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Bell Labs Innovations

CentreVu® Call Management System

Release 3 Version 8
Upgrades and Migration

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CentreVu® Call Management System Release 3 Version 8

Upgrades and Migration

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Preface

This document provides instructions for upgrading CentreVu Call Management System (CMS) software to version R3V8, and for migrating CMS data to CMS R3V8 once it is installed on the computer system.

Audiences for This Document

This document is intended for the following audience:

- Customer CMS Administrators
- Technical Service Center (TSC) engineers who provision CMS and provide customer support
- Lucent Technologies field technicians who install CMS host computer.

Organization of This Document

Chapter 1	*Introduction* contains an introduction to the upgrade and migration processes, including a table showing possible upgrade paths and the corresponding document chapters.
Chapter 2	*Migrating a Sun Computer to R3V8* contains instructions for upgrading a *Sun* computer from previous CMS versions installed on *Sun* platforms.
Chapter 3	*Upgrading the R3V8 Base Load* contains instructions for upgrading from one release of R3V8 to another.
Chapter 4	*Patching the R3V8 Base Load* contains instructions for patching CMS on a *Sun* platform.
Chapter 5	*Migrating Data to R3V8* presents the procedure for migrating data from an *INTEL* or *Sun SPARCserver* platform to a *Sun* platform.
Chapter 6	*Migrating 3B2 Data to a New Sun Platform* contains instructions for migrating data from R2 CMS on a 3B2 platform to R3V8 CMS on a *Sun* platform.
Chapter 7	*Troubleshooting* provides solutions for a variety of problems which may arise during the CMS upgrade process, and explains error messages directed to the terminal display or system log files.
Appendix A	*System and CMS Functions* is a reference to performing system and CMS functions required during upgrade and migration procedures.
Appendix B	*Data Migration Tables* shows how R2 and R3 CMS data are migrated to the R3V8 system.
Appendix C	*Fixing Migrated R2 Custom Reports* describes how to get migrated R2 custom reports to work in R3V8.

How to Use This Document

This document descibes the procedures required to upgrade a CMS system to version R3V8 from an earlier CMS version. Prior to beginning an upgrade, you should review the steps included in the upgrade process.

Some procedures have steps that are required only conditionally—if you have a certain kind of software installed, for example, or if you are performing a certain type of upgrade.

Related *CentreVu* CMS Publications

The following documents provide additional information to support *CentreVu* CMS R3V8 software:

- *CentreVu™ CMS Disk-Mirrored Systems* (585-215-841)
- *CentreVu™ Call Management System Release 3 Version 8 Administration* (585-210-910)
- *CentreVu™ Call Management System Release 3 Version 8 Open Database Connectivity* (585-210-911)
- *Lucent Call Center Release 8 Change Description* (585-210-925)
- *CentreVu™ Call Management System Release 3 Version 8 External Call History Interface* (585-210-912)
- *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 Release 3 Version 8 Hardware Maintenance and Troubleshooting* (585-210-919)
- *CentreVu™ Call Management System Release 3 Version 6 Sun® Enterprise™ 3000 Computer Connectivity Diagram* (585-215-865)
- *CentreVu™ Call Management System Release 3 Version 8 Software Installation and Setup* (585-210-941)
- *CentreVu™ Call Management System Release 3 Version 6 Sun® Enterprise™ 3000 Computer Hardware Installation* (585-215-867)
- *CentreVu™ Call Management System Release 3 Version 8 Sun® Enterprise™ 3500 Computer Hardware Installation* (585-215-873)

- *CentreVu™ Call Management System Sun® Ultra 5 Computer Hardware Installation* (585-215-871)
- *CentreVu™ Call Management System Release 3 Version 6 Planning, Configuration, and Implementation* (585-210-920)

To order a publication, call the BCS Publication Fulfillment Center at 1-800-457-1235.

CMS Assistance

If an upgrade problem occurs, see "Troubleshooting" on page 7-1. If you require additional assistance, do the following:

For help within the U.S.:

Telephone 1-800-242-2121 *(National Customer Care Center)*

The problem will be reported, and a trouble ticket will be generated so the problem can be escalated through the services organization.

You will be asked to identify the type of problem (ACD, hardware, or CMS R3V8) and will be connected to the appropriate service organization.

For Lucent Technicians:

Telephone 1-800-248-1234 *(Technical Service Center)*

Provide the TSC personnel with the customer's name, the *root* login ID and password, the phone number of the dial-in port, and a description of the problem. If TSC engineers cannot solve the problem, they will escalate it to the Customer Support Organization of Lucent Technologies.

For International Support:

Contact your Lucent Technologies distributor or customer representative.

Chapter 1: Introduction

This publication, *CentreVu® CMS R3V8 Upgrades and Migration* (585-210-913), provides information on how to perform CMS software upgrade, patches and CMS data migrations on the following platforms:

— *Sun** *SPARCserver*† computers (5, 10, 20)

— *Sun* Ultra 5‡ computers

— *Sun Enterprise*§ 3000 and 3500 computers

Upgrading to R3V8

Required Software

In addition to installing CMS and migrating data, an upgrade to the R3V8 release requires installation of the following supporting software:

- Solaris 7 (3/99 version) operating system software
- *Sun* Online VTS 3.1 software
- If the system has one or more HSI/P cards, the HSI/P driver found on the SunHSI/P Adapter 2.0 CD
- If the system has one or more HSI/S cards, the HSI/S driver found on the SunHSI/P Adapter 3.0 CD
- If the system has one or more SAI/P cards, theSAI/P driver found on the SunSAI/P Adapter 2.0 CD
- If the system has an Aurora SBus card, the Aurora 8-port or 16-port drivers
- If the system is using NTS, the Bay Networks Annex (R 10.0B) NTS driver
- If the system is using X.25 protocol connectivity instead of LAN connectivity, the X.25 for Solaris (version 9.1) driver
- The following *Informix* packages:
  - Structured Query Language (SQL), version 7.20 (optional package)
  - Standard Engine (SE), version 7.22
  - Runtime ESQL, version 9.14
  - International Language Supplement (ILS) version 2.11
- *Solstice DiskSuite,* version 4.2
- CMS Supplemental Services software
- *OpenLink* ODBC software

CMS R3V8 is supported only on *Sun* platforms. Therefore, some CMS system uprades may require new hardware.

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Speed Centre Upgrades

An upgrade to R3V8 is normally performed by Lucent's Speed Centre to minimize the total amount of system downtime at the customer site.

In a Speed Centre upgrade, the customer backs up the system and sends the backup tapes to the Lucent Speed Centre. The Speed Centre recreates the customer's system on Lucent hardware and performs the upgrade in a controlled environment. When the upgrade is complete, the customer is provided a new set of disk drives containing the upgraded system. Finally, the CMS data is migrated from customer backup tape(s) to the new system.

For details on the Speed Centre process, including costs and responsibilities, contact your Lucent account representative.

Supported Disk Drive Configurations

CMS R3V8 supports the following disk drive configurations:

Sun SPARCserver 5, 10 and 20

- One to ten 4.2 or 9.1 GB external *Sun* Storedge Unipack disk drives

Sun Ultra 5 platform

- Minimum of one 8.4 GB internal drive, plus one optional 9.1 GB internal drive and one to four additional 9.1 GB external *Sun* Storedge Unipack disk drives

Sun Enterprise 3000 platform

- One to ten 9.1-GB UltraSCSI internal disk drives

Sun Enterprise 3500 platform

- One to four 9.1-GB FC-AL internal disk drives (unmirrored systems) or two to eight 9.1-GB FC-AL internal drives (mirrored systems)

Migrating Data

CentreVu CMS R3V8 supports CMS data migration from these CMS software loads:

- Release 3 Version 2 CMS: any load
- Release 3 Version 4 CMS: any load
- Release 3 Version 5 CMS: any load

If your CMS software release is an earlier load than those listed above, you need to upgrade to one of the listed versions before you can upgrade to R3V8.

Migrations are executed using the following CMS main menu options:

1. `System Setup -> R3 Migrate Data`
2. `System Setup -> R2 Migrate Data`

Migrated data types include:

- system administration data
  - user logins and permissions
  - dictionary items (calculations)
  - timetables and shortcuts (from Release 3.0 [R3.0] and R3Vx of CMS only; Release 2 [R2] CMS schedules are not migrated).
  - custom reports (custom reports may require tuning)
- ACD administration data
  - exceptions (R3.0 and R3Vx only)
  - split and agent names (synonyms)
  - agent trace data
- historical data
  - agents, splits/skills
  - call work codes
  - trunks, trunk groups
  - vectors, Vector Directory Numbers (VDNs), if applicable.

Moving Multiple ACDs

Moving multiple ACDs can cause collisions in the System Administration data. The following list presents potential collisions points and their solutions:

- *CMS User IDs*
  - Before you migrate data, CMS user IDs—including any existing R3.0 user IDs with uppercase letters—must be in lowercase.
  - The migration program does not migrate CMS user IDs already established on the target platform. Unmigrated user IDs are listed in the customer migration log. For those IDs, the program does not migrate user interface attributes (color options, feature access, default values) from other ACDs. Custom reports, timetables, shortcuts, and menu additions owned by the unmigrated user IDs are moved to the CMS user ID.
  - *UNIX** system logins for CMS user IDs new to the target platform are created automatically.
  - Passwords are not migrated.
- Custom reports
  - The migration program renames non-unique custom reports *temp1*, *temp2*, and so on, and identifies them in the customer migration log. The determination of non-uniqueness is based on report group, report name, and CMS user ID. After the migration, change the names to something more meaningful.
  - Timetables/shortcuts using unmigrated reports are migrated but refer to the old report names. You need to modify the timetables/shortcuts to access the new names.
- *Timetables/shortcuts*. The migration program renames non-unique timetables or shortcuts to *temp1*, *temp2*, etc., and reports them in the migration log. You should change the names to something more meaningful, or delete them if they are no longer needed.

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- *Dictionary* The migration program discards all calculations and constants with non-unique names, and reports the discarded names and values in the customer migration log so you can re-enter them.
- *Menu additions*
  - The migration program discards non-unique menu additions (based on the menu name and CMS user ID). The program reports discarded additions in the customer migration log.
  - Customized executables referenced by menu additions are not migrated. The customer is responsible for saving any such executables before performing the upgrade, and reinstalling them afterward.
  - Custom data items and custom database tables are not migrated. The customer is responsible for recording, before the migration, the details of any custom items to be saved, and for recreating the items in *INFORMIX** and in CMS afterward.

Moving Pseudo-ACDs

Pseudo-ACDs are not migrated. After your R3V8 CMS is installed and operational, you must re-create and re-administer any pseudo-ACDs to be set up on the upgraded system. CMS R3V8 supports up to eight ACDs, which are designated by numbers 1 through 8. If you create any pseudo-ACDs on your R3V8 system, they should be assigned numbers 9 and greater.

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Chapter 2: Upgrading a *Sun* computer to R3V8

Overview

This chapter describes how to upgrade a *Sun* computer to CentreVu Call Management System (CMS) version R3V8 from earlier versions of CMS installed on *Sun* platforms.

Following the correct upgrade path

Different versions of CMS are often associated with different versions of the *Sun Solaris* operating system. Therefore, the upgrade path to CMS R3V8 can vary depending on which pre-upgrade version of CMS is installed on the computer. The table presented below shows the relationship between different CMS versions, hardware platforms and operating system upgrade paths.

Pre-upgrade CMS version	Hardware Platform	Pre-upgrade OS	Solaris OS upgrade path
R3V5 or earlier	SPARCserver 5/10/20	Solstice 2.4	2.4 → 2.5.1 → 2.7
R3V5u	Ultra 5 and Enterprise 3000	Solstice 2.5.1 (5/96 version)	2.5.1 (5/96 version) → 2.7
R3V6	all platforms	Solstice 2.5.1 (11/97 version)	2.5.1 (11/97 version) → 2.7

WARNING:

R3V5u to R3V8 upgrade procedures are slightly different from R3V6 to R3V8 upgrade procedures. These two upgrade paths require the installation of different versions of the 2.5.1 operating system:

- **if you are upgrading R3V5u to R3V8, install the 5/96 version of the Solaris 2.5.1 operating system**
- **if you are upgrading R3V6 to R3V8, install the 11/97 version of the Solaris 2.5.1 operating system**

Failure to install the proper version of Solaris 2.5.1 during the upgrade process will cause the upgrade to eventually fail (when the CMSADM backup is restored), thereby resulting in significant repetition and loss of time.

CMS R3V8 Upgrade Procedure Checklists

The following lists provide the upgrade procedures required to upgrade from R3V5 to R3V8, and R3V5U or R3V6 to R3V8. These tables can be used as checklists to organize and track your progress during the CMS upgrade process.

Depending on the configuration of the platform being upgraded and CMS packages that were purchased by the customer, some procedures will not be required. See each procedure description for details.

Perform the procedures in the order in which they are listed.

R3V5 → R3V8 Upgrade Procedure Checklist

R3V5 → R3V8 Upgrade Procedure	Page No.	Completed[a] ✓
procedure A (Characterizing the pre-upgrade system)	page 2-8	
procedure B (Performing a CMSADM Backup)	page 2-14	
procedure C (Performing a Full Maintenance Backup) (field upgrade only)	page 2-17	
procedure D (Performing an Incremental Maintenance Backup) (field upgrade only)	page 2-18	
procedure E (Replacing Disk Drives) (field upgrades only)	page 2-19	
procedure F (Installing Solaris 2.4)	page 2-21	
procedure G (Restoring the CMSADM backup)	page 2-31	
Removing obsolete metadevices and software		
procedure H.1 (Removing CMS metadevices)	page 2-34	
procedure H.2 (Removing System Files and Packages)	page 2-35	
procedure H.3 (Removing the obsolete HSI/P patch and driver)	page 2-36	
procedure H.4 (Removing the NTS software)	page 2-37	
procedure H.5 (Removing the X.25 software)	page 2-38	
procedure H.6 (Removing the Aurora port drivers)	page 2-39	
procedure H.7 (Removing obsolete SparcStation 10 packages)	page 2-41	
procedure I (Upgrading from Solaris 2.4 to 2.5.1)	page 2-42	
procedure M (Upgrading from Solaris 2.5.1 to 2.7)	page 2-67	

R3V5 → R3V8 Upgrade Procedure	Page No.	Completed[a] ✓
procedure N (Installing the Sun Validation Test Suite)	page 2-73	
procedure O (Installing Aurora SBus Multiport Drivers)	page 2-74	
procedure P (Installing HSI/S Driver Software)	page 2-75	
procedure S (Installing and Setting Up the NTS R10.0B Software)	page 2-78	
procedure T (Installing X.25 Version 9.1)	page 2-83	
procedure U (Installing the X.25 License Manager)	page 2-84	
procedure V (Setting Up the X.25 License)	page 2-85	
procedure W (Setting Up the INFORMIX Environment)	page 2-86	
procedure X (Installing INFORMIX SQL)	page 2-87	
procedure Y (Installing INFORMIX SE 7.22)	page 2-90	
procedure Z (Installing INFORMIX Runtime ESQL 9.14)	page 2-91	
procedure AA (Installing INFORMIX ILS 2.11)	page 2-93	
procedure AB (Installing Solstice DiskSuite 4.2)	page 2-95	
procedure AC (Installing Solaris Patches)	page 2-96	
procedure AD (Configuring Solstice DiskSuite)	page 2-97	
procedure AE (Creating the CMS Directory)	page 2-100	
procedure AF (Installing CMS Supplemental Services)	page 2-101	
procedure AG (Installing R3V8 CMS)	page 2-102	
procedure AH (Installing Visual Vectors Server Software)	page 2-103	
procedure AI (Setting Up CMS Authorizations)	page 2-104	
procedure AJ (Installing CMS Patches)	page 2-105	
procedure AK (Installing the Open Database Connectivity Software)	page 2-106	
procedure AM (Installing the External Call History (ECH) Feature Package)	page 2-109	
procedure AN (Configuring CMS)	page 2-111	
procedure AO (Performing a CMSADM Backup)	page 2-112	
procedure AP (Performing a Full Maintenance Backup) (Speed Centre upgrades only)	page 2-116	

R3V5 → R3V8 Upgrade Procedure	Page No.	Completed[a] ✓
procedure AQ (Performing an Incremental Maintenance Backup)	page 2-116	
procedure AR (Installing the Solaris Boot Prom Patch)	page 2-117	
procedure AS (Installing the New Disk Drives)	page 2-118	
procedure AT (Restoring System Files)	page 2-118	
procedure AU (Creating an Alternate Boot Device)	page 2-119	
procedure AV (Turning on CMS and CMS Data Collection)	page 2-121	
procedure AW (Administering the NTS)	page 2-122	
procedure AX (Performing a CMSADM Backup)	page 2-124	
procedure AY (Migrating System Administration Data to R3V8)	page 2-126	
procedure AZ (Migrating Agent/Call Center Admin Data to R3V8)	page 2-127	
procedure BA (Migrating Incremental and Full Historical Data to R3V8)	page 2-128	
procedure BB (Performing a Full Maintenance Backup)	page 2-129	

a Some procedures are not required for some upgrades.

R3V5u or R3V6 → R3V8 Upgrade Procedure Checklist

R3V5u or R3V6 → R3V8 Upgrade Procedure	Page No.	Completed[a] ✓
procedure A (Characterizing the pre-upgrade system)	page 2-8	
procedure B (Performing a CMSADM Backup)	page 2-14	
procedure C (Performing a Full Maintenance Backup) (field upgrade only)	page 2-17	
procedure D (Performing an Incremental Maintenance Backup) (field upgrade only)	page 2-18	
procedure E (Replacing Disk Drives) (field upgrades only)	page 2-19	
procedure J (Installing Solaris 2.5.1) (see Warning, page 2-1)	page 2-46	
procedure K (Restoring the CMSADM backup)	page 2-58	
Removing obsolete metadevices and software		
procedure L.1 (Removing CMS metadevices)	page 2-61	
procedure L.2 (Removing System Files and Packages)	page 2-62	
procedure L.3 (Removing the NTS software)	page 2-63	
procedure L.4 (Removing the Aurora port drivers)	page 2-63	
procedure L.5 (Removing the X.25 software)	page 2-65	
procedure M (Upgrading from Solaris 2.5.1 to 2.7)	page 2-67	
procedure N (Installing the Sun Validation Test Suite)	page 2-73	
procedure P (Installing HSI/S Driver Software)	page 2-75	
procedure Q (Installing HSI/P driver software)	page 2-77	
procedure R (Installing SAI/P driver software)	page 2-78	
procedure S (Installing and Setting Up the NTS R10.0B Software)	page 2-78	
procedure T (Installing X.25 Version 9.1)	page 2-83	
procedure U (Installing the X.25 License Manager)	page 2-84	
procedure V (Setting Up the X.25 License)	page 2-85	
procedure W (Setting Up the INFORMIX Environment)	page 2-86	
procedure X (Installing INFORMIX SQL)	page 2-87	
procedure Y (Installing INFORMIX SE 7.22)	page 2-90	

R3V5u or R3V6 → R3V8 Upgrade Procedure	Page No.	Completed[a] ✓
procedure Z (Installing INFORMIX Runtime ESQL 9.14)	page 2-91	
procedure AA (Installing INFORMIX ILS 2.11)	page 2-93	
procedure AB (Installing Solstice DiskSuite 4.2)	page 2-95	
procedure AC (Installing Solaris Patches)	page 2-96	
procedure AD (Configuring Solstice DiskSuite)	page 2-97	
procedure AE (Creating the CMS Directory)	page 2-100	
procedure AF (Installing CMS Supplemental Services)	page 2-101	
procedure AG (Installing R3V8 CMS)	page 2-102	
procedure AH (Installing Visual Vectors Server Software)	page 2-103	
procedure AI (Setting Up CMS Authorizations)	page 2-104	
procedure AJ (Installing CMS Patches)	page 2-105	
procedure AK (Installing the Open Database Connectivity Software)	page 2-106	
procedure AM (Installing the External Call History (ECH) Feature Package)	page 2-109	
procedure AN (Configuring CMS)	page 2-111	
procedure AO (Performing a CMSADM Backup)	page 2-112	
procedure AP (Performing a Full Maintenance Backup) (Speed Centre upgrades only)	page 2-116	
procedure AQ (Performing an Incremental Maintenance Backup)	page 2-116	
procedure AR (Installing the Solaris Boot Prom Patch)	page 2-117	
procedure AS (Installing the New Disk Drives)	page 2-118	
procedure AT (Restoring System Files)	page 2-118	
procedure AU (Creating an Alternate Boot Device)	page 2-119	
procedure AV (Turning on CMS and CMS Data Collection)	page 2-121	
procedure AW (Administering the NTS)	page 2-122	
procedure AX (Performing a CMSADM Backup)	page 2-124	
procedure AY (Migrating System Administration Data to R3V8)	page 2-126	
procedure AZ (Migrating Agent/Call Center Admin Data to R3V8)	page 2-127	

R3V5u or R3V6 → R3V8 Upgrade Procedure	Page No.	Completed[a] ✓
procedure BA (Migrating Incremental and Full Historical Data to R3V8)	page 2-128	
procedure BB (Performing a Full Maintenance Backup)	page 2-129	

a Some procedures are not required for some upgrades.

A: Characterizing the pre-upgrade system

This section includes procedures that are applicable to all CMS versions and hardware platforms.

These procedures are usually done by the Speed Centre via remote login to the customer's machine. The substeps must be completed at least one week before the upgrade begins.

A.1: Identifying Pre-upgrade system conditions

The following steps are used to identify the pre-upgrade versions of CMS and supporting software packages..

Question	How to Find the Answer	The Answer (circle or fill in blank)
1. What is the current CMS version?	Enter: `pkginfo -x cms` The system responds with a mesage indicating the load number (r3vxyy.y).	CMS version: _____
2. What version of X.25 is installed?	Enter: `pkginfo -x SUNWx25a` The system displays the version number.	X.25 version: _____
3. Is *Solstice DiskSuite* installed on the system?	Enter: `pkginfo SUNWmd` If *DiskSuite* is installed, you get a message indicating the package name and version. Otherwise, you get an error message.	DiskSuite No DiskSuite

Question	How to Find the Answer	The Answer (circle or fill in blank)

4. Is NTS installed on my system?	**On a pre-upgrade R3V5 system, enter:**
	`pkginfo SUNWxyl`
	If NTS is installed, you receive a message showing the version number. Otherwise, you get an error message.
	On a pre-upgrade R3V5u or R3V6 system, enter:
	`ls -ld /usr/annex`
	If NTS is installed, you receive a line of output for the `annex` directory. If NTS is not installed, you receive a "No such file or directory" message.
		NTS
		No NTS

5. If NTS is installed, what NTS hosts are configured on the system?	Enter:
	`cat /etc/hosts`
	The *hosts* file typically contains two columns, including a field for IP addresses and a field for the associated host name. Search for host names beginning with the character string "*cmsterm*".
	NTS devices listed in the hosts file may be assigned a non-standard host name. To identify these hosts, look for any accompanying comments that may help to identify them, such as:
	`# 8 port NTS`
		NTS Host Names
		_____
		_____
		_____
		_____
		_____
		_____
		_____

6. Are Aurora drivers installed on the system?	Enter: `pkginfo AURAcs AURAacs AURAsio16` If Aurora is installed, the output will indicate one or more package names and versions. Otherwise you get three error messages.	Aurora Yes / No
7. What are the CMS authorizations?	Enter: `cmssvc > /tmp/auth.cust` At the blinking prompt, enter `1` The customer CMS authorizations redirected to the `auth.cust` file must be printed or copied before the system is rebooted.	

Question	How to Find the Answer	The Answer (circle or fill in blank)
8. Is External Call History or Forecasting installed?	Examine the CMS authorizations output from the preceding step to see if *external call history* or *forecasting* are authorized.	ECH No ECH Forecast No Forecast
9. Which of the *INFORMIX SQL*, *SE* and *ESQL* packages are installed on the system?	Enter: `cat /opt/informix/etc/.snfile` The installed informix packages are listed along with their serial numbers. If the ESQL package is installed, it will be listed as "INFORMIX-connect".	SQL Yes / No SE Yes / No ESQL Yes / No
10. Is Visual Vectors Server Software installed on the system?	Enter: `pkginfo -x LUfaas` If Visual Vectors is installed, the output will indicate the package name and version. Otherwise, you get an error message	Visual Vectors No Visual Vectors
11. How many concurrent logins are licensed for Visual Vectors?	If Visual Vectors is installed, enter: `setupaas` Select the `auth_display` option to view the authorized maximum number of concurrent logins.	Visual Vectors maximum concurrent logins: _____
12. Is the ODBC software installed on the system?	Enter: `ls -ld /usr/openlink` If the ODBC software is installed, the /usr/openlink directory will be listed. If ODBC is not installed, a "No such file or directory" error message will be displayed.	ODBC No ODBC

A.2: Determining System ID Information

This procedure determines the systems's host name, host ID, and IP address.

Task	Action	Result
1	Enter: `uname -a`	`SunOS (`*`hostname`*`) 5.X` `Generic_n sun4m sparc`
2	Enter: `/usr/ucb/hostid`	`811c8f8b` The string of characters you see is the host ID.
3	Enter: `grep (`*`host name`*`) /etc/hosts` Substitute the host name obtained in Step 1 in this command.	The system lists the appropriate line of the */etc/hosts* file. For example: `136.7.136.45 cms1 loghost` In this example, the IP address of *cms1* is: `136.7.136.45.`
4	**Record the system's I.P. address in the space below:** I.P. Address:_____	

A.3: Recording Switch Information

This procedure obtains the setup information for the switches known to CMS.

Task	Action	Result
1	Enter the following command: `cmssvc`	The CMS Services menu is displayed.
2	Enter 5 to select the `swinfo` option.	The system asks you to select an ACD.
3	Enter the number for an ACD connected to the system.	The system lists the switch admin data for that ACD.
4	Copy the information, or dump the screen or window to a printer. For more information, see "Displaying Switch Information" on page A-2.	
5	Repeat Steps 1 through 4 for each ACD connected to the system.	

A.4: Checking Backup Devices

This procedure obtains information about the system backup/restore device.

Task	Action	Result
1	Log in as a CMS user.	$
2	Enter the following command: `cms`	The system prompts for a terminal type.
3	Press **`Enter`**.	The CMS main menu displays.
4	Select `Maintenance` → `Backup/Restore Devices`	The system displays the Backup/Restore Devices window.
5	a. Press `Enter` to access the Action menu. b. Press `L` and then `Enter`.	The system displays the *List All* window.
6	Print the window and save the printout. See "Printing a CMS Window" on page A-4.	

A.5: Recording ACD Setup Information

The procedure records ACD setup information for CMS.

Task	Action	Result
1	Press the F8 key.	The main menu re-displays.
2	Select `System Setup` → `Storage Intervals`	The *Storage Intervals* window displays.
3	Print the window and save the printout. For more information, see "Printing a CMS Window" on page A-4.	
4	Press the F8 key.	The main menu re-displays.
5	Select `System Setup` → `Free Space Allocation`	The *Free Space Allocation* window displays.
6	Print the window and save the printout.	
7	Press the F8 key.	The main menu re-displays.
8	Select `System Setup` → `Data Storage Allocation`	The *Data Storage Allocation* window displays.
9	Print the window and save the printout.	
10	Repeat steps 1 through 9 for each ACD connected to the system.	

A.6: Obtaining an X.25 License

If the pre-upgrade system includes X.25 version 1.23 or earlier, you will need to obtain:

- X.25 version 9.1
- a new X.25 license
- a new license password

X.25 passwords can only be acquired by contacting *Sun Microsystems*. In order to obtain a password, you must have the license ID of your software and the host name and hostid of the machine being upgraded. For further details, see the X.25 license package.

If the system is already running version 9.1, you can use the same password and license. If you do not know the password, you can obtain it by performing the following procedure.

Task	Action

1	Enter:
	`grep solstice_x.25 /etc/opt/licenses/licenses_combined`
	
	The system responds by displaying a line that appears similar to the following example:
	`INCREMENT solstice_x.25 lic.SUNW 9.100 01-jan-0 1 1BAAB10155CAD30B30C5 “0“`
	The password in this case is 01BAAB10155CAD30B30C5. The password format has the following characteristics:
	• The password must be 21 characters long
	• The alpha- numeric string following the date is the “base” password.
	• The character (or characters) in quotes is the fill character.
	If the base password has fewer than 21 characters, the password consists of the base password appended by the fill characters

A.7: Obtaining an *INFORMIX* SQL License

If the system is currently running *INFORMIX* SQL, you must also obtain a software license for version 7.20 of *INFORMIX* SQL. For details on acquiring *INFORMIX* software and licenses, refer to the *INFORMIX* documentation, or ask your Lucent representative.

B: Performing a CMSADM Backup

This procedure provides a backup of your current system files.

In a Speed Centre upgrade, the CMSADM backup tape is restored on one or more new disk drives after a copy of the original operating system has been reinstalled.

In a field upgrade, the CMSADM backup is restored on original disk drives (assuming they are supported by the upgrade software) or replacement drives and provides the ability to re-create the pre-upgrade CMS system if the upgrade process should fail.

NOTE:

The CMSADM backup process is different for Speed Centre upgrades and field upgrades performed at the customer site:

- CMSADM backups performed by Lucent Speed Centre are remotely executed and use a *backup.sc* script.
- CMSADM backups performed for a field upgrade use the normal CMSADM backup utility accessed from the main CMS menu.

Differences between Speed Centre and field upgrades result in the requirement for a different cpio command when each type of CMSADM backup is restored to an upgrade system.

B.1: CMSADM backup procedure (field upgrade)

This procedure is used to create a CMSADM backup during a field upgrade.

NOTE:

Note: The procedure presented below is specific to CMS versions R3V6 and earlier. CMS version R3V8 employs a different CMSADM backup procedure. Therefore, the procedure presented below does not apply to systems running CMS version R3V8.

Task	Action
1	Log in as root user.
2	Enter: `lp /etc/vfstab` The system prints out the */etc/vfstab* file. The printed output is required when the backup is restored.

Task	Action
3	Enter: `cms` The CMS menu is displayed.
4	Enter the number of the `backup` option. The program displays a list of tape drive types.

5	Enter the option number for the type of tape drive installed on the system.
	The program responds:
	`Calculating approximate number of tapes required. Please wait.`
	`Please insert the first cartridge tape into </dev/rmt/xxx>.`
	`Press ENTER when ready.`

6	Insert the cartridge tape, wait for the tape to rewind to the starting position, and press Enter.
	If CMS is turned on, the program responds:
	`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:`

7	Press Enter.
8	**If only one tape was required for the backup, follow step 8a to complete the backup. If two or more tapes are required, follow steps 8b through 12.** a. If only one tape was required for the backup, the program responds: `Please label the backup tape(s) with the date and the current CMS version (r3v5uxx.x)` Wait for the tape drive light-emitting diode (LED) to stop blinking before you remove the tape. Label the tape and set the tape write-protect switch to read only. Save the tapes and the *vfstab* printout until a backup restore is performed. b. If two or more tapes are required for the backup, the program responds: Please remove the current tape, number it, insert tape number *x,* and press Enter

9	The program responds:
	`End of medium on "output".`
	`Please remove the current tape, number it, insert tape number x, and press Enter`

10	Insert the next tape and allow it to rewind. When it is properly positioned, press Enter. Repeat this step for any additional tapes which may be required.

Task	Action

11	The program responds:
	`xxxxxxx blocks`
	`Tape Verification`
	`Insert the first tape`
	`Press Return to proceed`:

12	Insert the first tape used in the backup process. Wait for the tape to rewind to the correct position and press Enter. Repeat this step for each additional tape. After the last tape is verified, the program responds: `Please label the backup tape(s) with the date and the current CMS version (r3v5uxx.x)` Wait for the tape drive light-emitting diode (LED) to stop blinking before you remove the tape. Label the tape and set the tape write-protect switch to read only.
13	Save the tapes and the *vfstab* printout until a backup restore is performed.

C: Performing a Full Maintenance Backup

This procedure is performed at the customer site on the pre-upgrade system. At this point in the upgrade process, this procedure is required only for CMS upgrades performed in the field. The full backup should be performed approximately one day before starting the upgrade process.

NOTE:

CMS upgrades from any versions of R3V5 or R3V6 to R3V8 performed in the United States **must** go through the Lucent Technologies Speed Centre. Any field upgrades performed in the U.S. are not supported by Lucent Technologies, and any problems resulting from such an upgrade are the repsonsibility of the customer.

Lucent Technologies does support field upgrades for international customers. However, Lucent strongly recommends that full CMS version upgrades intended for international customers also be directed through a Speed Centre facility. Speed Centre upgrades greatly reduce the possibility of errors and faulty system configurations which may occur during the upgrade process, and provide absolute minimum down-time for upgraded CMS systems.

Task	Action
1	Log in to CMS. From the main menu, select the `Maintenance - Back Up Data` option.

2	The Back Up Data window is dispalyed. The required options, which should be presented as the default selections, include:
	`Device name:` `default`
	`Verify tape after backup?(y,n):` `y`
	`ACD(s) to back up:` `all ACDs`
	`Data to back up:`
	`- Local system administration data`
	`- CMS system administration data`
	`- ACD-specific administration data`
	`- Historical data -> Full`
	`- Non-CMS data`

3	Press Enter to access the action list in the upper right corner of the window, and select `Run`.

D: Performing an Incremental Maintenance Backup

This procedure is performed at the customer site on the pre-upgrade system and is required only for CMS upgrades performed in the field.

This backup should be performed immediately prior to starting the upgrade process in order to capture new and updated CMS data created during the interval since the Full Maintenance backup was performed.

Task	Action
1	Log in to CMS. From the main menu, select the `Maintenance - Back Up Data` option.

2	The Back Up Data window is displayed. The required selections include:
	`Device name:` `default`
	`Verify tape after backup?(y,n):` `y`
	`ACD(s) to back up:` `all ACDs`
	`Data to back up:`
	`- Local system administration data`
	`- CMS system administration data`
	`- ACD-specific administration data`
	`- Historical data -> Incremental`
	`- Non-CMS data`

3	Press Enter to access the action list in the upper right corner of the window, and select `Run`.

E: Replacing Disk Drives

This procedure is required at this point in the upgrade process only for field upgrades in which the system drives are being replaced with higher-capacity drives.

Replacement of disk drives in the field can be performed on most combinations of Sun hardware platforms and CMS versions. For information about supported hard drives, see "Supported Disk Drive Configurations" on page 1-2.

WARNING:

Always wear a properly grounded electrostatic discharge (ESD) strap when you are working on computer equipment.

The procedures described below provide only a general description of the process. For more detailed instructions, refer to the vendor documentation for your hardware platform.

Task	Action
1	Enter: `shutdown -i0 -g0 -y`
2	When the shutdown is finished, turn off the power switch on the rear panel of the computer.
3	Remove the power cord and open the machine (if the drive is internal) or Unipack (if the drive is external).
4	Determine which disk drive needs to be replaced.
5	Remove the disk.
6	Check the new drive or drives for any damage that may have occurred during shipment, to make certain they have a capacity of at least 4.2 gigabytes and to make certain the target 3 and target 1 disks have the same capacity.
7	Position the new drive in the machine (if internal) or Unipack (if external) and latch it into place as instructed in the drive installation documentation.
8	Close the cover and secure it with the screws provided.
9	Replace the power cord and power on the machine.

Following the Correct Upgrade Path

After completing procedures described in Sections A through E, the upgrade path varies according to the pre-upgrade version of CMS on the system:

- for upgrades beginning on an R3V5 system, continue with the next procedure (“Installing Solaris 2.4” on page 2-21)
- for upgrades beginning on either an R3V5u or R3V6 system, go to procedure J (“Installing Solaris 2.5.1” on page 2-46)

F: Installing *Solaris* 2.4

This upgrade procedure is required only for *Sun* platforms running CMS version R3V5 or earlier.

F.1: Booting from the CD

This procedure boots the system from the CD.

Task	Action	Result
1	Load the *Solaris* 2.4 CD into the CD-ROM drive.	
2	Press the **Stop** and **A** keys simultaneously.	The ok> prompt is displayed.
3	At the ok> prompt, enter: `boot cdrom`	The **`Solaris Installation Program`** screen is displayed.
4	Click the `Continue` button.	The **`Identify This System`** screen is displayed.
5	Click the `Continue` button.	The **`Host Name`** screen is displayed.

F.2: Identifying the computer system

This procedure obtains basic network connectivity information.

Task	Action	Result
1	*No Action Required.*	The **`Host Name`** screen is displayed.
2	**For field upgrades only.** In the Speed Centre, any host name is acceptable at this point. a. Click the *Host name* box. b. Type the host name for the workstation. (You recorded the host name earlier; see page 2-11.). c. Click the `Continue` button.	The **`Network Connectivity`** screen is displayed.

Task	Action	Result
3	a. Click the `Yes` option. b. Click the `Continue` button. c. If your system has more than one network board, a *Primary Network Interface* screen displays. In that case, click `le0` and then click `Continue.`	The **`IP Address`** screen is displayed.
4	a. Click the *IP address* box. b. Type the IP address (if it differs from 129.200.9.1) You recorded the address earlier; see page 2-11. c. Click the `Continue` button.	The **`Confirm Information`** screen is displayed.
5	a. Check the information displayed on the screen. If the information is correct, click `Continue` and skip ahead to the next procedure (F.3). If the information is incorrect, click `Change` and go back to Task 1.	The **`Name Service`** screen is displayed.

F.3: Setting the Name Service options

This procedure sets the name service options.

Task	Action	Result
1	*No Action Required.* The Name Service screen is displaying.	The **`Name Service`** screen is displayed.
2	a. Click the `None` option. b. Click the `Continue` button.	The **`Subnets`** screen is displayed.
3	a. Click the `No` option. b. Click the `Continue` button.	The **`Confirm Information`** screen is displayed.
4	Check the information displayed on the screen. If it is correct, click `Continue` and go to the next procedure. If it is incorrect, click `Change` and repeat *this* procedure.	

F.4: Setting the correct date and time

This procedure sets the date and time.

Task	Action	Result
1	*No action required.* The Time Zone screen is displaying.	The **`Time Zone`** screen is displayed.
2	a. Click `Geographic region`. b. Click `Set`.	The **`Geographic Region`** screen is displayed.
3	a. Click the region where this system is located. b. Click the time zone where this system is located. c. Click the `Continue` button.	The **`Date and Time`** screen is displayed.
4	a. Change the date and time as needed to reflect the current local date and time. b. Click `Continue`.	The **`Confirm Information`** screen is displayed.
5	Check the information displayed on the screen. If it is correct, click `Continue` and go on to procedure F.5. If it is incorrect, click `Change` and repeat *this* procedure.	The **`Install Solaris Software - Initial`** screen is displayed.

F.5: Selecting the *Solaris* 2.4 system files

This procedure selects *Solaris* system files for installation.

Task	Action	Result
1	*No Action Required.* The *Install Solaris Software: Initial* screen is displaying.	The **`Install Solaris Software - Initial`** screen is displayed.
2	Click the `Continue` button.	The **`Upgrade System?`** screen is displayed.
3	Click the `Initial` button.	The **`System Type`** screen is displayed.
4	a. Click `Standalone`. b. Click the `Continue` button.	The **`Software`** screen is displayed.

Task	Action	Result
5	a. Click `End User System Support.` b. Click `Customize.`	The **`Customize Software`** screen is displayed.
6	Select the following package: `Terminal Information`	The **`Customize Software`** screen is displayed.
7	Click `OK`.	The **`Software`** screen is displayed.
8	Click `Continue`.	The system files are installed. When the file installation is complete, the **`Disks`** screen is displayed.

F.6: Selecting disks for partitioning

This procedure selects hard disks for partitioning.

Task	Action	Result
1	*No Action Required.*	The **`Disks`** screen is displayed.
2	Check the list of disk drives in the *Available* column: it should list every disk in your system. If all disks are not listed, a connectivity problem may exist. In that case, stop the installation, power down, secure all drive connections, and restart the installation.	
3	a. Click a disk name in the *Available* column to highlight a disk. b. Click `Add` to select the disk. c. Repeat *a* and *b* until all available disks are in the Selected column. d. Click `Continue`.	The **`Preserve Data?`** screen is displayed.
4	Click `Continue.`	The **`Automatically Layout File Systems`** screen is displayed.
5	Click `Manual Layout`.	The **`File System and Disk Layout`** screen is displayed.
6	Click `Customize.`	The **`Customize Disks`** screen is displayed.

F.7: Setting up the disk partitions

This procedure sets up the disk partitions.

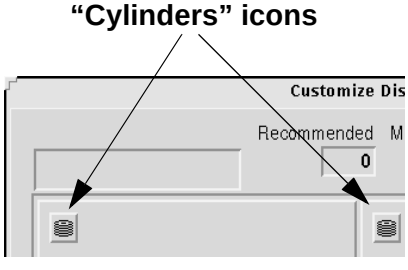
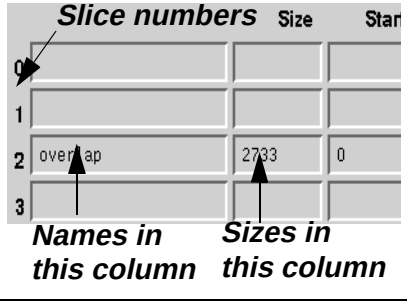
When setting up disk partitions for a mirrored system on Enterprise 3000 or 3500 systems, be careful to select the correct disk slices when you set up the boot and alternate boot disks.

For a mirrored Enterprise 3000 system:

- select c0t0 as the boot disk
- select c0t10 as the alternate boot disk

For a mirrored Enterprise 3500 system:

- select c0t0 as the boot disk
- select c1t4 as the alternate boot disk

Task	Action	Result
1	*No action required.* The *Customize Disks* screen is displaying. This screen lists partitioning for two disks, one in the left panel and another (if another exists) in the right panel.	
2	Click the cylinders icon for the disk you want to partition.	The **`Customize Disks By Cylinder`** screen is displayed
3	a. Click the space at the right of the slice number. b. Enter the slice name (see the *"SPARCserver Partition Values Table" on page 2-26*). c. Click the next space to the right and type the size (see *"SPARCserver Partition Values Table" on page 2-26*). d. Repeat *a* through *c* until the disk is properly partitioned.	
4	Click the OK button.	The **`Customize Disks`** screen is re-displayed
5	Repeat this procedure for every disk drive in the system. All drives must be partitioned.	

Partition values

The disk cylinder values provided in the following table conform to the R3V8 disk partitioning specifications for the 4.2 or 9.1-GB external disk drives required to upgrade a SPARCserver platform from CMS versions R3V5 or earlier to R3V8. These partions remain unchanged through the *Solaris* 2.5.1 and 2.7 upgrade steps performed later in the upgrade.

SPARCserver Partition Values Table:

		Partition Sizes (in cylinders)			
		4.2-GB SCSI		9.1-GB SCSI	
Slice	**Slice name**	**Boot Disk**	**Non-boot disk**	**Boot disk**	**Non-boot disk**
0	/ (if boot disk) or *(blank)* (if non-boot disk)	1023	2	616	2
1	*(blank)*	7	3878	7	4922
2	overlap[a]	3880	3880	4924	4924
3	*(blank)*	1879		3716	
4	swap (if boot disk) **or** *(blank)* (if non-bootdisk)	971		585	
5-7					

a O*verlap* partition sizes are automatically displayed in the Customize Disks screen during the Solaris installation. These values indicate the total number of cylinders for the disk drive models used for SPARCservers running R3V8. If the disk drive you are partitioning does not match one of these values, you have a non-standard disk. The system will not operate if the disk partitioning is incorrect. Escalate the issue to technical support.

F.8: Installing the Operating System

This procedure installs the *Solaris* 2.4 operating system using the system software and disk partitioning values you specified in the preceding procedures.

Task	Action	Result
1	*No action required.* The Customize Disks screen is displaying and all disks have been partitioned.	The **`Customize Disks`** screen is displayed.
2	Click `OK.`	The **`File System and Disk Layout`** screen is re-displayed.
3	Click `Continue.`	The **`Mount Remote File System?`** screen is displayed.
4	Click `Continue.`	The **`Profile`** screen is displayed.
5	Click `Begin Installation.`	The **`OK to reboot after Installing Solaris`** screen is displayed.
6	Click `Reboot.`	The **`Installing Solaris - Progress`** screen is displayed.
Additional Information: As the disks are partitioned and the system files are copied to the disk, the progress bar advances to indicate the progress of the installation. The progress window is eventually replaced by a console window in the upper left corner of the screen and the installation continues. Depending upon the platform being upgraded and the number of disks being installed, the installation can take up to three hours to complete.		

F.9: Completing the *Solaris* 2.4 installation

This procedure completes the operating system installation.

Task	Action	Result

1	*No action required.* When the installation completes, the machine reboots and prompts for a root password.	`On this screen you can create a root password.`
		`. . .`
		`Root password:`
		
		`Press Return to continue.`

2	Do not enter a password. Press Enter.	`Please re-enter your root password?`
		
		`Press Return to continue.`

3	Press Enter again.	`. . .`
		`syslog services starting.`
		`Print services started.`
		`volume management starting.`
		`The system is ready.`
		`<hostname> console login:`

4	Log in as the root user.	
5	Enter: `eject cdrom`	

F.10: Preserving interim copies of system install files

This procedure renames certain systems files that were created during the operating system installation, so that they will not be overwritten when the CMSADM backup restore is returned to the hard drive. Once the backup is restored, they are used to replace customer versions of those files until the upgrade process is completed.

This procedure also edits other key system files in order to avoid potential disruptions to the upgrade process.

Task	Action	

1	Enter the following series of commands:
	`cp /etc/hosts /etc/hosts.install`
	`cp /etc/passwd /etc/passwd.install`
	`cp /etc/shadow /etc/shadow.install`
	`cp /etc/nsswitch.conf /etc/nsswitch.install`	

2	Edit the “crontabs/root” file: `vi /var/spool/cron/crontabs/root`	
3	Comment out all lines that run commands under the */cms/* directory. For example: `0 2 * * 0,4 /cms/....` is changed to: `#0 2 * * 0,4 /cms/....`	
4	Write and quit the file: `:wq`	
5	Edit the *vfstab* file: `vi /etc/vfstab`	
6	Comment out all mounts to remote machines on the network. Any line beginning with a name followed by a colon is a remote mount. For example: `miti:/export/share` is changed to: `#miti:/export/share`	
7	Write and quit the file: `:wq`	
8	Edit the *etc/inittab* file: `vi /etc/inittab` and search for the `od:234....` entry	`od:234:respawn:/cms/dc/odbc/rqb_start`
9	If the entry is found, replace *respawn* with *off.*	`od:234:off:/cms/dc/odbc/rqb_start`

F.11: Installing the Fix for the QIC Tape Drive

This procedure is required only if there is a UniPack QIC 2.5-gigabyte tape drive installed on the system. The procedure installs a software fix to accommodate the tape device.

Task	Action	Result
1	Edit the file */kernel/drv/st.conf.* For example: `vi kernel/drv/st.conf`	File contents are displayed

2	Add the following four lines to the end of the file:
	`tape-config-list=`
	`“TANDBERG TDC 4200”, “Tandberg 2.5 Gig QIC”, “TAND-25G-FIXED”;`
	`TAND-25G-FIXED=1,0x37,512,0x867a,1,0x00,0;`
	`TAND-25G-VAR=1,0x37,0,0x867b,1,0x00,0;`	

3	To write and quit the file, enter: `:wq`	System returns to prompt.

G: Restoring the CMSADM backup

This procedure restores the contents of the CMSADM backup tape to the system.

G.1: Restoring the backup

Task	Action
1	Stop cron by entering: `/etc/rc2.d/S75cron stop`
2	Obtain the CMSADM backup tape created earlier ("Performing a CMSADM Backup" on page 2-14).
3	Verify that the tape is write-protected and load it into the tape drive.
4	First read the *Note* information (provided below) and then enter the appropriate `cpio` command (entered as a single line of input in the terminal window): `cpio -icmudfv -C 10240 -I /dev/rmt/<d#> -M "Insert next tape and press ENTER." "/etc/vfstab" "/etc/mnttab" "/usr/dbtemp" "/etc/path_to_inst" " "/dev*" "/dev*/*"` **Note:** • Verify that you have entered all the characters of the cpio command correctly before you press Enter. • *<d#>* is the tape drive's device number, which must be one of the following: `0` tape drive with the lowest target number in the SCSI chain. `1` tape drive with the second-lowest target number in the SCSI chain. `0c` compressed-mode tape drive with the lowest target number in the SCSI chain (the QIC 2.5-GB and the 14-GB drives support compressed mode). `1c` compressed-mode tape drive with the second-lowest target number in the SCSI chain (the QIC 2.5-GB and the 14-GB drives support compressed mode). • For a field upgrade in which the system hard drives are not replaced, all directories listed after the string `"Insert next tape and press ENTER."` can be omitted from the end of the command.
5	When all files have been found and restored, the system prompt is displayed. You may receive error messages concerning the `/home` directory, or a message indicating `"4 errors..."`. The messages can be ignored.

G.2: Removing CMS Entries From the *inittab* File

This procedure disables CMS processes that would otherwise generate spurious error messages during the upgrade.

Task	Action

1	Enter the following series of commands:
	`sed '/cm:/d' /etc/inittab > /tmp/foo$$`
	`mv /tmp/foo$$ /etc/inittab`
	`rm -f /etc/conf/init.d/cms`
	`/etc/init q`
	Note:
	Be careful to enter the correct single quote (`'`) character in the `sed` command displayed above. The forward-leaning single quote is called the *grave accent* character. On a *Sun* keyboard, it is usually found just to the left of the `Enter` key.

G.3: Altering Disruptive System Files

This procedure temporarily alters customer-specific system files which were restored from the customer CMSADM backup, and replaces them with the interim versions that you saved in "Preserving interim copies of system install files" on page 2-29.

Task	Action

1	Enter the following commands to rename the customer-specific files:
	`cp /etc/hosts /etc/hosts.cust`
	`cp /etc/passwd /etc/passwd.cust`
	`cp /etc/shadow /etc/shadow.cust`
	`cp /etc/nsswitch.conf /etc/nsswitch.cust`

2	Enter the following commands to recover the interim versions to be used during the upgrade:
	`cp /etc/hosts.install /etc/hosts`
	`cp /etc/passwd.install /etc/passwd`
	`cp /etc/shadow.install /etc/shadow`
	`cp /etc/nsswitch.files /etc/nsswitch.conf`

3	To verify that ksh is set as the default login shell, enter:
	`passwd -r files -e root`
	
	The program should display the following lines:
	
	`Old shell: /bin/ksh`
	`New shell:`
	
	• If the "Old shell" line indicates ksh is already set as the default login shell for root, enter Control-D to terminate the command without changing the shell.
	• If the "`Old shell`" line indicates a command shell other than ksh, enter `/bin/ksh` at the "`New shell:`" prompt and press Enter.
	
	Note: Be careful to enter the path correctly at the "`New shell:`" prompt. If the ksh path is entered incorrectly, root shell privileges become restricted and can only be corrected by editing the */etc/passwd* file.

H: Removing Obsolete Metadevices and Software

H.1: Removing CMS metadevices

This procedure removes CMS metadevices. It is required only if the system is upgraded in the field and *Solstice DiskSuite* is installed on the system. Otherwise, proceed to "Removing System Files and Packages" on page 2-35.

Task	Action

1	List metadevices by entering the following command:
	`/usr/opt/SUNWmd/sbin/metadb -i`
	The output format should be similar to the following example:
	`cms2# /usr/opt/SUNWmd/sbin/metadb -i`
	`flags first blk block count`
	`a m p luo 16 1034 /dev/dsk/c0t3d0s1`
	`a p luo 1050 1034 /dev/dsk/c0t3d0s1`
	`a p luo 16 1034 /dev/dsk/c0t1d0s1`
	`a p luo 1050 1034 /dev/dsk/c0t1d0s1`
	`o - replica active prior to last mddb configuration change`
	`. . .`
	`R - replica had device read errors`
	If you receive the message
	`Error: There are no existing databases,` go to "Removing System Files and Packages" on page 2-35.

2	Note each of the unique device names listed on the first few lines of the output. (For the output example shown above, you would note the device names *c0t3d0s1* and *c0t1d0s1*).

3	Delete a metadevice by entering the following command:
	`/usr/opt/SUNWmd/sbin/metadb -df /dev/dsk/<device>`
	where *<device>* is the device name. For example:
	`/usr/opt/SUNWmd/sbin/metadb -df /dev/dsk/c1t3d0s1`

4	Repeat step 3 for each metadevice recorded in step 2.
5	When all metadevices are removed, reboot the system: `init 6`

H.2: Removing System Files and Packages

This procedure removes various patches, packages and directories.

Task	Action	Result
1	Enter: cd /var/sadm/patch	
2	To identify directories of obsolete Solaris patches related to *Answerbook,* enter: ls -d 104954*	The command generates one or more lines of output similar to the following example: `104954-01 104954-02`

3	Execute a *backoutpatch* command for each patch directory you identify in Step 2. For the example output shown in Step 2, you would enter:
	`/var/sadm/patch/104954-01/backoutpatch 104954-01`
	`/var/sadm/patch/104954-02/backoutpatch 104954-02`	

4	To remove Solaris Answerbook, enter the following commands: pkgrm SUNWaadm pkgrm SUNWabc pkgrm SUNWabe pkgrm SUNWaman pkgrm SUNWfac pkgrm SUNWoft	For each package, requests for confirmation to continue the removal will be generated. Enter y each time. Error messages will be generated if any of the packages that are not found. These messages can be ignored.
5	Enter: `pkgrm cms`	`... Do you want to continue with the removal of this package [y,n,?,q]`
6	Enter: `y`	`... Do you want to preserve CMS data [y,n,?]`
7	Enter: `n`	`... CMS will be removed from this machine; the data will not be preserved. Are you sure this is correct [y,n,?]`
8	Enter: `y`	`... Have you backed up the file systems [y,n,?]`
9	Enter: `y`	`... Removal of <cms> was successful.`
10	To preserve customer information in the cms directory, enter: `mv /cms /cms.save`	

Task	Action	Result

11	Enter:
	`/opt/LUim/bin/remove`
		The program responds:
		`Do you want to remove this package?`
		`Do you want to coninue with the removal of this package [y,n,?,q]`
		Enter y each time you are prompted. When the last package is removed, the system returns to the prompt.

12	Perform this step only if *Solstice DiskSuite* is installed on your system (see page 2-8).
	Enter the following commands:
	`# pkgrm SUNWmd`
	`# pkgrm SUNWabmd`
		For each package you will receive at least two prompts asking for confirmation to continue the removal. Enter `y` each time.

13	**CAUTION:** **Be careful to enter the `rm` command exactly as it is presented below.** Enter: `rm -fr /opt/informix`	

H.3: Removing the obsolete HSI/P patch and driver

This procedure removes an obsolete HSI/P driver. It is required only for Ultra 5 systems with and HSI/P card.

Task	Action	Result
1	To search for an obsolete Solaris patch associated with the HSI/P version 1.0 driver, enter: `showrev -p | grep 106295`	
2	If the *showrev* command generates a line of output for the patch, enter: `/var/sadm/patch/106295-01/backoutpatch 106295-01`	

3	To identify the current HSI/P driver version, enter:
	`pkinfo -x SUNWhsip`
	If the driver version is 1.0, the command displays output similar to the following:
	`SUNWhsip SunHSI/P Driver for PCI`
	`(sparc) 1.0,REV=199x.xx.xx`	

4	If the HSI/P driver version is 1.0, enter: `pkgrm SUNWhsip` Enter y to confirm the pkgrm command each time you are prompted.	

H.4: Removing the NTS software

This procedure removes the NTS software package. It is required only if NTS is installed on the system.

Task	Action	Result

1	Enter:
	`ps -ef | grep erpcd`
		If NTS processes are running, the output will resemble the following example:
		`root 375 1 0 Jun 29 ? 0:00 /usr/annex/erpcd`
		`root 376 375 0 Jun 29 ? 0:00 /usr/annex/erpcd`
		If the system responds by re-displaying the system prompt, go to step 3.

2	The second column from the right in this output displays the process identification number (pid) for each NTS process. To stop the NTS processes, enter the *kill* command followed by the *-9* option and all pid values displayed in step 1. For the example provided above, the command would be: `kill -9 375 376`	
3	Enter: pkgrm SUNWxyl	`... Do you want to remove this package?`
4	Enter: `y`	`... Do you want to continue with the removal of this package [y,n,?,q]`
5	Enter: `y`	`... Removal of SUNWxyl> was successful.`
6	Save the rtelnet administration file into a nonstartup file by entering: `mv /etc/rc2.d/Speripherals /etc/rc2.d/peripherals` If you receive a "*cannot access Speripherals*" message, disregard it.	

7	Remove remaining NTS startup files by entering the following command:
	`rm -f /etc/rc2.d/K41ntserv`
	`rm -f /etc/rc2.d/S65ntserv`
	`rm -f /etc/init.d/ntserv`
	Ignore any error messages that may be displayed.	

8	To remove an obsolete NTS patch, enter: `/var/sadm/patch/101875-02/backoutpatch 101875-02`	

H.5: Removing the X.25 software

This procedure removes the X.25 software packages.

Task	Action	Result
1	Enter: `cd /var/sadm/patch`	

2	To identify directories of obsolete Solaris patches related to X.25, enter:
	ls 10256* 103068* 105084* | sort -r
		The command generates one or more lines of output similar to the following example:
		`103068-03`
		`103068-02`
		`10256-02`
		`10256-01`

3	Execute a *backoutpatch* command for each patch directory you identify in Step 2. Remove the patches in reverse order of installation. To remove the 10256 patches shown in the example in Step 2, you would enter:
	`/var/sadm/patch/10256-02/backoutpatch 10256-02`
	`/var/sadm/patch/10256-01/backoutpatch 10256-01`	

4	To search for multiple versions of X.25 packages enter the following command:
	pkginfo | grep <*package names*> | sort -r
	where the <*package names*> arguments include:
	SUNWax25x
	SUNWx25a
	SUNWx25b
	SUNWllc2a
	SUNWllc2b
	SUNWlicsw
	SUNWlit
	The command will display lines similar to the following partial example of command output:
	`application SUNWllc2a.3 LLC2 kernel modules and include files for Solaris/SPC`
	`application SUNWllc2a.2 LLC2 kernel modules and include files for Solaris/SPC`
	`application SUNWllc2a LLC2 kernel modules and include files for Solaris/SPC`
	Record each package name in the order in which they are displayed.	

Task	Action	Result
5	For each version of the X.25 packages that are identified, execute a `pkgrm` command. When multiple package versions are found, remove each package in the reverse order of installation. For example, to remove the SUNWllc2a packages shown in the example in Step 4, enter the `pkgrm` commands in the following sequence: pkgrm SUNWllc2a.3 pkgrm SUNWllc2a.2 pkgrm SUNWllc2a	For each package, a request for confirmation to continue the removal will be generated. Enter y each time.
6	To ensure the removal of obsolete X.25 license files, enter the following commands: rm -fr /etc/opt/licenses/licenses_combined* rm -fr /opt/SUNWconn/x25/x25_[0-9] . [0-9] . lic* Note: This step is not required for R3V5u or R3V6 systems upgrading to R3V8.	

H.6: Removing the Aurora port drivers

This procedure is required only for SPARCserver systems that have an Aurora SBus multiport card.

Task	Action
1	Enter the following command: `# pkginfo -x AURAacsa AURAacs AURAcs AURAsio16`
2	For each of the installed packages, record the version number in the space provided below. If you receive an `Information not found` message for any package, also record that information. `AURAacs` _____ `AURAacsa` _____ `AURAcs` _____ `AURAsio16` _____

<table>
<tr><th>Task</th><th>Action</th></tr>
<tr><td>3</td><td>Determine whether any of your drivers are obsolete by comparing the recorded version numbers to this table:

<u>Driver</u> <u>Obsolete versions</u>
AURAacs All versions earlier than 6.18
AURAacsa All versions earlier than 3.18
AURAcs All versions
AURAsio16 All versions earlier than 5.16</td></tr>
<tr><td>4</td><td>Enter a <tt>pkgrm</tt> command naming all obsolete Aurora drivers. For example, if you have any version of AURAcs or AURAsio16, you would enter the following command:

<tt>pkgrm AURAcs AURAsio16</tt></td></tr>
<tr><td>5</td><td>Record any drivers you have removed in the space provided below. This information is required later in the upgrade.

<u>Driver</u> <u>Removed (circle one)?</u>
AURAacs Yes No Not installed
AURAacsa Yes No Not installed
AURAcs Yes No Not installed
AURAsio16 Yes No Not installed</td></tr>
<tr><td>6</td><td>Enter the following commands:

<tt>sed -e '/^acs/d' -e '/^csfour/d' -e '/^cseight/d' /etc/driver_aliases > /tmp/acs$$</tt>

<tt>mv /tmp/acs$$ /etc/driver_aliases</tt>

<tt>Note:</tt>

Be careful to enter the correct single quote (<tt>'</tt>) character in the <tt>sed</tt> command displayed above. The forward-leaning single quote is called the grave accent character. On a Sun keyboard, it is usually found just to the left of the <tt>Enter</tt> key.</td></tr>
<tr><td>7</td><td>Enter the following commands:

<tt>sed -e '/^csfour/d' -e '/^cseight/d' /etc/name_to_major > /tmp/acs$$</tt>

<tt>mv /tmp/acs$$ /etc/name_to_major</tt></td></tr>
</table>

H.7: Removing obsolete SparcStation 10 packages

This procedure is required only for SPARCserver 5 or SPARCserver 20 platforms. It removes obsolete SparcStation 10 packages.

Task	Action
1	Enter: `dmesg | grep “SPARCstation-10”`
2	If no screen output is generated, no packages were found. If one or more lines of output are displayed, find the second character string from the left; this is the package name. For each package identified in Step 1, enter the command: `/usr/bin/pkgrm <package name>`

I: Upgrading from *Solaris* 2.4 to 2.5.1

Follow the procedures described in this section if:

- you are upgrading a SPARCserver 5, 10 or 20 that began the upgrade process with an R3V5 installation.

AND

- you have already completed preceding procedures presented in sections **A** through **F**

⚠ CAUTION:

The procedures in this section are not intended for upgrade of R3V5u or R3V6 systems. If your pre-upgrade system has either R3V5u or R3V6 installed on it, follow the *Solaris* 2.5.1 installation instructions presented in the next section, "Installing Solaris 2.5.1" on page 2-46.

I.1: Booting from the CD

Task	Action	Result
1	Enter the following command: `# init 0`	The `ok>` prompt is displayed.
2	Load the *Solaris* 2.5.1 CD into the CD-ROM drive and enter: `boot cdrom`	After the system reboots, the **`Solaris Installation Program`** screen is displayed.

I.2: Identifying the computer system

This procedure begins the OS installation.

Task	Action	Result
1	*No Action Required.*	The **Solaris Installation Program** screen is displayed.
2	Click the Continue button.	The **Identify This System** screen is displayed.
3	Click the Continue button.	The **Host Name** screen is displayed.
4	a) Click the Host name box. b) Enter a host name for the workstation. c) click the Continue button.	The **Network Connectivity** screen is displayed.
5	a. Click the Yes option. b. Click the Continue button. If your system has more than one network card, a *Primary Network Interface* screen displays. In that case, select the le0 option and then click Continue.	The **IP Address** screen is displayed.
6	a. Click the *IP address* box. b. Type the IP address you recorded earlier (page 2-11). **Note for Speed Centre upgrades**: if unsure, use the one that is NOT commented out. c. Click the Continue button.	The **Confirm Information** screen is displayed.
7	a. Check the information displayed on the screen. b. If the information is correct, click Continue and skip ahead to the next procedure. c. If the information is incorrect, click Change and repeat step 1.	

I.3: Setting the Name Service Options

This procedure sets the name service options.

Task	Action	Result
1	*No Action Required.* The Name Service screen is displaying.	The **`Name Service`** screen is displayed.
2	a. Click the `None` option. b. Click the `Continue` button.	The **`Confirm Information`** screen is displayed.
3	Check the information displayed on the screen. If it is correct, click `Continue` and go to the next procedure. If it is incorrect, click `Change` and repeat Step 1.	

I.4: Setting the Date and Time

This procedure sets the date and time.

Task	Action	Result
1	*No action required.*	The **`Subnets`** screen is displayed.
2	a. Click the `No` option. b. Click the `Continue` button.	The **`Time Zone`** screen is displayed
3	a. Click `Geographic region.` b. Click `Set.`	The **`Geographic Region`** screen is displayed.
4	a. Click the region where this system is located. b. Click the time zone where this system is located. c. Click the `Continue` button.	The **`Date and Time`** screen is displayed.
5	a. Change the date and time as needed to reflect the current local date and time. b. Click `Continue.`	The **`Confirm Information`** screen is displayed.
6	Check the information displayed on the screen. If it is correct, click `Continue` and go on to the next procedure. If it is incorrect, click `Change` and repeat Step 1.	

I.5: Selecting the *Solaris* 2.5.1 system files

This procedure selects the *Solaris* system files to install and upgrades the operating system to version 2.5.1.

Task	Action	Result
1	*No Action Required.*	The **`Install Solaris Software - Initial`** screen is displayed.
2	Click the `Continue` button.	The **`Upgrade System?`** screen is displayed.
3	Click the `Upgrade` button.	The **`System Type`** screen is displayed.
4	a. Select Standalone. b. Click the Continue button.	The **`Software`** screen is displayed .
5	a. Click `End User System Support.` b. Click `Customize.`	The **`Customize Software`** screen is displayed.
6	Select the following package: `Terminal Information`	The **`Customize Software`** screen is displayed.
7	Click `OK`.	The **`Software`** screen is displayed.
8	Click `Continue`.	The **`Profile`** screen is displayed.
9	***Additional Information:*** As the system files are copied to the disk, the progress bar advances to indicate the progress of the installation. The progress window is eventually replaced by a console window in the upper left corner of the screen and the installation continues. Depending upon the platform being upgraded and the number of disks being installed, the installation can take three hours to complete.	

Continuing the upgrade process

To continue the R3V5 to R3V8 upgrade process, go to "Upgrading from Solaris 2.5.1 to 2.7" on page 2-67.

J: Installing *Solaris* 2.5.1

These procedures install the Solaris 2.5.1 operating system. Perform these procedures if:

- you are upgrading a *Sun* SPARCsever, Ultra 5, Enterprise 3000 or 3500 that began the upgrade process with either an R3V5u or R3V6 installation.

AND

- you have already completed the preliminary system characterization procedures presented in sections **A** through **C**

CAUTION:

Upgrades for systems with pre-upgrade versions R3V5u and R3V6 require different versions of the 2.5.1 operating system:

- **R3V5u systems require installation of the 5/96 version of the Solaris 2.5.1 operating system**
- **R3V6 systems require installation of the 11/97 version of the Solaris 2.5.1 operating system**

Failure to install the proper version of Solaris 2.5.1 during the upgrade process will cause the upgrade to fail later in the process (when the CMSADM backup is restored). Significant repetition and loss of time will result.

J.1: Booting from the CD

	Action	Result
1	Enter the following command: `init 0`	The `ok>` prompt is displayed
2	Load the *Solaris* 2.5.1 CD into the CD-ROM drive and enter: `boot cdrom` **Note: Verify that you have the correct Solaris 2.5.1 version (5/96 or 11/97) required by the system.**	After the system reboots, the **`Solaris Installation Program`** screen is displayed

J.2: Identifying the system

.

Task	Action	Result
1	*No Action Required.*	The **`Solaris Installation Program`** screen is displayed.
2	Click the `Continue` button.	The **`Identify the System`** screen is displayed.
3	Click the `Continue` button.	The **`Host Name`** screen is displayed.
4	a. Click the *Host name* box. b. Type the host name for the workstation. (You recorded the host name earlier; see page 2-11). c. Click the `Continue` button.	The **`Network Connectivity`** screen is displayed.
5	a. Click the `Yes` option. b. Click the `Continue` button. c. If your system has more than one network board, a *Primary Network Interface* screen displays. Select the `hme0` option and then click the `Continue` button.	The **`IP Address`** screen is displayed.
6	a. Click the *IP address* box. b. Type the IP address you recorded earlier (page 2-11). **Note for Speed Centre upgrades**: if unsure, use the one that is NOT commented out). c. Click the `Continue` button.	The **`Confirm Information`** screen is displayed.
7	a. Check the information displayed on the screen. b. If the information is correct, click `Continue`. c. If the information is incorrect, click `Change` and repeat this procedure	

J.3: Setting the Name Service options

This procedure sets the name service options.

Task	Action	Result
1	*No Action Required.*	The **`Name Service`** screen is displayed.
2	a. Click the `None` option. b. Click the `Continue` button.	The **`Confirm Information`** screen is displayed.
3	Check the information displayed on the screen. If it is correct, click `Continue` and go to the next procedure. If it is incorrect, click `Change` and repeat Step 1.	

J.4: Setting the correct date and time

This procedure sets the date and time.

Task	Action	Result
1	*No action required.*	The **`Subnets`** screen is displayed.
2	a. Click the `No` option. b. Click the `Continue` button.	The **`Time Zone`** screen is displayed.
3	a. Click `Geographic region`. b. Click `Set.`	The **`Geographic Region`** screen is displayed.
4	Click the `Continue` button (you will enter the correct information during the final *Solaris* 2.7 upgrade).	The **`Date and Time`** screen is displayed.
5	Click `Continue.`	The **`Confirm Information`** screen is displayed.
6	Check the information displayed on the screen. If it is correct, click `Continue` and go on to the next procedure. If it is incorrect, click `Change` and repeat Step 1.	

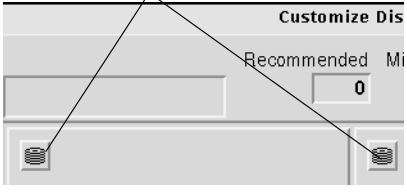
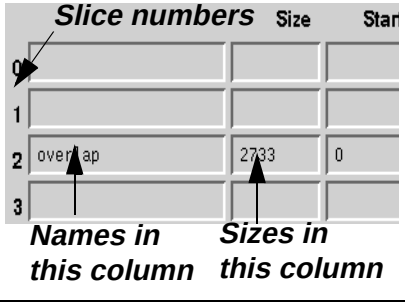
J.5: Selecting the *Solaris* system files

This procedure selects the *Solaris* system files to install and upgrades the operating system to version 2.5.1.

Task	Action	Result
1	*No Action Required.*	The **`Install Solaris Software - Initial`** screen is displayed.
2	Click the `Continue` button.	The **`Upgrade System?`** screen is displayed.
3	Click the **`Initial`** `button.`	The **`System Type`** screen is displayed.
4	a. Select Standalone. b. Click the Continue button.	The **`Software`** screen is displayed.
5	a. Click `End User System Support`. a. Click `Customize`.	The **`Customize Software`** screen is displayed.
6	Select the following package: `Terminal Information`	
7	Click `OK`.	The **`Software`** screen is displayed.
8	Click `Continue.`	The **`Select Disks`** screen is displayed.

J.6: Setting up disk partitions

Task	Action	Result
1	*No Action Required.*	The **`Disks`** screen is displayed.
2	Check the list of disk drives in the *Available* column: if all disk drives are not displayed, there is a possible connectivity problem. If this occurs, stop the installation, power down, secure all drive connections, and restart the installation.	

Task	Action	Result
3	a. Click the disk name to highlight an available disk. b. Click `Add` to select the disk. c. Repeat *a* and *b* until all available disks are in the Selected column. d. Click `Continue`.	The **`Preserve Data?`** screen is displayed.
4	Click `Continue`.	The **`Automatically Layout File Systems`** screen is displayed.
5	Click `Manual Layout`.	The **`File System and Disk Layout`** screen is displayed.
6	Click `Customize`.	The **`Customize Disks`** screen is displayed.
7	*No action required.* The *Customize Disks* screen is displaying. This screen lists partitioning for two disks, one in the left panel and another (if another exists) in the right panel.	**"Cylinders" icons** 
8	Click the cylinders icon for the disk you want to partition.	The **`Customize Disks By Cylinder`** screen is displayed.
9	Refer to the "Boot Disk Partition Table" on page 2-52 and enter the appropriate slice names and cylinder sizes for each slice number on the boot disk.	

Boot Disk Partition Values

The disk cylinder values provided in the following table conform to the R3V8 disk partitioning specifications for all disk drives compatible with R3V8. These partion settings will remain unchanged through the ensuing *Solaris* 2.7 upgrade.

NOTE FOR MIRRORED SYSTEMS:

When setting up disk partitions for mirrored Enterprise 3000 or 3500 systems, select the following disks (if feasible) to partition as the boot and alternate boot devices:

Enterprise 3000:

- boot - c0t0
- alternate boot - c0t1

Enterprise 3500:

- boot - c0t0
- alternate boot - c1t4

When you input the partition values for the boot and alternate disks, be careful to enter the correct slice names for partition 0:

- for primary boot disks, the slice name for partition 0 is always "/".
- for alternate boot disks, the slice name for partition 0 must always remain blank.

Boot Disk Partition Table:

		Disk Size (in cylinders)			
Slice	**Slice Name**	**4.2-GB SCSI (SPARCserver and E-3000)**	**8.4-GB EIDE (Ultra 5)**	**9.1-GB EIDE (Ultra 5)**	**9.1-GB SCSI (SPARCserver and E-3000) or FCAL (E-3500)**
0	/ **or** (*blank*) if alternate boot on mirrored systems	1023	2134	2032	616
1	*(blank)*	7	7	7	7
2	overlap[a]	3880	16706	17660	4924
3	*(blank)*	1879	12533	13540	3716
4	swap	971	2032	2081	585
5-7	*(blank)*				

a O*verlap* partition sizes are automatically displayed in the Customize Disks screen during the Solaris installation. These values indicate the total number of cylinders for the disk drive models used in CMS R3V8. If the disk drive you are partitioning does not match one of these values, you have a non-standard disk. Escalate the issue to Lucent technical support.

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Task	Action	Result
10	When you finish entering the slice names and cylinder values for the boot disk, click the OK button.	The **`Customize Disks`** screen is re-displayed
11	If there are more disks, select the cylinders icon for the next disk to be partitioned; the Customize Disks by Cylinders screen appears for the selected disk. Refer to the "Non-boot Partition Table" on page 2-53 and enter the appropriate slice names and cylinder sizes for each slice number on the boot disk. If there is not a second disk, go to Step 14.	

Non-boot disk partition values

The non-boot disk cylinder values provided in the following table conform to the R3V8 disk partitioning specifications for all disk drives supported by R3V8.

NOTE:

- For non-boot disks, all slice names remain blank, except for “overlap”.
- The size of the overlap file system always defaults to the size of the entire disk. Do not change this value.

Non-boot Partition Table:

		Disk Size (in cylinders)		
Slice	**Slice Name**	**4.2-GB SCSI (SPARCserver and E-3000)**	**9.1-GB EIDE (Ultra 5)**	**9.1-GB SCSI (SPARCserver, E-3000) or FCAL (E-3500)**
0	*(blank)*	2	2	2
1	*(blank)*	3878	17658	4922
2	overlap[a]	3880	17660	4924
3	*(blank)*			
4-7	*(blank)*			

a O*verlap* partition sizes are automatically displayed in the Customize Disks screen during the Solaris installation. These values indicate the total number of cylinders for the disk drive models used in CMS R3V8. If the disk drive you are partitioning does not match one of these values, you have a non-standard disk. Escalate the issue to Lucent technical support.

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Task	Action	Result
12	When you finish entering the slice names and cylinder values for the non-boot disk, click the OK button.	The **`Customize Disks`** screen is re-displayed
13	Repeat procedures 8 through 11 for each boot, non-boot and alternate boot disks your system may require.	
14	When the last disk has been partitioned, and the Customize Disks screen is once again displayed. Go to procedure J.7 (Installing the Operating System).	

J.7: Installing the Operating System

This procedure installs the *Solaris* 2.5.1 operating system using the system software and disk partitioning values you have specified. .

Task	Action	Result
1	*No action required.* The Customize Disks screen is displaying and all disks have been partitioned.	The **`Customize Disks`** screen is displayed.
2	Click `OK.`	The **`File System and Disk Layout`** screen is re-displayed.
3	Click `Continue.`	The **`Mount Remote File System?`** screen is displayed.
4	Click `Continue.`	The **`Profile`** screen is displayed.
5	Click `Begin Installation.`	The **`OK to reboot after Installing Solaris`** screen is displayed.
6	Click `Reboot.`	The **`Installing Solaris - Progress`** screen is displayed.
Additional Information: As the disks are partitioned and the system files are copied to the disk, the progress bar advances to indicate the progress of the installation. The progress window is replaced by a console window in the upper left corner of the screen and the installation continues. Depending on the platform being upgraded and the number of disks being installed, the installation can take up to three hours to complete.		
7	When the upgrade is finished, log in as root user and enter: `eject cdrom`	

J.8: Preserving interim copies of system files

This procedure renames certain systems files that were created during the operating system installation, so that they will not be overwritten when the CMSADM backup restore is returned to the hard drive. Once the backup is restored, they are used to replace customer versions of those files until the upgrade process is completed.

In addition, this procedure also edits other key system files in order to preclude potential disruptions to the upgrade process.

Task	Action	

1	Enter the following series of commands:
	`cp /etc/hosts  /etc/hosts.install`
	`cp /etc/passwd /etc/passwd.install`
	`cp /etc/shadow /etc/shadow.install`
	`cp /etc/nsswitch.conf /etc/nsswitch.install`	

2	Edit the “crontabs/root” file: `vi /var/spool/cron/crontabs/root`	
3	Comment out all lines that run commands under the */cms/* directory. For example: `0 2 * * 0,4 /cms/....` is changed to: `#0 2 * * 0,4 /cms/....`	
4	Write and quit the file: `:wq`	
5	Edit the *vfstab* file: `vi  /etc/vfstab`	
6	Comment out all mounts to remote machines on the network. Any line beginning with a name followed by a colon is a remote mount. For example: `miti:/export/share` is changed to: `#miti:/export/share`	
7	Write and quit the file: `:wq`	
8	Edit the */etc/inittab* file and search for the `od:234....` entry.	`od:234:respawn:/cms/dc/odbc/rqb_start`
9	**If the entry is not found, skip the rest of this procedure.** Otherwise, replace *respawn* with *off.*	`od:234:off:/cms/dc/odbc/rqb_start`
10	Write and quit the file: `:wq`	

J.9: Installing the Fix for the QIC Tape Drive

This procedure is required only if there is a UniPack QIC 2.5-gigabyte tape drive installed on the system. The procedure installs a software fix to accommodate the tape device.

Task	Action	Result
1	To edit the */kernel/drv/st.conf* file, enter: `vi kernel/drv/st.conf`	The contents of the *st.conf* file are displayed in vi mode.

2	Add the following four lines to the end of the file:
	`tape-config-list=`
	`"TANDBERG TDC 4200", "Tandberg 2.5 Gig QIC", "TAND-25G-FIXED";`
	`TAND-25G-FIXED=1,0x37,512,0x867a,1,0x00,0;`
	`TAND-25G-VAR=1,0x37,0,0x867b,1,0x00,0;`	

3	To write and quit the file, enter: :wq	
4	To reset the environment to the Korn shell, enter: ksh -o vi	

J.10: Installing the fix for the Mammoth EXB-8900 tape drive

This procedure is required only for Sun Enterprise 3500 computers equipped with Mammoth EXB-8900 tape drives. The procedure installs a software fix to accommodate the tape device.

Task	Action	Result
1	Enter: `vi kernel/drv/st.conf`	The contents of the *st.conf* file are displayed in vi mode.

2	Add the following four lines to the end of the file:
	`tape-config-list=`
	`"EXABYTE EXB-8900", "Mammoth EXB-8900 8mm Helical Scan", "EXB-8900", "TANDBERG SLR5", "Tandberg 8 Gig QIC", "TAND-8G-FIXED";`
	`EXB-8900 = 1,0x29,0,0xce39,4,0x7f,0x7f,0x7f,0x7f,0;`
	`TAND-8G-FIXED = 1,0x37,512,0x963a,4,0x963a,4,0xA0,0xD0,0xD0,0xD0,3;`
	Verify that you have entered the configuration information correctly.	

3	To write and quit the file, enter: `:wq`	
4	To reset the environment to the Korn shell, enter: `ksh -o vi`	

K: Restoring the CMSADM backup

This procedure restores the contents of the CMSADM backup tape to the system, cleans up system files, and temporarily makes certain customer-specific system files inoperative.

K.1: Restoring the backup

This procedure restores the CMSADM backup to the system.

Task	Action
1	Stop cron by entering: `/etc/rc2.d/S75cron stop`
2	Obtain the CMSADM backup tape created earlier ("Performing a CMSADM Backup" on page 2-14).
3	Verify that the tape is write-protected and load it into the tape drive.
4	First read the *Note* information (provided below) and then enter the appropriate cpio command (entered as a single line of input in the terminal window): `cpio -icmudfv -C 10240 -I /dev/rmt/<d#> -M "Insert next tape and press ENTER." "/etc/vfstab" "/etc/mnttab" "/usr/dbtemp" "/etc/path_to_inst" " "/dev*" "/dev*/*"` **Note: Verify that you have entered all the characters of the cpio command correctly before you press Enter.**
	Note: • `"/dev*"` and `"/dev*/*"` can be omitted from the end of the command when performing a field upgrade. • *<d#>* is the tape drive's device number, which must be one of the following: `0` tape drive with the lowest target number in the SCSI chain. `1` tape drive with the second-lowest target number in the SCSI chain. `0c` compressed-mode tape drive with the lowest target number in the SCSI chain (the QIC 2.5-GB and the 14-GB drives support compressed mode). `1c` compressed-mode tape drive with the second-lowest target number in the SCSI chain (the QIC 2.5-GB and the 14-GB drives support compressed mode).
5	When all files have been found and restored, the system prompt reappears. You may get error messages concerning the `/home` directory, or a message indicating "4 errors...". The messages are normal; ignore them.

K.2: Removing CMS Entries From the *inittab* File

Task	Action

1	Enter the following commands:
	`sed '/cm:/d' /etc/inittab > /tmp/foo$$`
	`mv /tmp/foo$$ /etc/inittab`
	`rm -f /etc/conf/init.d/cms`
	`/etc/init q`
	Note:
	Be careful to enter the correct single quote (') character in the `sed` command displayed above. The forward-leaning single quote is called the *grave accent* character. On a *Sun* keyboard, it is usually found just to the left of the `Enter` key.

K.3: Altering Disruptive System Files

This procedure is used to temporarily rename customer-specific system files that would otherwise disrupt the upgrade process and replace them with the interim versions that were saved in "Preserving interim copies of system files" on page 2-55.

Task	Action

1	Enter the following commands to rename the customer-specific files:
	`cp /etc/hosts /etc/hosts.cust`
	`cp /etc/passwd /etc/passwd.cust`
	`cp /etc/shadow /etc/shadow.cust`
	`cp /etc/nsswitch.conf /etc/nsswitch.cust`

2	Enter the following commands to recover the interim versions used during the upgrade:
	`cp /etc/hosts.install /etc/hosts`
	`cp /etc/passwd.install /etc/passwd`
	`cp /etc/shadow.install /etc/shadow`
	`cp /etc/nsswitch.install /etc/nsswitch.conf`

3	To verify that ksh is set as the default login shell, enter:
	`passwd -r files -e root`
	
	The program should display the following lines:
	
	`Old shell: /bin/ksh`
	`New shell:`
	
	• If the "Old shell" line indicates ksh is already set as the default login shell for root, enter Control-D to terminate the command without changing the shell.
	• If the "`Old shell`" line indicates a command shell other than ksh, enter `/bin/ksh` at the "`New shell:`" prompt and press Enter.
	
	Note: Be careful to enter the path correctly at the "`New shell:`" prompt. If the ksh path is entered incorrectly, root shell privileges become restricted and can only be corrected by editing the */etc/passwd* file.

L: Removing Obsolete Metadevices and Software

L.1: Removing CMS metadevices

This procedure removes CMS metadevices. It is required only if the system is upgraded in the field and *Solstice DiskSuite* is installed on the system. Otherwise, proceed to "Removing System Files and Packages" on page 2-35.

Task	Action

1	List metadevices by entering the following command:
	`/usr/opt/SUNWmd/sbin/metadb -i`
	The output format should be similar to the following example:
	`cms2# /usr/opt/SUNWmd/sbin/metadb -i`
	`flags first blk block count`
	`a m p luo 16 1034 /dev/dsk/c0t3d0s1`
	`a p luo 1050 1034 /dev/dsk/c0t3d0s1`
	`a p luo 16 1034 /dev/dsk/c0t1d0s1`
	`a p luo 1050 1034 /dev/dsk/c0t1d0s1`
	`o - replica active prior to last mddb configuration change`
	`. . .`
	`R - replica had device read errors`
	If you receive the message
	`Error: There are no existing databases,` go to "Removing System Files and Packages" on page 2-62.

2	Note each of the unique device names listed on the first few lines of the output. (For the output example shown above, you would note the device names *c0t3d0s1* and *c0t1d0s1*).

3	Delete a metadevice by entering the following command:
	`/usr/opt/SUNWmd/sbin/metadb -df /dev/dsk/<device>`
	where *<device>* is the device name. For example:
	`/usr/opt/SUNWmd/sbin/metadb -df /dev/dsk/c1t3d0s1`

4	Repeat step 3 for each metadevice recorded in step 2.
5	When all metadevices are removed, reboot the system: `init 6`

L.2: Removing System Files and Packages

The packages removed in this step will be replaced later in the upgrade process.

Task	Action	Result
1	Enter: `pkgrm cms`	`... Do you want to continue with the removal of this package [y,n,?,q]`
2	Enter: `y`	`... Do you want to preserve CMS data [y,n,?]`
3	Enter: `n`	`... CMS will be removed from this machine; the data will not be preserved. Are you sure this is correct [y,n,?]`
4	Enter: `y`	`... Have you backed up the file systems [y,n,?]`
5	Enter: `y`	`... Removal of <cms> was successful.`
6	To preserve customer information which remains in the cms directory, enter: `mv /cms /cms.save`	

7	To remove the CMS Supplemental Services packages, enter:
	`/opt/LUim/bin/remove`
		The program responds:
		`Do you want to remove this package?`
		`Do you want to coninue with the removal of this package [y,n,?,q]`
		Enter y each time you are prompted. When the last package is removed, the system returns to the prompt.

8	If Visual Vectors Server Software is installed on the pre-upgrade system, enter: `pkgrm LUfaas`	For each package you will receive at least two prompts asking for confirmation to continue the removal. Enter `y` each time. When the last package is removed, the system returns to the prompt.

9	If *Solstice DiskSuite* is installed on your system (see page 2-8), enter:
	`pkgrm SUNWmd`
	`pkgrm SUNWabmd`
		For each package you will receive at least two prompts asking for confirmation to continue the removal. Enter `y` each time.

L.3: Removing the NTS software

This procedure removes the NTS software package. It is required only if NTS is installed on the system.

Task	Action	Result

1	Enter:
	`ps -ef | grep erpcd`
		If NTS processes are running, the output will resemble the following example:
		`root 375 1 0 Jun 29 ? 0:00 /usr/annex/erpcd`
		`root 376 375 0 Jun 29 ? 0:00 /usr/annex/erpcd`
		If the system responds by re-displaying the system prompt, go to step 3.

2	The second column from the left in this output displays the process identification number (pid) for each NTS process. To stop the NTS processes, enter the *kill* command followed by the *-9* option and the pid values. For the example provided above, the command would be: `kill -9 375 376`	

3	Enter the following *rm* commands:
	`rm -fr /usr/annex`
	`rm -fr /usr/spool/erpcd`
	`rm -fr /bin/na`
	`rm -fr /bin/rtelnet`
	`rm -fr /bin/aprint`
	`rm -fr /etc/rc2.d/annex-initd`
	`rm -fr /etc/rc2.d/S99annex-initd`
		For each package, requests for confirmation to continue the removal will be generated. Enter y each time.

L.4: Removing the Aurora port drivers

This procedure is required only for SPARCserver systems that have an Aurora SBus multiport card.

Task	Action
1	Enter the following command: `pkginfo -x AURAacsa AURAacs AURAcs AURAsio16`

Task	Action
2	For each of the installed packages, record the version number in the space provided below. If you receive an `Information not found` message for any package, also record that information. `AURAacs` _____ `AURAacsa` _____ `AURAcs` _____ `AURAsio16` _____
3	Determine whether any of your drivers are obsolete by comparing the recorded version numbers to this table: **Driver** — **Obsolete versions** AURAacs — All versions earlier than 6.18 AURAacsa — All versions earlier than 3.18 AURAcs — All versions AURAsio16 — All versions earlier than 5.16
4	Enter a `pkgrm` command naming all obsolete Aurora drivers. For example, if you have any version of AURAcs and version 5.10 of AURAsio16, you would enter the following command: `pkgrm AURAcs AURAsio16`
5	Record any drivers you have removed in the space provided below. This information is required later in the upgrade. **DriverRemoved (circle one)?** AURAacs Yes No Not installed AURAacsa Yes No Not installed AURAcs Yes No Not installed AURAsio16 Yes No Not installed

6	Enter:
	`sed -e '/^acs/d' -e '/^csfour/d' -e '/^cseight/d' /etc/driver_aliases > /tmp/acs$$`
	`mv /tmp/acs$$ /etc/driver_aliases`
	Note:
	Be careful to enter the correct single quote (`'`) character in the `sed` command displayed above. The forward-leaning single quote is called the *grave accent* character. On a *Sun* keyboard, it is usually found just to the left of the `Enter` key.

7	Enter:
	`sed -e '/^csfour/d' -e '/^cseight/d' /etc/name_to_major > /tmp/acs$$`
	`mv /tmp/acs$$ /etc/name_to_major`

L.5: Removing the X.25 software

This procedure removes the X.25 software packages.

Task	Action	Result
1	Enter: `cd /var/sadm/patch`	

2	To identify directories of obsolete Solaris patches related to X.25, enter:
	ls -d 10256* 103068* 105084*
		The command generates one or more lines of output similar to the following example:
		`10256-01 10256-02 103068-03 105084-01`
		`105084-02 105084-03`

3	Execute a *backoutpatch* command for each patch directory you identify in Step 2.Remove the patches in reverse order of installation. For example, to remove the 10256 patches shown in the example in Step 2, you would enter:
	`/var/sadm/patch/10256-02/backoutpatch 10256-02`
	`/var/sadm/patch/10256-01/backoutpatch 10256-01`	

4	To identify multiple versions of X.25 packages enter the following command:
	pkginfo | grep <*package names*> | sort -r
	where the <*package names*> arguments include:
	SUNWax25x
	SUNWx25a
	SUNWx25b
	SUNWllc2a
	SUNWllc2b
	SUNWlicsw
	SUNWlit
	
	The command will display lines similar to the following partial example of command output:
	`application SUNWllc2a.3 LLC2 kernel modules and include files for Solaris/SPC`
	`application SUNWllc2a.2 LLC2 kernel modules and include files for Solaris/SPC`
	`application SUNWllc2a LLC2 kernel modules and include files for Solaris/SPC`
	
	Record each package name in the order in which they are displayed.	

Task	Action	Result
5	For each version of the X.25 packages, identified in the preceding step, execute a `pkgrm` command. When multiple package versions are found, remove each package in the reverse order of installation. For example, to remove the SUNWllc2a packages shown in the example in Step 4, you would enter the `pkgrm` commands in the following sequence: pkgrm SUNWllc2a.3 pkgrm SUNWllc2a.2 pkgrm SSUNWllc2a	For each package, a request for confirmation to continue the removal will be generated. Enter y each time.
6	To ensure the removal of obsolete X.25 license files, enter the following commands: rm -fr /etc/opt/licenses/licenses_combined* rm -fr /opt/SUNWconn/x25/x25_[0-9] . [0-9] . lic* Note: This step is not required for R3V5u or R3V6 systems upgrading to R3V8.	

M: Upgrading from *Solaris* 2.5.1 to 2.7

This procedure is required for all *Sun* platforms upgrading to CMS R3V8.

M.1: Booting from the CD

This procedure boots the system from the CD.

Task	Action	Result
1	Load the *Solaris* 2.7 CD into the CD-ROM drive.	
2	Enter: `init 0`	The `ok>` prompt is displayed.
3	Enter the following command: `boot cdrom`	The **`Select Language and Locale`** screen is displayed
4	Select the appropriate language and locale and click `Continue`.	The **`Solaris Installation Program`** screen is displayed
5	Click the `Continue` button.	The **`Identify This System`** screen is displayed
6	Click the `Continue` button.	The **`Host Name`** screen is displayed

M.2: Identifying the computer system

This procedure identifies your system for the installation.

Task	Action	Result
1	*No Action Required.*	The **`Host Name`** screen is displayed
2	**For field upgrades only.** In the Speed Centre, any host name is acceptable at this point. a. In the *Host name* field, enter the host name that was previously recorded for the workstation (see page 2-11.) b. Click the `Continue` button.	The **`Network Connectivity`** screen is displayed

Task	Action	Result
3	a. Click the `Yes` option. b. Click the `Continue` button. c. If your system has more than one network board, a *Primary Network Interface* screen displays. In that case, select: • the `le0` option (SPARCserver only) • or `the hme0` option (Ultra 5 or Enterprise platforms)	The **`IP Address`** screen is displayed
4	a. In the IP address field, enter the IP address (if it differs from 129.200.9.1) that was previously recorded for the workstation (see page 2-11). b. Click the `Continue` button.	The **`Confirm Information`** screen is displayed
5	a. Check the information displayed on the screen. If the information is correct, click `Continue`. If the information is incorrect, click `Change` and go back to Step 1.	The **`Name Service`** screen is displayed

M.3: Setting the Name Service options

This procedure sets the name service options.

Task	Action	Result
1	*No Action Required.* The Name Service screen is displaying.	The **Name Service** screen is displayed
2	a. Click the None option. b. Click the Continue button.	The **Confirm Information** screen is displayed.
3	a. Check the information displayed on the screen. If the information is correct, click Continue. If the information is incorrect, click Change and go back to Step 1.	The **Subnets** screen is displayed.
4	a. Click the No option. b. Click the Continue button.	The **Time Zone** screen is displayed.

M.4: Setting the correct date and time

This procedure sets the date and time.

Task	Action	Result
1	*No action required.* The Time Zone screen is displaying.	The **Time Zone** screen is displayed.
2	a. Click Geographic region b. Click Set.	The **Geographic Region** screen is displayed.
3	a. Select an appropriate region and time zone. b. Click the Continue button.	The **Date and Time** screen is displayed.
4	a. Change the date and time as needed to reflect the current local date and time. b. Click Continue.	The **Confirm Information** screen is displayed.
5	Check the information displayed on the screen. If it is correct, click Continue If it is incorrect, click Change and repeat Step 1.	The **Solaris Interactive Installation** screen is displayed.

M.5: Selecting the *Solaris* 2.7 system files

This procedure selects *Solaris* system files for installation.

Task	Action	Result
1	*No Action Required.*	The **`Solaris Interactive Installation`** screen is displayed.
2	Click the `Continue` button.	The **`Upgrade System?`** screen is displayed.
3	Click the `Upgrade` button.	The **`System Type`** screen is displayed.
4	a. Click `Standalone`. b. Click the `Continue` button.	The **`Select Language`** screen is displayed.
5	a. Click `Continue` to choose English and click continue, or choose an alternate language and click `Continue`.	A message is displayed to indicate that the Solaris software on the system is being analyzed for the upgrade. When the analysis is complete the **`Customize Software`** screen is displayed.
6	Verify that the "`Select to include Solaris 64-bit support" option` is **not** selected, and click `Customize`.	The **`Customize Software`** screen presents list of software package options.

7	Select the packages listed below by starting at the top of the list and make the package selections in the order shown below. When necessary, click on the triangular icons to expand and collapse package clusters. Some of these packages may already be selected, in which case they should not be altered.
	• Basic Networking (both packages)
	• On-Line Manual Pages
	• open the cluster for Open Windows Version 3, and select:
	  • X Windows system online user man pages
	• Point-to-Point Protocol (all three packages)
	• open the cluster for Programming tools and libraries and select:
	  • CSS tools bundled with SunOS
	  • Solaris bundled tools
	• System Accounting (both packages)
	  • Terminal Information	

Task	Action	Result
8	After you have selected all the packages listed in Step 7, verify that the following package clusters are **not** selected. If they are found to be selected, remove them. • Power Management OW Utilities • Power Management Software	
9	After the correct software packages are selected, click `OK`.	The **`Software`** screen is displayed
10	Click `Continue`.	The **`Profile`** screen is displayed
11	Click `Begin Upgrade.`	
12	When the upgrade is finished, log in as root user and enter: `eject cdrom`	

M.6: Editing */etc/default/login* to enable remote console access

This procedure enables remote console access to the CMS server.

Task	Action
1	Enter: `chmod 777 /etc/default/login`

2	Enter the following commands to open the file in vi and display text lines:
	`vi /etc/default/login`
	`:set nu`

3	Search for the *CONSOLE* line, which will appear similar to the following example: `CONSOLE=/dev/console` Note the line number displayed at the left side of the *CONSOLE* line. If the CONSOLE line is not visible on the current screen, enter the following command: :/CONSOLE The should move the cursor near, or on, the line of interest.

4	To "comment out" the line by inserting a "#" character at the beginning of the line:
	a. Enter a colon followed by the CONSOLE line number. For example, if the *CONSOLE* line number is 15, you would enter:
	`:15`
	The cursor moves to the beginning of the *CONSOLE* line.
	b. Press the Esc key, then press the letter i (This changes vi to insert mode.)
	c. Enter: #
	d. Press the Esc key and enter:
	`:wq`
	The revised line should read:
	`#CONSOLE=/dev/console`

5	Enter: `chmod 444 /etc/default/login`

N: Installing the *Sun* Validation Test Suite

This procedure installs the *Sun* Validation Test Suite.

Task	Action
1	Load the “Solaris 7 Supplemental Software" CD.

2	Enter:
	/usr/sbin/pkgadd -d /cdrom/cdrom0/Product SUNWvts SUNWvtsmn
	The system begins the installation, then asks:
	`This package contains scripts ...`
	`Do you want to continue?`

3	Enter: `y` The system displays the message: `Installation of <SUNWvtsmn> was successful.`
4	Enter: `eject cdrom`

O: Installing Aurora SBus Multiport Drivers

This procedure is required only for SPARCserver platforms using an Aurora SBus Multiport card.

Task	Action
1	Refer to the Aurora package installation obtained in "Removing the Aurora port drivers" on page 2-63 to see if the system used 8-port or 16-port drivers.
2	Load the Aurora Drivers CD.

3	Choose one of the `pkgadd` commands listed below:
	a. If the system has an 8-port expander, enter:
	`pkgadd -d /cdrom/cdrom0/Solaris_7 AURAacs AURAacsa AURAacss`
	b. If the system has a 16-port expander, enter:
	`pkgadd -d /cdrom/cdrom0/Solaris_7 AURAsio16`
	The program responds:
	`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 <AURA`*xxx*`> [y,n,?]`

4	Enter: `y` The program responds: `Installing Aurora 401/800S WMS2000/3X00 Base Driver (Solaris 7 SPARC) as <AURA`*xxx*`>` • For a 16-port package installation, the program returns to the command prompt when the installation is complete. Go to the next procedure. • For an 8-port package installation, the installation procedure continues below with Step 5.

5	The program installs the fist 8-port Aurora package, and prompts:
	`There are 2 more packages to be installed.`
	`Do you want to continue with installation [y,n,?]`

6	Enter `y` each time you are prompted. When the installation is complete, the program returns to the command prompt.
7	Enter: `eject cdrom`
8	Reboot by entering: `shutdown -y -i6 -g0` When the reboot is finished, log in as root user.

P: Installing HSI/S Driver Software

This procedure is required only for SPARCserver, Enterprise 3000 or 3500 platforms equipped with a High-speed Serial Interface - SBus card.

Note: Upgrade to the *SunLink* HSI/S version 3.0 driver software is not required for CMS R3V8, or for proper function of new HSI/S cards being added to the system. Therefore, if the *SunLink* HSI/S 2.0 driver software is currently installed on the system, you are not required to upgrade the HSI/S drivers at this time.

If you have installed a second HSI/S card on the system, you may choose not to upgrade the driver software after installing a new HSI/S card. However, you must execute a `boot -r` command so that the new card is recognized by the existing HSI/S driver software.

The installation procedure presented below would be used under either of two scenarios:

- If you already have one or more HSI/S cards installed on the server and choose to upgrade to the version 3.0 driver, you must first remove the obsolete driver package and associated Solaris patches; begin the procedure at Step 1.
- If you are installing an HSI/S card on the server for the first time, no previous HSI/S driver versions are installed on the system. Therefore, the initial clean-up steps can be omitted; begin the procedure at Step 5.

Task	Action	Result
1	To search for an obsolete Solaris patch associated with the HSI/S version 2.0 driver, enter: `showrev -p | grep 101130` • If a line of output is displayed, the patch is present. Note the specific patch version. For example, the output may indicate the presence of patch 101130-12, where "12" is the specifc version of the patch. Proceed to Step 2. • If the patch is not found, go to Step 3.	
2	If the *showrev* command generates a line of output for the patch, enter a *backoutpatch* command. For example, for the patch version shown in Step 1, you would enter: `/var/sadm/patch/101130-12/backoutpatch 101130-12`	

Task	Action	Result

3	To identify the current HSI/S driver version, enter:
	`pkginfo -x SUNWhsis`
	If the driver version is 2.0, the command displays output similar to the following:
	`SUNWhsis SunHSI/S Driver for PCI (sparc) 2.0,REV=199x.xx.xx`	

4	If the HSI/S driver version is 2.0, enter: `pkgrm SUNWhsis` Enter y to confirm the pkgrm command each time you are prompted.	
5	Load the "*SunLink HSI/S 3.0*" CD.	

6	Enter:
	`/usr/sbin/pkgadd -d /cdrom/cdrom0/Product`
	The system displays and installation menu and prompts:
	`Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:`	

7	Press Enter: System responds: `Do you want to continue with the installation of <SUNWhsis> [y,n,?]`	
8	Enter: `y` The program proceeds to install the `SUNWhsis`, `SUNWhsism` and `SUNWhsisu` packages. When the installation is finished, the program returns to the installation menu and prompts: `Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:`	
9	Enter: `q` The system returns to the command prompt.	
10	`Enter: eject cd`	

Q: Installing HSI/P driver software

This procedure is required only for Ultra 5 platforms equipped with an HSI/P card.

Task	
1	Verify that you are logged in as root and load the "*SunHSI/P Adapter 2.0"* CD.

2	Enter:
	`/usr/sbin/pkgadd -d /cdrom/cdrom0/Product`
	The system displays and installation menu and prompts:
	`Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:`

3	Press Enter: System responds: `Do you want to continue with the installation of <SUNWhsip> [y,n,?]`
4	Enter: `y` The program proceeds to install the `SUNWhsip`, `SUNWhsipm` and `SUNWhsipu` packages. When the installation is finished, the program returns to the installation menu and prompts: `Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:`
5	Enter: `q` The system returns to the command prompt.
6	Enter: `eject cdrom`

R: Installing SAI/P driver software

This procedure is required only for Ultra 5 platforms equipped with an SAI/P card.

Task	Action	Result
1	Verify that you are logged in as root and load the "*SunSAI/P Adapter 2.0"* CD.	
2	Enter: `/usr/sbin/pkgadd -d /cdrom/cdrom0/Product saip_2`	A listing of available packages is displayed:
3	Press `Enter`	The system responds: `Do you want to continue with the installation of <SUNWsaip> [y,n,?]`
4	`Enter: y`	The packages are installed and the sytem returns to the prompt
5	Enter: `eject cdrom`	

S: Installing and Setting Up the NTS R10.0B Software

This procedure installs the Bay Networks Annex R10.0B NTS software and sets up the NTS start-up files. It is required only if your system is connected to one or more Network Terminal Server (NTS) installations.

S.1: Installing the Communications Server Software

This procedure installs the Bay Networks Annex R10.0B NTS software.

Task	Action	
1	Load the "*BayNetworks Annex Release 10.0B*" CD.	
2	Enter: `mount`	The program lists the devices and systems currently mounted. Find the line beginning with */cdrom* , which is usually near the end of the output. It names the CD in the drive. `/cdrom/baynet_annex_system`

Task	Action	
3	Enter: `/cdrom/cdrom0/install`	The system responds: `Do you want to continue (y/n/q=quit) [y]:`
4	Press Enter.	The program displays a menu and prompts: `Enter desired action [1]:`
5	Press Enter.	The program prompts for a directory name: `Directory name [/usr/annex/cs_R10.0B]:`
6	Press Enter.	The program prompts for a carriage return: `Type carriage return to continue. Your cursor should be here-->`

7	Press Enter.	The program prompts for another directory name:
		`Where do you want the Annex utilities installed?`
		`Utility directory [/usr/annex]:`

8	Press Enter.	The program prompts for the BFS directory name: BFS directory [/usr/spool/erpcd/bfs]:
9	Press Enter.	The program asks if you want to install man pages: `Do you wish to install manual pages at this time? [y]:`
10	Enter y.	The program prompts for the man page base directory: `What is the manual page base directory? (q=quit) [/usr/man]:`
11	Press Enter.	The program displays an installation options menu and prompts: `Enter installation choice [1]:`

12	Press Enter.	The program asks for disk space confirmation:
		`To continue with this installation you need` *x* `MB of disk space in directory /usr/annex/cs_R10.0-R4.2HT.`
		`. . .`
		`Are you ready to continue (y/q=quit) [y]:`

Task	Action	

13	Press Enter.	The annex model menu displays:
		`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:`

14	Select the `Install all images` option.	The program responds:
		`Calling command: tar -xf /cdrom/baynet_annex_system/unix/software.tar`
		`.`
		`.`
		`.`
		`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]:`

15	Enter `y`.	The program responds:
		`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]:`

16	Enter the number corresponding to the `none` option.	The program responds: `Do you want the restrictions to apply to PPP and SLIP? [n]:`
17	Press Enter.	The program asks if you want the "erpcd daemon" to provide access control: `Do you want the erpcd daemon to provide access control (y/n) [y]:`

Task	Action	

18	Enter n.	The program lists the files that have been updated and asks if you want to install them:
		`Copies of the following files have been updated:`
		`services annex-initd`
		`Do you want to install any of these files (y/n) [y]:`

19	Press Enter.	The program requests verification: `Copy file save/modified/service to /etc/services (y/n) [y]:`
20	Press Enter.	The program responds: `Copy file save/modified/annex-initd to /etc/rc2.d/annex-initd (y/n) [y]:`

21	Press Enter.	The program copies the files and then asks if you want to start up the new version of the erpcd daemon:
		`No more system files to create or update`
		`Do you want to start-up the new version of the erpcd daemon? (y/n) [y]:`

22	Enter y.	The program starts the daemon, signals it is done installing the Comm. Server software, and asks whether you want to install the Annex Manager:
		`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]:`

23	Enter n. The program returns to the system prompt.	

S.2: Setting Up the NTS Start-up Files

This procedures sets up the NTS start-up files.

Task	Action
1	Enter: `echo "/etc/rc2.d/annex-initd" > /etc/rc2.d/S99annex-initd`

2	Enter:
	`chmod 744 /etc/rc2.d/annex-initd`
	`chmod 744 /etc/rc2.d/S99annex-initd`

3	Enter:
	`ln -s /usr/annex/na /usr/bin/na`
	`ln -s /usr/annex/rtelnet /usr/bin/rtelnet`
	`ln -s /usr/annex/aprint /usr/bin/aprint`

4	Enter: `eject cdrom`

T: Installing X.25 Version 9.1

This procedure installs the X.25 Version 9.1 software packages. It is required only if the X.25 protocol is used by the system.

Task	Action
1	Load *the "Solstice for Server Connect, Version - March 1997"* CD into the CD-ROM drive.

2	Enter the following commands:
	`cd /cdrom/cdrom0/products`
	`pkgadd -d x25/Image/sparc`
	An installation menu displays.

3	Enter: `1 2 3 4` The system installs the first four packages in the menu. For each package, you will have to answer the following prompt: `Do you want to continue with the installation of <package> [y,n,?]` Enter `y` each time. After the last package has been installed, the installation menu redisplays.
4	To exit the installation menu, enter: `q` The system prompt displays.

U: Installing the X.25 License Manager

This procedure installs the X.25 license manager. It is required only for systems using the X.25 protocol.

Task	Action
1	Enter: `pkgadd -d licenses/Image/sparc` The X.25 installation menu is displayed.
2	Press Enter. The system begins installing all packages listed in the menu. For each package to be installed, the system stops and prompts: `Do you want to continue with the installation of <SUNWcclit> [y,n,?]y` Enter `y` each time you are prompted. When the last package has been installed, the installation menu is displayed again.
3	To exit the installation menu, enter: `q`

4	Enter the following commands:
	`cd`
	`eject cdrom`

V: Setting Up the X.25 License

This procedure sets up the X.25 Version 9.1 software license. It is required only for systems using the X.25 protocol.

Task	Action
1	Enter the following command: `/etc/opt/licenses/lit_tty` The system responds with a product selection screen.
2	Press Enter repeatedly until the cursor is at *Solstice X.25 for Solaris 2 SPARC 9.1*.
3	Press `x`. An ID screen is displayed.
4	Press Enter several times until the cursor is positioned at *Rights to Use*.
5	Press `1,` then press Enter. The cursor moves to *Password*.
6	Enter the password and press Enter. The cursor moves to *Done Setting Up This License*.
7	Type `x.` The system enters the license information and prompts you to press any key.
8	Press any key. The system returns to the product screen.
9	Press Enter several times until the cursor is positioned at *Exit - Save Licenses.*
10	Press `x.` The system begins installing the licenses. If you are installing on a Speed Centre machine, whose hostid differs from that of the customer's machine, you may ignore any error messages. When the licenses are installed, the system prompt returns. ⚠ **CAUTION:** The host name of the system must not be changed once the X.25 license is installed. The X.25 license is disabled if the host name is changed.

W: Setting Up the *INFORMIX* Environment

This procedure sets up the *INFORMIX* installation and execution environment. This procedure is required for:

- all systems being upgraded from CMS version R3V5 or earlier
- R3V5u or R3V6 systems on which one or more new *INFORMIX* software packages are being added to a system on which the other *INFORMIX* packages required by CMS R3V8 are already installed

Task	Action

1	Enter the following commands:
	`export TERM=sun-cmd`
	`mkdir /opt/informix`

2	Set the environment variables by entering the following commands: export INFORMIXDIR=/opt/informix export PATH=$PATH:$INFORMIXDIR/bin
3	To change to the `informix` directory, enter: cd $INFORMIXDIR

4	To verify that the path was set correctly and that you are in the `/opt/informix` directory, enter:
	`pwd`
	The system should respond:
	`/opt/informix`
	If the correct path is not displayed, return to Step 1 and repeat the entire procedure.

X: Installing *INFORMIX* SQL

These procedures install the *INFORMIX* SQL software package. These procedures are required if:

- the correct version of *INFORMIX* SQL was not installed on the pre-upgrade system

  or

- *INFORMIX* SQL was not previously installed and is newly purchased as an upgrade option.

If the correct SQL package is either already installed or is not required as part of the upgrade, go to "Installing INFORMIX ILS 2.11" on page 2-93.

NOTE:

The installation procedure for SQL varies according to the existing state of the upgrade system.

- Pre-upgrade R3V5 systems require new versions of all INFORMIX packages in order to be compatible with R3V8. Therefore, all obsolete obsolete *INFORMIX* packages should already be removed (see procedure H.2 (Removing System Files and Packages). To install the Informix SQL 7.20 package, follow the steps presented in **procedure X.1 (Installing SQL 7.20 as part of a new INFORMIX installation)**.
- Some pre-upgrade R3V5u and R3V6 systems may already have the correct SE 7.22 and ESQL 9.14 package versions required by R3V8, and SQL 7.20 is being installed as a new upgrade option. Follow the steps presented in **procedure X.2 (Installing SQL 7.20 on a system with pre-existing INFORMIX packages)**.

X.1: Installing SQL 7.20 as part of a new *INFORMIX* installation

This procedure is required for all pre-upgrade R3V5 systems upgrading to R3V8.

Task	Action
1	Load the *INFORMIX-SQL* CD.
2	Enter: `cd $INFORMIXDIR`

Task	Action
3	To copy the *INFORMIX*-SQL files from the CD to the current directory, enter: `tar xvf /cdrom/unnamed_cdrom*/sql.tar`
4	To start the installation, enter: `./installsql` The program displays an information screen and prompts for a “RETURN” .
5	Press Enter. After a few minutes, you are prompted for a serial number: `Enter your serial number (e.g.,INF#R999999) >`
6	Enter the 11-character serial number shipped with the CD. The program prompts for the serial number key.
7	Enter the 6-character serial number key shipped with the CD. The program displays a license warning and prompts for a “RETURN”.
8	Press Enter. The program installs the software and returns to the system prompt.
9	Enter: `eject cdrom` **Go to procedure Y (Installing INFORMIX SE 7.22)**.

X.2: Installing SQL 7.20 on a system with pre-existing *INFORMIX* packages

This procedure is intended for pre-upgrade R3V5u and R3V6 systems on which the *INFORMIX* SE 7.22 and ESQL 9.14 packages are already installed, and SQL 7.20 is now being added to the system as a new upgrade option.

Task	Action
1	Obtain the *“INFORMIX-SQL”* CD, and record the serial number and serial number key for the Informix SQL software package. The serial number information is printed on the CD.
2	Load the *INFORMIX-SQL* CD.
3	To preserve the *sqlhosts* file, enter: `cp -p /opt/informix/etc/sqlhosts /cms/tmp/sqlhosts`

Task	Action
4	Enter: `cd $INFORMIXDIR`
5	To copy the *INFORMIX*-SQL files from the CD to the current directory, enter: `tar xvf /cdrom/unnamed_cdrom*/sql.tar`
6	Start the installation by entering the following command: `./installsql` The program displays an information screen and prompts for a “RETURN” .
7	Press Enter. After a few minutes, you are prompted for a serial number: `Enter your serial number (e.g.,INF#R999999) >`
8	Enter the 11-character serial number shipped with the CD. The program prompts for the serial number key.
9	Enter the 6-character serial number key shipped with the CD. The program displays a license warning and prompts for a “RETURN”.
10	Press Enter. The program installs the software and returns to the system prompt.

11	Enter:
	`vi /opt/informix/etc/.snfile`
	The file contents should be similar to the following example:
	`INFORMIX-SQL Serial Number ABC#A123456`
	`INFORMIX-SE Serial Number ABC#A123456`
	`INFORMIX-Connect Serial Number ABC#A123456`
	If the sequence for the package listings is not the same as that shown in the example provided above, edit the file to arrange the packages in the proper sequence.

12	To restore the *sqlhosts* file, enter: `cp -p /cms/tmp/sqlhosts /opt/informix/etc/sqlhosts`
13	Enter: `eject cdrom` **Go to procedure AA (Installing INFORMIX ILS 2.11)**.

Y: Installing *INFORMIX* SE 7.22

This procedure installs the *INFORMIX* SE 7.22 software. If this package is already installed on the system, go to procedure Z (Installing INFORMIX Runtime ESQL 9.14).

Task	Action
1	Remove the *"INFORMIX 7.22 SE*" CD from its case and record the serial number and serial number key exactly as they appear on the material shipped with the CD.
2	Load the CD.
3	Enter: `cd $INFORMIXDIR`
4	To copy SE package files from the CD to the current directory, enter: `tar xvf /cdrom/unnamed_cdrom*/se.tar`
5	To start the installation, enter: `./installse` The program displays an information screen and prompts for a “RETURN”.
6	Press Enter. After a few minutes, the program prompts for a serial number.
7	Enter the 11-character serial number. The program prompts for the serial number key.
8	Enter the 6-character serial number key. The program displays a license warning and prompts for a “RETURN”.
9	Press Enter. The program installs the software and returns to the system prompt.
10	Enter: `eject cdrom`

Z: Installing *INFORMIX* Runtime ESQL 9.14

This procedure installs the *INFORMIX* Runtime ESQL 9.14 software. If this package is already installed on the system, go to procedure AA (Installing INFORMIX ILS 2.11).

Task	Action
1	Obtain the "*Informix Runtime ESQL Version 9.14*" CD and record the serial number and serial number key from the material shipped with the CD.
2	Load the CD.
3	Enter: `cd $INFORMIXDIR`
4	To copy files from the CD to the current directory, enter: `tar xvf /cdrom/unnamed_cdrom*/conn.tar` The system copies the files and returns to the system prompt.

5	To start the installation, enter:
	./installconn
	The program responds:
	`cat: cannot open /opt/informix/etc/ClientSDK-cr`
	`Your existing INFORMIX shared libraries, if any, will be replaced and upgraded.`
	`Are you sure? [yes/no]`

6	Enter y
	The program responds:
	`Is I-Connect being installed along with Informix Dynamic Server with Universal Data Option (Release 9, requires to be run as user "informix")?`
	`(yes or no)`

7	Enter n
	The program responds:
	`This script will change the owner, group, and mode of many of the files of this package in this directory.`
	`Press RETURN to continue, or the interrupt key`
	`(usually CTRL-C or DEL) to abort.`

8	Press Enter. After several minutes, the program prompts for a serial number.

Task	Action
9	Enter the 11-character serial number. The program prompts for the serial number key.
10	Enter the 6-character serial number key. The program displays a license warning and prompts for a “RETURN”.
11	Press Enter. The program installs the software and returns the system prompt.
12	Enter: `eject cdrom`

AA: Installing *INFORMIX* ILS 2.11

This procedure installs *INFORMIX* ILS 2.11. The ILS package is optional for CMS R3V8, and is only required if the customer has purchased the software.

If this package is already installed on the system, go to procedure AB (Installing Solstice DiskSuite 4.2).

Task	Action	Result
1	Load the "*INFORMIX ILS 2.11"* CD.	
2	Enter: `cd $INFORMIXDIR`	
3	Start the installation by entering the following commands: `/cdrom/cdrom0/install`	The program displays a list of languages and prompts: `Select installer language?`
4	Enter the number of the language you want to use during the installation. If you select anything other than English, you will also have to choose a display character set.	The program displays a list of selections for install type and other options and prompts: `Enter one choice and hit ENTER:`
5	Enter 2 to select `Custom Install.`	The program displays a list of program components and prompts: `Select the components to install:`
6	Enter: `2 4` to select the `Locale` and `Code set conversion` options.	The program displays a list of locales and language character maps and prompts: `Enter one or more choices, separated with spaces, and hit ENTER:`
7	Enter: `7 15` to select `English` and `Japanese.`	The program displays a list of territory language locales and prompts: `Enter one or more choices, separated with spaces, and hit ENTER:`
8	Enter: `3` to select `United States.`	The system asks for *Locale-Codesets*.
9	Enter: `5`	The system asks for *Codeset Conversion Regions*.
10	Enter: `7 12`	The system asks for *Codeset Conversion Tables Codesets*.
11	Enter: `1 2 5`	The system asks for another *Codeset Conversion Tables Codesets* selection.

Task	Action	Result
12	Enter: `20 22`	After a few minutes, the program displays several pages of installation summaries and prompts for confirmation: `Hit ENTER to confirm or 'q' to return to main menu.`
13	Press Enter. The program installs the software, which may take from 20 minutes to an hour depending upon the platform, and then prompts you to "`Hit ENTER....`"	
14	Press Enter. The main menu displays.	
15	Enter the number of the `Exit` option.	
16	Enter the `eject cdrom` command. Remove the CD and return it to its case.	

AB: Installing *Solstice DiskSuite* 4.2

This procedure installs version 4.2 of the *Solstice DiskSuite* software package**.**

Step	Action
1	Load the *"Solaris Easy Access Server 2.0"* CD.
2	Enter: `pkgadd -d /cdrom/cdrom0/products/DiskSuite_4.2/sparc SUNWmd`
3	The system responds: `Do you want to continue with the installation of <SUNWmd> [y,n,?]`
4	Enter: `y` The system installs the package and returns to the system prompt.
5	Enter: `eject cdrom`

AC: Installing *Solaris* Patches

This procedure Installs *Solaris* patches.

Step	Action
1	Load the "*CentreVu Call Management System*" CD.
2	Enter: `pkgadd -d /cdrom/cdrom0 spatches` An installation menu is displayed.
3	The system responds: `Do you want to continue with the installation of <patches> [y,n,?]`

4	Enter: `y`
	The system responds:
	`Installing CMS Supplied Solaris patches as <spatches>`
	`Installation of <spatches> was successful.`

5	Enter: `/tmp/patches/install_patches | tee -a /var/sadm/spatch.log` The installation process may proceed for as long as 30 to 45 minutes.

6	When the process is finished, use the following command to reboot the system:
	`/usr/sbin/shutdown -y -i6 -g0`
	When the console login prompt displays, log in as the root user. The spatches are now installed.
	Note:
	The shutdown command occassionally fails to reboot the machine. The system issues the appropriate shutdown messages, but then returns to the prompt instead of shutting down. If this occurs, enter:
	`/usr/sbin/reboot`

7	Log in as root and enter: `installf SUNWcsr /etc d 0755 root sys`

AD: Configuring *Solstice* DiskSuite

This procedures configure *Solstice* DiskSuite for the system. Separate procedures are provided for unmirrored and mirrored systems. Should you encounter any problems, see "Troubleshooting a Solstice DiskSuite File System" on page 7-5.

AD.1: Configuring DiskSuite on an unmirrored system

This procedure configures DiskSuite on an unmirrored system.

Task	Action
1	Enter: `stty erase <Ctrl-H>` (where *<ctrl-H>* means "press/hold Control as you press H") The stty command sets up your backspace key as an actual backspace. If you do not enter this command, you will have to use the Delete key as a backspace.

2	Prepare to run the *Solstice DiskSuite* setup scripts by entering the following commands:
	`mkdir /olds`
	`cp /cdrom/cdrom0/cms/reloc/rdonly/olds_install/* /olds`
	`cd /olds`
	`chmod +x /olds/olds`

3	To set up the path, enter the following commands: `export PATH=$PATH:/usr/opt/SUNWmd/sbin/:/olds`
4	Enter: `olds -cleanup`
5	Enter: `olds -check_disks`
6	Enter: `olds -mk_files`

Task	Action
7	Enter: `olds -metadbs`
8	Enter: `olds -setup`

AD.2: Configuring DiskSuite on a mirrored system

This procedure configures DiskSuite on a mirrored Enterprise 3000 or 3500 system.

Task	Action
1	Enter: `stty erase` *<Ctrl-H>* (where *<ctrl-H>* means “press/hold Control as you press H”) The stty command sets up your backspace key as an actual backspace. If you do not enter this command, you will have to use the Delete key as a backspace.

2	Enter the following commands:
	`mkdir /olds`
	`cp /cdrom/cdrom0/cms/reloc/rdonly/olds_install/* /olds`
	`cd /olds`
	`chmod +x /olds/olds`

3	To alter the path, enter the following command: `export PATH=$PATH:/usr/opt/SUNWmd/sbin/:/olds`
4	Enter: `olds -mirrored -cleanup`
5	Enter: `olds -mirrored -check_disks`
6	Enter: `olds -mirrored -mk_files`
7	Enter: `olds -mirrored -metadbs`

Task	Action
8	Enter: `olds -mirrored -setroot`

9	To reboot, enter:
	`/usr/sbin/shutdown -y -g0 -i0`
	When the ok prompt is displayed, enter:
	`boot -r`
	When the reboot is finished, log in as root.

10	To setup the /cms metadevices, enter the following commands:
	`export PATH=$PATH:/olds:/usr/opt/SUNWmd/sbin`
	`olds -mirrored -setup`
	The system should respond:
	`Success, /cms mirrored successfully`

11	Enter the following commands:
	`mkdir /cms`
	`mount /cms`

12	To verify the DiskSuite configuration, enter:
	`df -k`
	The output format should be similar to the following example:
	`Filesystem kbytes used avail capacity Mounted`
	`/dv/md/dsk/d13 xxxxx xxxxx xxxxx xx% /`
	`proc xxxxx xxxxx xxxxx xx% /proc`
	`fd xxxxx xxxxx xxxxx xx% /dev/fd`
	`/dev/md/dsk/d21 xxxxx xxxxx xxxxx xx% /cms`
	To confirm that DiskSuite has administered all of the disks, verify that the "/dev/md/dsk/d21" line is present in the output.

AE: Creating the CMS Directory

This procedure creates a new CMS directory and restores customer information saved from the previous CMS directory.

Step	Action
1	Enter: `mkdir /cms`
2	Enter: `mount /cms`
3	Enter: `cd /cms.save`
4	Enter: `cp -R* /cms` The cms directory is now created and mounted to the system.
5	Enter: `rm -fr /cms.save`

AF: Installing CMS Supplemental Services

This procedure installs the CMS Supplemental Services software. Supplemental Services must be installed on the system before the CMS software is installed.

Task	Action	Result
1	Obtain the "*CentreVu CMS Supplemental Services*" CD and record the software version number from the CD, which is used later in the procedure.	
2	Load the CD.	

3	Enter:
	/usr/sbin/pkgadd -d /cdrom/cdrom0 LUim
		`Processing package instance <LUim>`
		`. . . . . .`
		`Installation of <LUim> was successful.`

4	Enter: `/opt/LUim/bin/install 2>&1 | tee -a /opt/LUim.log` The system displays a series of messages while it installs various code libraries and other packages. When the installation is complete, the sytem returns to the prompt.	
5	Obtain the version number for the copy of the "CentreVu Supplemental Services" CD used in the preceding procedure. Include the version number in the following setup command: `/opt/cc/install/ahl.rXvXXX.X/bin/setup` Use the CD version number to replace the `rXvXXX.X` term in the setup command	
6	Enter: `eject cdrom`	

AG: Installing R3V8 CMS

This procedure installs the new CMS software on the system.

Task	Action	Result
1	`Load the "CentreVu Call Management System"CD.`	

2	Enter:
	`/usr/sbin/pkgadd -d /cdrom/cdrom0 cms`
		System responds:
		`* - conflict with a file that does not belong to any package.`
		`Do you want to install these conflicting files [y,n,?,q]`

3	Enter: y	System displays several files, and queries: `Do you want to install these as a setuid/setgid files [y,n,?,q]`
4	Enter: y	System responds: `Do you want to continue with the installation of <cms> [y,n,?]`

5	Enter: y	System responds:
		`Assigning a new password for cms`
		`New password:`

6	Enter a new CMS login password. Re-enter the password when prompted.	System responds:
		`Assigning a new password for cmssvc`
		`New password:`

7	Enter a new login password for CMS services. Re-enter the password when prompted.	System responds:
		`Installing part 1 of 1`
		`. . . . .`

8	A list of installed CMS files and related software packages is displayed as the software is downloaded from the CD. When the installation is complete, the system returns to the prompt.	
9	To reboot the system, enter: `/usr/sbin/shutdown -y -i6 -g0`	

AH: Installing Visual Vectors Server Software

This procedure installs the Visual Vectors Server software and is required only if the customer has purchased CentreVu Visual Vectors.

Task	Action	Result
1	Load the *"CentreVu Visual Vectors Server Software"* CD.	
2	`Enter:` `pkgadd -d /cdrom/cdrom0 LUfaas`	System responds: `The selected base directory </cms/aas> must exist before installation is attempted. Do you want this directory created now [y,n,?,q]`
3	`Enter: y`	The system may display one or more messages indicating file conflicts and query: `Do you want to install these conflicting files [y,n,?,q]`
4	If this message is received, enter: y	System responds: This package contains scripts which will be executed with super-user permission.... Do you want to continue with the installation of LUfaas `[y,n,?,q]`
5	`Enter: y`	System responds: `Installation of LUfaas was successful.`
6	Enter: `eject cdrom`	
7	Enter: `setupaas`	The **`ACD Administration Server System Service`** menu is displayed.
8	Select the `init_aas` option.	System responds: `Maximum concurrent AAS logins [1-100]`
9	Enter the number of concurrent logins. If Visual Vectors was installed on the pre-upgrade system and the number of licenses has not been increased as part of the upgrade, the concurrent login number is the same as the value obtained during procedure for "Identifying Pre-upgrade system conditions" on page 2-8.	
10	Enter q to exit the `ACD Administration Server System Service` menu.	

AI: Setting Up CMS Authorizations

"Authorizations" define the set of features this CMS installation will have, and are set by Lucent Technologies Provisioning engineers from the CMS Services menu.

For a more detailed rendering of the procedure, see "Creating ACDs" on page A-19.

Task	Action	Result
1	Enter: `cmssvc`	The CMS Services menu is displayed.
2	Enter the menu option corresponding to the `auth_set` option.	The system responds: `Password:`
3	Enter the appropriate password. This password is available only to authorized personnel.	The system responds: `Is this an upgrade [y,n]:`
4	Enter: n The auth_set process presents a series of queries intended to identify the features and packages purchased for the system. Authorizations and associated parameters which require input include: • Forecasting package (y/n) • Vectoring package (y/n) • Graphics feature (y/n) • External Call History feature (y/n) • Expert Agent Selection feature (y/n) • External application feature (y/n) • authorization for use of more than 2000 VDNs (y/n) • number of simultaneous CentreVu Supervisor logins (2 - 250) • CentreVu Report Designer (y/n) • maximum number os split/skills (1-10,000) • maximum number of ACDs (1 - 8) When all authorizations have been set, the system returns to the prompt.	

AJ: Installing CMS Patches

This procedure installs CMS patches. Before you begin:

- verify that CMS is turned off
- the "*CentreVu Call Management System*" CD is loaded in the CD-ROM drive

Task	Action	Result
1	Enter: `cmssvc`	The CMS Services menu is displayed.

2	Enter the menu option for the load_all option.
	Note: If there are no patches to be installed, the system displays a message to that effect and returns to the system prompt. In that case, skip the rest of this procedure.
		If patches are available for installation, the system responds:
		`The following patches are available for installation:`
		`1. cmsp1-s`
		`.`
		`.`
		`.`
		`Are you sure you want to install all these patches? (y|n)`

3	Enter: `y`	The system responds:
		`Generating list of files to be patched...`
		`. . . . . .`
		`Patch installation completed.`
		See /cms/patch/cmsp*x*-s/log for details

4	Enter: `eject cdrom`	

AK: Installing the Open Database Connectivity Software

This procedure installs the *OpenLink** ODBC software. For more information about the ODBC feature, see *CentreVu® CMS R3V8 Open Database Connectivity* (585-210-911).

Task	
1	Load the "*CentreVu* CMS *OPENLINK* ODBC Driver" CD.
2	Enter: `mount` After about 15 seconds, the system should respond: `/cdrom/odbc_driver on /vol/dev/dsk/c0t2d0/odbc_driver read only on (current date and time)`
3	13. To create the *OpenLink* ODBC driver directory, enter: `mkdir /usr/openlink`
4	To change to the new directory, enter: `cd /usr/openlink`

5	To copy the files from the CD-ROM and install them, enter:
	`cp /cdrom/cdrom0/server/* .`
	`./install.sh`
	The program responds:
	`Extracting (inf5sol.taz) ...`
	`Extracting (inf7sol.taz) ...`
	`Extracting (odbcsol.taz) ...`
	`Extracting (rqbsol.taz) ...`
	`Enter the name of the user that owns the program`

6	Enter `root` as the name of the user who will own the programs. The program responds: `Enter the name of the group that owns the program`

*_OpenLink_ is a trademark of OpenLink Software.

Task	

7	Enter `root` as the name of the group that will own the programs.
	The program responds:
	`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 technolog`

8	To configure and initiate the ODBC software, enter:
	`/cms/dc/odbc/odbc_init`
	The program responds:
	`ODBC Driver initialization complete.`

9	To verify that the ODBC Request Broker is active on the server, enter:
	`ps -ef | grep oplrqb`
	The program responds:
	`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`

10	To return to the root directory, enter: `cd`
11	Enter: `eject cdrom`

AL: Installing the Forecasting Package

This procedure is required only if the Forecasting package was previously installed on the pre-upgrade system (see procedure A.1 (Identifying Pre-upgrade system conditions) or has been purchased as part of the upgrade.

Step	Action	Result
1	Enter the command: `cmsadm`	*... (CMS admin menu) ...*
2	Enter the number of the `pkg_install` option.	*... (install menu) ...*
3	Enter the number of the `forecasting` option.	`Creating database tables` ... ... `Forecasting package installed`

AM: Installing the External Call History (ECH) Feature Package

This procedure is required if the External Call History feature package was installed on the pre-upgrade system (see page 2-8) or has been purchased as part of the upgrade.

NOTE:

If the customer has a license for CentreVu Explorer version 1.0 or 2.0, enter the provided values where indicated.

Step	Action	Result
1	Enter: cmsadm	The *CMS admin menu* is displayed.
2	Enter the number of the `pkg_install` option.	The *install menu* is displayed.
3	Enter the number of the `external call history` option.	`Enter the name of computer to which to send call records (up to 256 characters):`
4	Enter the name of the Call History Reporting machine that was administered in uucp. If the customer has a CentreVu Explorer license, enter: `dummyech`	`Enter password for nuucp login on xxxxxxxx (up to 8 characters)`
5	Enter the password for `nuucp` of the Call History Reporting machine that was administered in `uucp`. If the customer has a CentreVu Explorer license, enter: `lucent1`	`Enter CMS port for connection to xxxxxxxx (s_pdevxxx):`

6	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 an 8- or 16-port NTS.
	If the customer has a CentreVu Explorer license, enter:
	`s_pdev999`
		`Select a speed for this connection`
		`1) 19200`
		`2) 38400`

Step	Action	Result
7	Enter the speed of the connection between *CentreVu* CMS and Call History Reporting machine. If the customer has a CentreVu Explorer license, enter: `19,200`	`Number of call segments to buffer for ACD xxxxx (0-99999):`

8	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.)
	
	If the customer has a CentreVu Explorer license, calculate this value by dividing 99, 999 by the number of ACDs connected to the system.
	
	This step is repeated for each administered ACD.
		`Computing space requirements and file system space availability.`
		
		`External Call History package installed.`

AN: Configuring CMS

This procedure completes the CMS setup.

Step	Action	Result
1	Enter: `cmssvc`	The *CMS Services menu* is displayed.
2	Enter the number of the `setup` option.	The *install menu* is displayed.
3	You can choose to answer a series of questions interactively through the terminal, or insert a *UNIX* flat file containing the necessary information. The following information is required: • system host name • type of backup device on your system • path name of your backup device • number of ACDs in your system • for each ACD, the following information: Switch name Switch model Whether vectoring and EAS are enabled Whether Central Office has disconnect supervision Phantom Abandon Call Timer value Local port/channel number Remote port/channel number The device used for X.25 connectivity Number of splits/skills Maximum number of split/skill members supported Number of shifts Start and stop times for each shift Number of agents logged in during each shift Number of associated trunk groups Number of trunks Number of associated unmeasured facilities Number of call work codes Number of vectors and VDNs. For more detailed instructions, see “Setting up the *CentreVu* CMS Application” in *CMS R3V8 Software Installation and Maintenance* (585-210-941).	

AO: Performing a CMSADM Backup

This procedure provides a backup of the upgraded disks and is required for both Speed Centre upgrades and field upgrades. If CMS data migration problems occur, the CMSADM backup is used to re-create the upgraded system.

NOTE:

For a normal upgrade, this step marks the end of the Speed Centre's responsibility. The disk drives are removed from the machine and packed up with the customer's backup tapes. The printout and tape from the latest backup are added to the package, and the package is returned to the customer site.

All remaining procedures must be done on site by either the customer or Lucent technicians (if the customer has elected to have Lucent perform the entire upgrade).

- Before starting the backup procedures described 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`.

CAUTION:

Verify that you are using the correct tape for the tape drive on your system. Many of the tape cartridges look alike, and using the wrong tape can damage the tape drive mechanism and tape heads. The following table lists the different model of tape drives, the accompanying tape cartridge model identification, and the CMS computers that use the tape drives.

Tape Drive	Tape Cartridge	CMS Computers
20/40-GB 8mm	*Exatape*[a] 170m AME	*Enterprise* 3500
SLR5 4/8-GB QIC	*Sony*[b] SLR	*Ultra* 5
14-GB 8mm	*Exatape* 160mm AME	*Enterprise* 3000

Tape Drive	Tape Cartridge	CMS Computers
5-GB 8mm	*Exatape* 112mm AME	*Enterprise* 3000
2.5-GB QIC	*3M*[c]	*SPARCserver*
150 MB	*Maxell*[d] DC6320	*SPARCserver*

a*Exatape* is a trademark of *Exabyte* Corporation.
b*Sony* is a registered trademark of Sony Corporation.
c*3M* is a registered trademark of Minnesota Mining and Manufacturing.
d*Maxell* is a registered trademark of Maxell, Inc.

AO.1: Procedure

1. Log in as root user and enter:

   `lp /etc/vfstab`

   The system prints out the */etc/vfstab* file. The printed output is required when the backup is restored.

   To access the CMS Administration menu, enter:

   `cmsadm`

   The CMS Administration menu appears:

```
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) pkg_install Install a feature package
5) pkg_remove  Remove a feature package
6) run_cms     Turn CentreVu CMS on or off
7) port_admin  Administer Modems, Terminals, and Printers

Enter choice (1-10) or q to quit:
```

2. Enter `3` to select the `backup` option. Depending on the configuration of your system, go to step a or b, below.

   a. If only one tape drive is available on the system, the program responds:

```
Please insert the first cartridge tape into
<device name>.
Press ENTER when ready or Del to quit:^?
```

   b. If more than one tape drive is available for use by the system, the program will display output similar to the following example:

```
Select the tape drive:
  1) <Exabyte EXB-8500 8mm Helical Scan>
  2) <Archive QIC-150>
Enter choice (1-2):
```

   Enter a tape drive selection from the displayed list. The program responds:

```
Please insert the first cartridge tape into
<device name>.
Press ENTER when ready or Del to quit:^?
```

3. Press Enter. The backup process begins. If more than one tape is required, the program displays the following message:

```
End of medium on "output".
Please remove the current tape, number it,
insert tape number x, and press Enter
```

   If you receive the message displayed above, insert the next tape and allow it to rewind. When it is properly positioned, press Enter.

4. When the backup is completed, the program response varies according to the number of tapes used for the backup:

   a. If the number of tapes required is one, the system responds:

```
xxxxxxx blocks
Tape Verification
xxxxxxx blocks
WARNING:  A CMS Full Maintenance Backup in
addition to this cmsadm backup must be done to
have a complete backup of the system.  . . . .

Please label the backup tape(s) with the date
and the current CMS version (r3v8xx.x)
```

   b. If the number of tapes required is more than one, the system responds:

```
xxxxxxx blocks
Tape Verification
Insert the first tape
Press Return to proceed :
```

   If you receive the message displayed above, insert the first tape used in the backup and press Enter. Wait for the tape drive light-emitting diode (LED) to stop blinking before you remove the tape.

   When prompted, repeat this process for any additional tapes generated by the backup process. When the final tape is verified, the program displays the output shown above in step 4a.

5. Save the tapes and the *vfstab* printout until a backup restore is performed.

CAUTION:

Label all tapes with the tape number and the date of the backup. Set the tape write-protect switch to read-only.

AP: Performing a Full Maintenance Backup

This procedure is performed at the customer site on the pre-upgrade system. At this point in the upgrade process, a full maintenance backup is required only for systems upgraded through the Speed Centre. A full maintenance backup should be done the day before CMS data migration is performed.

For systems upgraded in the field, both full and incremental backups were performed immediately prior to the start of the upgrade process in Procedures C and D.

For instructions on performing a full maintenance backup, see Procedure C.

AQ: Performing an Incremental Maintenance Backup

This procedure is performed at the customer site on the pre-upgrade system. An incremental backup is required for systems upgraded either in the Speed Centre or the field.

- For a Speed Centre upgrade, the incremental backup is performed on the pre-upgrade system before installing the new disks delivered from the Speed Centre.
- For a field upgrade, the incremental backup is performed on the upgraded system in order to obtain any new administration data created during the upgrade process.

For instructions on performing a full maintenance backup, see Procedure D.

AR: Installing the *Solaris* Boot Prom Patch

This procedure installs a Solaris patch to upgrade the system boot prom. It is required if:

- the upgrade system is an Enterprise 3500 system, and new, upgraded disk drives are provided by the Speed Centre

For Speed Centre upgrades, this step must be performed on the pre-upgrade system at the customer site before the new hard drives are installed.

For field upgrades, the Solaris boot prom patch was previously installed during procedure AC (Installing Solaris Patches).

Task	Action
1	Load the "*CentreVu* Call Management System" CD.
2	`Enter:` `sh /cdrom/cdrom0/spatches/install/install_eeprom 103346-19.tar.Z`
3	`Enter:` `/usr/sbin/shutdown -g0 -y -i6`

For a Speed Centre upgrade, this point marks the end of normal Speed Centre responsibilities for an upgrade. The new disk drives and backup tapes are shipped to the customer site, where all remaining upgrade procedures are performed.

This procedure is required only if the upgrade was done by the Lucent Speed Centre, and the upgraded disk drives have arrived at the customer site. For a description of the procedure, see procedure E (Replacing Disk Drives).

AS: Installing the New Disk Drives

This procedure is required only if the upgrade was done by the Lucent Speed Centre and the upgraded disk drives have arrived at the customer site. For more information, see Procedure E.

AT: Restoring System Files

This procedure restores selected system files altered during the upgrade in order to avoid potential disruptions.

This procedure is required only for field upgrades in which the disks were not prepared by the Speed Centre.

Task	Action	Result

1	Enter the following series of commands:
	`cp /etc/hosts.cust /etc/hosts`
	`cp /etc/passwd.cust /etc/passwd`
	`cp /etc/shadow.cust /etc/shadow`
	`cp /etc/nsswitch.cust /etc/nsswitch.conf`	

2	Enter: `mv /etc/rc2.d/peripherals  /etc/rc2.d/Speripherals` If you receive a *cannot access peripherals* message, verify you spelled the file name correctly. If you did, ignore the message; it means the file never existed.	
3	Enter: `vi /var/spool/cron/crontabs/root`	
4	Uncomment all lines that ran commands under the */cms* directory. For example: `#0 2 * * 0,4 /cms/` *is revised to:* `0 2 * * 0,4 /cms/` When you finish, write and quit the file.	
5	To edit the *vfstab* file, enter: `vi /etc/vfstab`	
6	Comment out all mounts to remote machines on the network. Any line beginning with “#” followed by a name and a colon is a "commented" remote mount. For example: `#miti:/export/share` *is revised to*: `miti:/export/share` When you finish, write and quit the file.	

Task	Action	Result

7	To edit the *inittab* file, enter:
	`vi /etc/inittab`
	and search for the following line:
	`od:234:off:/cms/dc/odbc/rqb_start`	

8	If the entry is found, edit the line to replace *off* with *respawn:* `od:234:respawn:/cms/dc/odbc/rqb_start`	
9	To write and quit the file, enter: `:wq`	
10	To reboot the system, enter: `/usr/sbin/shutdown -y -i6 -g0`	

AU: Creating an Alternate Boot Device

This procedure creates an alternate boot device. This procedure is required only for mirrored systems.

Task	Action	Result

1	Enter:
	`ls -l/dev/rdsk/<newbootdev>`
	where <newbootdev> is the device to be used as the alternate boot disk. For more information, see "**NOTE FOR MIRRORED SYSTEMS**", which is included in "Boot Disk Partition Values" on page 2-51.
		The system responds (for example):
		`lrwxrwxrwx 1 root root 54 Nov 9 /dev/redsk/c0t1d0s0 ->`
		`../../devices/sbus@3,0/SUNW,fas@3,8800000/sd@1,0:a,raw`

2	Identify and record the device definition from the output generated in Step 1. The device definition is the character sequence that starts after "/devices" and ends before "`:a,raw`". In the example provided above, the device definition is: `sbus@3,0/SUNW,fas@3,8800000/sd@1,0`	
3	Enter: `/usr/sbin/shutdown -y -g0 -i0`	The system displays the `ok` prompt.

Task	Action	Result
4	To create a device alias for the alternate boot device, enter: `nvalias bootdevice2 <device definition>` where `<device definition>` is the character sequence recorded in Step 2.	

5	At the `ok` prompt, enter:
	`devalias`
	The output should include a line that is similar to the following example:
	`Bootdevice2/sbus@3,0/SUNW,fas@3,8800000/sd@1,0`	

6	To test the alternate boot device, enter: `bootdevice2` When the computer restarts, login as `root` at the console login.	
7	Reboot once again to return system control to the regular boot disk: `/usr/sbin/shutdown -y -g0 -i6`	
8	To set up a "cron job" for chkDisk, enter: `crontab -e`	The `cron` file is displayed in editor mode.

9	Add the following line to the end of the file:
	`15 0 * * * /olds/chkDisks>/dev/null 2>&1`
	To save and quit the file, enter:
	`:wq`	

10	Enter: `chmod +x /olds/chkDisks`	

AV: Turning on CMS and CMS Data Collection

This procedure turns on the upgraded CMS software and enables data collection to begin.

Task	Action	Result
1	Enter: `cmsadm`	The program responds Input terminal type (default vt420):
2	Enter the appropriate terminal type or press Enter to accept the default.	The CentreVu(R) Call Management System Administration Menu is displayed.

3	Select the number for the `run_cms` option.	The program responds:
		`Select one of the following`
		`1) Turn on CMS`
		`2) Turn off CMS`
		`Enter choice (1-2):`

4	Enter: `1`	The program starts CMS and returns to the system prompt.
5	Log in as a CMS user and enter: `cms`	The program responds `Input terminal type (default vt420):`
6	Enter the appropriate terminal type or press Enter to accept the default.	The CMS `Main Menu` is displayed.
7	Press `s` or use the cursor keys to move to the `System Setup>` option and press Enter.	A list of setup options is displayed.
8	Use the cursor keys to move to the `Data Collection` option and press Enter.	The `System Setup: Data Collection` window is displayed.
9	Press Enter to move the cursor to the action list located in the upper right corner of the window and select the `Find One` option.	The first ACD is inserted in the ACD line in the `System Setup: Data Collection window`.
10	a. Use the cursor keys to move to the `Data Collection > On` option. b. Enter an `x` in the `On` option. c. Press Enter.	The active cursor moves back to the action list in the upper right corner of the window.

Task	Action	Result

11	a. Select the `Modify` option.
	b. Press Enter.
		The program displays the following message window:
		`View the Connect Status Window to determine when data is being transferred.`
		`Press return to continue:`

12	Press Enter.	
13	Repeat Steps 9 through 11 to start data collection on all system ACDs.	

AW: Administering the NTS

This procedure is required only if an NTS is installed on the system.

Task	Action	Result

1	Enter: na	The program responds:
		`Annex network administrator R13.3 February 4, 1997`
		`command:`

2	For the first NTS device identified in Step 5 of procedure A.1 (Identifying Pre-upgrade system conditions), enter an *annex* command followed by the NTS host name. For example, for NTS device *cmsterm1*, enter:
	`annex cmsterm1`
		Example:
		`cmsterm1: Micro-Annex-UX R7.0, 8 async, 2 printer ports`
		`command:`

3	Enter*:*
	`write cmsterm1 /etc/local.admin/nts1info`
		`cmsterm1: Micro-Annex-UX R7.0, 8 async, 2 printer ports`
		`cmsterm2: Annex-3-UX R7.0, 64 async, 1 printer ports`
		`. . .`
		`command:`

4	Repeat step 2 and 3 for each NTS identified on the system. Each time, write *cmsterm<n>* to *nts<n>info*.	

Task	Action	Result

5	Enter:
	`annex cmsterm1, cmsterm2, cmsterm<n>`
	(where *cmsterm1,...cmsterm<n>* represent the names of all installed NTSs separated by commas)
		`cmsterm1: Micro-Annex-UX R7.0, 8 async, 2 printer ports`
		`cmsterm2: Annex-3-UX R7.0, 64 async, 1 printer ports`
		`. . .`
		`command:`

6	Enter: `boot`	`time (return for 'now'):`
7	Press `Enter`	`annex list (return for default):`
8	Press `Enter`	`filename (return for default):`
9	Press `Enter`	`warning (return for none):`
10	Press `Enter`	`booting annex cmsterm1 ...` *The annex begins self-diagnostics and will not respond to admin operations for a short time.*

11	Enter the following:
	`annex cmsterm<n>`
		Example:
		`cmsterm<n>: Micro-Annex-UX R10.0, 8 async, 2 printer ports`
		`command:`

12	Enter the following:
	`read /etc/local.admin/nts<n>info`
		Example:
		`setting annex parameters for printer 1`
		`setting annex parameters for printer 2`
		`. . .`
		`command:`

13	Repeat step 11 through 13 for each NTS connected to the system.	
14	Enter: quit	

AX: Performing a CMSADM Backup

This procedure provides a backup of your current system files.

In a field upgrade, this backup gives you the ability to re-create the current CMS system if the upgrade process should fail.

In a Speed Centre upgrade, the CMSADM backup tape is reinstalled on one or more new disk drives after a copy of the original operating system has been reinstalled.

Note: The procedure presented below is specific to CMS R3V8 and differs from the backup procedure for systems running earlier CMS versions.

Task	Action
1	Log in as root user.
2	Enter: `lp /etc/vfstab` The system prints out the */etc/vfstab* file. The printed output is required when the backup is restored.
3	Enter: `cmsadm` The CMS administration menu is displayed.

4	Enter the number of the `backup` option.
	a. If only one tape drive is available, the program responds:
	`Please insert the first cartridge tape into <device name>.`
	`Press ENTER when ready or Del to quit:^?`
	b. If more than one tape drive is available for use, the program will display output similar to the following example:
	`Select the tape drive:`
	`1) <Exabyte EXB-8500 8mm Helical Scan>`
	`2) <Archive QIC-150>`
	`Enter choice (1-2):`
	Enter a tape drive selection from the displayed list. The program responds:
	`Please insert the first cartridge tape into <device name>.`
	`Press ENTER when ready or Del to quit:^?`
	Note: If the program fails to identify the tapes by manufacturer name, tape devices are displayed according to their system device names, such as `"/dev/rmt/0".`

Task	Action

5	Press Enter.
	
	The backup process is initiated. If more than one tape is required, the program displays the following message:
	
	`End of medium on "output".`
	`Please remove the current tape, number it, insert tape number x, and press Enter`
	
	Insert the next tape and allow it to rewind. When it is properly positioned, press Enter.

6	When the backup is completed, the program response varies according to the number of tapes that were used:
	
	a. if the backup required only one tape, the program responds:
	
	`xxxxxxx blocks`
	`Tape Verification`
	`xxxxxxx blocks`
	`WARNING: A CMS Full Maintenance Backup in addition to this cmsadm backup must be done to have a complete backup of the system. . . . .`
	
	`Please label the backup tape(s) with the date and the current CMS version (r3v8xx.x)`
	
	b. If the backup required more than one tape, the program responds:
	
	`xxxxxxx blocks`
	`Tape Verification`
	`Insert the first tape`
	`Press Return to proceed :`
	
	Insert the first tape used for the backup and press Enter. Wait for the tape drive light-emitting diode (LED) to stop blinking before you remove the tape.
	
	When prompted, repeat this process for any additional tapes generated by the backup process. When the final tape is verified, the program displays the output shown above in step 6a.

7	Save the tapes and the *vfstab* printout until a backup restore is performed.

AY: Migrating System Administration Data to R3V8

This procedure moves system administration data from the incremental backup tape to the upgraded system. For all versions of CMS Release 3, the system administration data is migrated via the `R3 Migrate Data` window.

WARNING:

Attempting to migrate system administration data more than once may cause catastrophic errors from which recovery is difficult. Before a re-migration of system administration data can be performed, CMS data collection must be turned off and a second setup of the CMS software must be performed.

Task	Action	Result
1	Log in to CMS. The CMS main menu is displayed.	
2	Select `System Setup - CMS State` from the CMS main menu and select the **`Single User`** `Mode` option.	
3	Insert the Incremental maintenance backup tape created in Procedure AQ.	
4	Select the `System Setup` -> `R3 Migrate Data` option from the CMS main menu.	

5	The `System Setup: R3 Migrate Data` window is displayed. The required selections include:
	`Device name:` `default`
	`Data type:` `System Administration data`
	`Specify ACDs to migrate:` `All ACDs`	

6	Press Enter to access the action list in the top right corner of the window.	
7	Select the `Run` option and press Enter. The `Status:` field reports the progress of the migration. When the migration ends, `Status:` indicates the success or failure of the run.	
8	To print out the customer migration log, enter: `lp /cms/migrate/r3mig.log` For help interpreting the log and its messages, U.S. customers can telephone the Lucent National Customer Care Center at 1-800-242-2121; international customers should contact their Lucent distributors or customer representatives.	

See also "Messages" on page 7-11 for explanations of log messages, and "R3 Migrate Data Window" on page A-24.

AZ: Migrating Agent/Call Center Admin Data to R3V8

This procedure moves Agent/Call Center Admin data from the incremental backup tape to the upgraded system.

WARNING:

Attempting to migrate Agent/Call Center Admin data more than once may cause catastrophic errors from which recovery is difficult. Before a re-migration of ACD administration data can be performed, CMS data collection must be turned off and a second setup of the CMS software must be performed.

Task	Action	Result
1	With the incremental maintenance backup tape created in Procedure AQ still in the tape drive, log in to CMS. The CMS main menu is displayed.	
2	Select `System Setup - CMS State` from the CMS main menu and select the `Single User Mode` option.	
3	Select the `System Setup` -> `R3 Migrate Data` option from the CMS main menu.	

4	The `System Setup: R3 Migrate Data` window is displayed. The required selections include:
	`Device name:` `default`
	`Data type:` `Agent/Call Center Admin data`
	`Specify ACDs to migrate:` `All ACDs`	

5	Press Enter to access the action list in the top right corner of the window.	
6	Select the `Run` option and press Enter. The `Status:` field reports the progress of the migration. When the migration ends, `Status:` indicates the success or failure of the run.	
7	To print out the customer migration log, enter: `lp /cms/migrate/r3mig.log` For help interpreting the log and its messages, U.S. customers can telephone the Lucent National Customer Care Center at 1-800-242-2121; international customers should contact their Lucent distributors or customer representatives.	

See also "Messages" on page 7-11 for explanations of log messages, and "R3 Migrate Data Window" on page A-24.

BA: Migrating Incremental and Full Historical Data to R3V8

This procedure moves CMS historical data from the incremental and full maintenance backup tapes to the upgraded CMS system.

Task	Action	Result
1	With the incremental maintenance backup tape created in Procedure AQ still in the tape drive, log in to CMS. The CMS main menu is displayed.	
2	Select the `System Setup` -> `R3 Migrate Data` option from the CMS main menu.	

3	The `System Setup: R3 Migrate Data` window is displayed. The required selections include:
	`Device name:` `default`
	`Data type:` `Historical data`
	`Stop date: (remains blank)`
	`Stop time: 11:59 PM`
	`Specify ACDs to migrate:` `All ACDs`	

4	Press Enter to access the action list in the top right corner.	
5	Select the `Run` option and press Enter. The `Status:` field reports the progress of the migration. When the migration ends, `Status:` indicates the success or failure of the run.	
6	Remove the incremental backup tape from the drive and insert the full maintenance backup tape created in Procedure .	
7	Repeat steps 2 through 5 to download the CMS historical data from the full backup tape.	
8	To print out the customer migration log, enter: `lp /cms/migrate/r3mig.log` For help interpreting the log and its messages, U.S. customers can telephone the Lucent National Customer Care Center at 1-800-242-2121; international customers should contact their Lucent distributors or customer representatives.	

See also "Messages" on page 7-11 for explanations of log messages, and "R3 Migrate Data Window" on page A-24.

BB: Performing a Full Maintenance Backup

After all of the CMS data has been successfully migrated to the new system, perform a final full maintenance backup.

For instructions on performing a full maintenance backup, see Procedure C.

Chapter 3: Upgrading the CMS R3V8 Base Load

"Upgrading the CMS R3V8 Base Load" describes how to upgrade CentreVu Call Management System (CMS) from an earlier base load to a more current base load.

The base load upgrade process includes the following procedural steps:

- “Verifying the Current CMS Version and Load” on page 3-2
- “Verifying Free Space in the Root File System” on page 3-2
- “Backing Up the System” on page 3-3
- “Installing Solaris Patches” on page 3-8
- “Removing CMS Patches” on page 3-9
- “Removing the Current CMS Load” on page 3-10
- “Upgrading CMS Supplemental Services” on page 3-11
- “Installing a New CMS Base Load” on page 3-12
- “Installing CMS Patches” on page 3-13
- “Turning On CMS” on page 3-14
- “Performing a CMSADM Backup” on page 3-14
- “Performing a Full Maintenance Backup” on page 3-14

A: Verifying the Current CMS Version and Load

This procedure verifies the version and load of CMS currently on the machine.

Step	Action	Result
1	Login as root user and enter: `pkginfo -x cms`	The system lists the currently installed CMS package, including the load number. For example: `cms Lucent Technologies CentreVu(R) Call Management System (sparc) r3v8xx.x`

B: Verifying Free Space in the Root File System

This procedure verifies that sufficient free space is available in your root file system to accomplish the base load upgrade.

Step	Action	Result
1	Enter : `df /`	The format of the command output will be similar to the following example: `/ (/dev/dsk/c0t3d0s0): xxxxx blocks yyyy files`
2	Check the specified number of blocks. Discontinue the upgrade if the number of indicated blocks is fewer than 8,000 blocks. Call the National Customer Care Center at 1-800-242-2121, or contact your Lucent distributor or customer representative for assistance.	

C: Backing Up the System

Prior to beginning a CMS base load upgrade, a CMSADM backup, a full maintenance backup, and an incremental maintenance bakcup should be performed.

C.1: Performing a CMSADM Backup

This procedure provides a backup of your current system files.

A CMSADM backup should be performed approximately one day before the CMS base load is performed.

CAUTION:

Verify that you are using the correct tape for the tape drive for your system. Many of the tape cartridges look alike, and using the wrong tape can damage the tape drive mechanism and tape heads.

Tape Drive	Tape Cartridge	CMS Computers
20/40-GB 8mm	*Exatape*[a] 170m AME	*Enterprise* 3500
SLR5 4/8-GB QIC	*Sony*[b] SLR	*Ultra* 5
14-GB 8mm	*Exatape* 160mm AME	*Enterprise* 3000
5-GB 8mm	*Exatape* 112mm AME	*Enterprise* 3000
2.5-GB QIC	*3M*[c]	*SPARCserver*
150 MB	*Maxell*[d] DC6320	*SPARCserver*

a. *Exatape* is a trademark of *Exabyte* Corporation.
b. *Sony* is a registered trademark of Sony Corporation.
c. *3M* is a registered trademark of Minnesota Mining and Manufacturing.
d. *Maxell* is a registered trademark of Maxell, Inc.

Task	Action
1	Log in as root user.
2	Enter: `lp /etc/vfstab` The system prints out the */etc/vfstab* file. The printed output is required when the backup is restored.
3	Enter: `cmsadm` The CMS administration menu is displayed.

4	Enter the number of the `backup` option.
	a. If only one tape drive is available, the program responds:
	`Please insert the first cartridge tape into <device name>.`
	`Press ENTER when ready or Del to quit:^?`
	b. If more than one tape drive is available for use, the program will display output similar to the following example:
	`Select the tape drive:`
	`1) <Exabyte EXB-8500 8mm Helical Scan>`
	`2) <Archive QIC-150>`
	`Enter choice (1-2):`
	Enter a tape drive selection from the displayed list. The program responds:
	`Please insert the first cartridge tape into <device name>.`
	`Press ENTER when ready or Del to quit:^?`
	Note: If the program fails to identify the tapes by manufacturer name, tape devices are displayed according to their system device names, such as `"/dev/rmt/0"`.

5	Press Enter.
	The backup process is initiated. If more than one tape is required, the program displays the following message:
	`End of medium on "output".`
	`Please remove the current tape, number it, insert tape number x, and press Enter`
	Insert the next tape and allow it to rewind. When it is properly positioned, press Enter.

Task	Action

6	When the backup is completed, the program response varies according to the number of tapes that were used:
	
	a. if the backup required only one tape, the program responds:
	
	`xxxxxxx blocks`
	`Tape Verification`
	`xxxxxxx blocks`
	`WARNING: A CMS Full Maintenance Backup in addition to this cmsadm backup must be done to have a complete backup of the system. . . . .`
	
	`Please label the backup tape(s) with the date and the current CMS version (r3v8xx.x)`
	
	b. If the backup required more than one tape, the program responds:
	
	`xxxxxxx blocks`
	`Tape Verification`
	`Insert the first tape`
	`Press Return to proceed:`
	
	Press Enter. When prompted, repeat this process for any additional tapes generated by the backup process. When the final tape is verified, the program displays the output shown above in step 6a.

7	Save the tapes and the *vfstab* printout until a backup restore is performed.

C.2: Performing a Full Maintenance Backup

This procedure performs a full maintenance backup of CMS system data. A CMSADM backup should be performed approximately one day before the CMS base load upgrade is performed.

Task	Action
1	Log in to CMS. From the main menu, select the `Maintenance - Back Up Data` option.

2	The Back Up Data window is dispalyed. The required options, which should be presented as the default selections, include:
	`Device name:` `default`
	`Verify tape after backup?(y,n):` `y`
	`ACD(s) to back up:` `all ACDs`
	`Data to back up:`
	`- Local system administration data`
	`- CMS system administration data`
	`- ACD-specific administration data`
	`- Historical data -> Full`
	`- Non-CMS data`

3	Press Enter to access the action list in the upper right corner of the window, and select `Run`.

C.3: Performing an Incremental Maintenance Backup

This procedure performs an incremental maintenance of CMS system data. The incremental backup collects all CMS data generated in the interval following the last full maintenance backup. Therefore, if the CMS base load upgrade can be started immediately after a full maintenance backup is completed, this procedure is not required.

Task	Action
1	Log in to CMS. From the main menu, select the `Maintenance - Back Up Data` option.

2	The Back Up Data window is displayed. The required selections include:
	`Device name: default`
	`Verify tape after backup?(y,n): y`
	`ACD(s) to back up: all ACDs`
	`Data to back up: Local system administration data`
	`CMS system administration data`
	`ACD-specific administration data`
	`Historical data -> Incremental`
	`Non-CMS data`

3	Press Enter to access the action list in the upper right corner of the window, and select `Run`.

D: Installing Solaris Patches

Step	Action	Result
1	Load the *"CentreVu Call Management System"* CD.	
1	Enter: cmssvc	The CMS Services menu is displayed.
2	Select the run_cms option, and the "Turn off" CMS option	The CMS Services menu is displayed again.
3	Enter: q	The system returns to the prompt.
4	Enter: pkgadd -d /cdrom/cdrom0	An installation menu displays.
5	Enter the number corresponding to the spatches option.	The System responds: Do you want to continue with the installation of this package [y,n,?]
3	Enter: y	The installation menu displays.
4	Enter: q	System returns to prompt.
5	Enter: /tmp/patches/install_patches	Installation of the spatches begins.
6	Enter: /usr/sbin/shutdown -y -i6 -g0 When the console login prompt displays, log in as the root user. The spatches are now installed. **Note:** The shutdown command occassionally fails to reboot the machine. The system issues the appropriate shutdown messages, but then returns to the prompt instead of shutting down. If this occurs, perform the following steps: • turn off CMS • enter: /usr/sbin/reboot	

E: Removing CMS Patches

This procedure removes CMS patches from the system.

Step	Action	Result
1	Enter: `cmssvc`	The CMS Services menu displays.

2	Enter the number of the `back_all` option.
	If the system responds with a *No CMS patches* message, the remaining steps of this procedure are not required.
		The system reponds:
		`The following patches are installed on this machine:`
		`.`
		`.`
		`.`
		`Are you sure you wish to remove all these patches? (y|n)`

3	Enter: y
	The system removes the patches.
		For each patch removed, the system displays messages similar to the following:
		`Removing patch package for cmspx-s:`
		`Patch x has been backed out.`

4	When all patches have been removed, the system returns to prompt.	

F: Removing the Current CMS Load

This procedure removes the current CMS base package:

Step	Action	Result

1	Enter:
	`pkgrm cms`
		The system checks the package and prompts for removal:
		`The following package is currently installed: cms Lucent Technologies CentreVu(R) Call Management System`
		`(sparc) r3vxxx.x`
		`Do you want to remove this package?`

2	Enter: y	The system responds:
		`Removing installed package instance <cms>`
		`. . .`
		`Do you want to continue with the removal of this package [y,n,?,q]`

3	Enter: y	The system responds:
		`Verifying package dependencies.`
		`Processing package information.`
		`Executing preremove script`
		`Do you want to preserve CMS data [y,n,?]`

4	Enter: y	The system prompts for verification:
		`CMS will be removed from this machine; the data will be preserved.`
		`Are you sure this is correct [y,n,?]`

5	Enter: y	The system asks for backup verification: `Have you backed up the file systems [y,n,?]`

6	Enter: y	The system responds:
		`CMS must be turned off in order to remove software.`
		`Do you want to turn off CMS now?`

7	Enter: y	The system responds: `Turning off CMS, please wait.` After removal of the CMS package is complete, the system returns to prompt.

G: Upgrading CMS Supplemental Services

This procedure upgrades the CMS Supplemental Services software.

Step	Action	Result
1	Obtain the "CentreVu Supplemental Services" CD and record the version number printed on the CD, which is used later in the procedure.	
2	Load the *"CMS Supplemental Services*" CD.	
3	Enter: `pkginfo -x LUim`	The program responds: `LUim Lucent Installation Manager (sparc) X.XX` If the version number is 0.41 or earlier, go to Step 4. If the version number is 0.42 or later, go to Step 9.
4	Enter: `pkgrm LUim`	The program responds: `Do you want to remove this package? [y,n,?]`
5	Enter: `y`	The program responds: `Do you want to continue with the removal of this package? [y,n,?]`
6	Enter: `y`	The program responds: `Package removed successfully`
7	Enter: `pkgadd -d /cdrom/cdrom0 LUim`	The program responds: `Do you want to continue with the installation of <LUim> [y,n,q,?]`
8	Enter: `y`	The program responds: `Installation of <LUim> was successful`
9	Enter: `/opt/LUim/bin/install 2>&1 | tee -a /opt/LUim.log` The system displays a series of messages while it installs various code libraries and other packages. When the installation is complete, the sytem returns to the prompt.	
10	Obtain the version number for the copy of the "CentreVu Supplemental Services" CD used in the preceding procedure. Include the version number in the following setup command: `/opt/cc/install/ahl.rXvXXX.X/bin/setup` Use the CD version number to replace the `rXvXXX.X` term in the setup command	
11	Enter: `eject cdrom`	

H: Installing a New CMS Base Load

Step	Action	Results
1	Load the "CentreVu Call Management System" CD.	
2	Enter: `pkgadd -d /cdrom/cdrom0`	The system responds: `... *-conflict with a file which does not belong to any package. Do you want to install these conflicting files [y,n,?,q]`
3	Enter: `y`	The system responds: `... Do you want to install these setuid/setgid files [y,n,?,q]`

4	Enter: `y`	`The system responds:`
		`... 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 this package [y,n,?]`

5	Enter: `y`
	`...installing CMS...`
	`Initializing Customer Data ...`
	A list of installed CMS files and other related software packages is displayed as the software is installed from the CD. When the installation is complete, the system responds:
	`Background installation of performance packages complete.`
	`If CMS was installed by choosing CMS from pkgadd menu, type q and press return to exit.`
	`If CMS was installed using pkgadd -d /cdrom/cdrom0 cms, press return.`
	Note: The following message may appear if the `cms` or `cmssvc.profile` files were altered during the upgrade:
	`A manual merge may be necessary to restore custom entries. The original content was saved in profile.save prior to changes.`	

Step	Action	Results
6	Press enter.	`The system returns to the command prompt.`
12	Enter the following command: `# pkgchk -n cms`	If the software installation was successful, the system prompt returns to the screen after a few seconds.

I: Installing CMS Patches

Step	Action	
1	Enter: `cmssvc` *... (CMS Services menu) ...*	The CMS Services menu is displayed, followed by: `Enter choice(1-x) or q to quit:`
2	Enter the number corresponding to the `load_all option.`	If there are no patches to be installed, the system displays a message to that effect and returns to the system prompt. In that case, disregard the remaining steps in this procedure. Otherwise, the system displays a list of available patches and asks: `Are you sure you want to install all these patches? (y|n)`

3	Enter: `y`	As the installation proceeds, the system keeps you informed of its progress:
		`Generating list of files to be patched...`
		`. . .`
		`Patch installation completed.`

4	Enter: `eject cdrom`	

J: Turning On CMS

1. Enter the command `cmsadm`.
2. Select the `run_cms` option. The CMS On/Off menu is displayed.
3. Select the `Turn on CMS` option.

K: Performing a CMSADM Backup

After the base load upgrade has been successfully completed, perform a CMSADM backup to secure a reliable copy of the computer system files.

For instructions on performing a CMSADM backup, see "Performing a CMSADM Backup" on page 3-3.

L: Performing a Full Maintenance Backup

This procedure creates a new full maintenance backup of the upgraded CMS system.

For instructions on performing a full maintenance backup, see "Performing a Full Maintenance Backup" on page 3-6.

Chapter 4: Patching the R3V8 Base Load

This chapter provides procedures for patching CMS R3V8 on a Sun platform.

The patching process consists of three specific procedures:

1. “Listing Patches” (below)
2. “Installing CMS Patches” on page 4-2
3. “Removing CMS Patches” on page 4-5

Listing Patches

These procedures list *CentreVu®* CMS patches. The method varies according to whether the patches are already installed or still on the CMS CD.

Listing Installed CMS Patches

The following procedure lists CMS patches already installed on your system.

Task	Action
1	Log in as *root.*
2	Enter the following command: `/cms/toolsbin/listcmspatches` The system displays a list of cms patches installed on the server.

Listing CMS Patches on the CD

The following procedure lists CMS patches that are on the CD-ROM and available to be installed

Task	Action
1	Log in as *root.*
2	Load the CMS CD.
3	Enter: `cmssvc`
4	The CMS Services menu is displayed.
5	Select the `patch_inst` option. The system lists the names of the patches on the CD.
6	Enter `q.`

Installing CMS Patches

These procedures install CMS patches. The method varies according to whether you want to install all patches or a single patch.

There are two occasions when you may have to install CMS patches:

- Immediately after upgrading CMS
- As a bug fix

Installing patches after a base load upgrade

The prerequisites for patch installation differ with each 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. Therefore, when patches are loaded after upgrading the system, install the patches before you turn CMS on.

Installing patches as a bug fix

If you are loading patches as a bug fix without upgrading your base load, you may install the patches without turning CMS off. Each patch will provide information about any additional actions which may be required.

The *readme* file for CMS lists CMS run level requirements for each patch. For instructions on installing and viewing the readme file, see "Viewing the Readme Files" on page A-35.

NOTE:

Installation of all available patches is recommended. If you believe you should not be installing a particular patch, telephone the National Customer Care Center (1-800-242-2121), or consult with your Lucent distributor or representative before deciding to omit it.

Installing All Available Patches

This procedure installs all patches available on the CD.

Task	Action	Result
1	Log in as *root* and load the CMS CD.	
2	Enter: `cmssvc`	... *(CMS Services menu)* ...
3	Select the `load_all` option and press Enter.	The system lists the patches on the CD and asks if you really want to install all the patches.

4	Enter `y`.	The system installs the patches, displaying a series of messages for each patch installed. For example:
		`@(#) installpatch 1.0 98/04/01`
		`cmsp1-s`
		`Generating list of files to be patched...`
		`. . . . . .`
		`Patch packages installed:`
		`cmsp1-s`
		`Patch installation completed.`
		`See /cms/patch/cmsp1-s/log for details.`
		When all the patches have been installed, the system prompt is displayed.

Installing a Single Patch

This procedure installs a single patch from the CMS CD.

Task	Action	Result
1	Log in as *root* and load the CMS CD.	
2	Enter: `cmssvc`	The CMS services menu is displayed
3	Select the `patch_inst` option.	The system lists the patches on the CD and prompts for an option number.

4	Enter the option number of the patch you want to install.	The system installs the patch, displaying messages similar to the following:
		`@(#) installpatch 1.0 96/04/01 cmsp1-s`
		`Generating list of files to be patched...`
		`. . . . .`
		`Patch packages installed:`
		`cmsp1-s`
		`Patch installation completed.`
		`See /cms/patch/cmsp1-s/log for details.`
		When the patch has been installed, the system prompt is displayed.

Removing CMS Patches

These procedures remove CMS patches. The removal method varies for removal of all patches or a single patch.

Removing All CMS Patches

This procedure removes all CMS patches installed on the system.

Task	Action	Result
1	Log in as *root* and load the CMS CD.	
2	Enter: `cmssvc`	The CMS services menu is displayed.
3	Enter the number of the `back_all` option.	The system lists the patches installed on the system and asks for verification of the removal.

4	Enter `y`.	Messages formatted like the example shown below are displayed for each patch that is removed:
		`@(#) backout patch 1.0 96/08/02`
		`Removing patch package for cmsp`*x*`-s:`
		`. . . . ..`
		`Making package database consistent with restored files:`
		`Patch` *x* `has been backed out.`

Removing a Single CMS Patch

This procedure removes a single CMS patch from the server.

Step	Action	Result
1	Login as *root* and load the CMS CD.	
2	Enter: `cmssvc`	The CMS Services menu is displayed.
3	Select the `patch_rmv` option.	The system lists the patches installed on the system and prompts you to select a patch.
4	Type the name of the patch you want to remove, exactly as it is displayed in the list, and press Enter.	The system asks you to verify the removal.

5	Enter `y`.	The patch is removed, and a message formatted like the example shown below is displayed:
		`@(#) backout patch 1.0 96/08/02`
		
		`Removing patch package for cmsp`*`x`*`-s:`
		`Removal of <cmspx-s> was successful.`
		`Restoring previous version of files...`
		
		`Patch x has been backed out.`

Chapter 5: Migrating Data to R3V8

This chapter describes how to migrate data from a Call Management System (CMS) on an *INTEL*[*] or *Sun*[†] computer to *CentreVu*® CMS Release 3 Version 8 (R3V8) on a *Sun* computer.

NOTES:

1. The customer is generally responsible for performing the necessary data migration to a new platform. Lucent Technologies may be contracted, however, to do the migration on a time-and-materials basis. Contact your Lucent Technologies representative for details.
2. You can move more than one ACD to the new platform. Doing so, however, may cause collisions in the System Administration data. See the “Migrations” section in Chapter 1, “Introduction,” for information on potential collisions and their solutions.
3. Phased migrations do not work. If you migrate some agents at one time, and others at a later time, you will have to decide which set of data you want. The two sets cannot be merged.

A: Installing a Tape Drive

ONLY IF YOU ARE MIGRATING FROM AN INTEL-BASED COMPUTER

Do this step only if you are migrating from an INTEL platform, and only if the new system is not already equipped with a 2.5-gigabyte tape drive. Otherwise, go directly to Step 2 (page 5-7).

When you are migrating from an *INTEL* platform to a *Sun* platform, Lucent field technicians may have to install an external 2.5-gigabyte tape drive on the *Sun* machine to enable data to be migrated from the *INTEL* platform. The drive installation should take place about one week before the migration.

The steps involved are two:

A. Order the drive from the TSC

B. Install the drive on the *Sun* system

*INTEL is a registered trademark of Intel Corporation.
†Sun is a registered trademark of Sun Microsystems, Inc.

A.1: Order the Drive

To order a tape drive kit, call the Lucent Technologies National Customer Care Center. The following procedure is involved:

1. Dial the Customer Care Center at 1-800-242-2121.
2. Press `0`.
3. Press the number that prompts “if you are responding to a call back request and have the five-digit extension.”
4. Dial the extension 84699.

Customers outside the United States should call their Lucent representative or distributor.

A.1.a: Required Parts

The tape drive kit should contain the following parts:

- The tape drive
- A power cord
- One 2-foot, 50-pin to 68-pin Small Computer System Interface (SCSI) cable
- One 68-pin to 68-pin SCSI extension cable
- One combination-lock carrying case (combination all zeroes)

A.1.b: Distance Limitations

The SCSI standard supports a maximum length of 19.7 feet (6 meters) for the SCSI bus. To ensure that the SCSI bus does not exceed this limit, complete the table below.

> Be sure to include the external 2.5-GB drive and cables in your calculations.

Table 5-1: SCSI Bus Distance Limitations

Step	Action	Distance
1	Start with the value of 4 feet for the internal SCSI cabling in the newly purchased platform.	4 feet
2	Add together the lengths of all external SCSI cables, and enter this value in the distance column at right.	
3	Multiply the number of external drives by 1 foot, and enter this value in the distance column (for example, three external drives equals 3 feet).	

Table 5-1: SCSI Bus Distance Limitations (Continued)

4	Add together the distances from Steps 1, 2, and 3, and enter this value in the distance column. This is an approximation of the total SCSI bus length.	

If the total is 18 feet or less, proceed with the tape drive installation as normal. If the total is more than 18 feet, call the Customer Care Center at 1-800-242-2121.

A.2: Install the Drive

When adding a tape drive to an existing system, you need to do the following:

- Remove existing SCSI device files (to prepare for new SCSI hardware configuration).
- Set the SCSI device ID.
- Connect the tape drive to the SCSI chain.
- Reboot and reconfigure the system.

The procedure is as follows:

Table 5-2: Tape Drive Installation Procedure

Step	Action
1.	Remove the SCSI device files by entering the command: `rm /dev/rmt/*` **Note** If you do not remove the SCSI device files before rebooting the system, the files may not match the hardware configuration. If that happens, repeat this procedure.
2.	Shut down the system using the command: `shutdown -i0 -g0 -y`
3.	Do the following in sequential order: a. Turn off the system unit. b. Turn off the system monitor. c. Turn off external devices one at a time, starting with the device nearest the system unit and proceeding to the farthest.

Table 5-2: Tape Drive Installation Procedure (Continued)

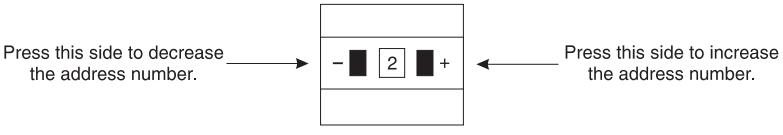
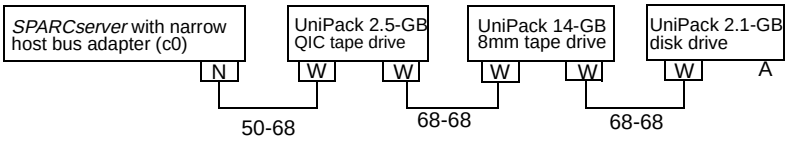
Step	Action
4.	Set the SCSI ID on the tape drive by doing the following: a. Locate the target address switch on the drive's rear panel (see Figure 5-1).  **Figure 5-1: Setting the SCSI ID/Target Address** b. Identify a SCSI ID that is not already being used. (SCSI ID 4 will almost certainly be free.) c. Press the switch buttons until the ID number appears in the window.
5.	Connect the tape drive to the other SCSI devices.
	NOTE: Because UniPack devices are auto-terminated, the last UniPack device in a SCSI chain requires no terminator. To verify that the tape drive is terminated, check the LEDs on the drive back panel. The LEDs—labeled Auto Term High and Auto Term Low—should both be lit. If the tape drive is not the last device in the chain, then neither LED is lit. Figure 5-2 shows the SCSI cabling scheme when one or more UniPack enclosures is present.  W = 68-pin wide SCSI III bus connection N = 50-pin narrow SCSI II bus connection A = Auto-terminated **Figure 5-2: SCSI Cabling Schemes**
6.	Plug the tape drive into a power source.

Table 5-2: Tape Drive Installation Procedure (Continued)

Step	Action
7.	Power up the system and check to see that it recognizes the drive you just installed. The procedure is as follows: a. Turn on devices attached to the *Sun* computer. Power-on the SCSI devices one at a time, beginning with the tape drive you just installed and working toward the system unit. b. Turn on the system unit and system monitor. Power-on diagnostics occur.

	c. After the display console banner appears, but before the operating system starts to boot, press the **Stop** and **A** keys simultaneously.
	The `ok` prompt appears, indicating that you are in the OpenBoot environment.
	d. Enter the command `probe-scsi-all.`
	The system responds with a list of all the SCSI devices it can find on the bus, in a format similar to this:
	`Target 1`
	`  Unit 0 Disk SEAGATE ST14801 SUN04246266 Copyright (C) 1991`
	`Target 3`
	`  Unit 0 Disk SEAGATE ST14801 SUN04246266 Copyright (C) 1991`
	`Target 4`
	`  Unit 0 Removable Tape Tandberg TDC 4200`
	`Target 6`
	`  Unit 0 Disk Removable Read Only Device SONY CD-ROM CDU-8012`
	`ok`
	The devices listed will, of course, vary with the system.
	e. Verify that the system can see all your SCSI devices, including the tape drive you just added.

8.	Reboot the system as follows: a. Enter the command `boot -r.` That reboots the system and reconfigures the devices. b. Log in as *root*.

Table 5-2: Tape Drive Installation Procedure (Continued)

Step	Action

9.	Edit the */kernel/drv/st.conf* file by entering the command:
	`vi /kernel/drv/st.conf`
	Add the following four lines to the file:
	`tape-config-list=`
	`“TANDBERG TDC 4200”, “Tandberg 2.5 Gig QIC”,“TAND-25G-FIXED”;`
	`TAND-25G-FIXED=1,0x37,512,0x867a,1,0x00,0;`
	`TAND-25G-VAR=1,0x37,0,0x867b,1,0x00,0;`

10.	Write and quit the file.

B: Back Up the Old System

B.1: Back Up CMS User Directories

If your system contains non-CMS files (*UNIX* command files, shell scripts, and so on) that you want to keep, you must save them to a tape that is readable by your new *Sun* platform. Later you will need to copy the files from the tape into the new system; you will not be able to do that unless the *Sun* system can read the tape.

Non-CMS files are in the CMS user directories, which are in */usr* on an *INTEL* machine and in */export/home* on a *Sun* machine. The files can be saved on tape using the following procedure:

1. Insert a blank tape into the drive and log into the system as *root*.
2. Enter the following commands:

```
# cd /usr              (INTEL systems only)
# cd /export/home      (Sun systems only)

# ls -l | grep cms | cut -c 55-80 > /tmp/sun
# find ‘cat /tmp/sun‘ -print | cpio -ocv > <device>
```

where *<device>* specifies the tape you are writing to, and must be one of the following:

/dev/scsi/qtape1	*INTEL machines only.*
/dev/rmt/0	*Sun:* the tape drive with the lowest target number in the SCSI chain.
/dev/rmt/1	*Sun:* The tape drive with the second-lowest target number in the SCSI chain.
/dev/rmt/0c	*Sun:* The compressed-mode (QIC 2.5-GB or 14-GB) tape drive with the lowest target number in the SCSI chain.
/dev/rmt/1c	*Sun:* The compressed-mode (QIC 2.5-GB or 14-GB) tape drive with the second-lowest target number in the SCSI chain.

Be sure to label the tape for future reference.

B.2: Do a Full Maintenance Backup

A full maintenance backup provides migration data for the new CMS version. You should perform the backup the night before beginning the upgrade and data migration.

Backups are done via the CMS Back Up Data window. Briefly, the procedure goes like this:

1. Log in to CMS and, from the main menu, select `Maintenance - Back Up Data.`
2. In the Back Up Data window, select the options indicated in the following table:

Field	Value to enter or select
`Device name`	The tape drive device name
`Verify tape...?`	`y`
`ACD(s) to back up`	All ACDs

`Data to back up`	`System Administration data`
	`ACD-specific administration data`
	`Historical data - Full`
	`Non-CMS data` (if needed)

3. Press Enter to access the action list, and select `Run`.

See also "Back Up Data Window" on page A-16.

B.3: Do a CMSADM Backup

The CMSADM backup provides a system backup in case the migration should go wrong. "CMSADM File System Backups" on page A-11 contains detailed, step-by-step procedures for performing CMSADM backups. Briefly, the procedure goes like this:

1. Make sure the system is in a multi-user state.
2. Access the Administration menu by entering a `cmsadm` command.
3. Select the `backup` option.
4. Feed tapes to the system until it stops asking for them

.

C: Install the New Platform

Lucent field technicians install the new *Sun* platform. The TSC provisions the system by setting authorizations, setting up data storage parameters, and setting up the *CentreVu* CMS R3V8 application. The customer can turn on *CentreVu* CMS R3V8 and install the feature packages that have been authorized.

.

D: Create ACDs

D.1: Record Information on Existing ACDs

From the old platform, the TSC accesses the following pieces of information, which will be needed to create ACDs in the next step:

- Switch information (use the `swinfo` option of `cmsadm`). See "Displaying Switch Information" on page A-2.
- Authorizations (use the `auth_display` option of `cmssvc`). See "Creating ACDs" on page A-19.
- Data storage allocation (`System Setup` option of CMS Main Menu). See "Checking Data Storage Allocation Parameters" on page A-6.
- Storage intervals (`System Setup` option of CMS Main Menu). "Checking the Storage Interval Size" on page A-6.
- Data storage allocation for Forecasting package (`Forecast` option—if present—of the CMS main menu).

D.2: Create ACDs on the New Platform

Task Performed By: TSC

The TSC creates the ACDs on the *Sun* platform using the information obtained in the previous step.

ACDs are created via the `acd_create` option of the CMSADM menu. See "Creating ACDs" on page A-19. When you create the ACDs on the new platform, you should set them up in exactly the same way they were set up on the old system.

.

E: Migrate Administration Data

E.1: Migrate System Administration Data

⚠ CAUTION:

This step is to be executed only once. Attempting to migrate system administration data more than once causes catastrophic errors from which you are unable to recover. Failure to heed this warning may destroy data irretrievably.

System administration data is migrated via the R3 Migrate Data window, using the full maintenance backup tapes prepared earlier. The procedure is as follows:

1. Log in to CMS. The CMS main menu displays.
2. Put CMS into single-user mode (`System Setup - CMS State`).
3. Insert the full maintenance backup tape into the tape drive.
4. From the CMS main menu, select the `System Setup` -> `R3 Migrate Data` option.
5. Set up the R3 Migrate Data Window to migrate the data:

Field	Value to enter or select
`Device name`	The tape drive device name
`Data Type`	`System Administration data`
`Specify ACD(s)`	All ACDs

6. Press Enter to access the action list in the top right corner.
7. Select `Run` and press Enter. System administration data generally takes about an hour to migrate. The `Status:` field reports the progress of the migration. When the migration ends, `Status:` indicates the success or failure of the run.

8. Investigate the customer migration log and take any necessary corrective action. For help interpreting the log and its messages, telephone the Lucent National Customer Care Center or contact your Lucent distributor or customer representative.

   The customer migration log is file `/cms/migrate/r3mig.log`. Print out the log with this command:

   ```
   lp  /cms/migrate/r3mig.log
   ```

   See also "Messages" on page 7-11 and "R3 Migrate Data Window" on page A-24.

E.2: Migrate ACD Administration Data

Migrating ACD administration data is similar to migrating system administration data. Both procedures use the R3 Migrate Data window to do the migration, but differ in the options chosen.

CAUTION:

Like the System Administration data migration, ACD Administration data should be migrated only one time.

To migrate ACD administration data, use this procedure:

1. Verify that the full maintenance backup tape is in the tape drive.
2. Log in to CMS. The CMS main menu displays.
3. Select `System Setup - Data Collection` and turn off data collection for all ACDs in the system. Briefly, the procedure is:
   a. Type in the name of an ACD.
   b. Move the cursor to the `Off` field and press the X key.
   c. Access the action list and select `Modify`.
   d. Repeat for each ACD in your system.

   For more information on the procedure, see "Turning Data Collection On or Off" on page A-7.

   Do not continue until you have verified that data collection is turned off for every ACD in your system.
4. Return to the CMS main menu and select the `System Setup` -> `R3 Migrate Data` option.

5. Complete the fields of the R3 Migrate Data window, as follows:

Field	Value to enter or select
`Device name`	the tape drive device name
`Data Type`	`ACD Administration data`
`Specify ACD(s)`	All ACDs

6. Press Enter to access the Action list in the top right corner of the menu.
7. Select `Run` and press Enter.

   As the migration progresses, messages in the `Status:` field report the migration's status. When the migration ends, `Status:` reports its success or failure.
8. Investigate the customer migration log and take any necessary corrective action. For help interpreting the log and its messages, telephone the Lucent National Customer Care Center or contact your Lucent distributor or Customer Representative.

   The customer migration log is file `/cms/migrate/r3mig.log`. Print out the log with this command:

   ```
   lp  /cms/migrate/r3mig.log
   ```

See also "Messages" on page 7-11 and "R3 Migrate Data Window" on page A-24

E.3: Restore Customer Files

The CMS administrator restores any *UNIX* system files created by the CMS users to the *Sun* platform. The procedure:

1. Insert the tape that contains the backup of customer *UNIX* system files into the 2.5-gigabyte tape drive.
2. Log in as *root*.
3. Enter these commands:

```
# cd  /export/home
# cpio -icvdm < <devicename>

(a list of files retrieved from tape displays)
```

where:

- The `-m` option is required when data spans multiple tapes
- *<devicename>* specifies the tape you are writing to, and must be one of the following:

/dev/rmt/0	The tape drive with the lowest target number in the SCSI chain.
/dev/rmt/1	The tape drive with the second-lowest target number in the SCSI chain.
/dev/rmt/0c	The compressed-mode (QIC 2.5-GB or 14-GB) tape drive with the lowest target number in the SCSI chain.
/dev/rmt/1c	The compressed-mode (QIC 2.5-GB or 14-GB) tape drive with the second-lowest target number in the SCSI chain.

If you see messages such as `cpio: Existing “file” same age or newer`, the file already exists on the *Sun* platform and will not be restored. Check with the file’s owner to determine which version of the file to keep. If this message occurs at all, it probably will be with the *cms* and *cmssvc* login IDs.

4. You must restore ownership of the files to their proper login IDs. To do this, enter these commands for *each* user login ID:

```
# cd /export/home
# find login -print | xargs chown login
# find login -print | xargs chgrp cms
```

where *login* represents the login ID you’re restoring the files to.

NOTE:

INTEL users: The restored files may contain *UNIX* system shell scripts or executable programs. Since the *Sun* platform hardware and operating system are different from those of the *INTEL* machine, executable files need to be recompiled on the *Sun* platform, and shell scripts may need to be modified to work with the *Sun* operating system.

.

F: Move the Link

F.1: Busy Out the Link

Task Performed By: Lucent field technician

From the switch, a Lucent field technician busies out the link between the old platform and the switch.

F.2: Move the Link

Task Performed By: Lucent field technician

Lucent field technicians take down the link between the old platform and the switch and bring up the *Sun* platform link. A switch technician needs to make sure that the switch is administered for R3V6 *CentreVu* CMS. See the *CentreVu™ CMS R3V6 Sun® SPARCserver™ Computers Installation and Maintenance* (585-215-857) document, Chapter 5, "Connecting the *Sun SPARCserver* Computer to the Switch."

F.3: Start Data Collection on the New Platform

You may now turn on the new CMS version and begin collecting data. The procedure is as follows:

1. Enter the command `cmsadm.` The *CentreVu* CMS Administration menu displays.
2. Select the `run_cms` option. The CMS On/Off menu displays.
3. Select the `Turn on CMS` option. After a brief delay, and a few messages about turning on the X.25 software, the system prompt reappears. CMS is now turned on and ready to run.

See also "Checking the Storage Interval Size" on page A-6.

.

G: Migrate Historical Data

G.1: Migrate Full Historical Data

To migrate full historical data, use this procedure:

1. From the CMS main menu, put CMS in a multi-user state via the `System Setup - CMS State` option.
2. Return to the CMS main menu and turn on data collection for all ACDs via the `System Setup - Data Collection` option. (See "Turning Data Collection On or Off" on page A-7.)
3. Verify that the full maintenance backup tape is in the tape drive.
4. From the CMS main menu, select the `System Setup` -> `R3 Migrate Data` option.
5. Complete the fields of the R3 Migrate Data Window:

Field	Value to Enter or Select
`Device name`	The tape drive device name
`Data Type`	`Historical data`
`Stop date`	Leave blank
`Stop time`	`11:59 PM`
`Specify ACD(s)`	All ACDs

6. Press **Enter** to access the Action list in the top right corner of the menu.

7. Select `Run` and press Enter.

   As the migration progresses, the `Status:` field displays various messages indicating its status.

NOTE:

While full historical data is being migrated to the new *Sun* platform, you may also run an incremental backup of the old platform. See 7B, below.

   A full historical migration may take several hours. It runs in the background, however, so you can exit the migration window and perform other tasks. If you do that, bring up the migration window periodically to check on the progress.

   When the migration ends, a message in the `Status:` field reports the migration's success or failure.

8. Investigate the customer migration log and take any necessary corrective action. For help interpreting the log and its messages, telephone the Lucent National Customer Care Center or contact your Lucent distributor or Customer Representative.

   The customer migration log is file `/cms/migrate/r3mig.log`. Print out the log with this command:

```
lp  /cms/migrate/r3mig.log
```

See also "Messages" on page 7-11 and "R3 Migrate Data Window" on page A-24.

G.2: Run an Incremental Backup on the Old Platform

You may run this step at the same time as the full historical data is being migrated to the new platform.

An incremental historical backup backs up the data that has been collected since the last full maintenance backup, and maximizes data collection for the upgrade.

An incremental backup goes like this

1. Display the main CMS menu.
2. From `CMS MainMenu`, select `Maintenance - Back Up Data.`
3. In the `Back Up Data` window, select these options:

Field	Value to Enter or Select
`Device name`	The tape drive device name
`Verify tape...?`	`y`
`ACD(s) to back up`	All ACDs
`Data to back up`	`Historical data - Incremental`

4. Press Enter to access the action list, and select `Run`.

See also "Back Up Data Window" on page A-16.

G.3: Migrate Incremental Historical Data

Once the incremental backup and the full migration have both completed, migrate the incremental data to the new platform. Do this:

1. Remove the full maintenance backup tape from the tape drive and replace it with the incremental backup tape you created in Step 2 of the upgrade procedure.
2. From the CMS main menu, select the `System Setup` -> `R3 Migrate Data` option.
3. Complete the fields of the R3 Migrate Data Window:

Field	Value to Enter or Select
`Device name`	The tape drive device name
`Data Type`	`Historical data`
`Stop date`	Leave blank
`Stop time`	`11:59 PM`
`Specify ACD(s)`	All ACDs

4. Press Enter to access the action list.
5. Select `Run` and press Enter.

   As the migration progresses, the `Status:` field displays various messages indicating its status. When the migration ends, the `Status:` field reports the migration's success or failure.
6. Investigate the customer migration log and take any necessary corrective action. For help interpreting the log and its messages, telephone the Lucent National Customer Care Center or contact your Lucent distributor or customer representative.

   The customer migration log is file `/cms/migrate/r3mig.log`. Print out the log with this command:

   ```
   lp  /cms/migrate/r3mig.log
   ```

See also "Messages" on page 7-11 and "Back Up Data Window" on page A-16.

NOTE:

The haglog table, which contains historical agent login and logout data, is not backed up by an incremental backup. Thus the haglog table contains data only up until the time the preupgrade full maintenance backup was done.

.

H: Back Up the New Platform

H.1: Run a CMSADM Backup

The CMSADM backup provides a complete system backup of the new platform. "CMSADM File System Backups" on page A-11 contains detailed, step-by-step procedures for performing CMSADM backups. Briefly, the procedure goes like this:

1. Make sure the system is in a multi-user state.
2. Access the Administration menu by entering a `cmsadm` command.
3. Select the `backup` option.
4. Feed tapes to the system until it stops asking for them

H.2: Run a Full Maintenance Backup

Do a full maintenance backup as soon as possible after completing the migration. *CentreVu* CMS incremental maintenance backups will fail if a full maintenance backup is not done. Briefly, the procedure goes like this:

1. Log in to CMS.
2. From the CMS main menu, select `Maintenance-Back Up Data.`
3. In the Back Up Data window, select these options:

Field	Value to enter or select
`Device name`	The tape drive device name
`Verify tape...?`	`y`
`ACD(s) to back up`	All ACDs

`Data to back up`	`System Administration data`
	`ACD-specific administration data`
	`Historical data - Full`
	`Non-CMS data` (if needed)
	Specific tables (if needed)

4. Press Enter to access the action list, and select `Run`.

See also "Back Up Data Window" on page A-16.

.

I: Return the Tape Drive

ONLY IF YOU BORROWED AN EXTERNAL TAPE DRIVE FROM LUCENT'

Do this procedure only if you borrowed a 2.5-gigabyte tape drive from the Lucent Customer Care Center. Please arrange to return it as soon as possible so it can be available to other customers.

I.1: Remove the Tape Drive

To remove the tape drive from the *Sun* system, do the following:

1. Remove the device files by entering the following command:

```
# rm /dev/rmt/*
```

   If you do not remove the device files before rebooting the system, the SCSI device files may not match the hardware configuration. If this occurs, repeat this entire step.

2. Shut the system down using the following command:

```
# shutdown -i0 -g0 -y
```

3. Do the following in sequential order:
   a. Turn off the *Sun* computer.
   b. Turn off the system monitor.
   c. Turn off all external devices starting with the device closest to the *Sun* computer and working toward the device at the end of the SCSI chain.
4. Remove the tape drive and disconnect it from the power source.
5. Reconnect the remaining SCSI devices.
6. Do the following in sequential order:
   a. Turn on devices attached to the *Sun* computer, starting with the device at the end of the SCSI chain and working toward the system unit.
   b. Turn on the *Sun* computer.
   c. Turn on the system monitor.

   Power-on diagnostics will occur when the computer is turned on.

   While the system is booting up, enter the OpenBoot environment by doing the following:

7. Press the **Stop** and **A** keys simultaneously after the display console banner appears but before the system starts booting the operating system.

   After you are in the OpenBoot environment, the following prompt appears:

```
ok
```

8. Enter the following command, and verify that the system recognizes the SCSI devices:

```
ok probe-scsi-all
```

The program responds:

```
/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

ok
```

The actual response (devices listed) depends on the devices installed on the SCSI bus.

9. Enter the following command to reboot the system and reconfigure the devices:

```
ok boot -r
```

I.2: Return the Tape Drive Kit

United States only: Ship the entire contents of the tape drive kit back to the TSC at this address:

Lucent Technical Service Center
8300 East Maplewood Avenue
Englewood, CO 80111

International customers: contact your Lucent representative or distributor.

Chapter 6: Migrating 3B2 Data to a New *Sun* Platform

This chapter provides instructions on migrating data from a 3B2 computer running R2 CMS to a *Sun** computer running R3V8 CMS.

NOTES:

1. The customer is responsible for performing the 3B2-to-*Sun* computer migration steps (except Steps 3 and 6A). The customer can, however, contract Lucent to do the migration on a time-and-materials basis.
2. Begin this procedure 2 to 3 days before the cutover to the new *Sun* platform to help ensure a smooth transition.

Migrating Multiple ACDs

When you migrate data from multiple R2 ACDs to a *Sun* computer, you can use either—or a combination—of these two scenarios:

- First, migrate the R2 administration data for all the ACDs to the *Sun* computer. That allows you to clean up the administration data (user IDs, dictionary, etc.) for all ACDs at once. After the administration data is cleaned up, you can start CMS data collection and then migrate the R2 historical data for each ACD.
- Migrate the R2 administration data and historical data for one ACD at a time to the *Sun* computer. That allows you to migrate the administration data for an ACD, clean up the administration data, start CMS data collection for that ACD, and then migrate the ACD's R2 historical data. Repeat the process for each remaining ACD until all the ACDs are migrated.

If you plan to do a multiple ACD migration, be aware of the following:

1. Moving multiple ACDs may cause collisions in the System Administration data. See the “Migrations” section in Chapter 1, “Introduction,” for information on potential collisions and their solutions.
2. Phased migrations don’t work. If you migrate some agents at one time and others later, you will have to decide which set of data you want to keep. The two sets cannot be merged.
3. Login/logout data does not migrate.

A: Perform Pre-migration Tasks

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

BEGIN THIS STEP AT LEAST THREE DAYS BEFORE BEGINNING THE MIGRATION.

Perform the following tasks on the 3B2:

A. Change R2 archive parameters for any files that will be set up for R3V8 to store the amount of data you want to migrate. This should be done 2 or 3 days before performing the historical data migration.

NOTE:

For Steps 1B and 1C, there is no need to print out scheduler screens or exceptions administration if you can access a terminal on *both* the 3B2 R2 CMS and the *Sun* computer CMS. You can view the R2 screens and then enter the appropriate information into the CMS windows.

B. Print out the scheduler screens, and write down what each program does. For example, what reports print on what printers, etc.

R2 scheduled programs do not migrate to the *Sun* computer; you will need to re-create them. The printout and the written information will aid you in re-creating the programs.

C. Print out the exceptions administration for each split, vector, and trunk group.

R2 exceptions administration does not migrate to the *Sun* computer. You will need to readminister these exceptions on the *Sun* computer. The printout will aid you in readministering the exceptions.

D. Clean up the dictionary:

1. Print out each area in the Dictionary subsystem except “Login Identifications” and “Database Items.”
2. Remove synonyms, constants, and calculations.
3. In calculations, you *must* replace all references to standard CMS database items in lower case with uppercase versions.
4. Modify names (synonyms), constants, and calculations so that all of them start with a letter.

5. Replace any occurrences of * \ - “ ‘ | ? ; ~ in names (synonyms) with legal characters (the symbols are not replaced for calculations). All other typewriter characters are legal. If you choose not to replace these characters, the migration program replaces them as follows:

   * to blank
   \ to blank
   - to _
   “ to '
   ‘ to blank
   | to blank
   ? to blank
   ; to :
   ~ to blank.

   If the program's replacement is acceptable, skip this step.

6. Create agent groups for all extension groups. Then delete the extension groups.
7. Change all constants greater than six characters to six characters or fewer. A character space must be designated for a decimal point. For example, the value “100.00” is a six character constant.

E. Look carefully at custom reports:

1. Decide whether all custom report designs from R2 will be needed in R3V8. You may find that some R2 custom reports are covered by new, standard R3V8 reports.
2. Remove any unneeded custom reports. Fix or remove any R2 reports that have not been compiled. Reports that have not been successfully compiled in R2 will not be migrated to R3V8.

   NOTE:

   If you used the *UNIX** system to move any custom report source files to new directories, those custom reports will not be migrated.

F. Remove Quads 2, 3, and 4 from any reports with multiple quads. Only the first quadrant will be migrated.

G. Clean up CMS user IDs, removing any that are no longer needed. Remember that CMS user IDs must be all lower case.

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B: Install the R2 Migration Program

To install the migration program on the 3B2, perform the steps in the following table at the 3B2 CMS console terminal:

Step	Action	Result
1.	Access the *UNIX* system from the CMS Main Menu and log in as *root*.	#
2.	Insert the CMS R2 Migration Backup 3.2Q diskette into the diskette drive, and close the drive door.	

3.	Start the installation process by entering the following command:
	`sysadm installpkg`
		`Running subcommand 'installpkg' from menu 'softwaremgmt', SOFTWARE MANAGEMENT`
		
		`Insert the removable medium for the package you want to install into the diskette1 drive. Press <RETURN> when ready. Type q to quit.`

4.	Press **Enter**.	`Starting to install the R2 CMS Migration program ...`
		
		`Finished installation.`
		
		`You may now remove the medium from the diskette1 drive.`
		
		`Insert the removable medium for the package you want to install into the diskette1 drive.`
		`Press <RETURN> when ready. Type q to quit.`

5.	Enter `q` and remove the diskette from the drive.	#

C: Install the *Sun* Computer

Installing the *Sun* computer consists of four substeps:

A. Install the computer.

B. Provision the system.

C. Install CMS feature packages.

D. Administer printers.

C.1: Install the Computer

Lucent field technicians install the *Sun* computer and connect it to the switch. Installation instructions and setup hints can be found in *CentreVu® CMS R3V6 Sun® SPARCserver™ Computers Installation and Maintenance* (585-215-857), in the following chapters:

- Chapter 3, “Installing the *Sun SPARCserver* Computer”
- Chapter 5, “Connecting the *Sun SPARCserver* Computer to the Switch”

C.2: Provision the System

The TSC provisions the system by setting authorizations, setting up data storage parameters, and setting up the CMS R3V8 application.

For additional information and instructions, see the following references:

- “Creating ACDs” on page A-19.
- “Setting Up Data Storage Parameters” on page A-21.
- *CentreVu™ CMS R3V6 Sun® SPARCserver™ Computers Installation and Maintenance* (585-215-857); Chapter 6, “Setting Up *CentreVu* CMS and Installing Feature Packages.”

C.3: Install Feature Packages

The customer can turn on the CMS R3V8 (via the `run_cms` option of `cmssvc` or `cmsadm`) and install the feature packages (if they apply).

For instructions, see Chapter 6, "Setting Up *CentreVu* CMS and Installing Feature Packages," *CentreVu™ CMS R3V6 Sun® SPARCserver™ Computers Installation and Maintenance* (585-215-857).

Also see, as necessary, the following:

- "Checking the Storage Interval Size" on page A-6
- "Turning Data Collection On or Off" on page A-7

C.4: Administer Printers

Printers for the *Sun* computer **must** be administered; the migration process does **not** migrate printer administration data.

See these chapters in the following documents:

- *CentreVu™ Call Management System R3V6 Administration* (585-215-850); Chapter 3, "Getting Started and Using CMS Daily;" the section entitled "Printers Worksheet."
- *CentreVu™ CMS R3V6 Sun® SPARCserver™ Computer Installation and Maintenance* (585-215-857); Chapter 4, "Installing Terminals, Printers, and Modems;" the section entitled "Administering Printers."

D: Transfer R2 Administration Data to Tape

This procedure transfers R2 CMS administration data to tape, including dictionary and custom report data.

If your 3B2 is equipped with a Small Computer System Interface (SCSI) tape system, use the tapes provided with the *Sun* computer if possible. These tapes provide a better read when the data is being restored to the new platform.

If your 3B2 is equipped with a Cartridge Tape Controller (CTC) tape system, use standard R2 backup tapes. The Technical Service Center (TSC) then transfers the data to a medium that is compatible with the *Sun* computer. Tapes used with a CTC tape system must be formatted.:

Step	Action
1.	Make sure the tape is not write protected (the black arrow in the upper left corner of the cartridge must point away from “safe”).
2.	Load the tape into the drive.
3.	At a terminal logged into R2 CMS, access *UNIX* through the CMS Main Menu. **NOTE:** Make sure you access the *UNIX* system through the R2 CMS Main Menu; otherwise, you will get the following error message: `CMS system error, setup getenv failed for ACDHOME`

4.	Start the migration program by entering this command:
	
	`/usr/bin/migrate`
	
	The system reponds:
	
	`R2 CMS to R3 CMS Data Migration`
	
	`Please answer a few questions before continuing ...`
	`.`
	`.`
	`.`
	`Enter the number of the existing R2 ACD:`

5.	Enter the appropriate R2 ACD number (1 for ACD1, 2 for ACD2, and so on). The system responds: `Enter the number of the corresponding R3 ACD number:`

Step	Action
6.	Enter the R3V8 ACD number to which this R2 ACD will be mapped.

7.	Repeat Steps 4 and 5 for each ACD on the system. After the last ACD, the system displays:
	`Selectone:<a>for administration and dictionary`
	`<h>forhistoricaldata`
	`<b>for both options:`

8.	Enter `a` to migrate the administration, dictionary, and custom reports information. The system responds:
	`Collecting the set of R2 CMS files to migrate ...`
	`Only one tape is required for the administration, dictionary, and custom reports migration`
	`Continuing with the migration .`
	`. .`
	`Migrating users ...`
	`Migration succeeded.`
	The `Migration succeeded` message means the program has finished migrating the information to tape and has returned you to the *UNIX* system prompt.

9.	Enter the command `exit` to return to the CMS main menu.

D.1: Transferring Data between Tape Media

If your 3B2 computer is equipped with a CTC tape system, the data needs to be transferred from the CTC tape to a medium compatible with the *Sun* computer. To have the data transferred, perform the following steps:

1. Dial the Lucent National Customer Care Center at 1-800-242-2121.
2. Press the number that prompts you for “CMS.”
3. Press the number that prompts you “to request assistance or to report a new problem.”

Once the TSC returns the tapes to you, you can proceed with the next step.

E: Migrate R2 Administration Data

There are three substeps to migrating the administration data:

A. Verify prerequisites

B. Migrate administration data.

C. Perform post migration tasks.

E.1: Verify Prerequisites

Before you can do the migration, the following situations must exist on the the *Sun* computer:

- A device name needs to be defined in the CMS R3V8 Maintenance: Backup/Restore Devices window (normally `default`). This is the device from which the data being migrated is read.
- You need write permission for the CMS System Setup subsystem to migrate the data.

See the following sections in the *CentreVu™ Call Management System R3V6 Administration* (585-215-850) document:

- Chapter 12, “Maintenance — Back Up/Restore Devices”
- Chapter 11, “System Setup — Feature Access.”

E.2: Migrating Administration Data

You migrate R2 CMS administration, dictionary, and custom report data to the *Sun* computer using the R2 Migrate Data window. The procedure (in brief) is as follows:

1. Insert the tape that contains the R2 administration data, dictionary items, and custom reports into the tape drive.
2. At a terminal logged into CMS R3V8, access the CMS Main Menu.

   NOTE:

   If your personal login ID is to be migrated, you must log in as *cms* to do the migration.

   NOTE:

   cms replaces *acd1* as the administration logid.
3. From the CMS main menu, select the `System Setup` -> `R2 Migrate Data` option.

4. Complete the fields of the R2 Migrate Data Window:

Field	Value to enter or select
Device name	tape drive device name (usually `default`)
Data Type	`Administration, Dictionary, and Custom Reports`
Stop date	*leave blank*
Stop time	11:59 PM

5. Press Enter to access the Action List (top right corner of menu).
6. Select Run and press Enter.

   As the migration progresses, the `Status:` field displays various messages indicating its status. .

   NOTE:

   Do **not** exit this window during the migration. If you exit this window or turn the terminal off, the migration will stop. If the migration stops in the middle, you must restart it.

   The migration of administration data, dictionary, and custom reports takes about 1 hour. When the migration completes successfully, the `Status:` line displays this message:

   ```
   Processing completed, see /cms/migrate/migrate.log. This file
   may contain a list of instructions for manually completing the
   migration.
   ```

   If the migration fails, the `Status:` line displays the following:

   ```
   Failed to migrate: Examine the file,
   /cms/migrate/migrate.log,for problems.
   ```

   In addition, a print window displays:

   ```
   Do you want to print the migration log?
   Enter y for yes or n for no:__
   ```

7. Enter `y` to print the log. You will need a copy of the log for Step 7, Perform Post Administration Migration Tasks.

E.3: Perform Post Migration Tasks

Perform the following tasks after you have migrated R2 administration data to the *Sun* computer. You may want a copy of the *CentreVu™ Call Management System R3V6 Administration* (585-215-850) document on hand as you complete these tasks.

1. Use the *CentreVu™ Call Management System R3V6 Administration* (585-215-850) document to:
   a. Reference Chapter 3, “Getting Started and Using CMS Daily.” If your switch supports the Expert Agent Selection (EAS) feature, see Appendix E, “CMS and Expert Agent Selection.”
   b. Complete the appropriate worksheets in Chapter 3.
   c. Make sure that all the tasks in the “Getting Started Checklist” (in Chapter 3) have been completed.
2. Print a copy of the migration log.

   If you have not already printed the migration log, do it now by entering the following command at the *UNIX* system prompt:

   ```
   lp /cms/migrate/migrate.log.
   ```
3. Fix all problems recorded in the migration log up to but **not** including custom reports. Use the log and Chapter 8, “Migration Log Messages” to determine what action you need to take.
4. Fix user IDs. See Chapter 10, “User Permissions” in the *CentreVu™ Call Management System R3V6 Administration* (585-215-850) document.
   a. Decide whether any users need to have administrator status. If so, change their type from `normal user` to `administrator`.
   b. Check the number of windows allowed and the refresh rate for each user. Change them if the defaults are not appropriate.
   c. Check the feature permissions for each user. The default permission for the System Setup subsystem is set to n for both read and write. Change this for any users who will need access.
   d. If you have vectoring, set up VDN permissions for all users. (These are set to n by default.)
   e. Verify the permissions to splits/skills, trunk groups, VDN (Vector Directory Number), and vectors for each user.
   f. All CMS user IDs must be lower case.

5. Set up and enable exceptions administration. See Chapter 8, "Exceptions," in the *CentreVu™ Call Management System R3V6 Administration* (585-215-850) document.
6. Verify that the split call profile parameters migrated. Change the values if desired. See Chapter 9, "ACD Administration," in the *CentreVu™ Call Management System R3V6 Administration* (585-215-850) document.
7. If you have vectoring, set up VDN call profile parameters. See Chapter 9, "ACD Administration," in the *CentreVu™ Call Management System R3V6 Administration* (585-215-850) document.
8. Identify critical reports (standard and custom) that you will need to run immediately following the migration.

   If any critical reports are migrated R2 custom reports, go to Step 7.8a; otherwise, go to Step 7.9.

   a. Determine if an R3V8 standard report can be used instead of the migrated R2 custom report. The R3V8 report may require modification through the Custom Report subsystem.

      NOTE:

      We strongly recommend that you use an R3V8 standard report instead of the migrated R2 report. Migrated custom reports do not fully migrate, take time to fix, and run 60 percent slower than their R3V8 counterparts.

   b. If you found an R3V8 standard report to use instead of the R2 custom report, go to Step 7.8c; otherwise, go to Step 7.8d.
   c. If you need to modify the R3V8 standard report, edit the report via the Custom Reports Screen Painter and make the necessary changes. Test the design and, if necessary, make corrections until no errors are found.

      When you are satisfied with the R3V8 report design, delete the migrated custom report it replaces.

      If there are more migrated custom reports, repeat the applicable Steps 7.8a through 7.8d; otherwise, go to Step 7.9.

d. Go to Appendix A and follow the steps to make your migrated R2 custom report run on the *Sun* computer.

   Check the migration log to see if the report has specific error messages from the migration. If so, go to Chapter 8, “Migration Log Messages,” and look up the messages. Perform the indicated actions to resolve the problem. From Custom Reports, run test design and, if necessary, make corrections until no errors are found.

   If there are more migrated custom reports, repeat the applicable Steps 7.8a through 7.8d; otherwise, go to Step 7.9.

9. Set up timetables. See Chapter 6, “Timetable and Shortcut,” in the *CentreVu™ Call Management System R3V6 Administration* (585-215-850) document.

   a. Set up timetables to schedule the reports you identified in Step 7.8 and any other reports you want to schedule.

      NOTE:

      Do not schedule any migrated custom reports until you have adjusted the reports to run on the *Sun* computer, fixed any migration problems, and tested the reports to make sure they will run.

   b. Set up timetables to do administration tasks such as nightly backup.

   c. Add any additional timetables for new reports that were not available in the R2 system, but are needed in R3V8. For example, if you did not have vectoring on the R2 system but have it on the *Sun* computer, you may want to schedule some vectoring reports.

10. On an as-needed basis, fix the remaining migrated custom reports by repeating the applicable Steps 7.8a through 7.8d for each report.

F: Transfer R2 Historical Data to Tape

F.1: Move the Link

The Lucent technicians take down the CMS link between the 3B2 and the switch, and bring up the link between the *Sun* computer and the switch.

NOTE:

It is important to write down the exact date and time the R2 CMS link was brought down. This information will be needed when migrating historical data.

A switch technician needs to make sure the switch is administered for CMS R3V8. At that point, data collection on CMS R3V8 can begin. Full historical reporting capabilities will be unavailable, however, while the historical data migration takes place.

F.2: Transfer the Data

To transfer R2 CMS historical data, do these steps on the 3B2 computer:

Step	Screen/Prompt	Action
1.	-	Put the tape in the tape drive.
	NOTE: Make sure the tape is not write protected (the black arrow in the upper left corner of the cartridge must point away from “safe”). **NOTE:** If your 3B2 is equipped with a Small Computer System Interface (SCSI) tape system, use the tapes provided with the *Sun* computer if possible. These tapes provide a better read when the data is being restored to the new platform. **NOTE:** If your 3B2 is equipped with a Cartridge Tape Controller (CTC) tape system, use standard R2 backup tapes. The Technical Service Center (TSC) then transfers the data to a medium that is compatible with the *Sun* computer. Tapes used with a CTC tape system must be formatted.	

Step	Screen/Prompt	Action
2.	#	At a terminal logged into R2 CMS, access *UNIX* through the CMS main menu.
	NOTE: Make sure you access the *UNIX* system through the R2 CMS Main Menu; otherwise, you will get the following error message: `CMS system error, setup getenv failed for ACDHOME`	
3.	$	Start the migration program by entering this command: `/usr/bin/migrate`

4.	`R2 CMS to R3 CMS Data Migration`
	
	`Please answer a few questions before continuing ...`
	`.`
	`.`
	`.`
	`Enter the number of the existing R2 ACD:`
		Enter the appropriate R2 ACD number (`1` for ACD1, `2` for ACD2, and so on).

5.	`Enter the number of the corresponding R3 ACD number:`	Enter the R3V8 ACD number to which this R2 ACD will be mapped.
NOTE: Repeat Steps 4 and 5 for each ACD on the system.		

6.	`Selectone:<a>for administration and dictionary`
	`<h>forhistoricaldata`
	`<b>for both options:`
		Enter `h` to migrate historical information.

7.	`.`
	`.`
	`.`
	`The number of cartridge tapes needed to migrate the CMS data is X (X, XX)`
	
	`Do you have enough tapes to continue the R2 CMS historical data migration (y, n)?`
		If you don't have enough tapes, answer `n`, hunt up the tapes you need, and restart the procedure with step 1 of this table.
		Otherwise, answer `y` and continue.

8.	`Continuing with the migration`
	`.`
	`.`
	`.`
	`Migration succeeded.`
		Enter the command `exit` to return to the CMS main menu

F.2.a: Transferring Data between Tape Media

If your 3B2 computer is equipped with a CTC tape system, the data needs to be transferred from the CTC tape to a medium compatible with the *Sun* computer. To have the data transferred, do this:

1. Dial the Lucent National Customer Care Center at 1-800-242-2121.
2. Press the number that prompts you for “CMS.”
3. Press the number that prompts you “to request assistance or to report a new problem.”

Once the TSC returns the tapes to you, you can proceed with the next step.

G: Migrate R2 Historical Data

There are three substeps to migrating the historical data:

A. Verifying prerequisites

B. Migrating the data.

C. Performing post migration tasks.

G.1: Verify Prerequisites

- A device name needs to be defined in the CMS R3V8 Maintenance: Backup/Restore Devices window (normally `default`). This is the device from which the data being migrated is read.
- You need **write** permission for the CMS R3V8 System Setup subsystem to migrate the data.
- You need to set the CMS R3V8 interval size to 30 minutes for the migration of R2 CMS historical data. R2 CMS has an interval size of 30 minutes, but CMS R3V8 can have interval sizes of 15, 30, or 60 minutes. If you wish a different R3V8 interval size, you can change it after the migration.

See the following sections in the *CentreVu™ Management System R3V6 Administration* (585-215-850) document:

- Chapter 12, “Maintenance — Back Up/Restore Devices”
- Chapter 11, “System Setup — Feature Access”
- Chapter 11, “System Setup — Storage Intervals.”

G.2: Migrate the Data

You migrate the R2 CMS historical and forecast administration data to the *Sun* computer using the R2 Migrate Data window. This migration is almost identical to the administration migration except that you enter a stop date and stop time.

Do the following steps from the *Sun* computer:

1. Insert the tape that contains the R2 historical data and forecast administration data into the tape drive.
2. At a terminal logged into CMS R3V8, access the CMS main menu.
3. Select the `System Setup - R2 Migrate Data` option.
4. Complete the fields of the R2 Migrate Data Window:

Field	Value to enter or select
Device name	Tape drive device name (usually `default`)
Data Type	`Historical and Forecast Administration Data`
Stop date	The date on which the technicians took down the R2 link. Can be mm/dd/yy format (09/08/93) or relative date format (-1)
Stop time	The time at which the technicians took down the R2 link. Entered in hh:mm AM/PM format. Default is 11:59PM. **CAUTION:** If you enter a date and time more recent than when the R2 link was brought down, you will delete any R3V8 data collected up to the date and time you enter.

CAUTION:

Do **not** exit the R2 Migrate Data window during the migration. If you exit the window or turn the terminal off, the migration stops and must be restarted.

5. Press Enter to access the Action List.

6. Select `Run` and press **Enter**.

   The following window displays:

```
The stop date and time are critical to the migration.
          <date and time>
Are you sure they are correct (y or n)?
Enter y for yes or n for no:__
```

7. If you are sure the stop date and stop time are correct, enter `y`. `Working` appears in the lower left-hand corner of the R2 Migrate window. The `Status:` field displays various messages that tell you what is being processed.

   If you wish to enter a new stop date and stop time, enter `n`. The program returns you to the `Stop date` field of the R2 Migrate window. Enter a new stop date and stop time and select `Run`.

   The migration of historical data and forecast administration data may take several hours.

   If more than one tape of historical data is being migrated, this window appears when it is time to change tapes:

```
***** END OF CURRENT TAPE *****
Insert proper tape; wait for retension pass to complete
then press <return> to continue.
```

8. Replace the current tape with the next tape, wait for the retension to complete (about 3 minutes), and then press Enter.

   If the migration completes successfully, the `Status:` line displays this message:

   ```
   Processing completed, see /cms/migrate/migrate.log. This file
   may contain a list of instructions for manually completing the
   migration.
   ```

   If the migration fails, the `Status:` line displays the following:

   ```
   Failed to migrate: Examine the file,
   /cms/migrate/migrate.log,for problems.
   ```

   In addition, a print window displays:

   ```
   Do you want to print the migration log?
   Enter y for yes or n for no:__
   ```

9. Enter `y` to print the log. You will need a copy of the log for Step 11, Perform Post Historical Migration Tasks.

G.3: Perform Post Migration Tasks

Perform the following tasks after you have restored the R2 historical data to the *Sun* computer. You may want a copy of the *CentreVu™ Call Management System R3V6 Administration* (585-215-850) document on hand as you complete the tasks in this section.

1. If you have not printed the migration log, enter the following command at the *UNIX* system prompt to print the log:

   ```
   lp /cms/migrate/migrate.log.
   ```

   The *migrate.log* file provides a record of what happened during the migration. Use this log and Chapter 8, “Migration Log Messages,” to determine what actions you need to take.

2. If forecasting is installed, fix any errors related to the forecast administration.

3. If forecasting is installed, run the forecast manager to recollect data for the forecasting tables from the migrated historical data. Then schedule the forecast manager in a timetable if you are planning to use forecasting. See Chapter 14, “Forecasting,” and Chapter 6, “Timetable and Shortcuts,” in the *CentreVu™ Call Management System R3V6 Administration* (585-215-850) document.

H: Back Up the System

H.1: Do a CMSADM Backup on the *Sun* Computer

The CMSADM backup provides a system backup in case the migration should go wrong. "Doing a CMSADM Backup on a Solaris System" on page A-11 contains a detailed, step-by-step procedure for performing a CMSADM backup. Briefly, that procedure goes like this:

1. Make sure the system is in a multi-user state.
2. Access the Administration menu by entering a `cmsadm` command.
3. Select the `backup` option.
4. Feed tapes to the system until it stops asking for them

H.2: Do a Full Maintenance Backup on the *Sun* Computer

After migrating the data, you should do a full *CentreVu* CMS maintenance backup as soon as possible. *CentreVu* CMS incremental maintenance backups will fail if a full maintenance backup is not done first. Briefly, the procedure goes like this:

1. Start CMS.
2. From the CMS MainMenu, select `Maintenance - Back Up Data`.
3. In the Back Up Data window, select these options:

Field	Value to enter or select
`Device name`	The tape drive device name
`Verify tape...?`	`y`
`ACD(s) to back up`	All ACDs

`Data to back up`	`System Administration data`
	`ACD-specific administration data`
	`Historical data - Full`
	`Non-CMS data` (if needed)

4. Press Enter to access the action list, and select `Run`.

See also "Back Up Data Window" on page A-16.

Chapter 7: Troubleshooting

This chapter covers the following areas:

- "General Problems Using the System" on page 7-2 contains solutions to general system, CMSADM backup, and CMS package installation problems.
- "Problems with NTS Administration" on page 7-4 discusses problems you might enounter while administering an NTS.
- "Troubleshooting a Solstice DiskSuite File System" on page 7-5 shows how to troubleshoot problems with installing *Solstice DiskSuite* software or with the */cms* file system on a computer that is running with *Solstice DiskSuite* software.
- "Migration Logs" on page 7-10 describes the log files generated during a data migration.
- "Messages" on page 7-11 lists error and informative messages that may show up on the display terminal during an upgrade, or which you might encounter in the migration log files.

General Problems Using the System

CD-ROM Drive Fails to Open

Problem: CD-ROM drive fails to open when you press the eject button.

On a *Sun* computer, a CD-ROM drive containing a CD cannot be opened by pressing the eject button. Instead, you must enter an *eject* command from the system console, like this:

```
# eject cdrom
#
```

After a very brief delay, the drive tray opens. You can close it again by pressing the drive's eject button or by pushing in on the front of the tray.

CMSADM Backup Problems

If you receive an error message during a backup or recovery, look up the message in the Messages section later in this chapter.

As the backup progresses, the program displays a series of dots—one dot per file—to indicate it is writing files to tape. You may have a problem if you notice one of the following:

- Dots are not printing (wait 10 minutes or longer to make certain the software is not just copying a very large table).
- The tape is not spinning.
- Messages have not displayed asking you to change tapes or informing you that the backup has completed.

If you encounter problems, call the Lucent Technologies National Customer Care Center at 1-800-242-2121.

Removing *CentreVu*® CMS Package Fails

If you are exited from the system when removing a *CentreVu* CMS package (*cms* or */cms.2*), you:

- May have logged in as `cmssvc`
- May have switched users — `su'd` to `root` or `root2`
- May have run `cmssvc`.

Solution:

- Log in directly as `root` or `root2`
- Remove package(s) as instructed by the system.

Verifying Installed Solaris Patches

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

1. At the system prompt, enter the following command:

   ```
   showrev -p
   ```

   The system responds by listing the patches currently installed on the machine.

2. Check the list to verify that all the *Solaris* Patches you need are installed.

The *Solaris* patches required for the current load are listed in the CMS readme file. For instructions, see "Viewing the Readme Files" on page A-35.

CMS Installation Fails

If the CMS installation fails with a *cannot add another instance of CMS* message, either the CMS package removal was not done or the removal was not completely successful.

To continue with the installation, enter the following command:

```
# pkgrm cms
```

Then restart the CMS installation procedure.

CD-ROM Drive Cannot be Mounted

If the CD-ROM drive does not respond to the mount command, the driver pointers may have been altered by the preceding `cpio` command. In that case, do the following:

1. Restart the initial operating system installation (step 8 for an Enterprise upgrade, step 10 for a SPARCserver upgrade).
2. When you reach the "Restore the CMSADM Backup" step, add the following to the `cpio` command:

   ```
   "/dev*" "/dev*/*"
   ```

3. Continue with the upgrade as you normally would.

Problems with NTS Administration

Version Numbers Don't Match

Problem: When you first start na it reports version R13.3, but when you annex an NTS it reports version R7.0.

This is normal behaviour when you are using older *info* files with more recent administration software. Ignore it.

NTSs Aren't Recognized

Problem: When you try to annex an NTS you receive an error like *cmsterm*<n> *not responding* or some other similar message indicating that the NTS isn't being recognized.

You may have a problem with network connectivity or with routing. Quit the na command and try to ping the NTS. If that fails, the NTS may be hung and may require a reboot via the console terminal. See Appendix B of *CMS R3V6 Software Installation and Maintenance* (585-215-866) for information about an alternate method of administering NTS.

Serial Port Warnings

Problem: You receive warnings for serial port parameters like input_buffer_size and bidirectional_modem, and so on.

The new administration software retires a number of serial port parameters, and institutes a large number of new parameters. Consequently, messages concerning serial port parameters can be ignored.

Unknown Pass Phrase

Problem: The NTS administration program has asked for a pass phrase, and you do not know it.

If the system administrator has access-protected the NTSs, you will not be able to do anything without knowing the pass phrase. If you cannot obtain the pass phrase or you have some other difficulty, you will have to administer the NTSs with the alternate method described in Appendix B of the *CMS R3V6 Software Installation and Maintenance* (585-215-866) document.

Troubleshooting a *Solstice DiskSuite* File System

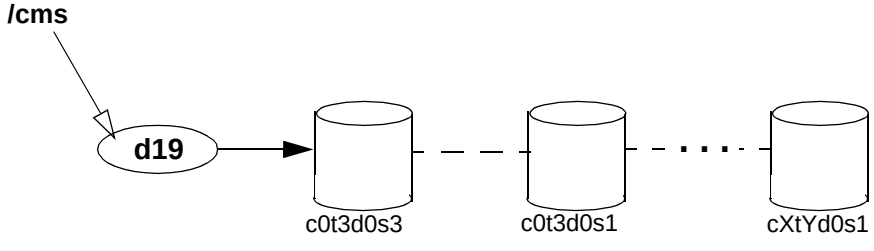
Solstice DiskSuite software package allows multiple disk partitions to be logically combined to create a single large partition. Using the *Solstice DiskSuite* package allows CMS databases to span multiple disks, and so grow quite large.

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.

CMS uses the *Solstice DiskSuite* software to set up three state databases, and to create a single metadevice containing all the disk partitions used to store CMS data. For example:



Identifying 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 metadevice, or with the */cms* file system.

Problems with Administration Scripts

If you seem to be having problems with the *olds* scripts, use the `pkginfo` command to verify that the *Solstice DiskSuite* software is installed:

```
# pkginfo -l SUNWmd
```

If it has not been installed, you may have to reinstall the operating system and repartition your disks. Once the software has been installed, the `olds` scripts will set up the environment so CMS can access the disks.

See the appropriate upgrade procedure for step-by-step descriptions of *Solstice DiskSuite* software installation and the use of *olds.* If you receive an error message from the script, see the “Messages” section, below.

Disk I/O Problems

If you seem to be having disk problems, check the system console and the */var/adm/messages* log for messages indicating problems with the 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 the *CentreVu CMS R3V6 Hardware Maintenance and Troubleshooting* document (585-215-861).

State Database Problems

Check the system console and the */var/adm/messages* log for messages indicating 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 disk.

Use the `metadb` command to check the status of the state database:

```
# metadb  -i
```

If the response indicates a state database problem, you must remove and recreate the state database that is causing the problem. The procedure:

Task	Action
1	Check to see if the error is caused by an underlying disk problem. If it is, recover or replace the disk. See the *CentreVu CMS R3V6 Hardware Maintenance and Troubleshooting* document (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:
	`# metadb -d mddb01`
	`# metadb -a mddb01`

Metadevice Problems

Use the `metastat` command to verify that the metadevice is set up correctly. For example:

```
# metastat
d19: Concat/Stripe
    Size: 31315536 blocks
    Stripe 0:
        Device      Start Block   Dbase
        c0t1d0s1           0       No
            .
            .
            .
     Stripe 9:
        Device       Start Block    Dbase
        c2t1d0s1           0       No
#
```

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

1. *All your disk drives must be accounted for.* You can verify that 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 drives seem to be missing, check to make sure all the drives are plugged in and turned on, and that each external drive has a unique target number.

2. *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 uses slice 3 of the first internal disk, and slice 1 of all the remaining disk drives. Consequently, the device name of the first internal disk drive must end in s3; all other device names must end in s1.

If there is any discrepancy between reality and the output of the `metastat` command, you will have to repartition your disks.

Checking the */cms* File System

Use the `fsck` command to check the */cms* file system for errors. Typically, you will use `fsck` in a procedure something like this:

```
# mount                    /* determine whether /cms is mounted */
# umount  /cms             /* unmount /cms */
# mount                    /* verify /cms has been unmounted */
# metastat                 /* determine the /cms metadevice */
# fsck /dev/md/rdsk/d19    /* check the /cms file system */
# mount  /cms              /* remount /cms after checking it */
#
```

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

If you have trouble mounting */cms:*

- Enter an `ls` command to verify that the */cms* directory exists. If not, create it with a mkdir command. For example:

```
# ls -ld /cms
cms: no such file or directory
# mkdir /cms
# ls -ld cms
drwxr-xr-x 22 root     root  512 Feb 11 12:13 cms
#
```

- Use the `metastat` command to determine the metadevice being used (see “Metadevice Problems” on the previous page). Then verify that the entry for */cms* in the */etc/vfstab* file is correct (see “Problems with Disk Administation”). If you find any errors, correct them.

Problems with Disk Administration

In a system with *Solstice DiskSuite* software installed, the total amount of disk space available to */cms* should be about the same as the total amount of space provided by all the disk drives in the system. If there appears to be a problem, you can check the files */etc/vfstab* and */etc/opt/SUNWmd/md.tab* to verify that the *Solstice DiskSuite* software recognizes all the drives on your system.

/etc/vfstab should name the d19 metadevice (*/dev/md/rdsk/d19*) as the */cms* file system. Old */cms* entries (in the form */cms0* through */cms12*) should not exist or, if they do exist, should be commented out by pound signs at the beginnings of the lines.

/etc/opt/SUNWmd/md.tab should account for all the disk drives. Check the */cms* section of the file to make sure it names all existing disk devices. The line below, for example, shows two disks being administered by *Solstice DiskSuite* software:

```
  .  .  .
#/cms  d19  3  1  /dev/dsk/c0t1d0s1  1  /dev/dsk/c0t3d0s3
```

If there is any discrepancy between either file and reality, do the following procedure.

Step	Action
1.	Reboot the system with the command: `init  0`

2.	Enter the command: `probe-scsi-all`
	The system responds (for example):
	`/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`
	`ok`

3.	Check the command output. It should list every disk drive attached to your system. **If every drive is listed, skip the remainder of this procedure.** If any drive is missing from the list, and this is your second or third try try at this procedure, contact the National Customer Care Center for assistance. If any disk drive is missing from the list, and this is your first time through the procedure, continue with step 4.

Step	Action
4.	Power off the relevant parts of the system, as follows: a. Turn off the SBus Expansion Subsystem. b. Turn off all external SCSI devices, beginning with the device nearest the system unit and proceeding to the farthest.
5.	Check all disk drive connections to make certain they are secure. Also check the SCSI IDs on the disk drives to make sure no two drives on the same SCSI chain have the same IDs. Hints: • A normal external disk unit has a rotary switch on the rear of the unit that sets the SCSI ID. • Be sure to avoid the ID numbers 3, 1, and 6; 3 and 1 are reserved for the internal drives, and 6 is the CD ROM drive.
6.	Power on the external SCSI devices in the opposite order in which you powered them off.
7.	Reboot the system with the command: `boot -r`
8.	Repeat this procedure.

When you have verified that the system is recognizing all its disk drives, reboot the system with a `boot -r` command, and log in as *root.*

Migration Logs

The migration program writes messages to one or more migration logs as the migration progresses. The specific name of the log files written to depends upon the type of migration.

- For an R2-to-R3V8 migration, there is one migration log file. The file name is */cms/migrate/migrate.log*.
- For an R3Vx-to-R3V8 migration, there are two migration logs. The file names are */cms/migrate/r3mig.log* and */cms/maint/r3mig/mig.log.*

When a migration completes, you should always check the migration logs for errors.

The error messages you might see are explained in "Messages" on page 7-11.

Messages

This section lists and explains messages you may encounter during an upgrade, including messages from CMS and *Solstice DiskSuite,* as well as messages printed to the migration logs.

A message may contain one or more variables as necessary. Variables in a message are italicized. For example, in the message:

`The stop date/time for all tables is: date`

`date` is a variable. In an actual message, a date appears in place of *date.*

Messages are arranged alphabetically, ignoring both variable names and special characters. A message like this, for example:

`/filesystem not found`

would be placed alphabatically by the words *not found.* Both the slash and the variable *filesystem* would be ignored for purposes of alphabetizing the message.

Message: `<synonym name> begins with non-alpha character. Change name after migration. Look for synonym in synonym group`

Cause: Synonym names must begin with a letter in CMS R3V8. The synonym *`synonym name`* does not begin with a letter and was migrated to CMS R3V8.

Resolution: List the synonym in the R3V8 Dictionary subsystem, and modify *`synonym name`* to begin with a letter.

Message: `Calculation <name, equation>: already in R3 dictionary.`

Cause: The calculation *`calculation name`* already existed in the R3V8 Dictionary database when this migration was done.

Resolution: Determine whether the R3V8 calculation is appropriate for your reports, and modify it if necessary. You may replace the standard calculation with the new one. If this is a standard R3V8 calculation, you must make a new R3V8 custom calculation with the R2 formula. Then change the custom reports that use the old calculation name to use the new calculation name. If you migrate administration data more than once, this message appears for all the calculations that were migrated the first time.

Message: `calculation truncated: <calculation name> <calculation equation>`

Cause: When this R2 CMS calculation was migrated, the formula was too long for CMS R3V8.

Resolution: Modify the calculation using the CMS Dictionary: Calculation window so it can be used in a custom report. That may require building other calculations to nest within this one.

Message:	`Call profile permissions exist for split <split#> R2 service level = <svc level> R2 increment = <interval size>`
Cause:	The call profile parameters for split *split number* already existed in the CMS R3V8 system when this migration was done.
Resolution:	Verify the split call profile parameters in the CMS ACD Administration subsystem, and modify them if necessary. If you migrate the administration data more than once, this message will appear for all the call profile permissions that were migrated the first time.

Message:	`Cannot migrate custom report: <report name> compiler errors at bottom of file: /cms/migrate/r2custom`*nn*
Cause:	The R2 custom report *custom report name* had compiler errors in the R2 system, so the report could not be migrated to CMS R3V8.
Resolution:	This custom report did not function in R2 because of the compiler errors. You have to manually re-create the report in the CMS R3V8 if the design is still needed. You can edit the failed report which is located in */cms/migrate/r2custom*nn.

Message:	`Cannot find database item in dictionary: <name>`
Cause:	The database item *item name* was not found in the R3V8 Dictionary.
Resolution:	If you need the database item in a custom report, manually add it to the R3V8 Dictionary.

Message:	`Cannot migrate R2 dictionary item <name> to R3 dictionary item.`
Cause:	The R2 item *item name* did not have a map to an R3V8 Dictionary item. Either no mapping exists or the item is misspelled.
Resolution:	Check Appendix B for the list of R2 items that are not mapped to R3V8. If the R2 item is not mapped, you need to replace the R2 item with a similar R3V8 item. If the item is misspelled, you can correct the spelling and then manually add it the R3V8 system.

Message:	`Changed name of report to TMP`*n*`. Make adjustments as necessary.`
Cause:	A custom report already existing in the R3V8 system has the same name as an R2 custom report to be migrated. The R2 custom report was migrated to the R3V8 system under the name TMP*n*.
Resolution:	If you want to change the name of the TMP*n* report, use the R3V8 Custom Reports: Screen Painter for custom reports. First, add a report with a new name. Then, copy the TMP*n* report to the new name. Finally, delete the TMP*n* report.

Message:	`/cms: Deadlock situation detected/avoided`
Cause:	Generated by one of the *Solstice DiskSuite* setup scripts.
Resolution:	Remove all your swap files residing on */cms* and reenter the command that generated the error. Remember to re-create the swap files when the `growfs` command completes.

Message:	`Collision in user login: <`*`username`*`>. All ownerships are transferred to user 'cms'.`
Cause:	There is already a login ID established for this user name. The user name being migrated is causing the conflict. The CMS administrator (`cms`) becomes the owner of custom reports, timetables, shortcuts, etc., that were previously owned by the migrated user name.
Resolution:	If the migrating user is different from the user already established, the system administrator should create a different user name for the migrating user and transfer the ownerships after the migration. If the migrating user and the existing user are the same, the administrator should consult with the user about the disposition of ownerships.

Message:	`Constant <`*`name`*`>, <`*`value`*`>: already exists as an R3 constant.`
Cause:	The constant *`constant name`* already existed in the R3V8 Dictionary database when this migration was done. The R2 constant, therefore, was not migrated.
Resolution:	Verify that the R3 constant is appropriate for your reports, and modify it if necessary. If you modify the constant, be careful that this constant is not being used in any new R3V8 custom reports, because the new value will affect those reports as well. If you migrate the administration data more than once, this message will appear for all the constants that were migrated the first time.

Message:	`<`*`calculation name`*`> contains items not found in R3 database.`
Cause:	The calculation *`calculation name`* has items in its formula that cannot be found in the R3V8 Dictionary database. These items can be database items or other calculations.
Resolution:	Verify the calculation's formula in the Dictionary subsystem, and either modify the formula or add back any calculations used in the formula.

Message: `Custom Report: <name>`
`Failed to swap repeat and totals lines.`

Cause: R3 CMS does not allow repeated rows above a nonrepeated row. When this R2 custom report was migrated, the program attempted to swap the nonrepeated row with the repeated rows but was unsuccessful.

Resolution: Use the R3V8 Custom Reports: Screen Painter and swap the repeated rows with the nonrepeated row. The problem report is *`report name`* entered on the line just above this error message.

Message: `Custom report field refers to <database item> which you must resolve to <set of R3 database items>`

Cause: The following R2 database items map to more than one R3V8 database items:

R2 Item	R3 Equivalent
ASSOCIATION	SPLIT, LOGID
CALLPROFCHG	SVCLEVELCHG, PERIODCHG
EVENT	MALICIOUS, ASSIST

Resolution: Determine which R3V8 equivalent is appropriate for the report. Use the Screen Painter to edit the report and substitute the R3V8 equivalent for the R2 database item. The custom report was the one being migrated at the time of the message. To change CALLPROFCHG to SVCLEVELCHG, for example, select the “Field” option in Screen Painter and change CALLPROFCHG to SVCLEVELCHG. In the Dictionary subsystem, change the name (synonym) to `slvl_chg` (to indicate the Acceptable Service Level has changed). After the name is changed, the report displays YES/NO instead of 1/0.

Message: `Date field being deleted because it goes beyond the width of report: row=<row> col=<col> width=<width>`

Cause: The length of the date field in the migrated real-time report exceeds 132 columns and cannot be migrated.

Resolution: Use the editor to add the field to the migrated report.

Message: `device: c0t6d0 will not be used`

Cause: Warning that c0t6do will not be set up for *Solstice DiskSuite*.

Resolution: No action required. Since c0t6d0 is the CD-ROM drive, this is not a problem.

Message: `device: <devicename> cannot be setup, or does not exist...`

Cause: The disk you are trying to attach is turned off, does not exist, or was removed from the system.

Resolution: Power-up the disk drive, or verify the correct name for the disk (stop-a, probe-scsi), or attach the disk to the system and reboot with a `boot -r` command from the open boot prompt.

Message:	`Dictionary collision: name='<name>' item_type='<cust_def>'`
Cause:	There is already the same custom table with the same item name already defined in the Dictionary subsystem.
Resolution:	Verify that the migrating table is the same as the existing one. If they are different, you must rename one table and reenter its database items.

Message:	`Dictionary collision: name='<name>' item_type='<const>' formula='<value>'`
Cause:	There is already a constant with the name but a different value.
Resolution:	You need to enter the constant again and rename it.

Message:	`Dictionary collision: name='<name' item_type='<calc>' formula='<calculation>'`
Cause:	There is already a calculation with '*name*' as the name but with different contents.
Resolution:	You need to enter the formula again and rename it.

Message:	`Dictionary collision: name='<column name>' table= '<table name>'`
Cause:	There is already a Dictionary item for this column in the same table.
Resolution:	Verify that the migrating table is the same as the existing one. If they are different, one table has to be renamed and database items must be reentered for the renamed table.

Message:	`Disk devicename already attached, exiting...`
Cause:	You are trying to attach a disk that is already attached.
Resolution:	Verify the name of the disk by doing a *stop-a, probe-scsi-all.* If it's an external disk, check the target number on the back of the drive. Consult the device documentation.

Message: `disk: <devicename> partition <n> is not partitioned correctly`

Cause: Disk *devicename* is partitioned improperly.

Resolution:

1. If the device name is "`c0t3xxxx`," you will have to restart the upgrade procedure at the disk repartitioning step.
2. If it's any other disk device, you can repartition it from the *Solaris* `format` command. The procedure:
   a. At the system prompt, type the word `format` and press Return. The system responds with an `AVAILABLE DISK SELECTIONS` menu.
   b. Enter the number that corresponds to the disk in error. The system displays a `FORMAT` menu and the prompt, `format >`.
   c. Type the word `partition` and press Return. The system displays the `PARTITION` menu and the prompt, `partition >`.
   d. Type the word `print` and press Return. The system displays a table that reflects the current partitioning of the disk.
   e. Compare the displayed table with the partition table presented in "Boot Disk Partition Values" on page 2-51. You must change the partitioning of the disk so the two tables agree. The procedure is as follows:
      1. From the `partition >` prompt, enter the number of the partition you want to change. The system prompts for the id tag, the permission flags, the starting cylinder, and the size, in that order.
      2. Enter, in response to the prompts, the appropriate numbers from the table below. (Note that the size is always expressed as *<n>*`c,` where c indicates "cylinders.")
      3. Use a `print` command as necessary to verify changes.
   f. Repeat a through c until the disk partitions conform to the table below.
   g. To exit back to the system prompt, enter q at the `partition>` prompt and q again at the `format>` prompt.

Message: `Due to name collision, <item type> '<name>' (<username>) has been changed to <tempname>`

Cause: The name of the migrated historical report, real-time report, timetable, or shortcut belonging to user *<username>* has been renamed *<tempname>* because of a collision with an already existing, identically named item in R3V8.

Resolution: Rename the report to something more meaningful than *<tempname>*.

Message:	`Error adding acd permissions for <user login>`
Cause:	When migrating R2 CMS user logins, the migration program could not add the ACD permissions for *<user login>*.
Resolution:	Use the R3 User Permissions: ACD Permissions window and check the permissions for *<user login>*. Modify the permissions if necessary.

Message:	`Error in adding directory.`
Cause	The migration program could not add the home directory to the *UNIX* system.
Resolution:	Use the FACE program to add the login to the *UNIX* system.

Message:	`Error in adding <login ID> to UNIX.`
Cause:	The migration program could not add *<login ID>* to the password file.
Resolution:	Use the FACE program to add the login to the *UNIX* system.

Message:	`Error in adding <synonym name> to table.`
Cause:	The migration program could not add the synonym *<synonym name>* to the R3V8 Dictionary database.
Resolution:	List the names (synonyms) in the R3V8 Dictionary subsystem, and add this name if necessary. The name type is whatever type that was being migrated at the time of the message; that is split/skill, vector, VDN, or trunk group. See the previous log entry for the name type.

Message:	`Error in adding feature permissions for <user login>`
Cause:	When migrating R2 CMS user logins, the migration program could not add the feature permissions for *<user login>*.
Resolution:	Use the CMS R3V8 User Data: Feature Access window and check the permissions for *user login*. Modify the permissions if necessary.

Message:	`Error in adding input variable: <report variable>`
Cause:	During the migration of an R2 custom report, the program could not add the variable *<report variable>* to the R3V8 version of the report.
Resolution:	Use the R3V8 Custom Reports: Screen Painter and add the variable for that report if that variable is necessary for the report to run. Verify all row search IDs to make sure they have the correct syntax.

Message:	`Error in adding member <mbrnum> to group <grpname>.`
Cause:	The migration program could not add group member *<mbrnum>* to group *<grpname>.*
Resolution:	Display the contents of the group in the R3V8 Dictionary subsystem, and add the member if necessary.

Message:	`Error in adding <userlog>`
Cause:	When migrating R2 CMS user logins, the migration program could not add *userlog*.
Resolution:	Use the CMS R3V8 User Permissions subsystem and check that the user login exists and has the correct permissions. Add or modify the user login if necessary.

Message:	`Error in creating UNIX login for user '<username>'. The user may have already had UNIX log...`
Cause:	The user already has a *UNIX** system login in *CentreVu* CMS R3V8.
Resolution:	If the user *username* already has a *UNIX* system login, ignore this message. Otherwise, verify that this user can log on and report any problems to Services.

Message:	`ERROR: too many select (repeat) statements:` *row search number*
Cause:	The number of select conditions in an R2 custom report exceeded the maximum of ten row search IDs for an R3V8 report.
Resolution:	The R2 report is not migrated. You have to re-create the report in CMS R3V8.

Message:	`ERROR: too many select statements: <row search number>`
Cause:	The number of select conditions in an R2 custom report exceeded the maximum of ten row search IDs for any report in CMS R3V8.
Resolution:	The R2 report is not migrated. You must re-create the report in CMS R3V8.

Message:	`Errors during this compile. Cannot migrate custom report. Compiler errors at bottom of file: <source file>`
Cause:	The report did not compile in R2 and is not migrated to R3V8.
Resolution:	If you need the information from this report, re-create it in R3V8.

Message:	`Expression field being deleted because it goes beyond the width of report: row=<row> col=<col> width=<width> R3 expression: <expression>`
Cause:	This field in the migrated real-time custom report exceeded the allowable length of 132 columns and was not migrated.
Resolution:	You need to add the field to the real-time custom report in R3V8 using the editor.

Message:	`Expression (row=<row number>,col=<column number>) exceeds maximum length and has been truncated: <expression>`
Cause:	During migration, the expression *expression* changed and is too long for the `Select` field of the `Field` window.
Resolution:	Delete spaces from the expression. If this does not decrease the length of the expression enough, then create a custom calculation in the Dictionary for *expression*. Edit the report and substitute the custom calculation for the expression in the `Select` field of the `Field` window.

Message:	`Failed to deliver service parameters to running system. After the migration, stop and then restart data collection.`
Cause:	The split service parameters from the R2 migration are not in effect for the R3 system.
Resolution:	Stop and then restart CMS R3V8 data collection to cause the R3V8 system to use R2 service level parameters.

Message:	`Fatal errors during custom report compilation (<file>, <line>)`
Cause:	An R2 CMS custom report had compiler errors in the R2 system, so it was not migrated to CMS R3V8.
Resolution:	Services may further investigate further, depending upon *<file>* and *<line>.*

Message:	`Full disk: call services to regain file system space.`
Cause:	The migration of R2 CMS data in conjunction with the R3V8 system collecting data, caused the disk space to fill up.
Resolution:	Call services immediately to resolve this problem.

Message:	`Getting user input...`
Cause:	Informational R2 CMS migration processing message.
Resolution:	No action required.

Message:	*<login ID>* `has no default printer. Assign default printer via User Data.`
Cause:	No default printer was assigned to *login ID* in the User Data window.
Resolution:	Use the User Data window and assign a default printer to *<login ID>*.

Message:	`In order to attach disk, /cms must already be mounted, exiting...`
Cause:	The command cannot execute because the */cms* file system is not mounted.
Resolution:	Execute a `mount /cms` command and rerun the command.

Message:	`Initializing temporary database tables...`
Cause:	Informational R2 CMS migration processing message.
Resolution:	No action required.

Message:	`Insufficient number of free blocks (<#-of-blocks>) in <system name> for temporary database tables.`
Cause:	The file system does not contain enough free blocks for CMS R3V8 to create the temporary tables needed for the migration.
Resolution:	Call services to resolve this situation.

Message:	`*** INTERNAL ERROR: contact services (<error#>, <timestamp>) ***`
Cause:	An internal error occurred during processing of the table listed above this message.
Resolution:	Contact services immediately. Do not remove the migration log file. Services needs the *errornum* and *time stamp* to find more information in their error log.

Message:	`Invalid user <logname>. Permissions not migrated.`
Cause:	Informational. The CMS R3V8 system found permission information for a deleted user, so did not migrate the permissions.
Resolution:	No action required.

Message:	`Logid in conflict with R3 CMS: (<login>)`
Cause:	When migrating the R2 CMS user logins, the program found that *<login>* already existed in CMS R3V8.
Resolution:	All R2 permissions for *user login* were migrated to R3V8 except feature access permissions and split/skill access permissions. You may want to use the CMS R3V8 System Setup: User Data subsystem to verify that the R3V8 feature access and split/skill access permissions for this login are appropriate.

Message:	`Login ID <login ID name> already exists.`
Cause:	A login ID *`login ID name`* already existed in the R3V8 Dictionary database when this migration was done. The R2 login ID was not migrated.
Resolution:	Modify the R2 login ID, and manually add it to the R3V8 Dictionary subsystem if necessary. If you migrate the administration data more than once, this message will appear for all the login IDs that were migrated the first time.

Message:	`Member <member number> is already in group <group name>.`
Cause:	The group member *`member number`* of the group *`group name`* already existed in the R3V8 Dictionary database when this migration was done. The group member was not migrated. If you migrate the administration data more than once, this message will appear for all the group members that were migrated the first time.
Resolution:	Modify the group in the R3V8 Dictionary subsystem if necessary.

Message:	`Menu addition: Name collision: <menu name> (/bin/date).`
Cause:	There is already a menu item with the same name as the one being migrated.
Resolution:	If the menu item refers to a different application, you need to reenter the menu name with a new name. Otherwise, ignore this message.

Message:	`metadb: <system: device:> has a metadevice database replica`
Cause:	There are already state database replicas existing on the indicated system and device.
Resolution:	No action required.

Message: `metainit: <systemname>: /etc/opt/SUNWmd/md.tab line 12: d19: unit already set up`

Cause: An initial setup of the file system has already been performed.

Resolution: If you are trying to attach a new disk, execute an `olds -setup` command for that device. To attach device c0t2d0, for example, you would enter the following:

```
# /olds/olds  -setup  c0t2d0
```

If you really need to do an initial setup, use the following commands to reinitialize:

WARNING:

These commands remove all system data. Make SURE you want to do this!

```
# /olds/olds  -cleanup
    .    .    .
# init 6      (reboots your system)
    .    .    .
    (should receive d19: Concat/Stripe is cleared message)
    .    .    .
# /olds/olds -check_disks
# /olds/olds -mk_files
# /olds/olds -metadbs
# /olds/olds -setup
```

Once the setup has completed, verify that all the disks are being controlled by the *Solstice DiskSuite* software. Use the following commands:

```
# mount /cms
# df -k /cms
```

Finally, restore all your swap files and their entries in `/etc/vfstab`. Do that by repeating the *Solstice DiskSuite* configuration step.

Message: `metainit: syntax error`

Cause: This is the `olds` general failure message. The most likely cause is that the `/etc/opt/SUNWmd/md.tab` file disagrees with your configuration. (For example, the file says you have seven disks in a given metadevice, but you really only have six.)

Resolution: Verify that `/etc/opt/SUNWmd/md.tab` is accurate. As a last resort, use an old md.tab file or do an initial `olds` setup.

Message: `Migrating <tablename> ACD<n> ...`

Cause: Informational message. Table *tablename* is being migrated. If the ACD*n* element appears, it indicates the table being migrated is specific to that ACD. If you want more information about the table itself, look up the table name in Appendix B.

Resolution: No action required.

Message:	`Migrating Historical Custom Report <report name>`
Cause:	Informational message printed for each historical custom report migrated.
Resolution:	No action required.

Message:	`Migrating realtime Custom Report <report name>`
Cause:	This message is printed for each real-time custom report that is migrated.
Resolution:	No action required.

Message:	`Migration completed.`
Cause:	CMS R3V8 finished migrating either the administration or historical data.
Resolution:	No action required.

Message:	`Multiple repeat statements on different rows in this report. Can't swap.`
Cause:	CMS R3V8 does not allow a vertically-repeated field to appear above another repeated field.
Resolution:	Use the R3V8 Custom Reports: Screen Painter and redesign the report so that all vertically-repeated fields are on the same row. Or, create multiple reports, where each report has a single row of vertically-repeated fields.

Message:	`newfs of cms metadevice failed`
Cause:	There is an internal problem with one of your disks.
Resolution:	Enter a `metaclear d19` command, and then rerun the `olds -setup` script. If the same error recurs after all that, repartition your disks or call Lucent Technologies National Customer Care Center at 1-800-242-2121

Message:	`<calculation name> not found in the R3 database.`
Cause:	One of the following conditions may cause this message to occur: 1. The formula for *`calculation name`* has items that cannot be found in the R3V8 Dictionary. Usually this occurs when an R2 calculation contains a nested calculation, and the original calculation is migrated before the nested one. 2. The calculation or database item is misspelled, in which case the calculation fails on R2.
Resolution:	1. Migrating an original calculation before the nested one is not a problem. No action needs to be taken. Verify that they are both in the Dictionary. 2. If the calculation or database item is misspelled, use the R3V8 Dictionary subsystem to correct the spelling. Note that if you correct the spelling, the calculation or database item may work in R3V8.

Message:	`Owner (`*id*`) not migrated to R3 CMS, ''cms'' will be owner of this report.`
Cause:	The R2 `user` *id* was not migrated to the R3V8 system. This user owned the custom report that was being migrated at the time of the message, but was not on the R3V8 system. The migration program changes the owner of the report to the “cms” user ID.
Resolution:	Do the following to transfer ownership of the report back to the original user ID. First, add the R2 *user ID* to the R3V8 system. Next, add a new custom report name for that user. Then, copy the report owned by “cms” to the new custom report name. Finally, delete the report owned by “cms.” NOTE: A CMS administrator logged in as “cms” should do this.

Message:	`Problem removing table. Call services to drop <`*tablename*`>.`
Cause:	An internal temporary table was not removed when the migration finished.
Resolution:	This condition causes no CMS problems, but you should contact services to remove the table to gain additional disk space.

Message:	`prtvtoc: /dev/rdsk/c0t6d0: Device busy`
Cause:	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, it is a CD-ROM drive).
Resolution:	No action required.

Message:	`R2 ASTATE is mapped to WORKMODE. You must manually add DIRECTION to the right of this field.`
Cause:	The R2 database item ASTATE was split into two database items for R3V8; that is, WORKMODE and DIRECTION. The migration program maps ASTATE only to WORKMODE.
Resolution:	Use the R3V8 Screen Painter to: 1. Make the WORKMODE field five columns. 2. Create a three-column field and enter “cagent.DIRECTION” in the Select field. In the Dictionary subsystem, set the synonym to “ag_dir.” 3. Assign the new field to the same Row Search Id as WORKMODE. 4. Save the changes by selecting the “Save Design” option.

Message: `R2 calculation <calculation name> contains <database items> which you must resolve to <set of R3V8 database items>.`

Cause: The following R2 database items map to more than one R3V8 database item:

R2 Item	R3 Equivalent
ASSOCIATION	SPLIT, LOGID
CALLPROFCHG	SVCLEVELCHG, PERIODCHG
EVENT	MALICIOUS, ASSIST
NONACD	CONNECTCALLS, OTHERCALLS
RINGABANDON	ABNCALLS, ABNRINGCALLS
RINGABNTIME	ABNTIME, ABNRINGTIME

Resolution: Determine which equivalent R3V8 database item is appropriate for the calculation. Then, in the Calculations window of the Dictionary subsystem, substitute the equivalent R3V8 database item for the R2 item.

Message: `R2 Login ID (<LOGID>) converted to (<logid>) due to upper case characters.`

Cause: The migrated login ID contained uppercase characters.

Resolution: None. The login ID is automatically converted to all lowercase characters.

Message: `R2 standard calculation <calculation name> is already in R3V8 dictionary. Review all migrated custom reports using this calculation to make sure the R3 formula is appropriate.`

Cause: Some standard R2 calculations are not included in the standard set of R3V8 calculations. Because they may be used in custom reports, these standard R2 calculations are migrated to the R3V8 system. If, before the migration, you created a custom calculation with the same name as these R2 calculations, the R2 calculation will not migrate and this message occurs.

Resolution: You need to compare the R2 and R3V8 formulas. If the R3V8 formula is appropriate, no action needs to be taken. If you need to use the R2 formula, you can change the R3V8 calculation to contain the R2 formula. However, changing the R3V8 calculation to contain the R3V8 formula will affect R3V8 standard reports.

Message: `– Request failed. See /cms/install/logdir/backup.log for more information.`

Cause: The tape is improperly seated in the drive, or was removed from the drive during the backup or is write protected, or the medium is corrupted.

Resolution: Check the console terminal. If you see a message like `WARNING: ST01: HA 0 TC 3 LU 0: Err 60503005 CMD 0000000A Sense Key 00000004 Ext Sense 00000000,` the tape is corrupted. Discard it and replace it with a new tape.

Otherwise, remove the tape from the drive and make sure it is not write protected (the black arrow in the upper left corner should be pointing away from “safe”).

Finally, reinsert the tape into the drive, making certain it is properly seated, and restart the backup.

Message: `Row Search Id <n> will fail because the select list contains a mixture of aggregate and nonaggregate items, and the group by limit for R3 custom reports (8) has been exceeded (<number>). Some of the fields will need to be changed or assigned to a duplicate Row Search ID before this report can be executed.`

Cause: R2 CMS allows a mixture of aggregate items (SUM, MAX, MIN, etc.) and nonaggregate items with the same search criteria. The R3V8 database, *INFORMIX*-SQL, has a limit of eight nonaggregate fields that can be in the same row search criteria with aggregate fields. If this limit is exceeded, this error message occurs.

Resolution: Select the Field option on the R3V8 Custom Reports: Screen Painter. If only one field in the Row Search uses an aggregate and this field is “max” (tablename.MAXOCWTIME) or a similar database item, then remove the “max” from the field (MAXOCWTIME is the maximum for the collection interval, so max [tablename.MAXOCWTIME] is redundant).

Message: `Row Search <rownumber>: where clause contains too many characters, <length>, maximum is 468.`

Cause: When the criteria for row search ID *rownumber* was migrated to R3V8, it was too long for the “select rows where” field.

Resolution: Edit the row search ID. Remove any unnecessary information in the `select rows where` field, such as table name, or change the variable to allow a range and decrease the number of “and” clauses or “or” clauses, or both.

Message: `STARTTIME column too small: number of columns row=row number, col=column number`

Cause: The R3V8 database item STARTTIME has the form “starttime-endtime.” If the R2 report did not provide enough space for this expansion, this error occurs.

Resolution: Use the R3V8 Custom Reports: Screen Painter to provide additional space.

Message:	`Successfully built temporary database tables.`
Cause:	Standard informational R2 CMS migration processing message.
Resolution:	No action required.

Message:	`Synonym <`*`synonym name`*`> already exists.`
Cause:	The synonym *`synonym name`* already existed in the R3V8 Dictionary database when this migration was done. The R2 synonym was not migrated.
Resolution:	Modify the R2 synonym name and manually add it to the R3V8 Dictionary subsystem if necessary. The synonym type is whatever type was being migrated at the time of the message; that is, split/skill, vector, VDN, or trunk group. See the previous log entry for the synonym type. If you migrate the administration data more than once, this message will appear for all the synonyms that were migrated the first time.

Message:	`Table not migrated. Vectoring package not installed.`
Cause:	During the historical migration, vectoring data existed on the R2 migration tape, but vectoring was not activated on the R3V8 system. This outage caused the historical vectoring data (half-hour and daily VDN/vector data) to not be migrated.
Resolution:	Contact services to have vectoring activated on the R3V8 system and, when activated, remigrate the historical data.

Message:	`Terminated by user request?` `User not administered on UNIX: user login`
Cause:	The login *`user login`* was migrated to CMS R3V8 but does not exist as a login on the *UNIX* system.
Resolution:	Users will be unable to log into *CentreVu* CMS R3V8 until they are added to the *UNIX* system. To add the user login, access User Permissions: User Data window. Press **Ctrl** **z** simultaneously to clear all fields. Type *`user login`* in the first field, select “Find one,” and then select “Add.” This procedure adds *`user login`* to the *UNIX* system and allows the user to log into *CentreVu* CMS R3V8. Follow the same steps for every user login that was not administered on the *UNIX* system.

Message:	`Text truncated after column 132: row=<`*`row`*`> col=<`*`col`*`>`
Cause:	A text field for a migrated real-time report either straddled or exceeded the allowable R3V8 line length of 132 columns. If the field exceeded 132 columns, it was not migrated. If it straddled 132 columns, it was truncated.
Resolution:	Use the editor to add or modify the report text field in R3V8.

Message:	`– That didn’t work, cannot open “/dev/scsi/qtape1” Change to part X and press RETURN key. [q] Permission denied.`
Cause:	During a multiple-tape backup, a continuation tape has been inserted that is write protected.
Resolution:	Remove the tape from the tape drive. Turn off write protection by moving the black arrow to point away from “safe.” Reinsert the tape into the drive and continue the backup.

Message:	`The expression <`*`expression`*`> could not be resolved in the dictionary. You must fix the expression <`*`expression`*`> for the report to work.`
Cause:	There is a calculation in the custom report that contains an invalid database item(s), and the calculation cannot be resolved in R3V8. The most likely causes for this message are that a referenced database item or another calculation cannot be found in the Dictionary subsystem or did not migrate.
Resolution:	Review previous comments in the migration log for references to the same expression. If there are other comments, this will help you define exactly what the problem is.

Message:	`The stop date/time for all tables is: `*`date`*
Cause:	Standard informational message that gives the stop date/time input on the R2 CMS Migration window.
Resolution:	No action required.

Message:	`This report goes beyond the maximum number of rows (25).`
Cause:	This is a quad report, which R3V8 does not allow. Only the first quadrant is migrated.
Resolution:	To regain the other quadrants, you must create an R3V8 custom report for each quadrant.

Message:	`Too many date display fields, now adding: `*`date prompt.`*
Cause:	Migrated custom reports can have only one hard-coded date selection. For example, if the report is for yesterday’s data, the R2 custom report should designate the date as “ –1.” This error indicates that the custom report referenced different days among its select statements. For example, –1 and –3.
Resolution:	Use the Screen Painter to edit the report and correct the date.

Message:	`Unable to move scroll region to bottom of report. You must do this manually.`
Cause:	Not enough rows were available to move the repeated portion of the R2 report to the bottom of the R3V8 report.
Resolution:	Edit the custom report via the R3V8 Custom Reports: Screen Painter and move the repeated row to the bottom of the report.

Message:	`UNRECOVERABLE ERROR READING TAPE, errno= Failed to open tape: no entry in the device directory. Make sure the Maintenance: Backup/Restore Devices screen has the correct Path.`
Cause:	The R2 migration program could not open the tape drive to read the R2 CMS data.
Resolution:	Check that the specified tape drive is set up with the correct path in the Maintenance: Backup/Restore Devices window. If you cannot resolve this problem, contact services for additional help. You may have a tape drive hardware problem or need a corrected tape device path.

Message:	`UNRECOVERABLE ERROR READING TAPE, errno= Tape drive not ready: there is no tape in the drive.`
Cause:	The R2 migration program could not open the tape drive to read the R2 CMS data.
Resolution:	Verify that the tape is positioned in the drive correctly, and restart the migration. Contact services if problems persist.

Message:	`User <`*`user name`*`>: access permissions already existed for table name.`
Cause:	A specific CMS user login *`user name`* already had access permissions for a certain *`table name`* (splits/skills, VDNs, vectors, or trunk groups).
Resolution:	Check that the access permissions for *`user login`* are correct. If not, manually change them using the R3V8 User Data windows.

Message:	`VDN Synonym <`*`VDN synonym name, VDN number`*`> already exists as R3 synonym.`
Cause:	A VDN synonym *`VDN synonym name`* already existed in the R3V8 Dictionary database when this migration was done.
Resolution:	Modify the R2 VDN synonym name, and manually add it to the R3V8 Dictionary subsystem if necessary.

Message: Warning: Current Disk has mounted partitions

Cause: The format command is warning you that it is probing a mounted disk.

Resolution: No action required. A probe is a nondestructive task that poses no danger to your data.

Message: `WARNING: custom report 'report name' (username) contains obsolete column 'column name'`

Cause: One of the columns used directly in this custom report (owned by *username*) is no longer valid in R3V8.

Resolution: You must delete/change the obsolete column from the report in order to use it. Note that the only obsolete column likely to be used by the customer is I_AUXTIME for 'agent' tables because it was one of the columns made available to the customer. Its R3V8 equivalent is TI_AUXTIME.

CAUTION:

Migration program will not be able to detect the use of I_AUXTIME indirectly through table-independent formulas because I_AUXTIME is no longer valid with 'agent' tables but still valid with other historical tables.

Message: `WARNING: Dictionary: calculation 'calculation name' contains obsolete column: COLUMN NAME`

Cause: The *COLUMN NAME* is no longer valid with CMS R3V8.

Resolution: You need to modify the formula to use a different column, or stop using the formula altogether. The following columns are no longer valid:

ABNRINGTIME	O_ABNRINGCALLS
ADJROUTETIME	O_ABNVECCALLS
BH_OBUSYCALLS	O_BACKUPCALLS
BH_ODISCCALLS	O_BUSYCALLS
HOLDABNTIME	O_CONNECTCALLS
INTERFLOWTIME	O_DISCCALLS
LOOKFLOWTIME	O_TRANSFERRED
O_ABNQUECALLS	

Message: `Warnings during this compile. Make sure the report works correctly. Warnings at bottom of file: <source file>`

Cause: During compilation of the custom report, the compiler detected problems. The report was migrated, but may not run in R3V8.

Resolution: Before trying to run the custom report, review and edit it to ensure accuracy.

Message:	`<group name> was an extension group in R2, and is now an agent group in R3.` `The extensions in this group have been changed to login ids.`
Cause:	CMS R3V8 does not allow groups set up by extension numbers, only by login IDs. Any R2 CMS extension groups migrated to CMS R3V8 are changed to agent groups, and the associated extensions are changed to login IDs.
Resolution:	Review this group to determine if using the extensions as login IDs is appropriate for your system. If it isn't, delete the contents of the group and add the appropriate login IDs.

Message:	`You must be root in order to run this command`
Cause:	Superuser privileges are necessary to run this script because most of the commands are related to system administration.
Resolution:	Log in as the root user and rerun the command.

Message:	`You need to have at least one disk set up, before attaching one, exiting...`
Cause:	You tried to use olds to attach a disk, but the metadevice has not yet been set up.
Resolution:	Set up the metadevice by running the `/olds/olds -setup` command without arguments.

Appendix A: System and CMS Functions

This chapter discusses system and CMS functions you may be called upon to perform during an upgrade or data migration. The topics discussed include the following:

- "Displaying Switch Information" on page A-2
- "Displaying CMS Authorizations" on page A-3
- "Printing a CMS Window" on page A-4
- "Checking the Free Space Allocation" on page A-5
- "Checking Data Storage Allocation Parameters" on page A-6
- "Turning Data Collection On or Off" on page A-7
- "Changing the CMS User Mode" on page A-8
- "Selecting an ACD Within CMS" on page A-9
- "CMSADM File System Backups" on page A-11
- "Back Up Data Window" on page A-16
- "Creating ACDs" on page A-19
- "Setting Up Data Storage Parameters" on page A-21
- "R3 Migrate Data Window" on page A-24
- "Viewing the Readme Files" on page A-35
- "Editing Files in UNIX With vi" on page A-36

Displaying Switch Information

1. Log into the system as `root`.
2. Type `cmssvc` and press **Enter**:

```
cmssvc
```

The system responds by displaying the CMS Services menu:

```
Lucent Technologies CentreVu(TM) 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) upd_install  Install update from disk files
 8) upd_remove   Back out the currently installed update
 9) upd_save     Save update on disk for later installation

Enter choice (1-9) or q to quit
```

3. Enter the number for `swinfo`.

   The system asks you to identify the ACD you want information on:

```
Select an ACD
   1)acd_number_1
   2)acd_number_2
Enter choice (1-2) or q to quit:
```

4. Type in the the number corresponding to the ACD you want information on, and press **Enter**.

   The system responds by listing the switch administration data for the selected ACD. For example:

```
Switch administration for acd 1:
        Switch name: acd_number_1
        Switch model: Definity-G3V6
        Vectoring: y
        Expert Agent Selection: y
        Central office disconnect supervision: y
        Local port: 1
        Remote port: 1
        Link: HSI link 0
```

Displaying CMS Authorizations

1. Log into the system as `root`.
2. Type `cmssvc` and press **Enter**:

```
# cmssvc
```

The system responds by displaying the CMS Services menu:

```
Lucent Technologies CentreVu(TM) 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) upd_install  Install update from disk files
  8) upd_remove   Back out the currently installed update
  9) upd_save     Save update on disk for later installation

Enter choice (1-9) or q to quit
```

3. Enter the number for `auth_display`.

The system responds by listing the authorizations for your system. For example:

```
Version purchased: R3V6

                    Capability/Capacity   Authorization
                    -------------------   -------------
                              vectoring   authorized
                            forecasting   not authorized
                               graphics   authorized
                  external call history   not authorized
                 expert agent selection   authorized
                   external application   not authorized
         Lucent CentreVu(TM) Supervisor   authorized
    Lucent CentreVu(TM) Report Designer   not authorized
                Maximum number of agents  5200
                  Maximum number of ACDs  2
Simultaneous CentreVu Supervisor logins   250
```

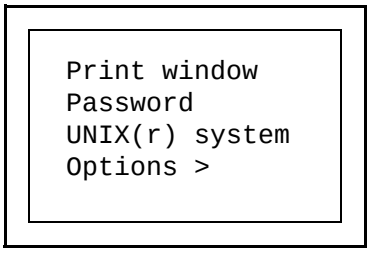
Printing a CMS Window

While a CMS data window is displayed, you are able to print an image of the window through the Options menu. Data is sent to the default printer.

This is how it works:

1. With any CMS window displaying, such as the Switch Setup window or the Migrate Data window, press F3.

   The Commands menu displays:



2. Select `Print Window.`
3. Press **Enter**.

When you go to the trouble to print out a window, especially during an upgrade or migration, it is generally because you are going to need the information later. Usually there is a good chance that the information will have been destroyed by the time you need it. Keep all CMS window printouts in a safe place until you are sure they are no longer useful.

If this procedure should fail, check the `User Permissions - User Data` option to make sure you have a valid default printer.

Checking the Free Space Allocation

Check the free space allocation by doing the procedure in the following table.

Task	Action	Result
1	Log in to CMS .	The CMS main menu displays.
2	Move the highlight to `System Setup` and press Enter.	The System Setup menu displays.
3	Move the highlight to `Free Space Allocation` and press Enter.	The Free Space Allocation window displays.
4	Print the window and save the printout.	A minus sign before—or parentheses around—a number under `Blocks Available` indicates a negative number. That means that more blocks are required than are available.

Checking Data Storage Allocation Parameters

Check the data storage allocation parameters by doing the procedure in the following table.

Task	Action	Result
1	Log in to CMS .	The CMS main menu displays.
2	Move the highlight to `System Setup` and press Enter.	The System Setup menu displays.
3	Move the highlight to `Data Storage Allocation` and press Enter.	The Data Storage Allocation window displays.
4	Print the window and save the printout.	

Checking the Storage Interval Size

Check the storage interval size by doing the procedure in the following table.

Task	Action	Result
1	Return to the CMS main menu. If you are already in CMS, F8 is the button to press.	The CMS main menu displays.
2	Move the highlight to `System Setup` and press Enter.	The System Setup menu displays.
3	Move the highlight to `Storage Intervals` and press Enter.	The Storage Intervals window displays.
4	Print the window and save the printout.	

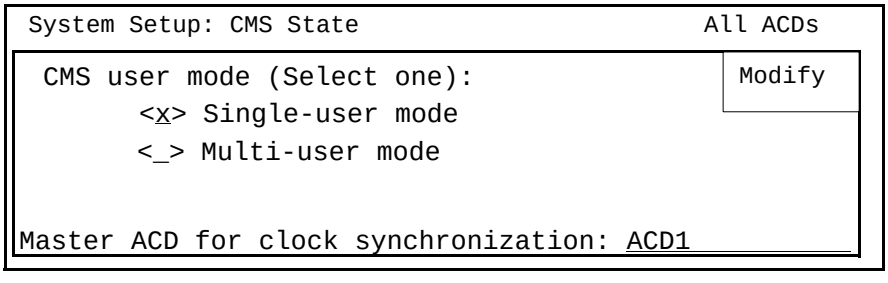
Turning Data Collection On or Off

To turn on or turn off data collection by an ACD, do the procedure in the following table.

Task	Action	Result
1	Log in to CMS .	The CMS main menu displays.
2	Move the highlight to `System Setup` and press Enter.	The System Setup menu displays.
3	Move the highlight to `Data Collection` and press Enter.	The Data Collection window displays.
4	In the `ACD` field, type the name or number of the ACD you want to turn on or off. As an alternative, you can simply press Enter to access the Action List, and select `Find One` or `List All` to help you select an ACD. `Find One` selects the first available ACD in the list; `List All` lists the name and data collection status of each ACD.	
5	Use the arrow keys to move to the `On` or `Off` field, and press the X key to select the field.	
6	Press Enter to access the Action menu.	
7	Highlight `Modify` and press Enter.	You are prompted to confirm your choice.
8	Enter `y` to confirm your choice, `n` to cancel it.	If you confirm your choice, the data collection state of the chosen ACD is changed and you are returned to the default Data Collection window. If you cancel your choice, you are returned to the Data Collection window as you had previously completed it.

Changing the CMS User Mode

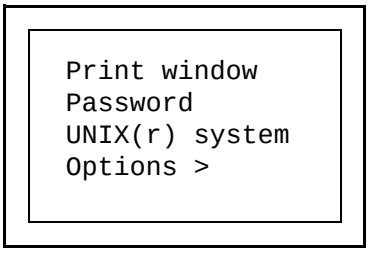
To change CMS to single-user or multi-user mode, do this:

Task	Action	Result
1	Log in to CMS .	The CMS main menu displays.
2	Move the highlight to `System Setup` and press **Enter**.	The System Setup menu displays.
3	Move the highlight to `CMS State` and press **Enter**.	The CMS State window displays.
4	4. To select a mode, type an x in the space provided. To change the master ACD, tab to the ACD name field and type the name or number of the ACD you want to change to. **(In order to change the master ACD, data collection must be turned off for all ACDs in the system.)**	
5		
6	Press **Enter** twice to execute the modifications.	

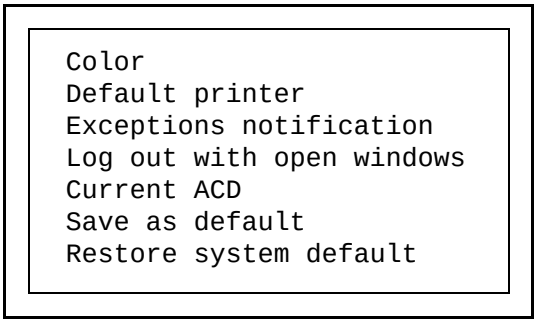
Selecting an ACD Within CMS

Many of the CMS data windows show information for only one ACD at a time. Such windows display data for the “current” ACD—the ACD that is selected at the moment. To select a given ACD as the current one, do this:

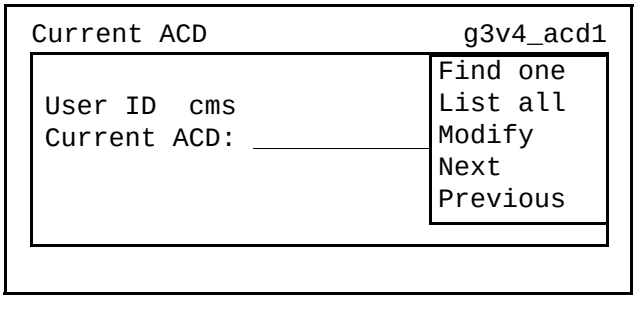
1. Press F3. The Commands menu displays:



2. Select `Options>` and press **Enter**. The Options submenu displays:



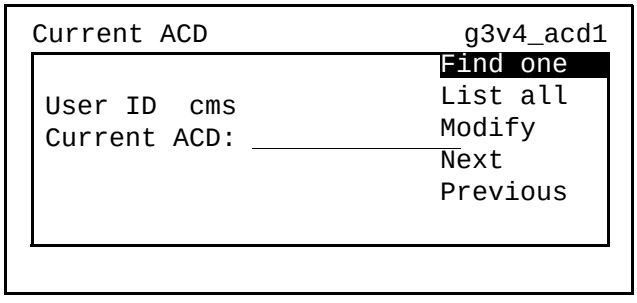
3. Select `Current ACD` and press **Enter**. A “Current ACD” window displays.



4. In the `Current ACD` field, type the number or name of the ACD to be selected.

5. Press Enter.

   The cursor moves to the Action List.



6. Select `Modify` and press Enter.
7. Press F8 to display the main menu.

   The next data window that displays will use the ACD you selected.

CMSADM File System Backups

Before you do any upgrade or data migration, you need to do a CMSADM backup of the file systems. The CMSADM backup is, at the very least, a precaution against an upgrade or data migration gone wrong. In some cases, the CMSADM backup tapes are used in the upgrade procedure.

If you are doing a data migration, full and incremental CMS maintenance backups are also required, to supply the data for the migration. Maintenance backups are done from the CMS Backup Data window (see "Back Up Data Window" on page A-16).

Doing a CMSADM Backup on a *Solaris* System

To back up the file systems from the *Solaris* system environment, do the following:

1. At the system console, log in as *root* and enter the following command:

   ```
   # lp /etc/vfstab
   ```

   Save the output from the printer; you will need it later, at the conclusion of this procedure.

2. Verify that the computer is in a multi-user state. A *Solaris* system that is in a multi-user state is in run level 2 or 3.

   To check whether the system is in a multi-user state, execute a `who -r` command. The system responds with its run level. For example:

   ```
   # who -r

   . run-level 3 Feb 2 16:52 3 0 S
   ```

3. Access the *CentreVu* CMS Administration menu by executing the following command:

```
# cmsadm
```

The system responds by displaying the *CentreVu* CMS Administration menu:

```
Lucent Technologies CentreVu(TM) 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 AC
   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:
```

4. Enter the number of the `backup` option:

```
Select tape drive to use:
   1) 150 MB cartridge tape
   2) 60 MB cartridge tape
   3) 14.0 Gybte 8mm tape
   4) 5.0 Gybte 8mm tape
   5) 2.5 Gbyte cartridge tape
Enter choice (1-5):
```

5. Select the tape drive to use (1, 2, 3, 4, or 5).

   If you have two tape drives and you choose 1, 2, or 4, the system responds:

```
Select the tape drive to use:
  1) /dev/rmt/0
  2) /dev/rmt/1

Enter choice (1-2):
```

   If you have two tape drives and you choose 3 or 5, the system responds:

```
Select the tape drive to use:
  1) /dev/rmt/0c
  2) /dev/rmt/1c

Enter choice (1-2):
```

NOTE:

All systems are shipped with one or more tape drives (QIC-150, 5-GB, 14-GB, or 2.5-GB). For systems with multiple tape drives, the QIC-150 is the first drive on the SCSI chain. For quicker backups, we recommend using a 2.5-GB or better tape drive.

`/dev/rmt/0` indicates the first tape drive in the SCSI chain.

`/dev/rmt/1` indicates the second tape drive in the SCSI chain.

`/dev/rmt/0c` indicates the first compressed-mode tape drive in the SCSI chain (the 14-GB and 2.5-GB tape drives support compressed mode).

`/dev/rmt/1c` indicates the second compressed-mode tape drive in the SCSI chain

If you have only one tape drive, you are not prompted.

In any case, the system eventually calculates the approximate number of tapes that will be required, displays its calculation on the screen, and prompts for the first tape:

```
The backup will need approximately 2 tapes.
    ..
    ..
Please insert the first cartridge tape into </dev/rmt/1>.
Press ENTER when ready:
```

6. To begin the backup, insert the tape and press Enter.

   If *CentreVu* CMS is turned on, the system responds:

```
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
BREAK to quit.
```

7. Press Enter to continue the backup.

   The system begins copying your file system to the tape. Dots display on the screen as the system is backed up. If one tape fills up, the system prompts for another:

```
Backing up files .....
.....................
.....................
Please remove the current tape, number it, insert tape
number X, and press ENTER.
```

NOTE:

When you insert another tape, you must allow the tape to rewind and reposition before you press Enter.

The system continues writing to tapes until it exhausts the file system files. Then it begins verifying the tapes:

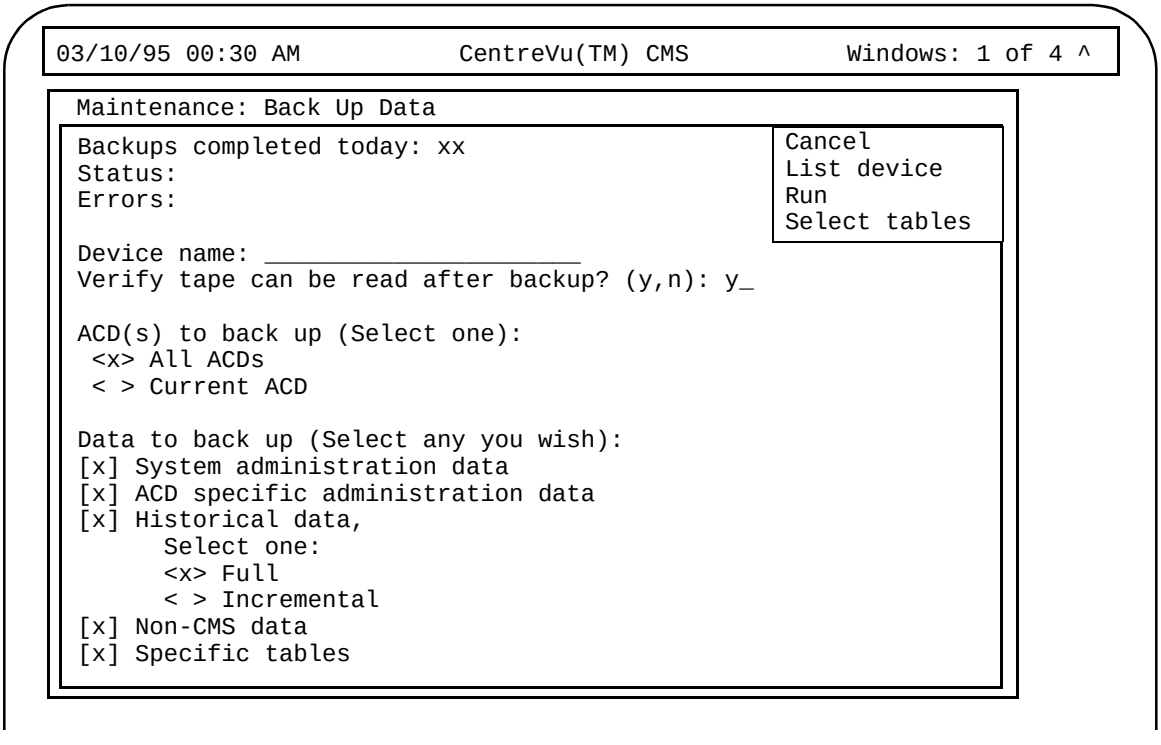
```
Tape Verification
Insert the first tape

Press return to proceed:(there is a delay as tape is
verified)

Please insert tape number X and press return: (there is a
delay as tape is verified)

Please label the backup tape(s) with the date and the
current CMS version (<version>).
```

The system continues verifying tapes until it exhausts the tapes. Again, when you insert each tape, allow the tape to rewind and reposition before you press Enter.

8. Label the CMSADM backup tapes with the date and *CentreVu* CMS version.
9. Retrieve the printout you acquired in step 1 and bundle it with the backup tapes. Set aside the tapes and printout in a safe place.

Back Up Data Window

You must complete the Back Up Data window to do a maintenance backup of CMS data. Make sure you have read all the information in this section before you fill out the window. See Table A-1 for descriptions of the fields on the Maintenance: Back Up Data window.



.

Table A-1: Back Up Data Field Descriptions

Field	Description
Backups completed today: (Display only)	Displays the number of backups which have been completed for the current day.
Status: (Display only)	Displays the status of the current or most recent backup and what is currently being backed up.
Errors: (Display only)	Displays any errors found in the backup.
Device name:	Enter the device name. This field may default to the device specified during the installation process. If this is the case, you can accept the default device name. To list tape devices, return to the main menu, select `Maintenance ⇒ Backup/Restore Devices,` and select the `List All` action.

Table A-1: Back Up Data Field Descriptions (Continued)

Field	Description
Verify volume can be read after backup? (y,n):	Enter **y** for yes to request that the data be reread to ensure that the data has been stored properly. While the data are being reread, the message `Verifying` displays on the status line. If there is no data to be reread or if verification fails, you must restart the backup using a different volume from the one that failed. Error messages are displayed on the status or error lines.
ACD(s) to back up (Select one):	Enter an **x** next to `All ACDs` or `Current ACD` to select the ACDs you want backed up. **All ACDs** — Complete a data backup for each ACD on the *CentreVu* CMS system *except* pseudo-ACDs. **Current ACD** — Complete a data backup for the current ACD.
Data to back up (Select any you wish):	**System administration data** Enter an **x** if you want system administration data backed up. System administration data includes user permissions and feature access permissions, MainMenu additional data, timetable and shortcut, printer administration, default values and color values, and custom report definitions (not the data associated with custom reports).
	ACD-specific administration data Enter an **x** if you want ACD administration data backed up. ACD-specific administration data includes the following: forecast data (if the feature is active), call work code administration data, VDN and vector administration data, data storage allocation data, exception administration data, agent trace data (historical list of agents traced), and ACD-specific Dictionary names.
	Historical data, `Select one:` Enter an **x** next to `Full` or `Incremental` to select the type of backup. *CentreVu* CMS tracks the last Full Backup and Incremental Backups.
	Full A Full Backup includes data for all of the time periods in the historical database. A Full Backup must be done prior to the first Incremental Backup. It is recommended that you periodically (for example, once a week) do a Full Backup of your system.

Table A-1: Back Up Data Field Descriptions (Continued)

Field	Description
Data to back up (Select any you wish): *(continued)*	**Incremental** An Incremental Backup includes the *CentreVu* CMS data recorded since the last backup (incremental or full) was completed. Only the historical data can be stored incrementally. Administration data is stored in full. A full backup must be done before the first incremental backup is done.
	Non-CMS data Enter an **x** if you want non-CMS data backed up. Non-CMS data includes all data from *INFORMIX** tables with names that start with "c_." The table definitions for non-CMS *INFORMIX* tables are **not** backed up. A *UNIX* system/*Solaris* system backup should be used instead.
	Specific tables When this field is selected, choose the `Select tables` action. An additional window displays in which you can specify which selected tables should be backed up. If you select `Specific Tables` to back up, you cannot make any other selection (for example, System data) in the `Data to backup up` field. See the "Specific Tables" section later in this chapter.
Tables to back up (Select any you wish):	Enter an **x** to select any of the listed *INFORMIX* tables whose data you want to back up.
Table name	The field displays the designated name of the *INFORMIX* table.
Description	This field displays the type of data included in the *INFORMIX* table.

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Creating ACDs

The `acd_create` option on the *CentreVu* CMS Administration menu allows you to define a new ACD.

NOTE:

The ACD must be authorized, and therefore purchased, before it can be added to the *CentreVu* CMS. See "Creating ACDs" on page A-19 for details.

1. Access the *CentreVu* CMS Administration menu by entering:

```
# cmsadm
```

The *CentreVu* CMS Administration menu appears.

```
Lucent Technologies CentreVu(TM) 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:
```

NOTE:

Before you define a new ACD, you must turn off *CentreVu* CMS.

2. To turn off *CentreVu* CMS, do the following:
   a. Enter 9 to select `run_cms` on the *CentreVu* CMS Administration menu.
   b. Enter 2 to turn off the *CentreVu* CMS. You will see the system prompt.
   c. Enter `cmsadm`. The *CentreVu* CMS Administration menu appears.
3. Enter 1 to choose `acd_create`.
4. At the prompts, you need to enter the following information:
   - Switch name for the new ACD
   - Switch model (release)
   - Vectoring enabled on the switch (if authorized)
   - Expert Agent Selection Enabled (if authorized)
   - Does Central Office have disconnect supervision? (Y/N)
   - 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 enabled on the switch)
   - Number of VDNs (if Vectoring enabled on the switch).

   After you have entered all the required information, the message `Updating database` appears, followed by `ACD created successfully`.
5. Turn the *CentreVu* CMS back on by doing the following:
   a. Enter `cmsadm`. The *CentreVu* CMS Administration menu appears.
   b. Enter 9 to select `run_cms` on the *CentreVu* CMS Administration menu.
   c. Enter 1 to turn on the *CentreVu* CMS.

   A message appears telling you that *CentreVu* CMS is running.

Setting Up Data Storage Parameters

TSC engineers modify specific data storage parameters on the *Sun SPARCserver* computer so the *CentreVu* CMS R3V6 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.

Do the following steps to set up the data storage parameters in the *storage.def* file:

1. Change to the */cms/install/cms_install* directory by entering:

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

NOTE:

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

2. Edit the *storage.def* file, and enter the appropriate values for each question. Place the answer to each question on the line below the question.

   The *storage.def* file looks like this

```
# 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):
500
# 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
```

The file repeats the previous statements for ACDs 2 through 4.

3. After entering the appropriate values, write and quit the file.:

```
# 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
   .

   .

   .
```

After the *CentreVu* CMS application is running, the System Administrator can change the data storage parameters using the Data Storage Allocation window in the System Setup subsystem. See the CMS *Administration* (585-215-850) document.

R3 Migrate Data Window

Use the window in Figure A-1 to migrate Release 3.0 (R3.0), Release 3 Version 2 (R3V2), or Release 3 Version 4 CMS data on an *INTEL* or *Sun* machine to Automatic Call Distribution (ACDs) on the *CentreVu* CMS R3V6 *Sun SPARCserver* platform.

The window is in the System Setup subsystem. To access it, log in to CMS, select `System Setup` from the main menu, and then select `R3 Migrate Data` from the submenu.

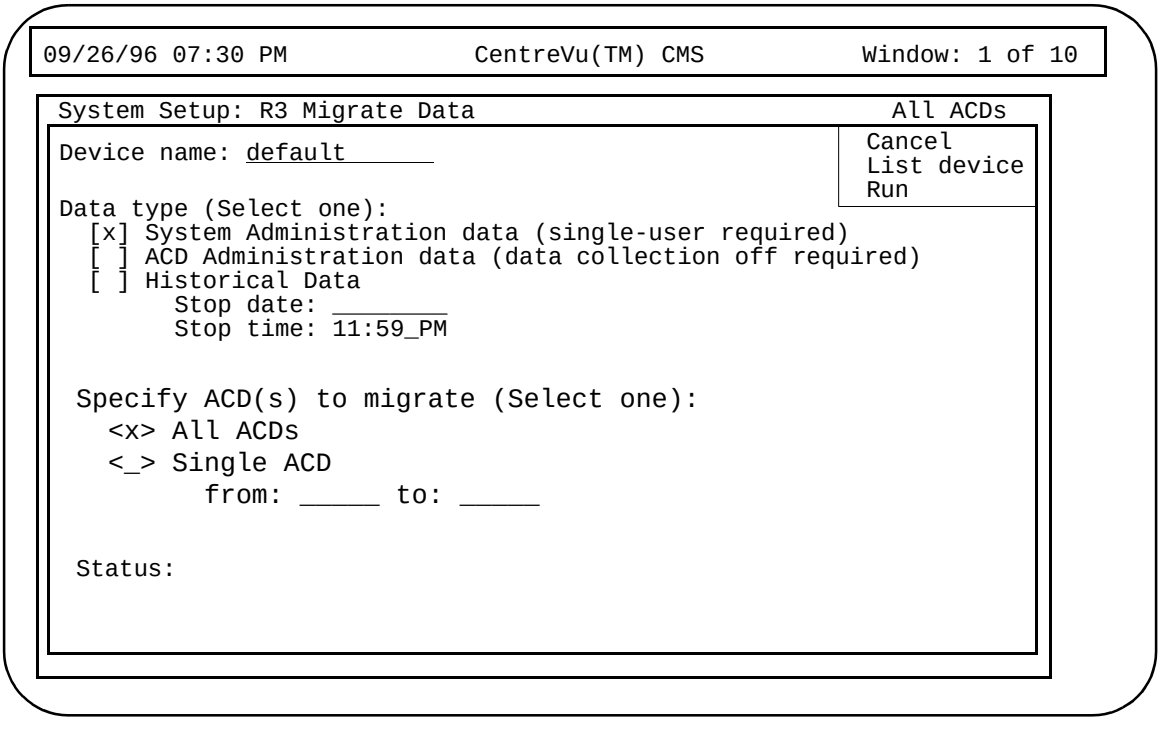

Figure A-1: R3 Migrate Data Window

Field Descriptions

`Device name:`

Enter the device name from which the data being migrated will be read.

Valid input is the name of a device that has been defined in the Maintenance: Backup/Restore Devices window (normally `default`). The field is 20 characters long.

`Data type:`

Choose the type of data you are migrating: system administration data, ACD administration data, or historical data. (Appendix B, “Data Migration Tables,” lists the data items and their associated types.) You can select only one data type at a time.

NOTE:

Keep the following items in mind when choosing the data type:

- **System administration and ACD administration data** should each be migrated only one time. Migrating administration data more than once could cause catastrophic errors.
- **To migrate system administration data** CMS must be in the single-user mode .
- **To migrate ACD administration data** CMS must have data collection turned off.
- **To migrate historical data** CMS may be in the single-user or multi-user mode .

`Stop date:`

Enter the date through which you wish to record data for migration to the CMS. The migration process does not migrate data collected after the stop date you specify.

Valid input is a date in mm/dd/yy or in relative format. This field is 8 characters long. If you leave the this field blank, the program migrates data up to the date written on the tape by the CMS Maintenance Backup procedure.

`Stop time:`

Enter the time through which you wish to record data for migration to the CMS. The migration process does not migrate data collected after the stop date and time you specify.

Valid input is a time in hh:mmXM or in HH:mm (24-hour) format. This field is 8 characters long.

`Specify ACD to migrate:`

Select `All ACDs` or `Single ACD`.

If you select `All ACDs`, data is migrated from the backup tape to your hard disk ACD-by-ACD (that is, ACD1 on tape to ACD1 on disk, ACD2 to ACD2, and so on).

If you select `Single ACD`, you must specify the `From` and `To` ACDs, and may migrate the data in any ACD-combination you find necessary. Valid input is a number 1 through 4.

Action List Entries

`Cancel`

Results in an acknowledgment window that asks if you want to cancel the migration. If you answer `y` to terminate the migration, the migration is stopped and “Canceled” is displayed on the status line.

`List device`

Brings up a secondary window listing the available device names defined in the Maintenance: Backup/Restore Devices window. The window lists the device names, paths, descriptions, and device types.

`Run`

Starts the migration.

If you elect to migrate system administration data, the `Run` entry verifies that CMS is in the single-user mode.

If you elect to migrate ACD administration data, the `Run` entry verifies that data collection is off.

If you elect to migrate historical data, the migration may proceed regardless of the CMS state, and data collection may be turned on.

The status field reports the progress.

Additional Considerations

- You cannot execute this window to migrate data for a nonsupported migration path.
- You cannot run this window on a timetable.
- In CMS R3V6, this window does not migrate custom tables or data items. Instead, you must investigate and record the details of any custom items you wish to transfer, and reproduce them in *INFORMIX*. Once custom items have been added in *INFORMIX*, they can be added into CMS (Dict/Database Items/ Custom Items).
- Phased migrations don't work. If you migrate some agents at one time, and others at a later time, you will have to decide which set of data you want. The two sets of data cannot be merged.

Operational Cases

The following cases may occur during the execution of the R3 Migrate Data window. Each case describes the input conditions, the application action, and what to do for each condition.

User Permission

Input Condition You do not have write permission to the System Setup subsystem.

Application Action The Run Action Item is not displayed.

What to Do If you cannot run this window, change permissions so you have the appropriate write permission. See the CMS *Administration* (585-215-850) document for permissions information.

Invalid Device

Input Condition You entered an invalid device name in the device field.

Application Action The device name is validated when the Run entry is selected and the following acknowledge window is displayed:

```
Invalid device name entered. Press Return to go back to the
previous window and specify the device name again.

Press return to continue:
```

What to Do Press Enter to get back to the main window and enter a valid device, or administer the device in the Maintenance: Backup/Restore Devices window.

Invalid ACD

Input Condition You entered an invalid ACD number in the ACD field.

Application Action The following message window is displayed:

```
Enter the ACD you are migrating data to.
Numeric inputs must be between 1 and 4. Decimal points are not
allowed.
Multiple values are not allowed.
```

What to Do Enter a valid ACD number to clear the message window.

Run Conditions — Single-User

Input Condition You selected System Administration data and CMS is in the multi-user mode.

Application Action The following acknowledge window is displayed:

```
ERROR: CMS must be in Single User state to
migrate System Administration data.

Press return to continue:
```

What to Do Press Enter to clear the acknowledge window and use the System Setup: CMS State window to change CMS to the single-user state.

Run Conditions — Data Collection Off

Input Condition You selected ACD Administration data, and data collection for at least one of the existing ACDs is turned on.

Application Action The following Acknowledge window is displayed:

```
ERROR: Data Collection must be off for all ACDs
to migrate ACD Administration data.

Press return to continue:
```

What to Do Press Enter to clear the acknowledge window, and use the System Setup: Data Collection window to turn off data collection for all ACDs.

Tape Not Mounted

Input Condition Tape is not mounted in the designated tape drive.

Application Action The following acknowledge window is displayed:

```
ERROR: Cannot read the volume. Please check
the volume and/or the device drive.

Press return to continue:
```

What to Do Press Enter to clear the acknowledge window. Another acknowledge window displays to prompt for the volume.

Volume Read Error

Input Condition There is an error with the volume read.

Application Action The following acknowledge window is displayed:

```
ERROR: Migration errors have occurred with the current volume.
Enter yes to skip this volume or no to cancel the migration.

Enter 'y' for yes or 'n' for no:
```

An error message indicating the read problem is written to the Services error log. The status line displays “Failed,” and the main window is locked.

What to Do If you enter n, the migration stops. “Canceled” is displayed on the status line, and the window is unlocked. The following error message is written to Customer and Services logs: `Migration canceled by the user`.

If you enter y, the status line is cleared, and the Volume Prompt (subsequent volume) window is displayed. In either case, if a table is involved, its migration is not completed, but the table’s migrated data is accessible.

Non-CMS Volume

Input Condition The mounted volume is not a CMS backup volume.

Application Action The following acknowledge window is displayed:

```
ERROR: Mounted volume is not a CMS backup volume.

Press return to continue:
```

What to Do Press Enter to clear. Another acknowledge window displays to prompt for the correct volume.

Data Write Error

Input Condition There is an error with data write.

Application Action The following acknowledge window is displayed:

```
ERROR: Migration errors have occurred with table=ttttt.
Enter yes to skip the table or no to cancel the migration.
Enter 'y' for yes or 'n' for no:
```

An error message indicating that the reload problem is written to the Customer and Services error logs. The status line displays “Failed,” and the main window is locked.

What to Do Entering y clears the acknowledge window. The status line displays “Working,” and the migration continues with the next table on the volume.

Entering n stops the migration. The status line displays “Canceled,” and the window is unlocked. The following error message is written to Customer and Services logs: `Migration canceled by the user.`

In either case, depending on the error, the table may or may not be accessible. Manual correction may have to be performed. If you encounter this message, call the TSC.

Process Is Running

Input Condition Process is reloading data to disk.

Application Action The main window's status line displays “Working,” and then the status field reports the migration status.

What to Do You can exit the window and bring it up later without affecting the actual migration process running in the background. In addition to using the migration log file, you can use the window to display feedback from the migration process.

Volume Prompt — First Volume

Input Condition The migration is started, and the first volume is needed.

Application Action The following acknowledge window is displayed:

```
To start the migration, load the first CMS Maintenance Backup
volume into the device drive.
Enter yes when ready or no to cancel.

Enter 'y' for yes or 'n' for no:
```

The main window is locked.

What to Do If you load a backup volume and enter `y`, the acknowledge window clears. The migration checks for these conditions before starting the reload:

- CMS Maintenance Backup volume
- Database compatibility
- Volume order
- Supported migration path.

If you enter `n`, the migration stops. The status line displays “Canceled,” and the window is unlocked. The following error message is written to Customer and Services logs: `Migration canceled by the user.`

Volume Prompt — Subsequent Volume

Input Condition The backup spans multiple tapes, and the current tape is not the last one.

Application Action The following acknowledge window is displayed:

```
To continue the migration, load volume xxxxxxxxx into the
device drive.
Enter yes when ready or no to cancel the migration.

Enter 'y' for yes or 'n' for no:
```

The main window is locked. The volume label should be the next volume in sequence.

What to Do Unload the current volume, and load the requested volume. If you load the volume and enter y, the acknowledge window clears, and the migration checks to make sure that it has the right volume before starting the reload.

If you enter n, the migration stops. The status line displays "Canceled," and the window is unlocked. The following error message is written to Customer and Services logs: `Migration canceled by the user.`

Volume Order

Input Condition The mounted volume is not the volume in sequence for reload.

Application Action The following acknowledge window is displayed:

```
ERROR: Mounted volume is not the requested volume.

Press return to continue:
```

What to Do Press Enter to clear. Unload current volume and load requested volume.

Partial Migration and Restart

Input Condition The migration has been running, is stopped or aborted, and then restarted.

Application Action The following acknowledge window displays:

```
Migration has been run before, but did not complete.
Enter yes to continue the migration where it left
or no to rerun the migration from the beginning.

NOTE: For sysadmin data, rerun of migration from the beginning
could create duplicate data

Enter y for yes or n for no:__
```

What to Do

If you enter y, the migration starts from where it stopped. That is, the program skips over the data that already has been migrated.

Entering y saves time, especially if you are migrating historical data. (If you are migrating administration data, entering y prevents an excessive amount of messages from being entered into the migration log.)

If you enter n, the program starts the migration from the beginning of the data. If you restart the system administration migration, numerous `already exists` messages will appear in the migration log due to the data already migrated. Data collisions will result in the user IDs and user permissions being deleted.

NOTE:

Only enter n for special instances. For example, you would want to start the migration from the beginning if you cleaned up the database.

Completed Migration and Restart

Input Condition You have completed the migration and then restarted it using the same tape.

Application Action The following acknowledge window displays:

```
Migration has been run before.
Do you want to run it again?

NOTE: For sysadmin data, rerun of migration could create
duplicate data.

Enter y for yes or n for no:__
```

What to Do

If you enter n, the program returns you to the action list in the R3 Migrate Data window.

If you enter y, the program starts the migration from the beginning of the data. (If you are migrating administration data, numerous "`already exists`" messages will appear in the migration log due to the data already migrated.)

NOTE:

Only enter y for special instances. For example, you would want to start the migration from the beginning if you cleaned up the database.

Tape Changed

Input Condition You run a migration, change the tape, then restart the migration. The migration can be either incomplete or complete.

Application Action The following acknowledge window displays:

```
Migration for this data type has been partially run or
successfully completed before, but the tape containing
the migration data was not the same as the one currently
in the tape drive. Do you want to run the migration
using the tape in the tape drive?

Note: For system administration data, rerun of migration will
not override any previously migrated data.

Enter y for yes or n for no:__
```

What to Do If you enter y, the program starts the migration from the beginning of the data.

NOTE:

Enter y only for special instances. For example, you would want to start the migration from the beginning if you cleaned up the database.

If you enter n, the program returns you to the action list in the R3 Migrate Data window.

Viewing the Readme Files

CentreVu CMS provides four readme files to explain differences between CMS software loads, to notify you of errors in CMS documents, and to answer frequently asked questions about CMS. The file names are as follows:

cms.readme - features of the current load
cmshistory.readme - features of previous loads
cmsdoc.readme - document errata
cmsfaq.readme - Frequently Asked Questions (FAQs)

The files are on the CD containing the *CentreVu* CMS software. Follow these steps to view or print the files:

1. Insert the CMS CD into the CD-ROM drive. (You must use the CD-ROM caddy if you have an external CD-ROM drive.)
2. Log in as *root*.
3. Enter one of these commands:
   - `pg /cdrom/cdrom0/<filename>` to view a file, or
   - `lp -d <printer> /cdrom/cdrom0/<filename>` to print a file

   where *<filename>* is the name of the file and *<printer>* is the system printer name.

Editing Files in *UNIX* With vi

Vi *(vee eye)* stands for *visual editor*. It is distributed with virtually every *UNIX* system, and is likely to be the editor of choice for any changing of text files you have to do during a CMS upgrade. There is no compelling reason to use vi, however. If there is another editor available on your system, and you know how to use it, feel free to do so.

Starting vi

To start vi and have it load a file immediately for editing, enter the following command:

```
#  vi  <filename>
```

That command gives you a screen showing the lines of text in the file. Once the screen is displaying, you may begin editing the file.

Working With vi

Vi is always in one of two modes: *command mode* or *insert mode.* In command mode, anything you type at the keyboard is interpreted as an instruction to vi to perform a function. In insert mode, anything you type at the keyboard is inserted into the file as text.

Vi always starts in command mode. To switch to insert mode, you must press Enter or type one of the insert mode commands **`i, I, a, A, o,`** or **`O`** (see the table below). When you are in insert mode, you switch to command mode by pressing the **`Esc`** key.

The table on the next page lists and explains commonly used commands. For more in-depth coverage of vi, consult your system documentation or a third-party publication.

Command Type	Command	Effect
Insert	i	Begins inserting at the left of the current character.
	I	Begins Inserting at the beginning of the current line.
	a	Begins inserting at the right of the current character.
	A	Begins inserting at the end of the current line.
	o	Inserts a new line after the current line.
	O	Inserts a new line before the current line.
	Enter	Inserts a new line after the current character.
Delete	x	Deletes the current character.
	dd	Deletes the current line.
	D	Deletes from the cursor to the end of the current line.
	r*<c>*	Replaces the current character with *<c>.*
Cursor Movement	w	Move to the beginning of the next word.
	*<n>*G	Move to line number *<n>.*
	G	Move to the end of the file.
	^U	Move backward in the file (“up”) one-half screenful.
	^B	Move backward one screenful.
	^D	Move forward in the file (“down”) one-half screenful.
	^F	Move forward in the file one screenful.
Copy and Paste	y	Copies (“yanks”) the current character.
	yw	Yanks the current word.
	yy	Yanks the current line.
	p	Pastes the last yank to the right of the cursor.
	P	Pastes the last yank to the left of the cursor.
Save & Exit	:q	Quit, prompt to save the file.
	:q!	Quit without saving the file.
	:x	Exit (save the file and quit).
	:w *<name>*	Write the file to a new file named *<name>*.

Appendix B: Data Migration Tables

This appendix shows how the Release 3 (R3) Call Management System (CMS) data and the Release 2 (R2) CMS data are migrated to the Release 3 Version 8 (R3V8) system. The information is presented as follows:

- R3-to-R3V8 migration tables
- R2-to-R3V8 migration tables
  - — Custom Report References to Database Items
  - — Historical Database Item Mapping
  - — Calculation Migration.3-to-R3V8 Migration Tables

Table B-1: R3-to-R3V8 Migration Tables

Table Name	Application	Description	System Admin	ACD Admin	Historical
aar_agents	Agent Act. Recorder	Agents being traced		X	
acd_shifts	DSA,FSA	Agent shifts		X	
acds	User Permissions	ACD access		X	
ag_actv&	Agent Trace	Agent trace data		X	
ag_ex_adm	Exceptions	Agent exceptions admin		X	
agex&	Exceptions	Agent exceptions data		X	
agroups	Dictionary	Agent groups		X	
arch_stat	Archiver	Archive status			
br_dev_types	Backup/Restore	B/R device types			
br_devices	Backup/Restore	B/R devices			
br_fulls	Backup/Restore	Backup history: full backups			
br_increms	Backup/Restore	Backup history: inc. backups			
br_tables	Backup/Restore	B/R tables			
cmstbls	Dictionary	Database tables			
customer_log	ELOG	Customer error log			
dagent&	Historical reports	Daily agent data			X
db/gem/h_custom#	Custom Reports	Report GEM files (historical)	X		
db/gem/r_custom#	Custom Reports	Report GEM files (real-time)	X		
db/journal/shortcut#	Time Tables	Shortcut settings	X		
db/journal/timetable#	Time Tables	Timetable settings	X		
dberrors	IDBM	Error map: Informix vs. CMS			
dbitems	Dictionary	Database items	X		
dbstatus	Backup/Restore	Hist./forecast tables update status			
dcadmin	DSA,SPI,install	Data collection admin			
dcalloc	DSA,FSA	Data storage allocation admin			
dcwc	Historical reports	Daily call work codes data			X
dsplit&	Historical reports	Daily splits data			X
dtkgrp&	Historical reports	Daily trunk groups data			X
dtrunk	Historical reports	Daily trunks data			X
dvdn	Historical reports	Daily VDNs data			X
dvector	Historical reports	Daily vector data			X
error_msg	ELOG	Canned customer error msgs			
ex_msgs	Exceptions	Canned exception messages			

Table B-1: R3-to-R3V8 Migration Tables (Continued)

Table Name	Application	Description	System Admin	ACD Admin	Historical
f_agposrep	Forecast	Agent Positions Required Report			
f_cday&	Forecast	Current Day Report		X	
f_cdayconf&	Forecast	Current Day Config.		X	
f_cdayrep&	Forecast	Current Day Report		X	
f_chpap	Forecast	Call Handling Profile		X	
f_chprof	Forecast	Call Handling Profile		X	
f_cstap	Forecast	Costs Profile		X	
f_cstprof	Forecast	Costs Profile		X	
f_dataarch	Forecast	Data Storage Alloc.		X	
f_dsplit&	Forecast	Daily Split Data			X
f_dtkgrp	Forecast	Daily Trunk Group Data			X
f_fin	Forecast	Financial Report			
f_finrep	Forecast	Financial Report			
f_hfinrep	Forecast	Hypothetical Financial Report			
f_hypodata	Forecast	Hypothetical Data	X		
f_hyporep	Forecast	Hypothetical Report			
f_intra	Forecast	Intraday Report			
f_intrarep	Forecast	Intraday Report			
f_ispday&	Forecast	Special Day Split Data			X
f_isplit&	Forecast	Interval Split Data			X
f_itkgrp	Forecast	Interval Trunk Group Data			X
f_long	Forecast	Long Term Report			
f_longrep	Forecast	Long Term Report			
f_spdays&	Forecast	Special Day Admin		X	
f_specrep	Forecast	Special Day Report			
f_status	Forecast	Forecast Manager Status		X	
f_tkgpprof	Forecast	Trunk Group Profiles		X	
f_tkreqrep	Forecast	Trunk Required Report			
f_tperfrep	Forecast	Trunk Performance Report			
features	User Permissions	Feature access	X		
filesys	DSA,FSA	Historical reports file systems			
fs_check	CRT	File systems for free space check			
h_custom#	Custom Reports	Custom reports: historical	X		
hagent&	Historical reports	Intrahour agent data			X
haglog&	Historical reports	Intrahour agent login-logout data			X
hcwc	Historical reports	Intrahour call work code data			X
hsplit&	Historical reports	Intrahour split data			X
htkgrp&	Historical reports	Intrahour trunk group data			X
htrunk	Historical reports	Intrahour trunk data			X
hvdn	Historical reports	Intrahour VDN data			X
hvector	Historical reports	Intrahour vector data			X
linkex*	Exceptions	Link exceptions data		X	
magent&	Historical reports	Monthly agent data			X
main_menu#	CRT	Main menu	X		
mctex&	Exceptions	Malicious call trace exceptions		X	

Table B-1: R3-to-R3V8 Migration Tables (Continued)

Table Name	Application	Description	System Admin	ACD Admin	Historical
mcwc	Historical reports	Monthly call work code data			X
menu#	CRT	Submenu	X		
menu_add#	CRT	Menu additions	X		
menu_help	CRT	Menu help			
menu_item_help	CRT	More help for menu items			
msplit&	Historical reports	Monthly split data			X
mtkgrp&	Historical reports	Monthly trunk group data			X
mtrunk	Historical reports	Monthly trunk data			X
mvdn	Historical reports	Monthly VDN data			X
mvector	Historical reports	Monthly vector data			X
print_adm	Printer Admin	Printer parameters	X		
r_custom#	Custom Reports	Custom reports: real time	X		
scwininfo#	Short Cuts	Shortcut window info	X		
sp_ex_adm	Exceptions	Split exceptions admin		X	
spex&	Exceptions	Split exceptions		X	
split_pro&	ACD profiles	Split profile		X	
splits&	User Permissions	Split access		X	
std_rpts	Custom Reports	Standard reports list			
synonyms	Dictionary	Synonyms		X	
sys_info	DSA,FSA	DC parameters			
tg_ex_adm	Exceptions	Trunk group exceptions admin		X	
tgex	Exceptions	Trunk group exceptions		X	
tgroups	User Permissions	Trunk groups access		X	
ttsc#	Time Tables,User Perms	Timetables	X		
ttsched#	Time Tables,User Perms	Schedules	X		
ttsctasks#	Time Tables,User Perms	Associated tasks	X		
user_colors#	CRT	Color options	X		
user_defval#	CRT	User defaults	X		
users#	User Permissions	Users	X		
vdn_pro	ACD profiles	VDN profile		X	
vdn_x_adm	Exceptions	VDN exceptions admin		X	
vdnex	Exceptions	VDN exceptions data		X	
vdns	User Permissions	VDN access		X	
vec_x_adm	Exceptions	Vector exceptions admin		X	
vecex	Exceptions	Vector exceptions data		X	
vectors	User Permissions	Vector access		X	
wagent&	Historical reports	Weekly agent data			X
wcwc	Historical reports	Weekly call work code data			X
workcodes	User Permissions	Work codes access		X	
wsplit&	Historical reports	Weekly split data			X
wtkgrp&	Historical reports	Weekly trunk group data			X
wtrunk	Historical reports	Weekly trunk data			X
wvdn	Historical reports	Weekly VDN data			X
wvector	Historical reports	Weekly vector data			X

R3-to-R3V8 Migration Tables

Table B-2: R3-to-R3V8 Migration Tables

Table Name	Application	Description	System Admin	ACD Admin	Historical
aar_agents	Agent Act. Recorder	Agents being traced		X	
acd_shifts	DSA,FSA	Agent shifts		X	
acds	User Permissions	ACD access		X	
ag_actv&	Agent Trace	Agent trace data		X	
ag_ex_adm	Exceptions	Agent exceptions admin		X	
agex&	Exceptions	Agent exceptions data		X	
agroups	Dictionary	Agent groups		X	
arch_stat	Archiver	Archive status			
br_dev_types	Backup/Restore	B/R device types			
br_devices	Backup/Restore	B/R devices			
br_fulls	Backup/Restore	Backup history: full backups			
br_increms	Backup/Restore	Backup history: inc. backups			
br_tables	Backup/Restore	B/R tables			
cmstbls	Dictionary	Database tables			
customer_log	ELOG	Customer error log			
dagent&	Historical reports	Daily agent data			X
db/gem/h_custom#	Custom Reports	Report GEM files (historical)	X		
db/gem/r_custom#	Custom Reports	Report GEM files (real-time)	X		
db/journal/shortcut#	Time Tables	Shortcut settings	X		
db/journal/timetable#	Time Tables	Timetable settings	X		
dberrors	IDBM	Error map: Informix vs. CMS			
dbitems	Dictionary	Database items	X		
dbstatus	Backup/Restore	Hist./forecast tables update status			
dcadmin	DSA,SPI,install	Data collection admin			
dcalloc	DSA,FSA	Data storage allocation admin			
dcwc	Historical reports	Daily call work codes data			X
dsplit&	Historical reports	Daily splits data			X
dtkgrp&	Historical reports	Daily trunk groups data			X
dtrunk	Historical reports	Daily trunks data			X
dvdn	Historical reports	Daily VDNs data			X
dvector	Historical reports	Daily vector data			X
error_msg	ELOG	Canned customer error msgs			
ex_msgs	Exceptions	Canned exception messages			
f_agposrep	Forecast	Agent Positions Required Report			
f_cday&	Forecast	Current Day Report		X	
f_cdayconf&	Forecast	Current Day Config.		X	
f_cdayrep&	Forecast	Current Day Report		X	
f_chpap	Forecast	Call Handling Profile		X	
f_chprof	Forecast	Call Handling Profile		X	
f_cstap	Forecast	Costs Profile		X	
f_cstprof	Forecast	Costs Profile		X	
f_dataarch	Forecast	Data Storage Alloc.		X	
f_dsplit&	Forecast	Daily Split Data			X
f_dtkgrp	Forecast	Daily Trunk Group Data			X
f_fin	Forecast	Financial Report			

Table B-2: R3-to-R3V8 Migration Tables (Continued)

Table Name	Application	Description	System Admin	ACD Admin	Historical
f_finrep	Forecast	Financial Report			
f_hfinrep	Forecast	Hypothetical Financial Report			
f_hypodata	Forecast	Hypothetical Data	X		
f_hyporep	Forecast	Hypothetical Report			
f_intra	Forecast	Intraday Report			
f_intrarep	Forecast	Intraday Report			
f_ispday&	Forecast	Special Day Split Data			X
f_isplit&	Forecast	Interval Split Data			X
f_itkgrp	Forecast	Interval Trunk Group Data			X
f_long	Forecast	Long Term Report			
f_longrep	Forecast	Long Term Report			
f_spdays&	Forecast	Special Day Admin		X	
f_specrep	Forecast	Special Day Report			
f_status	Forecast	Forecast Manager Status		X	
f_tkgpprof	Forecast	Trunk Group Profiles		X	
f_tkreqrep	Forecast	Trunk Required Report			
f_tperfrep	Forecast	Trunk Performance Report			
features	User Permissions	Feature access	X		
filesys	DSA,FSA	Historical reports file systems			
fs_check	CRT	File systems for free space check			
h_custom#	Custom Reports	Custom reports: historical	X		
hagent&	Historical reports	Intrahour agent data			X
haglog&	Historical reports	Intrahour agent login-logout data			X
hcwc	Historical reports	Intrahour call work code data			X
hsplit&	Historical reports	Intrahour split data			X
htkgrp&	Historical reports	Intrahour trunk group data			X
htrunk	Historical reports	Intrahour trunk data			X
hvdn	Historical reports	Intrahour VDN data			X
hvector	Historical reports	Intrahour vector data			X
linkex*	Exceptions	Link exceptions data		X	
magent&	Historical reports	Monthly agent data			X
main_menu#	CRT	Main menu	X		
mctex&	Exceptions	Malicious call trace exceptions		X	
mcwc	Historical reports	Monthly call work code data			X
menu#	CRT	Submenu	X		
menu_add#	CRT	Menu additions	X		
menu_help	CRT	Menu help			
menu_item_help	CRT	More help for menu items			
msplit&	Historical reports	Monthly split data			X
mtkgrp&	Historical reports	Monthly trunk group data			X
mtrunk	Historical reports	Monthly trunk data			X
mvdn	Historical reports	Monthly VDN data			X
mvector	Historical reports	Monthly vector data			X
print_adm	Printer Admin	Printer parameters	X		
r_custom#	Custom Reports	Custom reports: real time	X		

Table B-2: R3-to-R3V8 Migration Tables (Continued)

Table Name	Application	Description	System Admin	ACD Admin	Historical
scwininfo#	Short Cuts	Shortcut window info	X		
sp_ex_adm	Exceptions	Split exceptions admin		X	
spex&	Exceptions	Split exceptions		X	
split_pro&	ACD profiles	Split profile		X	
splits&	User Permissions	Split access		X	
std_rpts	Custom Reports	Standard reports list			
synonyms	Dictionary	Synonyms		X	
sys_info	DSA,FSA	DC parameters			
tg_ex_adm	Exceptions	Trunk group exceptions admin		X	
tgex	Exceptions	Trunk group exceptions		X	
tgroups	User Permissions	Trunk groups access		X	
ttsc#	Time Tables,User Perms	Timetables	X		
ttsched#	Time Tables,User Perms	Schedules	X		
ttsctasks#	Time Tables,User Perms	Associated tasks	X		
user_colors#	CRT	Color options	X		
user_defval#	CRT	User defaults	X		
users#	User Permissions	Users	X		
vdn_pro	ACD profiles	VDN profile		X	
vdn_x_adm	Exceptions	VDN exceptions admin		X	
vdnex	Exceptions	VDN exceptions data		X	
vdns	User Permissions	VDN access		X	
vec_x_adm	Exceptions	Vector exceptions admin		X	
vecex	Exceptions	Vector exceptions data		X	
vectors	User Permissions	Vector access		X	
wagent&	Historical reports	Weekly agent data			X
wcwc	Historical reports	Weekly call work code data			X
workcodes	User Permissions	Work codes access		X	
wsplit&	Historical reports	Weekly split data			X
wtkgrp&	Historical reports	Weekly trunk group data			X
wtrunk	Historical reports	Weekly trunk data			X
wvdn	Historical reports	Weekly VDN data			X
wvector	Historical reports	Weekly vector data			X

NOTE:

&=tables/data that are affected by EAS format.
#=tables/data that could be affected by user CMS ID conflicts.
Tables/data with no 'X' mark will not be migrated in *subsequent* ACDs. For the first ACD, they are either migrated or re-initialized by installation feature.

R2-to-R3V8 Migration Tables

Custom Report References to Database Items

The following table lists the R3V8 equivalent database items and calculations for R2 database items (see Table B-3). These R3 equivalents may appear in custom reports and in custom calculations in the dictionary. Items marked “Report reference" have no direct equivalent in the R3V8 database. In these cases, you must change the custom report.

Table B-3: R2-to-R3V8 — Custom Report References to Database Items

R2 Item	R3 Equivalent	Note
ABANDON1-10	ABNCALLS1-10	
ABANDONS	ABNCALLS	interval-based to call-based
ABANTIME	ABNTIME	
ACDCALLS	ACDCALLS	interval-based to call-based
ACDCOUNT	ONACD	
ACDTIME	I_ACDTIME	
ACWCOUNT	INACW	
ACWINCALLS	ACWINCALLS	interval-based to call-based
ACWINCOUNT	ONACWIN	
ACWINTIME	I_ACWINTIME	
ACWOUTCALLS	ACWOUTCALLS	interval-based to call-based
ACWOUTCOUNT	ONACWOUT	
ACWOUTTIME	I_ACWOUTTIME	
ACWTIME	I_ACWTIME	
AGENTS	POSITIONS	
AGTIME	ACDTIME	
ALLINUSE	ALLINUSETIME	
ALLTRKSBUSY	–	Report reference
ANSBACK	BACKUPCALLS	
ANSDELAY	ANSTIME	
ANSMAIN	ACDCALLS–BACKUPCALLS	
ANSWERED	ACDCALLS	
ASSISTS	ASSISTS	
ASSOCIATION	SPLIT, LOGID or none	Report reference
ASTATE	WORKMODE	Report that user will need to add DIRECTION
ATAGENT	ATAGENT	

Table B-3: R2-to-R3V8 — Custom Report References to Database Items (Continued)

R2 Item	R3 Equivalent	Note
AUXCOUNT	INAUX	
AUXINCALLS	AUXINCALLS	interval-based to call-based
AUXINCOUNT	ONAUXIN	
AUXINTIME	I_AUXINTIME	
AUXOUTCALLS	AUXOUTCALLS	interval-based to call-based
AUXOUTCOUNT	ONAUXOUT	
AUXOUTTIME	I_AUXOUTTIME	
AUXTIME	TI_AUXTIME (agent) or I_AUXTIME (split)	Report reference (calculations)
BABANDONS	BH_ABNCALLS	
BHANDLEDIN	BH_ACDCALLS	
BALLINUSE	BH_ALLINUSETIME	
BFAILURES	–	Report reference
BINCALLS	BH_INCALLS	
BINTIME	BH_INTIME	
BMBUSYTIME	–	
BNONACD	BH_OTHERCALLS	
BOUTTIME	BH_OUTTIME	
BSOFTFAILS	–	
BUSYHOUR	BH_STARTTIME	
CABINET	–	Report reference
CALLATAGENT	–	Report reference
CALLPROFCHG	SVCLEVELCHG or PERIODCHG	Report reference
CALLS1-10	ACDCALLS1-10	
CARRIED	INCALLS	
CARRIER	–	Report reference
CIRCUIT	–	Report reference
CMODE	–	Report reference
CUMACW	ACWTIME	
CUMRING	RINGTIME	
CUMTALK	ACDTIME	
DIRECTION	DIRECTION	
DNCALL	–	Report reference
DNEXT	VDN	
DNS	NUMVDNS	
DNSTARTDATE	–	Report reference
DNSTARTTIME	–	Report reference

Table B-3: R2-to-R3V8 — Custom Report References to Database Items (Continued)

R2 Item	R3 Equivalent	Note
DNWAITTIME	INTIME–ACDTIME	
EQLOCATION	EQLOC	
EVENT	MALICIOUS or ASSIST	Report reference
EXTCALL	DIRECTION	Report reference
EXTCALLDATE	–	Report reference
EXTCALLTIME	–	Report reference
EXTENSION	EXTENSION	
FAILURES	FAILURES	R2 item includes inbound SHORTCALLS; R3 item does not
FBUSYCALLS	BUSYCALLS	
FBUSYTIME	BUSYTIME	
FDISCCALLS	DISCCALLS	
FDISCTIME	DISCTIME	
FLOWTIME	OUTFLOWTIME	
GROUP	–	Defined in dictionary
GROUPSIZE	TRUNKS	
HOLDABANS	HOLDABNCALLS	
HOLDABANTIME		
HOLDS	HOLDCALLS	
HOLDTIME	HOLDTIME	
IDLETIME	I_AVAILTIME	
INCALLS	INCALLS	
INCOUNT	INBOUND	
INFLOW	INFLOWCALLS	
INPOOL	AVAILABLE	
INPROGRESS	INPROGRESS	
INTIME	INTIME	
INVECTOR	INVECTOR	
LOGDATE	–	Report reference
LOGID	LOGID	
LOGMODE	–	Report reference
LOGTIME	–	Report reference
MAXAGENTS	MAXSTAFFED	
MAXCALLSWAIT	MAXINQUEUE	
MAXOLDCW	MAXOCWTIME	
MBUSYCOUNT	MBUSY	
MBUSYTIME	MBUSYTIME	
MODULE	–	Report reference

Table B-3: R2-to-R3V8 — Custom Report References to Database Items (Continued)

R2 Item	R3 Equivalent	Note
NONACD	CONNECTCALLS (tk gp, vdn) or OTHERCALLS (trunk)	Report reference
NUMACW	–	Report reference
NUMRING	RINGCALLS	
NUMTALK	ACDCALLS	
OCW	OLDESTCALL	
ONHOLD	ONHOLD	
OUTCALLS	OUTCALLS	
OUTCOUNT	OUTBOUND	
OUTFLOW	OUTFLOWCALLS	
OUTTIME	OUTTIME	
OVERFLOWS	BLOCKAGE	
PRICALLS	MEDCALLS	
PRILEVEL	PRIORITY	
PRIORITY	PRIORITY	
QUECALLS	INQUEUE + INRING	
RINGABANDON	ABNCALLS (agent) or ABNRINGCALLS (split)	Report reference
RINGABNTIME	ABNTIME (agent)	Report reference for split table and calculations
RINGANSTIME	ANSRINGTIME (agent)	Report reference for split, VDN tables and calculations
RINGANSWER	ACDCALLS	
RINGASSOC	–	Report reference
RINGCALLS	RINGCALLS	
RINGCOUNT	INRING	
RINGTIME	I_RINGTIME	
ROUTEDCALLS	INTERFLOWCALLS	
ROUTETIME		
SLOT	–	Report reference
SOFTFAIL	–	Report reference
SPLIT	SPLIT	
STAFCOUNT	STAFFED	
STAFTIME	I_STAFFTIME	
STATE_DATE	–	Report reference
STROKE1-9	EVENT1-9	
SVCLVL	SERVICELEVEL	

Table B-3: R2-to-R3V8 — Custom Report References to Database Items (Continued)

R2 Item	R3 Equivalent	Note
TIMEMARK	AGTIME	TIMEMARK was time of day; AGTIME is duration in state
TRK_NDX	EQLOC	
TRKGRP	TKGRP	
TRKSINUSE	NUMINUSE	
TRUNKASSOC	–	Report reference
TRAFFIC	ACCEPTABLE	
TSTATE	TKSTATE	
VECCALL	–	Report reference
VECSTARTDATE	–	Report reference
VECSTARTTIME	–	Report reference
VECTIME	INTIME	
VECTOR	VECTOR	
WINDOW	PERIOD1-9	R2 item was constant; R3 item may have different value for each period

Historical Database Item Mapping

The following tables (Table B-4 through Table B-9) show how the R2 historical data values are migrated to the R3V8 database. If the R3V8 Equivalent column contains a dash, the R2 value is not migrated to *CentreVu*® CMS R3V8.

Many R2 items with the “TIME” suffix (for example, ACWINTIME) are migrated to two items in the R3V2 database: an interval-based item (I_ACWINTIME) and a call-based item (ACWINTIME).

The value 30 is put into the R3V8 item INTRVL, since R2 CMS stores data in 30-minute intervals.

In some cases, the meanings of the R2 and R3V8 items are **not** the same. The migration program attempts to migrate the data values to that R3V8 item which is closest in meaning to the corresponding R2 item; however, some items are not identical. These items are identified in the “Notes” column.

Table B-4: Agent Data

R2 Item	R3 Equivalent	Notes
ACDCALLS	ACDCALLS	interval-based to call-based
ACDTIME	I_ACDTIME, ACDTIME	R2 value migrates to two R3 items
ACWINCALLS	ACWINCALLS	interval-based to call-based
ACWINTIME	I_ACWINTIME, ACWINTIME	R2 value migrates to two R3 items
ACWOUTCALLS	ACWOUTCALLS	interval-based to call-based
ACWOUTTIME	I_ACWOUTTIME, ACWOUTTIME	R2 value migrates to two R3 items
ACWTIME	I_ACWTIME, ACWTIME	R2 value migrates to two R3 items
AGHOUR	–	
AGMINUTE	–	
ASSISTS	ASSISTS	
AUXINCALLS	AUXINCALLS	interval-based to call-based
AUXINTIME	I_AUXINTIME, AUXINTIME	R2 value migrates to two R3 items
AUXOUTCALLS	AUXOUTCALLS	interval-based to call-based
AUXOUTTIME	I_AUXOUTTIME, AUXOUTTIME	R2 value migrates to two R3 items
AUXTIME	TI_AUXTIME	
CMODE	–	
EXTENSION	EXTENSION	
GROUP	–	Defined in dictionary
IDLETIME	I_AVAILTIME, TI_AVAILTIME	R2 value migrates to two R3 items
INTERVAL	STARTTIME	
JDATE	ROW_DATE	
LOGID	LOGID	

Table B-4: Agent Data (Continued)

R2 Item	R3 Equivalent	Notes
LOGMODE	–	
QUALITY	INCOMPLETE	
SERIAL	–	
SPLIT	SPLIT	
STAFTIME	I_STAFFTIME, TI_STAFFTIME	R2 value migrates to two R3 items
STROKE1-9	EVENT1-9	

Table B-5: Split Data

R2 Item	R3 Equivalent	Notes
ABANDON1-10	ABNCALLS1-10	
ABANDONS	ABNCALLS	
ABANTIME	ABNTIME	
ACDCALLS	ACDCALLS	interval-based to call-based
ACDTIME	I_ACDTIME	
ACWINCALLS	ACWINCALLS	interval-based to call-based
ACWINTIME	I_ACWINTIME, ACWINTIME	R2 value migrates to two R3 items
ACWOUTCALLS	ACWOUTCALLS	interval-based to call-based
ACWOUTTIME	I_ACWOUTTIME, ACWOUTTIME	R2 value migrates to two R3 items
ACWTIME	I_ACWTIME	
ANSDELAY	ANSTIME	
ANSWERED+ABANDONS+ OUTFLOW	CALLSOFFERED	
ASSISTS	ASSISTS	
AUXINCALLS	AUXINCALLS	interval-based to call-based
AUXINTIME	I_AUXINTIME, AUXINTIME	R2 value migrates to two R3 items
AUXOUTCALLS	AUXOUTCALLS	interval-based to call-based
AUXOUTTIME	I_AUXOUTTIME, AUXOUTTIME	R2 value migrates to two R3 items
AUXTIME	I_AUXTIME	
CALLPROFCHG	SVCLEVELCHG, PERIODCHG	R2 value migrates to two R3 items
CALLS1-10	ACDCALLS1-10	
CUMACW	ACWTIME	
CUMTALK	ACDTIME	
HOLDABANS	HOLDABNCALLS	
HOLDABANTIME		
HOLDS	HOLDCALLS	
HOLDTIME	HOLDTIME	
IDLETIME	I_AVAILTIME	
INFLOW	INFLOWCALLS	
INTERVAL	STARTTIME	
JDATE	ROW_DATE	

Table B-5: Split Data (Continued)

R2 Item	R3 Equivalent	Notes
MAXAGENTS	MAXSTAFFED	
MAXCALLSWAIT	MAXINQUEUE	
MAXOLDCW	MAXOCWTIME	
NUMACW	–	
NUMTALK	–	
OUTFLOW	OUTFLOWCALLS	
PRICALLS	MEDCALLS	
QUALITY	INCOMPLETE	
SERIAL	–	
SPLIT	SPLIT	
STAFTIME	I_STAFFTIME	
STROKE1-9	EVENT1-9	
SVCLVL	SERVICELEVEL	
TRAFFIC	ACCEPTABLE	
WINDOW	PERIOD1-9	R2 item was constant, R3 item may have different value for each period

Table B-6: Trunk Group Data

R2 Item	R3 Equivalent	Notes
ABANDONS	ABNCALLS	
ALLINUSE	ALLINUSETIME	
ANSWERED	ACDCALLS	
BABANDONS	BH_ABNCALLS	interval-based to call-based
BHANDLEDIN	BH_ACDCALLS	interval-based to call-based
BALLINUSE	BH_ALLINUSETIME	
BFAILURES	–	
BINCALLS	BH_INCALLS	interval-based to call-based
BINTIME	BH_INTIME	interval-based to call-based
BMBUSYTIME	–	
BNONACD	BH_OTHERCALLS	
BOUTCALLS	BH_OUTCALLS	interval-based to call-based
BOUTTIME	BH_OUTTIME	interval-based to call-based
BSOFTFAILS	–	
BUSYHOUR	BH_STARTTIME	
FAILURES	FAILURES	R2 item includes inbound SHORTCALLS; R3 item does not
GROUPSIZE	TRUNKS	
INCALLS	INCALLS	
INTERVAL	STARTTIME	

Table B-6: Trunk Group Data (Continued)

R2 Item	R3 Equivalent	Notes
INTIME	INTIME	
JDATE	ROW_DATE	
MBUSYTIME	MBUSYTIME	
NONACD	CONNECTCALLS	
OUTCALLS	OUTCALLS	
OUTTIME	OUTTIME	
QUALITY	INCOMPLETE	
SERIAL	–	
SOFTFAIL	–	
TRKGRP	TKGRP	

Table B-7: Trunk Data

R2 Item	R3 Equivalent	Notes
ABANDONS	ABNCALLS	
ANSWERED	ACDCALLS	R2 item includes ACDCALLS plus calls that went to coverage or were forwarded; R3 item is only ACDCALLS.
CABINET	EQLOC	R2 item is a segment of R3 item
CARRIER	EQLOC	R2 item is a segment of R3 item
CIRCUIT	EQLOC	R2 item is a segment of R3 item
FAILURES	FAILURES	R2 item includes inbound SHORTCALLS; R3 item does not
INCALLS	INCALLS	
INTERVAL	STARTTIME	
INTIME	INTIME	
JDATE	ROW_DATE	
MBUSYTIME	MBUSYTIME	
MODULE	EQLOC	R2 item is a segment of R3 item
NONACD	OTHERCALLS	
OUTCALLS	OUTCALLS	
OUTTIME	OUTTIME	
QUALITY	INCOMPLETE	
SERIAL	–	
SLOT	EQLOC	R2 item is a segment of R3 item
SOFTFAIL	–	
TRKGRP	TKGRP	
TRK_NDX	–	

Table B-8: Vector Data

R2 Item	R3 Equivalent	Notes
ABANDONS	ABNCALLS	
ABANTIME	ABNTIME	
ANSBACK	BACKUPCALLS	
ANSDELAY	ANSTIME	
ANSMAIN+ANSBACK	ACDCALLS	
CARRIED	INCALLS	
FBUSYCALLS	BUSYCALLS	
FBUSYTIME	BUSYTIME	
FDISCCALLS	DISCCALLS	
FDISCTIME	DISCTIME	
FLOWTIME	OUTFLOWTIME	
FLOWTIME + FBUSYTIME + FDISCTIME	OTHERTIME	
INFLOW	INFLOWCALLS	
INTERVAL	STARTTIME	
JDATE	ROW_DATE	
NONACD + OUTFLOW + FBUSYCALLS + FDISCCALLS	OTHERCALLS	
OUTFLOW	OUTFLOWCALLS	
QUALITY	INCOMPLETE	
ROUTEDCALLS	INTERFLOWCALLS	
ROUTETIME	INTERFLOWTIME	
SERIAL	–	
VECTIME	INTIME	
VECTOR	VECTOR	

Table B-9: VDN Data

R2 Item	R3 Equivalent	Notes
ABANDONS	ABNCALLS	
ABANTIME	ABNTIME	
AGTIME	ACDTIME	
ANSDELAY	ANSTIME	
ANSWERED	ACDCALLS	
CARRIED	INCALLS	
DNEXT	VDN	
DNWAITTIME+AGTIME	INTIME	
FBUSYCALLS	BUSYCALLS	
FBUSYTIME	BUSYTIME	
FDISCCALLS	DISCCALLS	
FDISCTIME	DISCTIME	
FLOWTIME	OUTFLOWTIME	
FLOWTIME + FBUSYTIME + FDISCTIME	OTHERTIME	
INFLOW	INFLOWCALLS	
INTERVAL	STARTTIME	
JDATE	ROW_DATE	
NONACD	CONNECTCALLS	
OUTFLOW	OUTFLOWCALLS	
OUTFLOW + FBUSYCALLS + FDISCCALLS + NONACD	OTHERCALLS	
QUALITY	INCOMPLETE	
SERIAL	–	
VECTOR	VECTOR	

Calculation Migration

The following table lists the R3 equivalent calculations for R2 calculations (see Table B-10).

Table B-10: Calculation Migration

R2 Calculation	R3V8 Equivalent	Notes
AGENT_CALL_OUT	No R3 calculation	maps to ONACWOUT + ONAUXOUT
AUX_WORK_TIME	No R3 calculation	maps to I_AUXTIME – I_AUXOUTTIME – I_AUXINTIME (split) or to TI_AUXTIME – I_AUXOUTTIME – I_AUXINTIME (agent)
AVG_ABANDON_TIME	AVG_ABANDON_TIME	
AVG_ABANDON_TIME_SUM	AVG_ABANDON_TIME_SUM	
AVG_ACD_TALK_TIME	AVG_ACD_TALK_TIME	call-based in R3; interval-based in R2
AVG_ACD_TALK_TIME_HH	AVG_ACD_TALK_TIME	
AVG_ACD_TALK_TIM_SUM	AVG_ACD_TALK_TIM_SUM	call-based in R3; interval-based in R2
AVG_ACD_TT_HH_SUM	AVG_ACD_TALK_TIM_SUM	
AVG_ACW_TIME	AVG_ACW_TIME	R2 calc does not include ACW (After Call Work) extn time; R3 calc does; call-based in R3; interval-based in R2
AVG_ACW_TIME_SUM	AVG_ACW_TIME_SUM	R2 calc does not include ACW extn time; R3 calc does; call-based in R3; interval-based in R2
AVG_ANSWER_SPEED	AVG_ANSWER_SPEED	
AVG_ANSWER_SPEED_SUM	AVG_ANSWER_SPEED_SUM	
AVG_COMP_ACW_TIME	AVG_ACW_TIME	
AVG_COM_TALK_TIME	AVG_ACD_TALK_TIME	
AVG_HOLD_TIME_IN	AVG_TRK_HOLD_TIME_IN	call-based in R3; interval-based in R2
AVG_HOLD_TIME_IN_SUM	AVG_TRK_HOLD_IN_SUM	call-based in R3; interval-based in R2
AVG_HOLD_TIME_OUT	AVG_TRK_HOLD_TIM_OUT	call-based in R3; interval-based in R2
AVG_HOLD_TIM_OUT_SUM	AVG_TRK_HOLD_OUT_SUM	call-based in R3; interval-based in R2
AVG_HUNTANS_TIME	No R3 calculation	maps to (ANSTIME – ANSRINGTIME) / ACDCALLS
AVG_INIT_RING_TIME	No R3 calculation	maps to RINGTIME / RINGCALLS
AVG_RINGABN_TIME	No R3 calculation	maps to ABNTIME / ABNCALLS [agent table only]
AVG_RINGANS_TIME	No R3 calculation	maps to ANSRINGTIME / ACDCALLS
AVG_TALK_TIME_IN	AVG_TALK_TIME_IN	call-based in R3; interval-based in R2
AVG_TALK_TIME_IN_SUM	AVG_TALK_TIME_IN_SUM	call-based in R3; interval-based in R2
AVG_TALK_TIME_OUT	AVG_TALK_TIME_OUT	call-based in R3; interval-based in R2
AVG_TALK_TIM_OUT_SUM	AVG_TALK_TIM_OUT_SUM	call-based in R3; interval-based in R2
AVG_TERM_RING_TIME	No R3 calculation	maps to RINGTIME / RINGCALLS

Table B-10: Calculation Migration (Continued)

R2 Calculation	R3V8 Equivalent	Notes
AVG_WORK_TIME	No R3 calculation	maps to (I_ACDTIME + I_ACWTIME – I_ACWINTTIME – I_ACWOUTTIME) / ACDCALLS
AVG_WORK_TIME_SUM	No R3 calculation	maps to sum(I_ACDTIME + I_ACWTIME – I_ACWINTTIME – I_ACWOUTTIME) / sum(ACDCALLS)
CALLS_OFFERED	No R3 calculation	maps to database item CALLSOFFERED
DNTIME	No R3 calculation	maps to database item INTIME
EXT_CALL_IN	EXT_CALL_IN	call-based in R3; interval-based in R2
FULLTIME_AGENT	AVG_POS_STAFF	
FULL_AG_NUM_CALL	CALLS_PER_POS	
HR_STAFF_TIME	No R3 calculation	maps to I_STAFFTIME / 3600
HUNTABANDON	No R3 calculation	maps to ABNCALLS – ABNRINGCALLS
HUNTANSTIME	No R3 calculation	maps to ANSTIME – ANSRINGTIME
INCOMING_CCS	No R3 calculation	maps to INTIME / 100
MIN_STAFF_TIME	No R3 calculation	maps to I_STAFFTIME / 60
NUM_CALL_IN	No R3 calculation	maps to ACDCALLS / MAXSTAFFED
NUM_CALL_OUT1	No R3 calculation	maps to INTERVAL * 60 * ((AUXOUTCALLS + ACWOUTCALLS) / (I_STAFFTIME – I_AUXTIME))
NUM_CALL_OUT2	EXT_CALL_OUT	call-based in R3; interval-based in R2
OUTGOING_CCS	No R3 calculation	maps to OUTTIME / 100
PERCENT_ACD_TIME	PERCENT_ACD_TIME	
PERCENT_ACD_TIME_SUM	PERCENT_ACD_TIME_SUM	
PERCENT_AUX_WORK	PERCENT_AUX_WORK	
PERCENT_AUX_WORK_SUM	PERCENT_AUX_WORK_SUM	
PERCENT_BUSY_ALL	PERCENT_ALL_BUSY	
PERCENT_BUSY_ALL_SUM	PERCENT_ALL_BUSY_SUM	
PERCENT_CALL_ABAN	PERCENT_CALL_ABAN	R3V2 calculation includes all calls offered; R2 calculation includes only answers, abandons and outflows
PERCENT_CALL_ANS	PERCENT_CALL_ANS	R3V2 calculation includes all calls offered; R2 calculation includes only answers and abandons
PERCENT_CALL_ANS_SUM	PERCENT_CALL_ANS_SUM	R3 calc includes all calls offered; R2 calc includes only answers and abandons
PERCENT_MAINT_TIM	PERCENT_MBUSY	
PERCENT_MAINT_TM_SUM	PERCENT_MBUSY_SUM	
PERCENT_SERV_LEVL	PERCENT_SERV_LVL_SPL	

Table B-10: Calculation Migration (Continued)

R2 Calculation	R3V8 Equivalent	Notes
PERCENT_STAFF_IN	No R3 calculation	maps to 100 * (I_ACDTIME + I_ACWTIME – I_ACWINTIME – I_ACWOUTTIME) / I_STAFFTIME
PERCENT_STAFF_OUT	No R3 calculation	maps to 100 * (I_ACWOUTTIME + I_AUXOUTTIME) / I_STAFFTIME
SEC_STAFF_TIME	No R3 calculation	maps to I_STAFFTIME
TRKBUSY	No R3 calculation	maps to INTIME + OUTTIME
V_AVG_ANS_SPEED_SUM	AVG_ANSWER_SPEED_SUM	

Appendix C: Fixing Migrated R2 Custom Reports

Not all Release 2 (R2) custom reports work after you migrate them to *CentreVu*® Call Management System Release 3 Version 8 (CMS R3V8). Migrated R2 custom reports run more slowly than R3V8 reports and may appear different than the R2 versions. This appendix describes some of the steps you can do to get the migrated R2 custom reports working in R3V8.

To make the necessary changes to the migrated custom reports, you should have attended custom report training. Also, have a copy of the *CentreVu*™ *CMS R3V5 Custom Reports* (585-215-822) document on hand as you go through the steps in this appendix.

During long custom report editing sessions, you should occasionally execute the `Save design` option to ensure that all report changes are kept. Before the last `Save design`, execute the `Test design` option and, if necessary, make corrections until no errors are found.

Complete the following steps to fix your R2 migrated custom reports:

Step 1: Move Misplaced Text

CentreVu CMS R3V8 does not allow repeated rows above a nonrepeated row. If an R2 custom report contains repeated rows above a nonrepeated row, the migration program swaps these rows so the repeated rows are at the bottom of the migrated report. This swapping may cause heading labels to be off, especially for real-time reports that combine agent and split data. Use the `Move block` action list option on the Screen Painter to move text to its appropriate location.

Step 2: Fix Report Input Fields

1. Check input field length.

   In migrated custom report input windows, the length of input fields is 10. Since synonyms or split names may be up to 20 characters long, you may want to lengthen the input fields to accommodate these entities.

2. Combine two input fields.

   It is more efficient to replace two input fields of a migrated R2 custom report with one input field defined as a range. R2 Daily reports, for instance, have two input fields—FIRST_INTERVAL and LAST_INTERVAL—to display the start time and the end time of data in a report. To fix these reports, replace the two input fields with a single input field “Times.” Define “Times” as a range (Range/List=y), and select “Time (point in time)” in the Type field. Instead of entering the first and last interval to run the report, you enter a range of time (for example, 7:30AM-5:00PM).

   You can use the same method to fix input fields of migrated R2 weekly and monthly reports. Replace the input fields START_DAY and NUMBER_OF_DAYS with one input field “Dates.” Define “Dates” as a range, and select “Date” in the Type field.

   When replacing two input fields with one, you must also change the row search criteria that reference the input fields. That is, if you delete an input field, you must also delete the “where” clauses that use that input field’s variable. If you change an input field to accept a range, you must ensure that the “where” clauses that use that input field’s variable use only an equals sign (=).

3. Fix input values displayed on a report.

   When an R2 custom report is migrated to R3V8 and an input field value is displayed on the report, a separate `Row search ID` is assigned to display that value. For example, an input field is Split Number and that Split Number appears on the report. It is more efficient to use the `Variable/time/date` option on the Screen Painter to display input field values on a report. By using this option, you reduce the number of queries to the database, thus, reducing the time it takes to run the report.

   Complete these steps to use the Var/Time/Date window to display an input field value on a report:

   a. On the Screen Painter, select `Define input`. Select the `List all` action list option for the `Variable name` field. Obtain the name of the variable to be displayed on the report.

      NOTE:

      Check that the input field is the appropriate length for the value the field will be accepting. This is the length that will appear on the report. Lengthen or shorten the input field accordingly.

   b. Return to the Screen Painter and use the `Erase block` action list option to remove the report field.

   c. Select the `Variable/Time/Date` action list option.

   d. Move the cursor to the `Display input variable` option, and enter `x` to select. Enter the variable name (obtained in Step 2.3a) in the associated field.

   e. Select the `Save` action list option.

Step 3: Fix Report Fields

1. Fix time fields.

   Any R2 field that displays time (for example, After Call Work [ACW] time, Automatic Call Distribution [ACD] time) that does **not** contain the division operator " / " is migrated to R3V8 as a "time" field. The format for the time is set depending on the type of report: real-time reports are set to minutes and seconds (mm:ss), and historical reports are set to hours and minutes (hh:mm).

   Any R2 field that contains an expression with the division operator, or any R2 field that contains a calculation name (for example, AVG_ANSWER_SPEED), is migrated to R3V8 as a "numeric" field. When reports are run with numeric fields representing time fields, the data displayed is number of seconds. In other words, an average speed of answer of 2 minutes is displayed as `20`. If you want these fields to be time fields, you must manually change the fields' type and format.

2. Adjust precision.

   If an R2 field contains an expression that uses the division operator (for example, ACDTIME/ACDCALLS), the precision is migrated and set on the R3V8 report. Unlike R2 CMS, R3V8 does not automatically set precision for calculation names that contain division (for example, PERCENT_CALLS_ANS). In migrated custom reports, therefore, precision is not set for fields that contain a calculation name that uses division. You need to manually enter the desired precision (decimal places) for these fields.

NOTE:

In R3V8, the field length includes the decimal point. For example, to display "100.00" on a report, the field on the Screen Painter must be 6 characters long with the decimal digits set to 2.

3. Change database items.

   NOTE:

   Appendix B, “Data Migration Tables,” contains the R3V8 equivalent database items and calculations for R2 database items. The R3V8 equivalents will appear in the migrated custom reports.

   Administrable Service Level Increments — For R3V8 call profile reports, you can administer each of the first nine service level increments to variable time lengths. Some migrated R2 call profile reports may use PERIOD1 and multiply that database item to get different service levels. You may want to modify these reports to use the R3V8 administrable service level increments (PERIOD1-9 database items).

   Number of Calls in Queue — For R2 Split, VDN, and Vector real-time reports, the database item for number of calls in queue is QUECALLS. When these reports are migrated, QUECALLS is mapped to the calculation INQUEUE+INRING. This mapping is acceptable for split reports but not for VDN and Vector reports. For real-time VDN reports, the number of calls in queue is the calculation INPROGRESS–ATAGENT. For Vector reports, the number of calls in queue is the database item INQUEUE. You need to manually change the calculation INQUEUE+INRING to the appropriate data expression in any migrated real-time VDN or Vector custom report.

4. Sum data for multiple agent logins.

   Agents can be logged into multiple splits/skills on Generic 3 switches. Historical Agent reports not run for a specific split will show multiple rows of data for an agent that was logged into more than one split. You will probably want to “sum” the data across all splits an agent logs into to display one row of data per agent.

   In addition, when an agent logs out and logs back in within the same interval, Interval reports will show multiple rows of data for each agent login session. You may want to “sum” the data for the interval to display one row of data per interval.

Step 4: Fix the Row Search Window

1. Sort data in a report.

   If you want your data sorted in a specific order, you must add `Order by` criteria in the Row Search window. For example, if a report displays data for multiple days, the data will not be ordered by the date unless you specify ROW_DATE in the `Order by` field.

   Similarly, if you want the data ordered by time in interval reports, specify STARTTIME in the `Order by` field.

2. Fix multiple row search IDs.

   Each `Row search ID` in a custom report represents a query to the database. The more `Row search IDs` in a report, the more time it takes to run the report. Sometimes migrated custom reports have multiple `Row search IDs` in the same row. For example, the row on the Screen Painter might look like this:

   ```
   SPLIT                ACDTIME  ACDCALLS  ACWTIME  AUXTIME
   ---------------------------------------------------------
   0xxxxxxxxxxxxxxxxx   1xxxxxx  1xxxx     1xxxxxx  1xxxxx
   ```

   > In the above example, `Row search ID 0` and `Row search ID 1` query the same database table (dsplit). It is more efficient to remove the SPLIT field from `Row search ID 0` and reassign it to `Row search ID 1` with the other fields.

   After the reassignment, the row on the Screen Painter would look like this:

   ```
   SPLIT               ACDTIME  ACDCALLS  ACWTIME  AUXTIME
   ---------------------------------------------------------
   1xxxxxxxxxxxxxxxx   1xxxxxx  1xxxx     1xxxxxx  1xxxxx
   ```

   This reduces the number of queries to the database, thus, reducing the time it takes to run the report.

   Multiple Row search IDs may be necessary in the same row when the report contains data from different database tables (for example, data from split/skill and VDN tables).

   Separate Row Search for Agent Login ID — Agent reports often have a separate `Row search ID` for the Agent Login ID field (the login ID field is the only field assigned to the `Row search ID`). This may cause the display of the agent login ID and the associated data to be misaligned. The alignment can be corrected and the report made more efficient by removing the login ID from its current `Row search ID` and assigning it to the `Row search ID` of the remaining fields.

3. Change tables for weekly and monthly reports.

   CentreVu CMS R3V8 stores data in intrahour, daily, weekly, and monthly tables. The weekly and monthly tables are used in *CentreVu* CMS R3V8 for weekly and monthly reports where the report shows one row of data for the entire week or month. Migrated R2 weekly and monthly reports use the daily database tables which show multiple rows of data for the week or month. To make these R2 weekly and monthly custom reports more efficient and more consistent with *CentreVu* CMS R3V8, you may want to change them to use the weekly and monthly tables.

   To change tables in a report, you must change the table name in the `From table(s)` field of the Row Search window and in the `Select` field of the Field window.

   Also, if you want multiple days in the report, weekly or monthly reports that use intrahour tables (for example, hagent, hsplit, htkgrp, etc.) should be modified to use daily database tables so the reports will run faster.

Step 5: Add Highlighting

Video attributes set on R2 custom reports are **not** migrated to *CentreVu* CMS R3V8. You may want to set any highlighting for migrated custom reports.

Step 6: Define No-Scroll Regions

The no-scroll (stationary) regions are not set on migrated reports. You may want to set the no-scroll regions on those migrated reports you might display on the terminal.

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