVu* CMS software from the CD-ROM to the hard disk and to initialize the customer CMS data. A list of files is displayed as the software is downloaded. When the installation is finished, the program responds as follows:

```

Installation of <cms> was successful.

```

```

The following packages are available:

```

```

1  cms          Lucent CentreVu(R) Call Management System
    (sparc) r3vXxx.x
2  spatches     CMS Supplied Solaris Patches
    (sparc) 1.0

```

```

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:

```

14. Enter `q`. The program responds as follows:

```
The machine must now be rebooted in order to ensure same
operation. Execute shutdown -y -i6 -g0 and wait for the
"console login" prompt.
#
```

15. Enter the following to begin the shutdown:

```
/usr/sbin/shutdown -y -i6 -g0
```

16. Log in as *root*.
17. Click within one of the xterm windows to make it active.
18. Verify that the `/cms/swap` file system has been created by entering `swap -l`. The program responds as follows:

```
swapfile          dev  swaplo blocks  free
/dev/dsk/c0t3d0s4 32,28    8 133752 103040
/cms/swap         -         8 124920  92512
```

# Install the CMS Patches

---

## Overview

There are three occasions when you may have to install CMS patches:

- During a factory installation
- Immediately after upgrading CMS
- As a bug fix.

If you are loading patches just after upgrading your system, it is best to turn CMS off until you have the patches installed. The reason for that is that the prerequisites for patch installation differ with the patch. Some require that CMS be off, others require that data collection be off, and still others require CMS to be in single-user mode. To be absolutely safe, and to help the upgrade proceed as quickly as possible, just turn CMS off.

If you are loading patches as a factory installation or a bug fix without upgrading your base load, you may install the patches without turning CMS off. Each patch will let you know if you need to do anything special to accomplish the load.

The readme file for CMS lists CMS run level requirements for the patch.

**⇒ NOTE:**

The features must be authorized on your system before patches can be installed. Call 1-800-242-2121 to have authorizations installed.

**⇒ NOTE:**

We recommend that you always install all available patches. If you believe you should not be installing a particular patch, call the National Customer Care Center at 1-800-242-2121, or consult with your Lucent distributor or representative, before deciding to skip it.

---

## Release and Platform Considerations

- All releases
- All platforms.

## Prerequisites

- The *Solaris* 2.5.1 operating system must be installed
- All the preceding factory software installation requirements in this appendix must be completed
- Log in as *root* at the console
- You must have the current `cmssvc` password
- The “*CentreVu* Call Management System” CD should already be loaded in the CD-ROM drive.

## Procedure

1. Enter `cmssvc` to access the CMS Services menu as shown below:

```
Lucent Technologies CentreVu(R) Call Management System Services Menu
```

```
Select a command from the list below.
```

- ```
1) auth_display Display feature authorizations
2) auth_set     Authorize capabilities/capacities
3) run_cms      Turn CentreVu CMS on or off
4) setup        Set up the initial configuration
5) swinfo       Display switch information
6) swsetup      Change switch information
7) patch_inst   Install a single CMS patch from CD
8) patch_rmv    Backout an installed CMS patch
9) load_all     Install all CMS patches found on CD
10) back_all    Backout all installed CMS patches from machine
```

```
Enter choice (1-10) or q to quit:
```

2. Enter `2` to select the `auth_set` option. The authorizations must be set before you can install the patches. Use the default or minimum values for now. The actual values will be entered later in another procedure.
3. Enter `cmssvc` to access the CMS Services menu.
4. Enter `9` to select the `load_all` option to load all of the patches. If you want to load one patch at a time, enter `7` to select the `patch_inst` option.

5. If there are any patches found on the CD-ROM, enter `y` if you are loading all of the patches or enter the patch number if you are loading only one patch. The system installs the patch or patches. As it does so, it displays messages similar to the following for each patch installed:

```
@(#) installpatch 1.0 96/04/01
cmspx-s
Generating list of files to be patched...
Creating patch archive area...
Saving a copy of existing files to be patched...
xxxx blocks
      File compression used
Installing patch packages...

Doing pkgadd of cmspx-s package:
Installation of <cmspx-s> was successful.

Patch packages installed:
      cmspx-s

Patch installation completed.
```

6. After installing all of the patches, enter `eject cdrom` to eject the CD-ROM from the computer.
7. Remove the CD-ROM from the disk tray, place the CD-ROM back in its case, and close the CD-ROM tray.

# Install the CMS Supplemental Services Software

---

## Overview

The following procedures are used to install the *CentreVu* CMS R3V6 Supplemental Services software. The CMS Supplemental Services uses an installation manager program that, once installed, will check future CD installations of Supplemental Services for new software packages and updates to existing software packages. At this time, only one software package, Administration History Log, uses the installation manager.

---

## Release and Platform Considerations

- R3V6
  - All platforms.
- 

## Prerequisites

- The *Solaris* 2.5.1 operating system must be installed
  - All the preceding factory software installation requirements in this appendix must be completed
  - Log in as *root* at the console
  - Obtain the “*CentreVu* CMS Supplemental Services R3V6” CD.
- 

## Procedure

1. Load the “*CentreVu* CMS Supplemental Services R3V6” CD into the CD-ROM drive.
2. Enter `who -r` to determine the computer’s state. You should see a message similar to the following:

```
.      run-level 3 <date and time> 3    0 S
```

3. If the computer is *not* in run-level 3, enter the following:

```
/usr/sbin/shutdown -y -i6 -g0
```

4. After the shutdown, log back in as *root*.

5. After about 15 seconds, enter `mount` to verify the name of the CD-ROM. The program responds with a list of devices and file systems currently mounted. The last line should display the installed CD as shown below:

```
. . .  
. . .  
. . .  
/cdrom/cms on /vol/dev/dsk/c0t2d0/cms read only on Wed  
Apr 15 12:04:34 1998
```

6. Add the CMS package by entering the following:

```
/usr/sbin/pkgadd -d /cdrom/cdrom0 LUim
```

The program responds as follows:

```
Processing package instance <LUim> from </cdrom/cms#1>
```

```
Lucent Installation Manager  
(sparc) 0.20
```

```
Copyright (c) 1997 Lucent Technologies  
All Rights Reserved
```

```
## Processing package information.  
## Processing system information.  
## Verifying disk space requirements.  
## Checking for conflicts with packages already installed.  
## Checking for setuid/setgid programs.
```

```
This package contains scripts which will be executed with super-  
user permission during the process of installing this package.
```

```
Do you want to continue with the installation of <LUim> [y,n,?]
```

7. Enter `y`. The program responds as follows:

```
Installing Lucent Installation Manager as <LUim>

## Installing part 1 of 1.
/opt/LUim/bin/examine_cd
/opt/LUim/bin/install
.
.
[ verifying class <none> ]
/opt/LUim/response/SUNWSbum <linked pathname>
/opt/LUim/response/SUNWSbus1 <linked pathname>
/opt/LUim/response/SUNWSbus2 <linked pathname>
## Executing postinstall script.
volume management starting.

Installation of <LUim> was successful.
```

After the Installation Manager package is installed, the program checks the CD for any new or updated packages. The status of the Installation Manager displays on a window labeled Installation Manager Log. On a new system, the program responds as follows:

```
package LUim is already properly installed
installing LUahl package

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Installation of <LUahl> was successful.
Installing jrel.1.5
Unpacking...
.
.
inflating: jrel.1.5/LICENSE
inflating: jrel.1.5/README
Done.
installing /cdrom/cdrom0/orbixlibs/libITinimt.so
installing /cdrom/cdrom0/orbixlibs/liborbixmt.so
installing /cdrom/cdrom0/rwlibs/libdbt12d.so
installing /cdrom/cdrom0/rwlibs/libstd12d.so
installing /cdrom/cdrom0/rwlibs/libstd4d.so
installing /cdrom/cdrom0/rwlibs/libthr12d.so
installing /cdrom/cdrom0/rwlibs/libt1s12d.so
```

When the program finishes, the CD is automatically ejected. The log window displays for about 15 seconds, and then goes away. The installation details are logged to a temporary file found at `/tmp/cdlog`. This log file will remain intact until the next system reboot.

8. Remove the CD-ROM from the disk tray, place the CD-ROM back in its case, and close the CD-ROM tray.
9. Enter the following command to set up the Administration History Log:

```
/opt/cc/install/ahl_1c.003/bin/setup
```

 **CAUTION:**

*Do not run this command more than once. If you run it more than once, a critical configuration file will be deleted.*

The program responds as follows:

```
No previous version is in place.  
enable crontab entry...  
set up output log configuration...
```

The Administration History Log is set up.

10. This software monitors the `/etc/defaultrouter` file. If this file does not exist on the system, enter the following command to create the file:

```
touch /etc/defaultrouter
```

# Set Up CMS

---

## Overview

After the CMS software and patches have been installed, TSC personnel set up the *CentreVu* CMS application to work with the customer's configuration. If the customer has ordered additional *CentreVu* CMS feature packages, these need to be installed as well.

---

## Release and Platform Considerations

- All releases
  - All platforms.
- 

## Procedure

Follow the procedures in Chapter 2, "Setting Up *CentreVu* CMS and Installing Feature Packages," to set up the CMS software.

# Install the Aurora Ports Card Drivers

---

## Overview

The following procedures are used to install the Aurora ports card drivers.

---

## Release and Platform Considerations

- R3V6
  - *SPARCserver*.
- 

## Prerequisites

- The *Solaris 2.5.1* operating system must be installed
  - All the preceding factory software installation requirements in this appendix must be completed
  - Log in as *root* at the console
  - Obtain the “Aurora Drivers” CD.
- 

## Procedure

1. Load the “Aurora Drivers” CD into the CD-ROM drive.
2. Enter `who -r` to determine the computer’s state. You should see a message similar to the following:

```
.    run-level 3 <date and time> 3    0 S
```

3. If the computer is *not* in run-level 3, enter the following:

```
/usr/sbin/shutdown -y -i6 -g0
```

4. After the shutdown, log back in as *root*.

5. After about 15 seconds, enter `mount` to verify the name of the CD-ROM. The program responds with a list of devices and file systems currently mounted. The last line should display the installed CD as shown below:

```
. . .  
. . .  
. . .  
/cdrom/aurora_drivers on /vol/dev/dsk/c0t2d0/aurora_drivers  
read only on Wed Apr 1 12:10:33 1998
```

6. Add the Aurora package by entering the following:

```
/usr/sbin/pkgadd -d /cdrom/cdrom0
```

The program responds as follows:

```
The following packages are available:  
1  AURAacs  Aurora 40X, 80X, WMS 2000/3000 Base Driver  
      (sparc) 6.14  
2  AURAacsa Aurora 40X, 80X, WMS 2000/3000 Asynchronous Drive:  
      (sparc) 3.14  
3  AURAsio16 Aurora 1600SE device driver  
      (sparc) 5.13  
Select package(s) you wish to process (or 'all' to process  
all packages). (default: all) [?,??,q]:
```

7. Select 1 and 2 to install the 8-port card drivers, select 3 to install the 16-port card drivers, or press Enter to select both sets of drivers.

**⇒ NOTE:**

Do *not* try to install the 16-port card drivers and then install the 8-port card drivers; you will get errors during installation. The following screens show the installation for both sets of drivers. If you select one or the other, your installation screens will differ.

The program responds as follows:

```
Processing package instance <AURAacs> from
</cdrom/aurora_drivers>
Aurora 40X, 80X, WMS 2000/3000 Base Driver
(sparc) 6.14
.
.
This package contains scripts which will be executed with
super-user permission during the process of installing this
package.

Do you want to continue with the installation of <AURAacs>
[y,n,?]
```

8. Enter *y*. The program responds as follows:

```
Installing Aurora 40X, 80X, WMS 2000/3000 Base Driver
as <AURAacs>
## Installing part 1 of 1.
/etc/rc2.d/S91AURAacs
.
.
[ verifying class <sed> ]
## Executing postinstall script.

Installation of <AURAacs> successful.

There are 2 more packages to be installed.

Do you want to continue with installation [y,n,?]
```

9. Enter `y`. The program responds as follows:

```
Processing package instance <AURAacsa> from
</cdrom/aurora_drivers>
Aurora 40X, 80X, WMS 2000/3000 Asynchronous Driver
(sparc) 3.14
.
.
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
## Verifying package dependencies.
Do you want to continue with the installation of <AURAacsa>
[y,n,?]
```

10. Enter `y`. The program responds as follows:

```
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-
user permission during the process of installing this package.

Do you want to continue with the installation of <AURAacsa>
[y,n,?]
```

11. Enter `y`. The program responds as follows:

```
Installing Aurora 40X, 80X, WMS 2000/3000 Asynchronous Driver a
<AURAacsa>
## Installing part 1 of 1.
/etc/rc2.d/S92AURAacsa
.
.
## Executing postinstall script.

Installation of <AURAacsa> successful.

There is 1 more package to be installed.

Do you want to continue with installation [y,n,?]
```

12. Enter `y`. The program responds as follows:

```
Processing package instance <AURAsiol6> from
</cdrom/aurora_drivers>
Aurora 1600SE device driver
(sparc) 5.13
.
.
This package contains scripts which will be executed with super
user permission during the process of installing this package.

Do you want to continue with the installation of <AURAsiol6>
[y,n,?]
```

13. Enter `y`. The program responds as follows:

```
Installing Aurora 1600SE device driver as <AURAsiol6>
## Installing part 1 of 1.
/kernel/drv/siol6
.
.
Installation of <AURAsiol6> successful.

The following packages are available:

 1  AURAacs   Aurora 40X, 80X, WMS 2000/3000 Base Driver
      (sparc) 6.14
 2  AURAacsa Aurora 40X, 80X, WMS 2000/3000 Asynchronous Drive
      (sparc) 3.14
 3  AURAsiol6 Aurora 1600SE device driver
      (sparc) 5.13

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

14. Enter `q`.

15. Enter `eject cdrom` to eject the CD-ROM from the computer.

16. Remove the CD-ROM from the disk tray, place the CD-ROM back in its case, and close the CD-ROM tray.

# Install the Open Database Connectivity Software

---

## Overview

The following procedures are used to install the *OpenLink*<sup>\*</sup> Open Database Connectivity (ODBC) software. For more information about the ODBC feature, see *CentreVu CMS R3V6 Open Database Connectivity (585-215-852)* or *CentreVu CMS R3V5 Open Database Connectivity (585-215-839)*.

---

## Release and Platform Considerations

- All releases
  - All platforms.
- 

## Prerequisites

- The *Solaris 2.5.1* operating system must be installed
  - All the preceding factory software installation requirements in this appendix must be completed
  - Log in as *root* at the console
  - Obtain the “*CentreVu CMS OPENLINK ODBC Driver*” CD.
- 

## Procedure

1. Load the “*CentreVu CMS OPENLINK ODBC Driver*” CD into the CD-ROM drive.
2. After about 15 seconds, enter `mount` to verify the name of the CD-ROM. The program responds with a list of devices and file systems currently mounted. The last line should display the installed CD as shown below:

```
. . .  
. . .  
. . .  
/cdrom/odbc_driver on /vol/dev/dsk/c0t2d0/odbc_driver read  
only on Sat Jun 6 11:47:05 1998
```

---

<sup>\*</sup>*OpenLink* is a trademark of OpenLink Software.

3. Create the *OpenLink* ODBC driver directory by entering the following commands:

```
mkdir /usr/openlink
cd /usr/openlink
pwd (to confirm you are in /usr/openlink)
```

4. Enter the following commands to copy the files from the CD-ROM and install the files:

```
cp /cdrom/cdrom0/server/* .
./install.sh
```

The program responds as follows:

```
Extracting (inf5sol.taz) ...
Extracting (inf7sol.taz) ...
Extracting (odbcsol.taz) ...
Extracting (rqbsol.taz) ...
Enter the name of the user that owns the programs:
```

5. Enter `root` as the name of the user who will own the programs. The program responds as follows:

```
Enter the name of the group that owns the programs:
```

6. Enter `root` as the name of the group that will own the programs. The program responds as follows:

```
Registering ...
oplrqb is now registered to Lucent Technologies BCS.
This is a 5 concurrent users license
that will not expire.

Thank you for using OpenLink Software technology.
```

7. Enter the following to configure and initiate the ODBC software:

```
/cms/dc/odbc/odbc_init
```

The program responds as follows:

```
ODBC Driver initialization complete.
```

8. Enter the following to verify that the ODBC Request Broker is active on the server:

```
ps -ef | grep oplrqb
```

The program responds as follows:

```
root 3354 3351 0 11:49:43 ?          0:00 /usr/openlink/bin/oplrqb -f
+configfile /cms/dc/odbc/cmsrqb_init +loglevel 5 +l
root 3359 3317 0 11:50:11 pts/5    0:00 grep oplrqb
```

9. Enter `cd` to move to the root directory.
10. Enter `eject cdrom` to eject the CD-ROM from the computer.
11. Remove the CD-ROM from the disk tray, place the CD-ROM back in its case, and close the CD-ROM tray.

# Set Up the Remote Console

## Overview

This section describes how to redirect the remote console port using the *Solaris* software package. Redirecting the console allows the TSC to dial in and do remote maintenance. The location of the remote console port differs depending on the hardware platform:

| Hardware Platform                             | Port A         | Port B         |
|-----------------------------------------------|----------------|----------------|
| <i>SPARCserver</i> and <i>Enterprise 3000</i> | Remote Console | Switch Link    |
| <i>Ultra 5</i>                                | Switch Link    | Remote Console |

## Release and Platform Considerations

- All releases
- All platforms.

## Administer the Remote Console Port

To administer the remote console port on the back of your computer, do the following:

1. Enter the following to remove the current port administration:

```
/cms/install/bin/abcmadm -r ttyX (where X is a or b)
```

The program responds as follows:

```
ttyX is currently set to be incoming
```

```
Are you sure you want to change it? [y,n,?]
```

2. Enter `y`. The program responds as follows:

```
ttyX administration removed
```

3. Enter the following to remove the other port's administration (this can be Port A or Port B depending on platform):

```
/cms/install/bin/abcmadm -r ttyX (where X is a or b)
```

The program responds as follows:

```
ttyX administration removed
```

4. Enter the following to administer the remote console port:

```
/cms/install/bin/abcmadm -i -b 9600 ttyX (where X is a or b)
```

The program responds as follows:

```
ttyX set to incoming port 9600 baud  
#
```

The remote console port has been administered.

## Test the Remote Console Port

Test the remote console port on the back of a computer by redirecting the console from the local console to the remote console, and then redirecting the console back to the local console from the remote console.

1. Dial in (from the remote console) to the remote console modem (that is, access the remote console port on the computer), and log in as *root*.

2. Remove the port monitor by entering the following:

```
/cms/install/bin/abccadm -r ttyX (where X is a or b)
```

The program responds as follows:

```
ttyX is currently set to be incoming
Are you sure you want to change it? [y,n,?]
```

3. Enter *y*. The program responds as follows:

```
ttyX administration removed
```

4. Redirect the console to the remote console port by entering the following:

```
/cms/install/bin/abccadm -c -b 9600 ttyX
```

The program responds as follows:

```
This change requires a reboot to take affect
Are you ready to reboot? [y,n,?]
```

5. Enter `y`. The system will automatically reboot, and the remote console port will come up as the console.

As the system reboots, the shutting down messages will appear on the local console. When the system starts to come back up, the local console should go blank, and the system boot diagnostics should appear on the remote console. After the system reboots, a login prompt should appear on the remote console.

6. Log in to the remote console as `root`. At this time, an *OpenWindows* login window appears on the local console.

 **CAUTION:**

*If you enter Control-D from the remote console to exit the system without first redirecting control back to the local console, you may lock yourself from using the console locally or remotely.*

7. Redirect the console back to the local console by entering the following:

```
/cms/install/bin/abccadm -c local
```

The program responds as follows:

```
Console set to local
```

```
This change requires a reboot to take affect
```

```
Are you ready to reboot? [y,n,?]
```

8. Enter `y`. The system automatically reboots and the remote console port comes up as a regular dial-in port with the `login:` prompt displayed.

As the system reboots, the shutting-down messages appears on the remote console. When the system starts to come back up, the system boot diagnostics should appear on the local console. After the system reboots, a login prompt should appear on the local console.

9. Log into the local console as `root`.

The console has been redirected from the remote console to the local console.

# Administer the NTS

---

## Overview

Each NTS needs to be administered so it will be recognized on the network. The following networking items need to be administered:

- Internet address
- Subnet mask
- Preferred load host internet address (the address of one or more *Sun* computers)
- Broadcast address
- Type of IP packet encapsulation.

 **NOTE:**

The administration process needs to be completed on each NTS being installed. If you administer more than one NTS for this system, the IP addresses must be unique (see the table in Prerequisites).

---

## Release and Platform Considerations

- All releases
- All platforms.

## Prerequisites

Obtain the Standard Network IP address and NTS IP address for each NTS you are administering:

| Device        | IP Address*  | Network Name    |
|---------------|--------------|-----------------|
| Host Computer | 129.200.9.1  | <i>hostname</i> |
| First NTS     | 129.200.9.11 | cmsterm1        |
| Second NTS    | 129.200.9.12 | cmsterm2        |
| Third NTS     | 129.200.9.13 | cmsterm3        |
| Fourth NTS    | 129.200.9.14 | cmsterm4        |
| Fifth NTS     | 129.200.9.15 | cmsterm5        |
| Sixth NTS     | 129.200.9.16 | cmsterm6        |
| Seventh NTS   | 129.200.9.17 | cmsterm7        |

\* The IP addresses shown here are the factory defaults. Use the actual system addresses if available.

---

## Procedure

1. Edit the *hosts* file by entering the following:

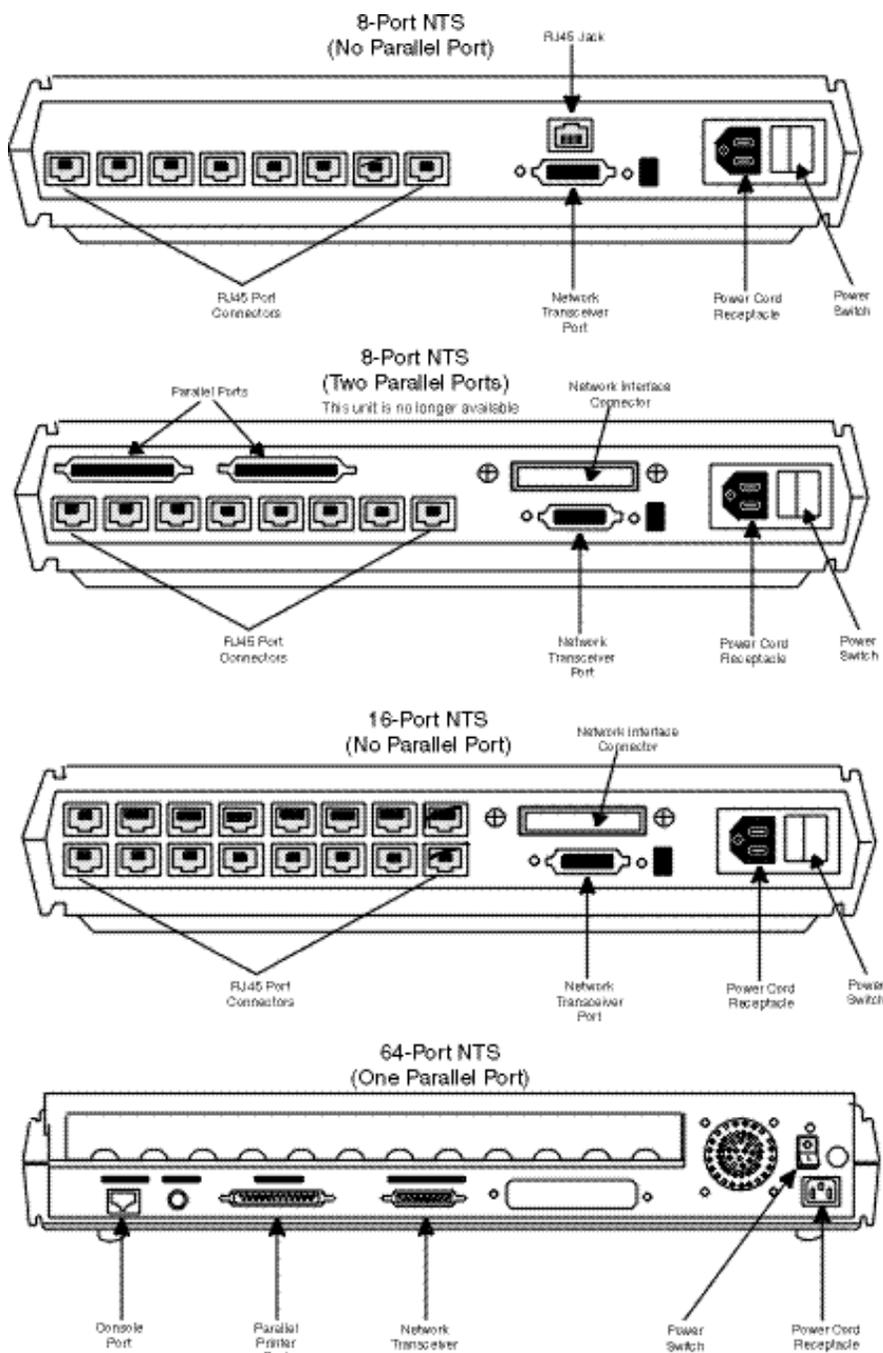
```
vi /etc/inet/hosts
```

2. Add a separate line in this file for each NTS that corresponds to the addresses from the Prerequisites table. The following is an example hosts file:

```
135.9.156.97    cms4
129.200.9.11    cmsterm1
129.200.9.12    cmsterm2
129.200.9.13    cmsterm3
129.200.9.14    cmsterm4
129.200.9.15    cmsterm5
129.200.9.16    cmsterm6
129.200.9.17    cmsterm7
129.200.9.18    cmsterm8
```

This example shows a working IP address for the host machine and the factory defaults for the NTS units.

3. Press the Esc key to leave the edit mode.
4. Enter `:w!` to overwrite the existing file.
5. Enter `:q` to quit editing the file.
6. Connect the power cord to the NTS (see the following figure).



7. Connect the 10-T transceiver to the Network Transceiver Port on the back panel of the NTS.
8. Connect the network hub unit to the NTS (10-T transceiver) using a UTP network cable.
9. Connect a dumb terminal to the Console Port on the rear of the NTS using the console cable and adapter that came with the NTS. On the 8- and 16-port NTSs, the Console Port is port #1.

You will need the following for the 8- and 16-port units:

- Console Cable
- Adapter - comcode 407361823
- Null Modem - comcode 407122043.

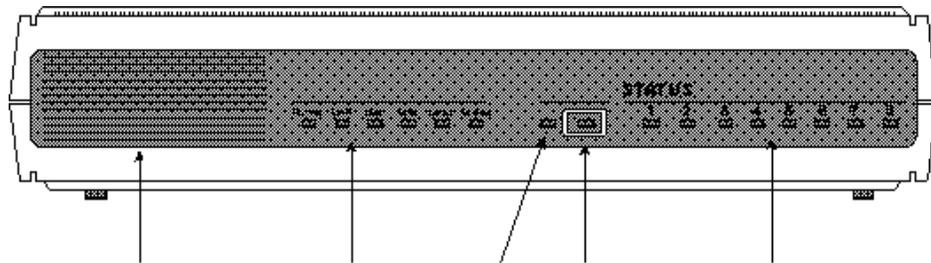
You will need the following for the 64-port unit:

- Console Cable
- Adapter - part number 06-988-260-20.

**⇒ NOTE:**

The terminal options should be set to 9600 bps, 8 bits, no parity or space parity, and a stop bit.

10. Turn on the NTS, and within 15 seconds push the Test Switch on the front of the NTS (see the following figure).



11. The NTS goes through its hardware diagnostics, and the following prompt should appear:

```
Monitor::
```

12. Enter the `erase` command.

**⇒ NOTE:**

There are two types of information that can be erased:

- EEPROM (configuration information)
- FLASH (self-boot image).

If only one type of information is present, the program begins to erase it. If there are two types of information, the program prompts you to select the information you want to erase. Erase both the EEPROM and the FLASH information.

The program responds as follows:

```
Erase
  1) EEPROM (i.e., Configuration Information)
  2) FLASH (i.e., Self Boot Image)
Enter 1 or 2::
```

13. Enter `1` to erase EEPROM. The program responds as follows:

```
Erase all non-volatile EEPROM memory? (y/n) [n]::
```

14. Enter `y`. The program responds as follows:

```
Erasing xxxx bytes of non-volatile memory. Please wait....
.....
Erased xxxx bytes of non-volatile memory complete.
Monitor::
```

15. Repeat Steps 12 through 14, but select `2` (FLASH) to erase the FLASH information.

16. After you have completed the `erase` command, enter `addr`. The program responds as follows:

```
Enter Internet address [<uninitialized>]::
```

17. Enter the IP address for this NTS. This should follow the IP address structure outlined earlier in the Prerequisites on Page B-140. The program responds as follows:

```
Internet address : xxx.xxx.xxx.xxx
```

```
Enter Subnet mask [255.255.255.0]::
```

18. Enter the appropriate Subnet mask, or press Enter to accept the default. The program responds as follows:

```
Subnet mask: xxx.xxx.xxx.xxx
```

```
Enter preferred load host Internet address [<any host>]::
```

19. Enter the IP address of the *Sun* computer. The program responds as follows:

```
Preferred load host address xxx.xxx.xxx.xxx
```

```
Enter Broadcast address [0.0.0.0]::
```

20. Press Enter to accept the default broadcast message address. The program responds as follows:

```
Enter Preferred dump address [0.0.0.0]::)
```

21. Enter the IP address of the *Sun* computer. The program responds as follows:

```
Preferred dump address: xxx.xxx.xxx.xxx

Select type of IP packet encapsulation (ieee802/ethernet)
[<ethernet>] ::
```

22. Press Enter to accept the default IP packet encapsulation. The program returns to the `monitor::` prompt if you have a 64-port NTS. Continue with Step 24.

The program responds with the following question if you have an 8- or 16-port NTS:

```
Type of IP packet encapsulation: <ethernet>

Load Broadcast Y/N [Y]::
```

23. Enter N. The program returns to the `monitor::` prompt.
24. Enter the `boot` command at the monitor prompt to reinitialize the NTS with the new parameters. The program responds as follows:

```
Enter boot file name [oper.42.enet]::
```

### ⇒ NOTE:

The boot file name differs depending on the type of NTS. For the 8- and 16-port NTS, the boot file name is:

```
[ (ip) "oper.52.enet", (mop) "OPER_52_ENET.SYS" ]
```

For the 64- port NTS, the boot file name is:

```
oper.42.enet
```

25. Press Enter to accept the default boot file name. The program responds as follows:

```
Requesting boot file "oper.42.enet".
Unanswered requests shown as '?',
                               transmission errors as '*'.

Booting file: oper.42.enet from 129.200.9.1

Loading image from 129.200.9.1
.....
```

The periods (dots) continue to appear as the NTS is initialized and set up.

**⇒ NOTE:**

If the program displays "SELF" instead of the IP address (129.200.9.1 is the factory default; your IP address may be different), it means that you did not erase EEPROM. Go back to Step 12 to erase EEPROM.

When the initialization finishes, the program responds as follows:

```
annex: :
```

26. Disconnect the dumb terminal from the NTS.  
The NTS has been administered.

# Perform a CMSADM File System Backup

The CMSADM file system backup saves all of the file systems on the computer onto a tape.

---

## Overview

The CMSADM file system backup includes the following:

- *Solaris* 2.5.1 system files and programs
- *CentreVu* CMS programs and data
- Non-*CentreVu* CMS customer data placed on the computer (in addition to the *CentreVu* CMS data).

The CMSADM file system backup should be done at the following times:

- After the system has been set up in the factory

This backup contains the default factory configuration. These tapes should be saved if the system must be reinstalled in the field.

- After the *CentreVu* CMS is provisioned

This backup contains the *Solaris* system files and programs and *CentreVu* CMS configuration data placed on the computer by TSC provisioning personnel. These tapes should also be saved.

In addition, field technicians should perform a *CentreVu* CMS full maintenance backup before they turn a new system over to the customer. See *CentreVu* CMS R3V6 Administration (585-215-850) or *CentreVu* CMS R3V5 Administration (585-215-820).

- Before and after the *CentreVu* CMS software is upgraded (usually done by a field technician)
- Once a month (done by the customer).

### CAUTION:

*The customer must use a new set of backup tapes for this CMSADM File System backup. The customer must **NOT** use the original set of factory or provisioning backup tapes.*

The number of cartridge tapes required to complete a CMSADM file system backup depends on the amount of data on the system and the capacity of the backup tape. The program estimates the number of tapes required and informs the user.

## Release and Platform Considerations

- All releases
  - All platforms.
- 

## Prerequisites

- Before starting the backup procedures in this section, log in as *root*, and enter `lp /etc/vfstab`. The output from the printer is necessary when doing a system restore. Bundle the printout of the `/etc/vfstab` file with the system backup tape(s) for future reference.
  - Verify that the computer is in a *Solaris* multi-user state (2 or 3). To check if you are in the multi-user state, enter `who -r`.
- 

## Procedure

1. Enter `cmsadm` to access the *CentreVu* CMS Administration menu. The *CentreVu* CMS Administration menu appears as follows:

```
Lucent Technologies CentreVu(R) Call Management System
Administration Menu
Select a command from the list below.
  1) acd_create  Define a new ACD
  2) acd_remove Remove all administration and data for an ACD
  3) backup      Filesystem backup
  4) diskmap     Estimate disk requirements
  5) memory      Estimate memory requirements
  6) realtime    Estimate real-time report refresh rate
  7) pkg_install Install a feature package
  8) pkg_remove  Remove a feature package
  9) run_cms     Turn CentreVu CMS on or off
Enter choice (1-9) or q to quit:
```

2. Enter 3 to select the backup option.

The program responds as follows (this screen is slightly different between R3V5 and R3V6):

```
Select the tape drive type:
 1) 150MB cartridge tape
 2) 60MB cartridge tape
 3) 14.0 Gbyte 8mm tape
 4) 5.0 Gbyte 8mm tape
 5) 2.5 Gbyte cartridge tape
 6) 4.0 - 8.0 Gbyte cartridge tape
Enter choice (1-6):
```

3. Enter the number for the tape drive installed on your system. The system responds as follows:

```
Calculating approximate number of tapes required. Please
wait.
```

The system approximates the number of tapes required for the backup. Please note that this is an approximation, and more tapes may be needed once the backup is under way.

If the number of tapes required is one, the system responds as follows:

```
The backup will need approximately 1 tape.

Please insert the first cartridge tape into </dev/rmt/X>.

Press ENTER when ready:
```

If the number of tapes required is more than one, the system responds as follows:

```
The backup will need approximately <X> tapes.  
  
Be sure to number the cartridge tapes consecutively in the  
order they will be inserted.  
  
Please insert the first cartridge tape into </dev/rmt/x>.  
  
Press ENTER when ready:
```

4. To begin the backup, insert the cartridge tape, wait for the tape to rewind and reposition, and then press Enter.

If *CentreVu* CMS is turned on, the system responds as follows:

```
The backup is about to begin. CMS is currently on.  
CMS will be turned off automatically during that portion  
of the backup which needs CMS off.  
Press ENTER to proceed or Del to quit:
```

5. To continue the backup, press Enter. A CMSADM backup may take several hours, depending on the speed of the system and the tape drive.

If only one tape is required, the system responds as follows:

```
Backing up files...  
  
.....  
.....  
(dots continue to display as the system is backed up)  
.....  
XXXXXX blocks  
Tape verification  
XXXXXX blocks  
  
Please label the backup tape(s) with the date and the  
current CMS version (r3vXxx.x)
```

If only one tape was required, continue with Step 9. If more than one tape is required, the system responds as follows:

```
Backing up files...
```

```
.....  
.....
```

```
(dots continue to display as the system is backed up)
```

```
.....
```

```
End of medium on "output".
```

```
Please remove the current tape, number it, insert tape  
number X, and press ENTER
```

**!** CAUTION:

*Label all tapes with the tape number and the date of the backup.  
Set the tape write-protect switch to read-only.*

6. Insert the next tape and press Enter to continue. When you insert the next tape, allow it to rewind and reposition before you press Enter. Repeat this step for any additional tapes.

After the system completes the backup, the system responds as follows:

```
XXXXXXX blocks
```

```
Tape Verification
```

```
Insert the first tape
```

```
Press Return to proceed:
```

7. Insert the first tape and press Enter to continue. After the tape is verified, the system responds as follows:

```
End of medium on "input".
```

```
Please insert tape number X and press Return
```

8. Remove the first tape and insert the second tape. After the tape rewinds and repositions, press Enter to continue. Repeat this step for each additional tape.

After the last tape is verified, the system responds as follows:

```
XXXXXXXX blocks  
Please label the backup tape(s) with the date and the  
current CMS version (r3vXxx.x)
```

9. Wait for the tape drive light-emitting diode (LED) to stop blinking before you remove the tape. The CMSADM file system backup is complete.

 **CAUTION:**

*Label all tapes with the tape number and the date of the backup.  
Set the tape write-protect switch to read-only.*

# Glossary

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## Overview

This Glossary defines terms and acronyms used in this document that may not be familiar to you. The Glossary includes a separate list of Acronyms at the end.

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## Terminology

### Access Permissions

Permissions assigned to a Call Management System (CMS) user so that the user can access different subsystems in CMS or administer specific elements (splits/skills, trunks, vectors, and so on) of Automatic Call Distribution (ACD). Access permissions are specified as **read** or **write** permission. Read permission allows the CMS user to access and view data (for example, run reports or view the Dictionary subsystem). Write permission allows the CMS user to add, modify, or delete data and execute processes.

### Acknowledgment

A window that requires the user to confirm an action or to acknowledge a system message (for example, system going down, warning, or fatal error for the user window). This window cannot be moved, sized, or scrolled and disappears only when the user confirms the message.

### Action List

A menu in the upper right corner of most user windows. The menu lists the actions available for that particular user window (for example, add, modify, delete, and so on). The user selects an action after entering necessary data in the window.

### Add Package

A *Solaris*<sup>\*</sup> operating system command (`pkgadd`) that allows you to add an additional software package.

### Agent

A person who answers calls to an extension in an ACD. This person is known to CMS by a login identification keyed into a voice terminal.

### Agent Login ID

A 1- to 4-digit number (Generic 2) or a 1- to 9-digit number (Generic 3) entered by the agent at the ACD extension to activate the position. Agent logins are required for all CMS-measured ACD agents.

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<sup>\*</sup>*Solaris* is a registered trademark of Sun Microsystems, Inc.

|                                          |                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Agent Skill</b>                       | The different types of calls a particular agent can handle. An agent can be assigned up to four skills. These skills are assigned as either primary or secondary skills. See “Primary Skill” or “Secondary Skill” definitions in this Glossary.                                                                                                                              |
| <b>Agent State</b>                       | A feature of agent call handling that allows agents to change their availability to the system (for example, ACW, AVAIL, ACD).                                                                                                                                                                                                                                               |
| <b>Announcement</b>                      | A recorded message that tells the caller what destination the call has reached. The announcement also often tries to persuade the caller to stay on the line. With Call Vectoring, announcements can be part of a vector’s call processing. An announcement is assigned to a vector by entering an announcement number.                                                      |
| <b>Asynchronous Connector</b>            | A logical device used to control the computer timing protocol in which a specific operation is begun upon receipt of an indication (signal) that the preceding operation has been completed.                                                                                                                                                                                 |
| <b>Asynchronous Data Transmission</b>    | A scheme for transmitting data where each character is preceded by a start bit and followed by a stop bit, thus permitting data elements to occur at irregular intervals. This type of transmission is advantageous when transmission is not regular (when characters are typed at a keyboard).                                                                              |
| <b>Asynchronous Data Unit (ADU)</b>      | A data communications equipment (DCE) type device that allows direct connection between RS-232 equipment and the digital switch.                                                                                                                                                                                                                                             |
| <b>Automatic Call Distribution (ACD)</b> | <p>A switch feature. ACD is software that channels high-volume incoming call traffic to agent groups (splits or skills).</p> <p>Also an agent state where the extension is engaged in an ACD call (with the agent either talking to the caller or the call waiting on hold).</p>                                                                                             |
| <b>Backup</b>                            | The process of protecting data by writing the contents of the disk to a tape that can be removed from the computer and stored safely. A spare copy of data or software that you keep in case the original is damaged or lost. CMS provides three different types of backups: CMSADM File System Backup, CMS Full Maintenance Backup, and CMS Incremental Maintenance Backup. |
| <b>Boot</b>                              | To load the system software into memory and start it running.                                                                                                                                                                                                                                                                                                                |
| <b>Bus</b>                               | <p>A signal route to which several items of a computer system may be connected in parallel so that signals can be passed between them.</p> <p>In general, a multiconductor electrical path used to transfer information over a common connection from any of several sources to any of several destinations.</p>                                                             |

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|                                                       |                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Cables</b>                                         | Wires or bundles of wires configured with adapters or connectors at each end and used to connect two or more hardware devices.                                                                                                                                                              |
| <b>Call Level Interface (CLI)</b>                     | A database programming interface from the Structured Query Language (SQL) Access Group, an SQL membership organization. Under CLI, SQL statements are passed directly to the server without being recompiled.                                                                               |
| <b>Call Management System Query Language (CMS-QL)</b> | A relational database management (operating) system used to organize most of CMS's data. Automatically comes with CMS and runs in the background.                                                                                                                                           |
| <b>Call Vectoring</b>                                 | A highly flexible method for processing ACD calls using Vector Directory Numbers (VDNs) and vectors as processing points between trunk groups and splits or skills. Call vectoring permits treatment of calls that is independent of splits or skills.                                      |
| <b>Cartridge Tape</b>                                 | A 0.25-inch (6.35-mm) magnetic tape used in the tape drive of the Desktop Backup Pack and External Storage Module to read and write data.                                                                                                                                                   |
| <b>CentreVu<sup>®</sup> CMS</b>                       | <i>CentreVu</i> Call Management System (CMS). A software product used by business customers that have a Lucent Technologies telecommunications switch and receive a large volume of telephone calls that are processed through the Automatic Call Distribution (ACD) feature of the switch. |
| <b>CMS Administration (CMSADM) Filesystem Backup</b>  | A backup that saves all the file systems on the machine which includes <i>Solaris</i> 2.5.1 system and programs, CMS programs and data, and non-CMS data you place on the computer in addition to the CMS data. See the "Backup" definition for more details.                               |
| <b>Command</b>                                        | A command is an instruction used to tell the computer to perform a function or to carry out an activity.                                                                                                                                                                                    |
| <b>Common Desktop Environment</b>                     | A desktop user interface for <i>Solaris</i> . This replaces OpenWindows.                                                                                                                                                                                                                    |
| <b>Configuration</b>                                  | Configuration is the way that the computer is set up to allow for particular uses or situations.                                                                                                                                                                                            |
| <b>Copy</b>                                           | Copy means to duplicate information.                                                                                                                                                                                                                                                        |
| <b>Custom Reports</b>                                 | Real-time or historical reports that have been customized from standard reports or created from original design.                                                                                                                                                                            |

|                                                  |                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Daemon</b>                                    | Pronounced “demon.” A <i>UNIX</i> <sup>*</sup> program that executes in the background ready to perform an operation when required, usually unattended processes initiated at start-up, such as print spoolers, email handlers or schedulers.                                                                     |
| <b>Data Collection Off</b>                       | CMS is not collecting ACD data. If you turn off data collection, CMS will not collect data on current call activity.                                                                                                                                                                                              |
| <b>Database</b>                                  | A group of files that store ACD data according to a specific time frame: current and previous intrahour real-time data and intrahour, daily, weekly, and monthly historical data.                                                                                                                                 |
| <b>Database Item</b>                             | A name for a specific type of data stored in one of the CMS databases. A database item may store ACD identifiers (split numbers or names, login IDs, VDNs, and so on) or statistical data on ACD performance (number of ACD calls, wait time for calls in queue, current states of individual agents, and so on). |
| <b>Database Tables</b>                           | Tables that CMS uses to collect, store, and retrieve ACD data. Standard CMS items (database items) are names of columns in the CMS database tables.                                                                                                                                                               |
| <b>Data Communications Equipment (DCE)</b>       | Modems are a good example of DCE. Any equipment that connects to Data Terminal equipment (DTE) using an RS-232 standard interface.                                                                                                                                                                                |
| <b>Data Communications Interface Unit (DCIU)</b> | A hardware device on the Generic 2 switches that prepares and sends architecture messages to other switches or application adjuncts.                                                                                                                                                                              |
| <b>Data Terminal Equipment (DTE)</b>             | Data Terminal Equipment (DTE) includes terminals, personal computers, and workstations. A <i>Sun</i> <sup>†</sup> <i>SPARCserver</i> <sup>‡</sup> computer is a DTE device.                                                                                                                                       |
| <b>Device</b>                                    | The term used to refer to the peripheral itself; for example, a hard disk or a tape drive. A peripheral is sometimes referred to as a subdevice or an Logical Unit (LU).                                                                                                                                          |
| <b>Disk</b>                                      | A round platter, or set of platters, coated with magnetic medium and organized into concentric tracks for storing data.                                                                                                                                                                                           |

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<sup>\*</sup>*UNIX* is a registered trademark in the United States and other countries, licensed exclusively through X/Open Company Limited.

<sup>†</sup>*Sun* is a registered trademark of Sun Microsystems, Inc.

<sup>‡</sup>*SPARCserver* is a trademark of SPARC International, Inc.

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|                                                                          |                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Dynamic random access memory Single In-line Memory Module (DSIMM)</b> | A small printed circuit card that contains Dynamic Random Access Memory (DRAM).                                                                                                                                                                                                                             |
| <b>Error Correction Code (ECC)</b>                                       | A code that protects the customer's system and data from single bit soft errors that can occur frequently depending on the environment.                                                                                                                                                                     |
| <b>Error Message</b>                                                     | An error message is a response from a program indicating that a problem has arisen or something unexpected has happened, requiring your attention.                                                                                                                                                          |
| <b>Ethernet</b>                                                          | A type of network hardware that allows communication between systems connected directly together by transceiver taps, transceiver cables, and a coaxial cable. Also implemented using twisted-pair telecommunications wire and cable.                                                                       |
| <b>Ethernet Address</b>                                                  | A unique number assigned to each system when it is manufactured. The Ethernet address of your system is displayed on the banner screen that appears when you power on your system.                                                                                                                          |
| <b>Exception</b>                                                         | A type of activity on the ACD which falls outside of the limits the customer has defined. An exceptional condition is defined in the CMS Exceptions subsystem, and usually indicates abnormal or unacceptable performance on the ACD (by agents, splits or skills, VDNs, vectors, trunks, or trunk groups). |
| <b>Expert Agent Distribution (EAD)</b>                                   | A call queued for a skill will go to the most idle agent (primary skill agent). Agents who are idle and have secondary agent skills will receive the call queued for a skill if there are no primary agents available.                                                                                      |
| <b>Expert Agent Selection (EAS)</b>                                      | An optional feature that bases call distribution on agent skill (such as language capability). EAS matches the skills required to handle a call to an agent who has at least one of the skills required.                                                                                                    |
| <b>External Controller</b>                                               | A connector that is outside the cabinet and is accessible to the user without having to open any doors, remove any panels, or remove any cabinet covers (also known as an "External Connector").                                                                                                            |
| <b>Forecast Reports</b>                                                  | These reports display expected call traffic and agent or trunk group requirements for the customer's call center for a particular day or period in the future.                                                                                                                                              |
| <b>Gigabyte (GB)</b>                                                     | One gigabyte equals $2^{30}$ bytes (1073741824 bytes).                                                                                                                                                                                                                                                      |

|                                                 |                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hand-Shaking Logic</b>                       | A format used to initiate a data connection between two data module devices.                                                                                                                                                                                                                  |
| <b>Hard Disk</b>                                | A device that stores operating systems, programs, and data files.                                                                                                                                                                                                                             |
| <b>High Speed Serial Interface (HSI)</b>        | A 4-port serial communications card. Each of the four ports is used for a single physical X.25 link. It is an add-on package that is needed by CMS for multiple ACDs.                                                                                                                         |
| <b>High Speed Serial Interface/PCI (HSI/P)</b>  | An HSI card for systems with PCI bus. Attaches to quad cables.                                                                                                                                                                                                                                |
| <b>High Speed Serial Interface/SBus (HSI/S)</b> | An HSI card for systems with Sbus. Attaches to patch panels.                                                                                                                                                                                                                                  |
| <b>Historical Database</b>                      | Contains intrahour records for up to 62 days in the past, daily records for up to 5 years in the past, and weekly or monthly records for up to 10 years for each CMS-measured agent, split or skill, trunk, trunk group, vector, and VDN.                                                     |
| <b>Historical Reports</b>                       | Reports that display past ACD data for various agent, split or skill, trunk, trunk group, vector, or VDN activities.                                                                                                                                                                          |
| <b>Host Adapter</b>                             | An I/O card that plugs into the computer backplane and is used as an interface between the computer system and the Small Computer System Interface (SCSI) bus.                                                                                                                                |
| <b>Host Computer</b>                            | A computer that is attached to a network and provides services other than simply acting as a store-and-forward processor or communication switch. The <i>Sun SPARCserver</i> or <i>Sun Enterprise<sup>*</sup> 3000</i> computer is your host computer and hosts the CMS application software. |
| <b>Host Name</b>                                | A name that you (or your system administrator) assign to your system unit to uniquely identify it to the <i>Solaris 2.5.1</i> operating system (and also to the network).                                                                                                                     |
| <b>Hung System</b>                              | A system that does not respond to input from the keyboard or mouse.                                                                                                                                                                                                                           |
| <b>INFORMIX<sup>†</sup></b>                     | A relational database management system used to organize CMS's data. An add-on software package needed by CMS.                                                                                                                                                                                |

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<sup>\*</sup>*Enterprise* is a trademark of Sun Microsystems, Inc.

<sup>†</sup>*INFORMIX* is a registered trademark of Informix Software, Inc.

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|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Install</b>                                      | The procedures used to set up the hardware and software of a computer, terminal, printer, and modem so that they can be used. Installing often includes customizing the system for a particular situation or user.                                                                                                                                                                                                                                                                                                     |
| <b>Interface</b>                                    | A common boundary between two systems or pieces of equipment.                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>International Telecommunications Union (ITU)</b> | Formerly the Consultative Committee for International Telephony and Telegraphy (CCITT). An international organization that sets communications standards.                                                                                                                                                                                                                                                                                                                                                              |
| <b>Internet Protocol (IP)</b>                       | An integral part of the internet communication protocol system (see Transmission Control Protocol/Internet Protocol [TCP/IP]). The IP provides the routing mechanism of the TCP/IP. See also Network Address.                                                                                                                                                                                                                                                                                                          |
| <b>Interval-Based Items</b>                         | A category of database items. These items represent the amount of time during a collection interval spent doing a particular activity. Interval-based items are updated throughout the collection interval and timing is restarted at the end of the interval. Interval-based items should only be used to show the amount of time in an interval for an activity or to calculate percentages of time spent in an interval. Interval-based items should not be used to calculate averages (such as average hold time). |
| <b>Intrahour Interval</b>                           | A 15-, 30-, or 60-minute segment of time starting on the hour. An intrahour interval is the basic unit of CMS report time.                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Keyboard</b>                                     | An input device for entering information by typing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Keyboard Port</b>                                | The port on your Desktop <i>Sun SPARCserver</i> computer unit where the keyboard cable is connected.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Link Access Procedure Balanced</b>               | The ITU standard error correction protocol used on most current X.25 packet switching networks.                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Link</b>                                         | A transmitter-receiver channel or system that connects two locations.                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Log In</b>                                       | The process of gaining access to a system by entering a user name and, optionally, a password.                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Log Out</b>                                      | The process of exiting from a system.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Logical Unit</b>                                 | The term used to refer to a peripheral device such as a disk drive.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Measured</b>                                     | A term that means an ACD element (agent, split or skill, trunk, trunk group, vector, VDN) has been identified to CMS for collection of data.                                                                                                                                                                                                                                                                                                                                                                           |

|                                                  |                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Megabyte (MB)</b>                             | One megabyte equals $2^{20}$ bytes (1048576 bytes).                                                                                                                                                                                                                                                           |
| <b>Menu</b>                                      | A list of items from which the user can select one. A menu cannot be moved or sized and does not count in the user window count.                                                                                                                                                                              |
| <b>Messages</b>                                  | Temporary windows used only for displaying information like “field help” and syntactical field errors. Message windows cannot be moved, sized, or scrolled and do not count in the user-window count. Messages windows are automatically removed when the user corrects the error or moves to the next field. |
| <b>Modem</b>                                     | A device that enables a computer or terminal to establish a connection with another computer or terminal and to communicate data through telephone lines.                                                                                                                                                     |
| <b>Multi-user Mode</b>                           | A mode of CMS in which any administered CMS user can log into CMS. Data continues to be collected if data collection is “on.”                                                                                                                                                                                 |
| <b>Network Address</b>                           | A unique number assigned to each system on a network, consisting of the network number and the system number. Also known as Internet Address or Internet Protocol (IP) address.                                                                                                                               |
| <b>Network Hub</b>                               | Hardware that connects a computer to a Network Terminal Server (NTS).                                                                                                                                                                                                                                         |
| <b>Network Terminal Server (NTS)</b>             | A hardware terminal that connects to the Network Hub using cabling. The NTS provides 50-pin switch champ connectors used to attach 64 serial devices using the patch panel cables and patch panels.                                                                                                           |
| <b>Network Terminal Server Patch Panel</b>       | Hardware that has ports for connecting serial peripheral devices (for example, printers, terminals and modems). The NTS patch panel connects to the NTS using PBX-Champ cabling.                                                                                                                              |
| <b>Non-Volatile Random Access Memory (NVRAM)</b> | A random access memory (RAM) system that holds its contents when external power is lost.                                                                                                                                                                                                                      |
| <b>Open Window</b>                               | A window that remains open because the user has not yet closed it with the “Exit” Screen Label Key (SLK). An open window becomes the current window when it initially appears on the screen or when the user makes it the current window using the “Current” SLK.                                             |
| <b>OpenWindows</b>                               | A desktop user interface for <i>Solaris</i> . This has been replaced by the Common Desktop Environment (CDE).                                                                                                                                                                                                 |

|                                          |                                                                                                                                                                                                                                                         |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operating System (OS)</b>             | The software that controls and allocates the resources, such as memory, disk storage, and the screen display for the computer.                                                                                                                          |
| <b>Partitions</b>                        | Sections of the hard disk that are used to store an operating system and data files or programs. By dividing the disk into partitions, you can use the space allocated in a more efficient and organized manner.                                        |
| <b>Password</b>                          | A character string that is associated with a user name. Provides security for a user account. Desktop <i>Sun SPARCserver</i> computers require you to type a password when you log into the system, so that no unauthorized person can use your system. |
| <b>Personal Computer Interface (PCI)</b> | A bus architecture that replaces SBus.                                                                                                                                                                                                                  |
| <b>Port (I/O Port)</b>                   | A designation of the location of a circuit that provides an interface between the system and lines and/or trunks.                                                                                                                                       |
| <b>Primary Skill</b>                     | An agent will handle calls to many skills before calls to secondary skills. See "Agent Skill" in this Glossary.                                                                                                                                         |
| <b>Primary Window</b>                    | The first window opened in response to a menu selection. A primary window may also generate another user window (secondary window). A primary window can be moved, sized, or scrolled, and counts in the window count.                                  |
| <b>Printer</b>                           | A physical device that takes electronic signals, interprets them, and prints them on paper.                                                                                                                                                             |
| <b>Private Branch Exchange (PBX)</b>     | A private switch system providing voice-only or voice and data communications services (including access to public and private networks) for a group of terminals within a customer's premises. Also see Switch.                                        |
| <b>Processor Interface (PI)</b>          | A hardware device on the Generic 3i switches that prepares and sends architecture messages to other switches or application adjuncts.                                                                                                                   |
| <b>Queue</b>                             | A holding area for calls waiting to be answered in the order in which they were received. Calls in a queue may have different priority levels, in which case, calls with a higher priority are answered first.                                          |
| <b>Read Permission</b>                   | A mode that allows a CMS user to access and view data (for example, run reports or view the Dictionary subsystem). Read permission is granted from the User Permissions subsystem.                                                                      |

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Real-Time Database</b>        | A database that consists of the current and previous intrahour data on each CMS-measured agent, split or skill, trunk, trunk group, vector, and Vector Directory Number (VDN).                                                                                                                                                                                                                              |
| <b>Real-Time Reports</b>         | Reports that display current ACD call activity on agents, splits or skills, trunks, trunk groups, vectors, and VDNs for the current or previous intrahour interval. Current intrahour interval real-time reports are constantly updated as data changes during the interval. Previous intrahour interval real-time reports show data totals for activity that occurred in the previous intra-hour interval. |
| <b>Recommended Standard (RS)</b> | Any one of several Electronic Industries Association (EIA) standards commonly used in U.S. electronic applications.                                                                                                                                                                                                                                                                                         |
| <b>Refresh Rate</b>              | The number of seconds CMS should wait for each update of the real-time report data. A user's fastest allowable refresh rate is defined in the User Permissions — User Data window as a minimum refresh rate. The default refresh rate when a user brings up the report input window is the administered minimum refresh rate plus 15 seconds.                                                               |
| <b>RS-232</b>                    | An electrical interface standard, normally using a 25-pin (DB-25) physical connector. The electrical portion of the interface is unbalanced (for example, RS-232 has a positive voltage and a ground). This standard was officially renamed TIA/EIA-232-E in 1984, but the RS-232 designation is still most commonly used.                                                                                  |
| <b>RS-422</b>                    | A balanced electrical interface (for example, RS-422 has a positive and a negative voltage). This interface is used by the HSI/S card.                                                                                                                                                                                                                                                                      |
| <b>RS-423</b>                    | An unbalanced electrical interface (for example, RS-423 has a positive voltage and a ground).                                                                                                                                                                                                                                                                                                               |
| <b>RS-449</b>                    | A 37-pin physical interface used by the HSI/S card.                                                                                                                                                                                                                                                                                                                                                         |
| <b>SBus</b>                      | The Input/Output bus for the <i>Sun SPARCserver</i> computer. Provides slots for additional cards (for example, HSI Controller Card).                                                                                                                                                                                                                                                                       |
| <b>SBus Expansion Subsystem</b>  | A peripheral device attached to a computer system. The SBus expansion subsystem provides three additional SBus slots and space for two optional SCSI hard disk drives. The SBus expansion subsystem consists of the following: the SBus expansion chassis, the expansion adapter card (in the computer system), and the SBus expansion subsystem cable.                                                     |

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|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Screen Labeled Key (SLK)</b>                  | The first eight function keys at the top of the keyboard that correspond to the screen labels at the bottom of the terminal screen. The screen labels indicate the function each key performs.                                                                                                                                                                                                   |
| <b>Scroll Cursor</b>                             | <i>INFORMIX</i> provides two kinds of cursors when traversing select results. A scroll cursor allows relative movement backward or forward within the query results while a non-scroll cursor allows only forward movement, one record at a time.                                                                                                                                                |
| <b>SCSI Bus</b>                                  | An industry standard peripheral bus that is used to connect intelligent peripherals to a computer. It uses a daisy-chained cabling arrangement that originates at the Host Adapter to interconnect up to seven intelligent peripheral controllers on the bus. The <i>Sun SPARCserver</i> computer uses a fast SCSI-2 implementation.                                                             |
| <b>SCSI ID</b>                                   | Each tap on the SCSI bus is required to have a unique identification or address, which is the SCSI ID. The ID is set by a switch located on each controller. In a Lucent Technologies' implementation, the Host Adapter card (with a SCSI ID of 7) is preset. The remainder can be set with external devices "push buttons." Users never have to open a chassis or touch a circuit-board switch. |
| <b>SCSI Single-Ended Bus</b>                     | A version of the SCSI bus designed to minimize cost and space. Cable lengths up to 6 meters are supported. It is not compatible with the differential version of the SCSI bus.                                                                                                                                                                                                                   |
| <b>Secondary Skill</b>                           | An agent will handle secondary skill calls after primary skill calls. See "Agent Skill" in this Glossary.                                                                                                                                                                                                                                                                                        |
| <b>Secondary Window</b>                          | A user window that is generated from a primary window. Secondary windows can be moved, sized, or scrolled and do not count in the user window count.                                                                                                                                                                                                                                             |
| <b>Serial Asynchronous Interface/PCI (SAI/P)</b> | A card that provides access to eight serial ports by connecting to an eight-port patch panel.                                                                                                                                                                                                                                                                                                    |
| <b>Serial Interface Y-Cable</b>                  | A cable that attaches to the A/B port on the back of the <i>Sun SPARCserver</i> 10/20 computer. The Desktop <i>Sun SPARCserver</i> 10/20 computer system has two serial ports located on the two terminations of its optional serial interface Y-cable.                                                                                                                                          |
| <b>Shortcut</b>                                  | A series of tasks which are run immediately on the screen. Shortcut is a fast, easy way to select windows that the customer might look at every day.                                                                                                                                                                                                                                             |

|                                               |                                                                                                                                                                                                                                                            |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Single-User Mode</b>                       | A CMS mode in which only one person can log into CMS. Data collection continues if data collection is “on.” This mode is required to change some CMS administration.                                                                                       |
| <b>Skill</b>                                  | In relationship to the call center, think of skill as a specific customer need or requirement, or perhaps a business need of the call center.                                                                                                              |
| <b>Slot</b>                                   | An electronic connection designed to receive a module or a printed circuit board (such as a Single In-line Memory Module [SIMM] or a frame buffer board).                                                                                                  |
| <b>Small Computer System Interface (SCSI)</b> | A hardware interface that allows the connection of peripheral devices (such as hard disks, tape drives and CD-ROM drives) to a computer system.                                                                                                            |
| <b>Solaris</b>                                | The operating system package on the <i>Sun SPARCserver</i> computer. <i>Solaris</i> is a version of the <i>UNIX System V Release 4</i> . CMS requires <i>Solaris</i> to run on the <i>Sun SPARCserver</i> computer or <i>Sun Enterprise 3000</i> computer. |
| <b>Split</b>                                  | A group of extensions that receive special-purpose calls in an efficient, cost-effective manner. Normally, calls to a split arrive over one or a few trunk groups.                                                                                         |
| <b>Storage Device</b>                         | A hardware device that can receive data and retain it for subsequent retrieval. Such devices cover a wide range of capacities and speeds of access.                                                                                                        |
| <b>Structured Query Language (SQL)</b>        | A language used to interrogate and process data in a relational database. SQL commands can be used to interactively work with a database or can be embedded within a programming language to interface to a database.                                      |
| <b>Submenu</b>                                | A menu that appears as a result of a menu selection. All menu selections followed by a “>” have submenus.                                                                                                                                                  |
| <b>Subsystem</b>                              | Each CMS main menu selection (for example, Reports, Dictionary, System Setup, Exceptions, and so on), along with Timetable and Shortcut, is referred to as a subsystem of the Call Management System throughout this document.                             |
| <b>Sun Enterprise Computer</b>                | A series of host computer systems manufactured by Sun Microsystems Inc. The <i>Sun Enterprise 3000</i> computer is a platform used to support <i>CentreVu</i> ® CMS as a replacement for the discontinued <i>Sun SPARCserver 10/20</i> platforms.          |

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|                                                                 |                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Sun SPARCserver Computer</b>                                 | A host computer that is attached to a network and provides services other than simply acting as a store-and-forward processor or communication switch. For CMS R3V6, the <i>Sun SPARCserver 5</i> is available for new installations.                             |
| <b>Sun Ultra Computer</b>                                       | A series of host computer systems manufactured by Sun Microsystems Inc. The <i>Sun Ultra 5</i> computer is a platform used to support <i>CentreVu</i> <sup>®</sup> CMS as a replacement for the discontinued <i>Sun SPARCserver 10/20</i> platforms.              |
| <b>Super-user</b>                                               | A user with full access privileges on a system, unlike a regular user whose access to files and accounts is limited.                                                                                                                                              |
| <b>Switch</b>                                                   | A private switch system providing voice-only or voice and data communications services (including access to public and private networks) for a group of terminals within a customer's premises.<br>Also see PBX.                                                  |
| <b>Syntax</b>                                                   | The format of a command line.                                                                                                                                                                                                                                     |
| <b>System</b>                                                   | A general term for a computer and its software and data.                                                                                                                                                                                                          |
| <b>Tap</b>                                                      | A tap is any intelligent (microprocessor-based) controller connected to the SCSI bus.                                                                                                                                                                             |
| <b>Tape Cartridge</b>                                           | A magnetic piece of hardware that is used as a storage unit for data. The SCSI QIC-150, SCSI QIC 2.5-GB, SCSI 4-8 SLR, 8mm 5-GB, and 8mm 14-GB tape cartridges are used to back up and copy data for the platform.                                                |
| <b>Task</b>                                                     | Used with Timetables and Shortcuts. A task is a combination of inputs on a user window (like a report input window) and the completed action list selection (Add, Modify, and so on) which, when executed, performs an operation (for example, running a report). |
| <b>Transmission Control Protocol/Internet Protocol (TCP/IP)</b> | A communications protocol that provides interworking between dissimilar systems. It is the de facto standard for <i>UNIX</i> systems.                                                                                                                             |
| <b>Terminal</b>                                                 | A device that consists of a video display and keyboard that you use to type and display information. A terminal is connected to a serial port on the NTS. This is not the same thing as a monitor.                                                                |

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Timetable</b>                     | An activity task or group of activities tasks (like reports) scheduled for completion at a time that is convenient and nondisruptive for the call center's operation.                                                                                                                                                                                                                                                                                                                   |
| <b>Trunk</b>                         | A telephone line that carries calls between two switches, between a Central Office (CO) and a switch, or between a CO and a phone.                                                                                                                                                                                                                                                                                                                                                      |
| <b>Trunk Group</b>                   | A group of trunks that are assigned the same dialing digits — either a phone number or a Direct Inward Dialing (DID) prefix.                                                                                                                                                                                                                                                                                                                                                            |
| <b>UNIX System</b>                   | The operating system on the computer on which CMS runs. A user can access the <i>UNIX</i> system from the “Commands” SLK. <i>Sun</i> uses <i>Solaris</i> as its <i>UNIX</i> operating system.                                                                                                                                                                                                                                                                                           |
| <b>User ID</b>                       | The login ID for a CMS user.                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>User Name</b>                     | A combination of letters, and possibly numbers, that identifies a user to the system.                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>User Window</b>                   | A window the user can move, size, or scroll. It may contain input fields, reports, or help information.                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Vector</b>                        | A list of steps that process calls in a user-defined manner. The steps in a vector can send calls to splits, play announcements and/or music, disconnect calls, give calls a busy signal, or route calls to other destinations. Calls enter vector processing by way of VDNs, which may have received calls from assigned trunk groups, from other vectors, or from extensions connected to the switch.                                                                                 |
| <b>Vector Command</b>                | The keyword in a vector step that describes the action to be executed on an incoming call (for example, “Queue to main,” “check backup,” “disconnect”).                                                                                                                                                                                                                                                                                                                                 |
| <b>Vector Directory Number (VDN)</b> | An extension number that is used in ACD software to permit calls to connect to a vector for processing. A VDN is not assigned an equipment location; it is assigned to a vector. A VDN can connect calls to a vector when the calls arrive over an assigned automatic-in trunk group or when calls arrive over a dial-repeating (DID) trunk group, and the final digits match the VDN. The VDN by itself may be dialed to access the vector from any extension connected to the switch. |
| <b>Vector Step</b>                   | One processing step listed in a vector. A vector step consists of a command and one or more conditions or parameters.                                                                                                                                                                                                                                                                                                                                                                   |

|                            |                                                                                                                                                                                                                  |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Voice Terminal</b>      | A telephone set, usually with buttons, that gives an agent some control over the way calls are handled.                                                                                                          |
| <b>Weekly/Monthly Data</b> | Daily data that has been converted to a weekly or monthly summary.                                                                                                                                               |
| <b>Window</b>              | Any rectangle on the CMS screen that encloses a menu, data entry fields, reports, or messages.                                                                                                                   |
| <b>Window Count</b>        | The number of primary windows that can be open at any one time.                                                                                                                                                  |
| <b>Write Permission</b>    | A mode of CMS that allows the CMS user to add, modify, or delete data and execute processes. Write permission is granted from the User Permissions subsystem.                                                    |
| <b>X.25</b>                | An ITU communications protocol standard for packet switching networks that typically operates at 56 Kbps or less. An add-on software package that allows CMS to communicate with the switch using X.25 protocol. |

## Acronyms

ACD — Automatic Call Distribution  
ADU — Asynchronous Data Unit  
ANSI — American National Standards Institute  
CDE — Common Desktop Environment  
CLI — Call Level Interface  
CMS — Call Management System  
CMSADM — Call Management System Administration  
CMSSVC — Call Management System Services  
DCE — Data Communications Equipment  
DCIU — Data Communications Interface Unit  
DIP — Dual In-Line Package  
DSIMM — Dynamic Random Access Memory Single In-line Memory  
Module  
DTE — Data Terminal Equipment  
EAD — Expert Agent Distribution  
EAS — Expert Agent Selection  
ECC — Error Correction Codes  
EIA — Electronic Industries Association  
EIDE — Enhanced Integrated Drive Electronics  
ESQL/C — Embedded SQL within 'C' language  
HSI/P — High Speed Serial Interface/PCI Bus  
HSI/S — High Speed Serial Interface/SBus  
IDE — Integrated Drive Electronics  
IDI — Isolating Data Interface  
ILS — International Language Supplement  
IP — Internet Protocol  
IPC — Intelligent Ports Card  
ITU — International Telecommunication Union  
LAPB — Link Access Procedure Balanced  
NTS — Network Terminal Server  
NVRAM — Non-Volatile Random Access Memory

PBX — Private Branch Exchange  
PCI — Peripheral Component Interconnect  
PEC — Price Element Code  
QPPCN — Quality Protection Plan Change Notice  
RAM — Random Access Memory  
RISC — Reduced Instruction Set Computer  
RS — Recommended Standard  
SAI/P — Serial Asynchronous Interface/PCI Bus  
SCSI — Small Computer System Interface  
SIMM — Single In-line Memory Module  
SLK — Screen-labeled Key  
SLR — Single-channel Linear Recording  
SQL — Structured Query Language  
TCP/IP — Transmission Control Protocol/Internet Protocol  
TIA — Telecommunication Industry Association  
TSC — Technical Service Center  
UPS — Uninterrupted (or Uninterruptable) Power Supply  
VDN — Vector Directory Number  
VESP — Voice Enhanced Services Platform



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