Lucent Technologies
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CentreVu™ **Call Management System**
Release 3 Version 5
Upgrades and Migration

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Developed by the Lucent Technologies Customer Training and Information Products Organization

CentreVu™ Call Management System
Release 3 Version 5
Upgrades and Migration

Table of Contents

Preface

List of Tables

Overview

This document—*CentreVu*™ *CMS R3V5 Upgrades and Migration* (585-215-826)—is written for technicians and Lucent Technologies Call Center customers. This document provides instructions for upgrading and updating CMS software and for migrating CMS data.

Audience

The primary audiences for this document are as follows:

- The customer CMS administrator

- Technical Service Center (TSC) engineers who provision the CMS and provide customer support

- Lucent Technologies field technicians who install the CMS host computer.

Terminology

This document uses the following terminology:

Sun * **SPARCserver**† **Platform** refers to the *Sun SPARCserver* 5, 10, and 20 computers, which may run R3V2 CMS, R3V4 *CentreVu* CMS, or R3V5 *CentreVu* CMS software.

INTEL‡ **Platform** refers to the 3332, the *StarServer*, the 6386/33S, and the 6868/25S computers. These platforms may run R3.0, R3V1, R3V2, CMS R3V4, or CMS R3V5 software. (You should note, however, that the *StarServer*, the 6386/33S, and the 6868/25S computers support R3V5 only as a bug fix to R3V4.)

3B2 Platform refers to the 3B2 computer which runs the R2 CMS software application.

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‡*INTEL* is a registered trademark of Intel, Corp.

Organization of Document

This document is organized as follows:

Chapter 1	Introduction
Chapter 2	Processes and Procedures
	This chapter discusses general CMS and *UNIX** processes and procedures that you may be required to perform during the upgrade or data migration.
Chapter 3	Upgrading a *Sun SPARCserver* Platform
	This chapter discusses how to upgrade existing CMS software on a *Sun SPARCserver* platform, including upgrading to R3V5 from a previous CMS version, patching an existing R3V5 load, and upgrading a Generic 2.2 switch from non-EAS to EAS.
Chapter 4	Migrating Data to a New *Sun SPARCserver* Computer
	This chapter discusses how to migrate data from a 3B2 computer, from an *INTEL* platform, or from an older *Sun SPARCserver* 5, 10, or 20 system to a newly purchased *Sun SPARCserver 5* or *SPARCserver* 20 system.
Chapter 5	Upgrading an *INTEL* Platform
	This chapter describes how to upgrade existing CMS software on an *INTEL* platform, including upgrading to R3V5 from a previous CMS version, updating existing R3V5 software, and upgrading a Generic 2.2 switch from non-EAS to EAS.
Chapter 6	Troubleshooting
	This chapter discusses migration logs for data migrations to R3V5, migration error messages, and troubleshooting *Solstice DiskSuite*† installations.
Appendix A	Fixing Migrated R2 Custom Reports
	This appendix describes some of the steps you can do to get the migrated R2 custom reports to work in R3V5.
Appendix B	Data Migration Tables
	This appendix shows how the R3 CMS data and the R2 CMS data are migrated to the R3V5 system.

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

Conventions

Table P-1 is an example of the text style conventions used in this book..

Table P-1: Style Conventions

Use	When

`Constant Width`	• In general, anything seen on the screen/window is in `Constant Width` including field entry items. For example:
	
	  In the `Calculation name:` field, enter `ACDTIME/ACDCALLS`.
	
	  Select `Dictionary` from the CMS Main Menu.
	
	  The `Options >` menu appears.
	
	• `Constant width` is used when something is quoted from the system (`Add, field names`).

Italic	• References to other documents are in italics. For example: See the *CentreVu™ Call Management System R3V5 Custom Reports* (585-215-822) document for more information. • References to file names and directories are in italics. For example, */cms, root*. • Trademarks are in italics.
Quotes	Chapter and section cross-references are in plain text; titles are quoted: • See Chapter 3, "User Interface," for more information. • See the "Removing a Software Package" section in this chapter.
Initial Caps	References to windows and subsystems, are initial cap. • In the ACD Administration: Activate Agent Trace window... • Set access permissions for CMS users from the User Permissions subsystem.

Custom symbols	• Custom symbols are used to represent screen-labeled keys (SLKs), Return keys, and Shift keys. For example:
	
	  `Return`, `Esc`, `Shift`, `J`, and others.
	
	• Notes are separated from other text and are marked by a note icon:
	
	  Note

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- Using the registered trademark or the trademark as a proper adjective modifying the common name of the product or service — never using the registered trademark or the trademark as a noun.

Related *CentreVu* CMS Publications

These documents are available for the *CentreVu* CMS R3V5 product:

- *CentreVu™ Call Management System Release 3 Version 5 Administration, Issue 1* (585-215-820)

- *CentreVu™ Call Management System Release 3 Version 5 Reports, Issue 1* (585-215-821)

- *CentreVu™ Call Management System Release 3 Version 5 Change Description* — request the current issue (585-215-823)

- *CentreVu™ Call Management System Release 3 Version 5 External Call History Interface* Issue 1 (585-215-824)

- *CentreVu™ Call Management System Release 3 Version 5 Sun® SPARCserver™ Computers Installation and Maintenance* Issue 1 (585-215-827).

The following documents are also available to aid in the upgrade and migration process:

- *CMS Release 3 Version 2 Installation and Maintenance* (585-215-122)

- *CMS R3.0 Administration* (585-215-511)

- *CMS R3.0 Installation and Maintenance WGS* (585-215-112).

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

CMS Helplines

If an installation problem arises that requires assistance, Lucent Technologies technicians or the customer may call the following numbers:

Customer Number

1-800-242-2121

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

The customer will be prompted to identify the type of problem (ACD, hardware, or CMS R3V5) and will be connected to the appropriate service organization.

Technician Number

1-800-248-1234

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

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

International Support

For International Support contact your Lucent Technologies Representative/Distributor for more information.

Chapter 1
Introduction

List of Tables

General Information

This publication, *CentreVu™ CMS R3V5 Upgrades and Migration* (585-215-826), provides information on how to:

- Perform CMS software upgrades, patches, and updates on the following platforms:

  — *Sun** *SPARCserver*† computers (5, 10, 20)
  — 3332
  — *StarServer*® computer‡
  — 6386/33S‡
  — 6386/25S‡

- Perform CMS data migrations.

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†SPARCserver is a trademark of SPARC International, Inc.
‡Supports R3V5 only as a bug-fix upgrade.

Upgrades, Updates, and Data Migration

You upgrade or update your CMS software to get additional functionality, to fix a problem, or to go to a new release of CMS.

Upgrades

A CMS upgrade involves moving the existing CMS software from one release to another, as in a move from R3V4 to R3V5, or from one load to another, as in a move from the r3v5ab.a load to r3v5ab.b load.

Depending upon which release you upgrade to, you may have to do more than just upgrade the software. You may also need to *migrate* your data, a procedure in which data collected by the older release are processed by the new software so they fit with the new database organization (see below). You may have to upgrade the hardware as well.

Upgrading to R3V5 from an earlier release of CMS *always* requires data migration. For full R3V5 functionality, you also need to be running on a 3332, a *Sun SPARCserver* 5, or a *Sun SPARCserver* 20. If you do not upgrade your hardware, or if you receive R3V5 as a *bug-fix upgrade,* you may install R3V5 on your existing machine, but it will support neither the *Definity*® ECSR5 switch nor any increase in the number of split/skill members your system can accommodate.

Updates and Patches

A CMS update or patch involves modifying existing CMS software *in place* to provide additional functionality or fix a problem. The update and patch processes involve downloading new files from a cartridge tape, a CD, or a World-Wide Web location to the hard disk, installing the new files, and then rebooting.

Data Migrations

The term *data migration* refers to the process of moving CMS data from one release to another. Data migration is necessary when you are moving to a new platform, or when the database organization changes between releases or loads.

Migrations are executed through the `System Setup - R3 Migrate Data` and `System Setup - R2 Migrate Data` options of the CMS Main Menu. The migrated data gives the existing or new platform an initial database from which to operate. The data includes the following:

- system administration data
    - dictionary items (calculations and names [synonyms])
    - timetables and shortcuts (from Release 3.0 [R3.0] and R3Vx of CMS only; Release 2 [R2] CMS schedules are not migrated).

- ACD administration data
    - exceptions (R3 and R3Vx only)
    - split and agent names (synonyms).

- historical data
    - agents, splits/skills
    - trunks, trunk groups
    - vectors, Vector Directory Numbers (VDNs), if applicable.

- custom reports (custom reports may require tuning).

| Note | Custom data items and custom database tables are <u>not</u> migrated. If you have customized your CMS database and you wish to keep the customizations in R3V5, you must do three things: |

- Before upgrading CMS or migrating data, investigate and record the details of any custom items you wish to save.

- When the upgrade and migration are complete, and R3V5 is up and running, create the custom items and tables in *INFORMIX*[a].

- Once the custom items have been created in *INFORMIX*, they can be added into CMS (via the Dict/Database Items/ Custom Items option).

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

Migrating to a Smaller Storage Interval

When you migrate data from a larger storage interval to a smaller one, the data is not migrated down to the smaller interval; all historical data is kept at the same interval at which it was originally collected. New data, of course, will be collected and saved at the smaller interval.

Moving Multiple ACDs

Moving multiple ACDs can cause collisions in the System Administration data. The following items are the potential collisions and their solutions:

- CMS User IDs

    - Before you migrate data, CMS user IDs must be in lowercase letters. This includes any existing R3.0 user IDs with uppercase letters.

    - The migration program does not migrate CMS user IDs that have already been established on the *Sun SPARCserver* Platform. The program reports unmigrated user IDs in the

customer migration log. For these user IDs, the program does not migrate user interface attributes (color options, feature access, default values) from other ACDs. In addition, the migration program moves custom reports, timetables, shortcuts, and menu additions owned by the nonmigrated user IDs to the *cms* user ID.

— *UNIX*[*] system logins for CMS user IDs new to the *Sun SPARCserver* platform are created automatically.

- Custom reports

  — The migration program makes nonunique custom reports (based on report group, report name, and CMS user ID) unique by renaming them. For example, the program renames the first nonunique report *temp1*, the second *temp2*, etc. The program identifies these custom reports in the customer migration log. After the migration, you should change the names of these custom reports to something more meaningful.

  — Timetables/shortcuts using these reports are still migrated but refer to the old custom report names . You need to modify the timetables/shortcuts to access the new report names.

- Timetables/shortcuts

  The migration program renames nonunique timetables or shortcuts to *temp1*, *temp2*, etc., and reports them in the migration log. Change the names of these timetables/shortcuts to something more meaningful, or delete them if they are no longer needed.

- Dictionary

  The migration program discards all calculations and constants with nonunique names. The program reports the discarded names and values in the customer migration log so you can re-enter them.

- Menu additions

  — The migration program discards menu additions that are not unique (based on the menu name and CMS user ID). The program reports discarded menu additions in the customer migration log.

  — Customized executables referenced by menu additions are <u>not</u> migrated. The customer is responsible for saving any such executables before performing the upgrade, and reinstalling them afterward.

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Supported Switch Releases

CMS R3V5 supports the switch release upgrades shown below. You can change the switch release using the `swsetup` command from the `cmssvc` menu. Note that once you change to a new switch release, it may not be possible to change back to the previous release.

Table 1-1: Supported Switch Releases

If the current switch type is...	Then it can be changed to...
System 85-R2V4[a]	R2V4[a], G2.1[a], G2.2, G2.2/EAS, G3r, G3V2, G3V3, G3V4, ECSR5[b]
DEFINITY® System G1.1[a]	G1.1[a], G3i, G3r, G3V2, G3V3, G3V4, ECSR5[b]
DEFINITY System G2.1[a]	R2V4[a], G2.1[a], G2.2, G2.2/EAS, G3r, G3V2, G3V3, G3V4, ECSR5[b]
DEFINITY System G2.2	G2.2, G2.2/EAS, G3r, G3V2, G3V3, G3V4, ECSR5[b]
DEFINITY System G2.2/EAS[c]	G2.2/EAS
DEFINITY System G3i	G3i, G3r, G3V2, G3V3, G3V4, ECSR5[b]
DEFINITY System G3r	G3r, G3V2, G3V3, G3V4, ECSR5[b]
DEFINITY System G3V2	G3V2, G3V3, G3V4, ECSR5[b]
DEFINITY System G3V3	G3V3, G3V4, ECSR5[b]
DEFINITY System G3V4	G3V4, ECSR5[b]
DEFINITY System ECSR5[b]	ECSR5[b]

a. Supported only by the bug-fix upgrade version of R3V5
b. Supported only by the purchased version of R3V5 CMS
c. Migration from G2.2/EAS to G3V2, G3V3, G3V4, or ECSR5 is not an option

| Note | If you are upgrading from a G3iV1 to a G3iV1.1 switch, leave the switch type on the CMS R3V5 set as G3i. If you do change the switch type on the CMS R3V5 to G3V2, make sure to change the CMS type on the switch to R3V5. Changing the settings does not add any features or increase your data capacities. |

> **Note** If you are upgrading from a G3rV1 to a G3rV1.1 switch, leave the switch type on the CMS R3V5 set as G3r unless you have a need for any of the new capacities available from the G3rV1.1. The new capacities are 255 measured splits, 5200 measured agents, and 665 measured trunk groups.
>
> If you want to use the new capacities, change the CMS type on the switch to R3V5 and the switch type on the CMS to G3V2. If you change the CMS and switch types, CMS vector contents will allow you to type in the "converse" vector step, but the switch will not accept a vector with this step.

Supported CMS Software Releases

The *CentreVu* CMS R3V5 supports migration from these CMS software loads:

- Release 2 CMS: Load 2.31, EDI Issue 1.4 or later
- Release 3 CMS: Load 3.2m5.1, EDI Issue 1.5 or later
- Release 3 Version 2 CMS: Load 31amh, EDI Issue 1.2 or later.
- Release 3 Version 4 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 will be able to upgrade to R3V5.

Supported Disk Drive Configurations

CMS supports any legal disk drive configuration. A system with the *Solstice DiskSuite*[*] package, however, is restricted to the following disk drive configurations:

- One 2.1-GB internal disk drive
- Two 1.05-GB internal disk drives
- One 1.05-GB and one 2.1-GB internal disk drive
- Two 2.1-GB internal disk drives
- Any of the preceding, plus as many as ten external disk drives

Note that the *Solstice DiskSuite* software does not support a CMS system with only one 1.05-GB internal disk drive.

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

Choosing an Upgrade Procedure

This publication contains a number of possible upgrade scenarios, with and without data migration procedures. The table below presents the scenarios covered in this manual and, for each one, lists a corresponding upgrade procedure and tells you where in the manual to find it.

When considering which procedures to follow, remember that installing the *Solstice DiskSuite* package requires that you repartition your disks, which may take some time. The package is required, however, only by users who must administer more than 5200 split/skill members.

Table 1-2: Upgrade Scenarios

If your R3V5 machine is ...	... and you are ...	... then use the procedures in these sections:
a *Sun SPARCserver* system	upgrading (without *Solstice DiskSuite*) from an earlier version of CMS (includes bug-fix versions of V5)	"Preupgrade Procedure" on page 3-2, followed by "Step 7: Do a CMSADM Backup" on page 3-10
	upgrading (with *Solstice DiskSuite*) from an earlier version of CMS	"Preupgrade Procedure" on page 3-2, followed by "Upgrading to R3V5 (10,000-agent Capacity)" on page 3-33
	patching the current load	"Patching CentreVu CMS" on page 3-112
	upgrading from a previous V5 load	"Upgrading the R3V5 Base Load" on page 3-117
	transferring data from a previously owned *INTEL*[a] system	"Migrating Data from INTEL to Sun" on page 4-27
	transferring data from a previously owned *Sun* system	"Migrating Data between Sun SPARCserver Computers" on page 4-50
an *INTEL* system	upgrading from a previous version of CMS (includes bug-fix versions of R3V5)	"Upgrading to R3V5 from a Previous Release of CMS" on page 5-5
	upgrading from a previous R3V5 load	"Upgrading the R3V5 Base Load" on page 5-18
	updating the current load	"Updating an INTEL Platform" on page 5-25

a. INTEL is a registered trademark of Intel, Corp.

Chapter 2
Common Processes and Procedures

List of Figures

List of Tables

Overview

This chapter discusses functions you may be called upon to perform during an upgrade or data migration. The topics discussed include the following:

- Loading a CD into a CD-ROM drive
- Displaying CMS software information
- Checking data storage and free space allocations
- Displaying switch and authorization information
- Turning CMS on and off
- Turning data collection on and off
- Selecting ACDs
- Performing CMSADM backups
- Setting up CMS
- Installing CMS feature packages
- Using the CMS Migrate Data and Backup Data windows.

Loading or Unloading a CD-ROM Drive

Loading the Drive

Follow this procedure to load a compact disk into a CD-ROM drive.

1. If you have an external CD-ROM drive, follow steps a through c, below. Otherwise, go to Step 2.

   a. Place the CMS CD-ROM in the CD-ROM caddy so the CD label faces up.

   b. Insert the CD-ROM caddy into the CD-ROM drive slot.

   c. The CD is now loaded and ready to use.

2. Open the CD-ROM drive tray by pressing the Eject button on the CD-ROM drive unit.

   > **Note** If there is already a CD in the drive, you must enter the following command to open the CD tray:
   >
   > ```
   > eject  cdrom
   > ```

3. Gently press the CD in place in the CD-ROM disk tray. When the CD is properly inserted in the disk tray, the label faces up.

4. Push the CD-ROM drive tray back into the drive unit until it closes.

Unloading the Drive

When you are finished with the CD currently loaded in the CD-ROM drive, follow this procedure to remove it:

1. Enter an `eject cdrom` command:

   ```
   #  eject  cdrom
   #
   ```

2. Remove the CD from the CD-ROM drive, and store the CD in its case or sleeve..

Displaying CMS-Related Software Information

To display a list of the CMS software packages installed on your system, enter a `pkginfo` command (*Sun*[*] *SPARCserver*[†] computers) or `displaypkg` command (*INTEL*[‡] platforms*)*:

```
# pkginfo -x cms.*    (Sun SPARCserver)

# displaypkg         (INTEL)
```

Your system responds by listing all the CMS packages that have been installed. The precise format of that list depends on your system. *Sun SPARCserver* computers respond in this format:

```
cms           Lucent Technologies CentreVu(TM)Call Management System
              (sparc) r3v5xx.x
#
```

INTEL computers respond in this format:

```
The following software packages have been installed:
Lucent Technologies CentreVu(TM) Call Management System (r3v5xx.x)
   .
   .
   .
#
```

If more than one package is listed, you know that at least one field update has been installed.

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[*]*Sun* is a registered trademark of Sun Microsystems, Inc.
[†]*SPARCserver* is a registered trademark of Sun Microsystems, Inc.
[‡]*INTEL* is a registered trademark of Intel, Corp.

Displaying Switch Information

1. Log into the system as `root`.

2. Type `cmssvc` and press **Return**:

```
# 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 **Return**.

   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-G3V5
        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 Return:

```
# 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: R3V5

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 ⒡⒊.

   The Commands menu displays:

   ```
   Print window
   Password
   UNIX(r) system
   Options >
   ```

2. Select `Print Window.`

3. Press `Return`.

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

1. Log in to CMS by entering the following commands:

```
# su -cms
$ cms
```

The system responds by displaying the CMS main menu. For
example:

```
        Main Menu

Reports>
Dictionary>
Exceptions>
ACD Administration>
Custom Reports>
User Permissions>
System Setup>
Maintenance>
Logout
;
```

2. Select System Setup and press Return.

The System Setup menu displays:

```
02/20/95 08:30              CentreVu(TM) CMS                    Wind

        Main Menu
Reports >
Dictionary >
Exceptions >
Forecast >
ACD Administration >
Custom Reports >
User Permissions >
System Set    Switch Setup
              Pseudo-ACD Setup
Maintenanc    Load Pseudo-ACD Data
              Data Storage Allocation
Logout        Free Space Allocation
;             Storage Intervals
              Main Menu Addition
              CMS State
              Data Collection
              External Application Status
              Data Summarizing
              R3 Migrate Data
              R2 Migrate Data
```

3. Select `Free Space Allocation` and press `Return`.

    The system displays the free space allocation screen for your system setup. For example:

```
04/26/95 07:30 PM          CentreVu(TM) CMS        Window: 1 of 10

 System Setup: Free Space Allocation                        All ACDs

 Status:                                                   Modify
                         Blocks                   Blocks      %
 File system for:       Required  File system     Avail     Avail
 Agents:        /cms1    351099   /cms             2313      0.6
 Agent Trace:   /cms       4096   /cms1         1561645     81.0
 Call wrk codes:/cms         64
 Call records:  /cms         16
 Exceptions:    /cms        112

 Login/logout:  /cms       5236
 Splits/skills: /cms      45414
 Trunk Groups:  /cms1     14557
 Trunks:        /cms     123700
 VDNs:          /cms      45477
 Vectors:       /cms      22899
```

A minus sign before, or parentheses around, a number under `Blocks Available` indicates a negative number, and means that more blocks are required than are available.

Checking the Storage Interval Size

1. Log in to CMS by entering the commands:

```
# su -cms
$ cms
```

The system responds by displaying the CMS main menu. For example:

```
          Main Menu

  Reports>
  Dictionary>
  Exceptions>
  ACD Administration>
  Custom Reports>
  User Permissions>
  System Setup>
  Maintenance>
  Logout
  ;
```

2. Select System Setup and press `Return`.

   The System Setup menu displays:

```
02/20/95 08:30              CentreVu(TM) CMS                    Wind

          Main Menu
  Reports >
  Dictionary >
  Exceptions >
  Forecast >
  ACD Administration >
  Custom Reports >
  User Permissions >
  System Set  Switch Setup
              Pseudo-ACD Setup
  Maintenanc  Load Pseudo-ACD Data
  Logout      Data Storage Allocation
  ;           Free Space Allocation
              Storage Intervals
              Main Menu Addition
              CMS State
              Data Collection
              External Application Status
              Data Summarizing
              R3 Migrate Data
              R2 Migrate Data
```

3. Select `Storage Intervals` and press `Return`.

The system displays the Storage Intervals screen for your system. For example:

```
System Setup: Storage Intervals              g3v5_eas

 ┌──────────────────────────────────────────────┐
 │ Intrahour interval (Select one):     │ Modify │
 │           <_> 15 minutes             └────────┤
 │           <x> 30 minutes
 │           <_> 60 minutes
 │
 │ Data Summarizing time:   12:35 AM
 │ Switch time zone offset (-23 to +23): 0
 │
 │ Week start day        Week stop day
 │ (Select one):         (Select one):
 │   <x> Sunday            <_> Sunday
 │   <_> Monday            <_> Monday
 │   <_> Tuesday           <_> Tuesday
 │   <_> Wednesday         <_> Wednesday
 │   <_> Thursday          <_> Thursday
 │   <_> Friday            <_> Friday
 │   <_> Saturday          <x> Saturday
 │
 │ Daily start time: 12:00 AM
 │ Daily stop time:  11:59 PM
 └──────────────────────────────────────────────┘
```

Checking Data Storage Allocation Parameters

1. Log in to CMS by entering the following commands:

```
# su -cms
$ cms
```

The system responds by displaying the CMS main menu. For example:

```
        Main Menu

Reports>
Dictionary>
Exceptions>
ACD Administration>
Custom Reports>
User Permissions>
System Setup>
Maintenance>
Logout
;
```

2. Select System Setup and press **Return**.

The System Setup menu displays:

```
02/20/95 08:30              CentreVu(TM) CMS                    Wind

         Main Menu
Reports >
Dictionary >
Exceptions >
Forecast >
ACD Administration >
Custom Reports >
User Permissions >
System Setup >      Switch Setup
Maintenance >       Pseudo-ACD Setup
Logout              Load Pseudo-ACD Data
;                   Data Storage Allocation
                    Free Space Allocation
                    Storage Intervals
                    Main Menu Addition
                    CMS State
                    Data Collection
                    External Application Status
                    Data Summarizing
                    R3 Migrate Data
                    R2 Migrate Data
```

3. Select `Data Storage Allocation` and press `Return`.

   The system displays data storage allocation parameters for the current ACD. For example:

```
04/26/95 07:30 PM              CentreVu(TM) CMS              Window: 1 of 10

 System Setup: Data Storage Allocation                          g3v4_acd1
 Warning: Print a copy of this window prior to modifying      Modify

                         # of    Days of   Days of   Weeks of  Months of
 Data Item:              Items   Intrahour  Daily    Weekly    Monthly
 Splits/Skills (0-255)     30      31        387        0         0
 Agents                            31        387        0         0
 Trunk Groups (0-656)      20      31        387       53        13
 Trunks (0-3650)         2000      31        387       53        13
 Call work codes (1-1969)  20      31        387       53        13
 Vectors (0-512)          512      52        387       53        13
 VDNs (0-2000)           1000      62        547       53        13
 Shift 1 Times: 12:00 AM - 11:59 PM Maximum agents logged in: 1736
 Shift 2 Times: _____ - _____ Maximum agents logged in: ____
 Shift 3 Times: _____ - _____ Maximum agents logged in: ____
 Shift 4 Times: _____ - _____ Maximum agents logged in: ____
 Total split/skill members, summed over all splits/skills (0-5200): 5200
 Number of agent login/logout records (0-999999): 365000
 Number of unmeasured trunk facilities: 300
 Number of exception records (0-2000): 500
 Number of call records (0-5000 ): 0
```

Turning CMS On and Off

Do the following to stop or restart the *CentreVu* CMS software:

1. Access the *CentreVu* CMS Administration menu by entering:

```
# cmsadm
```

The system displays the 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
   3) backup      Filesystem backup
   4) diskmap     Estimate disk requirements
   5) memory      Estimate memory requirements
   6) realtime    Estimate real-time report refresh rate
   7) pkg_install Install a feature package
   8) pkg_remove  Remove a feature package
   9) run_cms     Turn CentreVu CMS on or off
Enter choice (1-9) or q to quit:
```

2. Enter the number of the `run_cms` option. The system responds:

```
Select one of the following
1) Turn on CMS
2) Turn off CMS
Enter choice (1-2):
```

3. Enter `1` to turn *CentreVu* CMS on, or `2` to turn it off. The system responds by printing a series of messages about starting (or stopping) the X.25 software. For example:

```
Turning on X.25, please wait

Starting the X.25 software — please wait
X.25 has found a valid license
The network has been brought up.
Please wait for initialization.

***CMS is now up***

#
```

When the system prompt returns to your screen, CMS has started (or stopped) running.

Turning Data Collection On or Off

To turn on or turn off data collection by an ACD, do this:

1. Log in to CMS. The CMS Main Menu displays:

```
02/20/95 08:30              CentreVu(TM) CMS

        Main Menu
  Reports >
  Dictionary >
  Exceptions >
  Forecast >
  ACD Administration >
  Custom Reports >
  User Permissions >
  System Setup >
  Maintenance >
  Logout
  ; _____
```

2. Select the `System Setup` option and press `Return`. The System Setup menu appears:

```
02/20/95 08:30              CentreVu(TM) CMS

        Main Menu
  Reports >
  Dictionary >
  Exceptions >
  Forecast >
  ACD Administration >
  Custom Reports >
  User Permissions >        Switch Setup
  System Setup >            Pseudo-ACD Setup
  Maintenance >            Load Pseudo-ACD Data
  Logout                   Data Storage Allocation
  ; _____        Free Space Allocation
                           Storage Intervals
                           Main Menu Addition
                           CMS State
                           Data Collection
                           External Application Status
                           Data Summarizing
                           R3 Migrate Data
                           R2 Migrate Data
```

3. Select `Data Collection` and press `Return`. The `System Setup:` `Data Collection` window displays:

```
04/26/95 07:30 PM            CentreVu(TM) CMS      Window: 1 of 10

 System Setup: Data Collection                        All ACDs

                                                    ┌──────────┐
   ACD:_____    │ Find One │
                                                    │ List All │
   Data Collection (Select one):                    │ Modify   │
          <x> On                                    │ Next     │
          <_> Off                                   │ Previous │
                                                    └──────────┘
```

4. Type the name or number of the ACD for which you want to turn data collection on or off.

   As an alternative, you can press `Return` 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 `Return`.

7. Select `Modify` and press `Return`. You are prompted to confirm your choice.

Changing the CMS User Mode

To change CMS to single-user or multi-user mode, do this:

1. From the CMS Main Menu, select the `System Setup` option and press `Return`. The System Setup menu appears:

```
 02/20/95 08:30                    CentreVu(TM) CMS

         Main Menu
  Reports >
  Dictionary >
  Exceptions >
  Forecast >
  ACD Administration >
  Custom Reports >
  User Permissions >
  ........................    Switch Setup
  System Setup >              Pseudo-ACD Setup
  ........................    Load Pseudo-ACD Data
  Maintenance >               Data Storage Allocation
  Logout                      Free Space Allocation
  ; _____          Storage Intervals
                              Main Menu Addition
                              CMS State
                              Data Collection
                              External Application Status
                              Data Summarizing
                              R3 Migrate Data
                              R2 Migrate Data
```

2. Select `CMS State` and press `Return`. The `System Setup: CMS State` window displays:

```
 System Setup: CMS State                      All ACDs

  CMS user mode (Select one):                Modify
        <x> Single-user mode
        <_> Multi-user mode


 Master ACD for clock synchronization: ACD1
```

3. 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.

Note	In order to change the master ACD, data collection must be turned off for all ACDs in the system.

4. Press `Return` 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:

```
Print window
Password
UNIX(r) system
Options >
```

2. Select `Options>` and press **Return**. The Options submenu displays:

```
Color
Default printer
Exceptions notification
Log out with open windows
Current ACD
Save as default
Restore system default
```

3. Select `Current ACD` and press **Return**. A "Current ACD" window displays.

```
Current ACD                          g3v4_acd1
                                   ┌──────────┐
                                   │ Find one │
   User ID  cms                    │ List all │
   Current ACD: _____        │ Modify   │
                                   │ Next     │
                                   │ Previous │
                                   └──────────┘
```

4. In the `Current ACD` field, type the number or name of the ACD to be selected.

5. Press **Return**.

The cursor moves to the Action List.

```
Current ACD                    g3v4_acd1
                              ┌─────────┐
                              │Find one │
                               List all
 User ID  cms                  Modify
 Current ACD:  _____         Next
                              ─Previous
```

6. Select Modify and press **Return**.

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 2-26).

Doing a CMSADM Backup on an *INTEL* System

The number of cartridge tapes required to back up the *CentreVu* CMS software varies depending on how many file systems the *CentreVu* CMS software resides on:

- */cms* is on disk drive 1.

- */cms1* is on disk drive 2, if equipped.

- */cms2* is on disk drive 3, if equipped.

- */cms3* is on disk drive 4, if equipped.

- */cms4* is on disk drive 5, if equipped.

To back up the file systems from the *UNIX*[*] system environment, do the following:

1. Log in as *root* at the system console, and execute the following command:

   ```
   # lp /etc/fstab
   ```

   Save the printout; you will need it at the conclusion of this procedure.

2. In the multi-user state, execute the following command:

   ```
   # cmsadm
   ```

---

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The *CentreVu* CMS Administration menu displays:

```
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 forecasting package
8) pkg_remove   Remove forecasting package
9) run_cms      Turn CMS On or Off Enter choice
Enter choice (1-9) or q to quit:
```

3. Enter the number of the `backup` option.

   The system displays a `Calculating....` message while it calculates the number of tapes that will be required. Then it displays this:

```
System Message

The backup will need approximately:
xx cartridge tape(s) for a 60MB drive or
xx cartridge tape(s) for a 120MB drive or
xx cartridge tape(s) for a 320MB drive or
xx cartridge tape(s) for a 525MB drive

Please insert the first cartridge tape. Be sure to number the
cartridge tape(s) consecutively in the order they will be
inserted.


Strike ENTER when ready.
```

4. Insert the first tape into the tape drive and press **Return**.

   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
DEL to quit.
```

5. Press ⟨**Return**⟩. The system proceeds with the backup, displaying dots on the screen to indicate that it is running.

   The system will inform you if it needs another tape. When you insert the next tape, allow the tape to rewind and reposition before you press ⟨**Return**⟩.

   When the system is through backing up, it begins a process that verifies the tapes just written. For example:

```
Backing up files...............
..............................
      .
      .
..............................
..............................
XXXXXX blocks

Tape Verification

Insert the first tape
Press Return to proceed
```

6. Reinsert the first backup tape into the drive and press ⟨**Return**⟩.

   The system starts verifying tapes, stopping only to prompt for subsequent tapes. When it has verified all the tapes, it returns you to the system prompt. For example:

```
Tape Verification

Insert the first tape
Press Return to proceed
      .
      .
      .
xxxxxx blocks

Please label the backup tape(s) with the date and the
current CMS version XXXXX
```

7. Label the backup tapes with the date and CMS version.

8. Retrieve the printout you acquired in step1, and bundle it with the backup tapes. Put the tapes and printout in a safe place.

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 O 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 Return .

   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 Return 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 Return .

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 `Return`.

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, Figure 2-1, to do a maintenance back up of CMS data. Make sure you have read all the information in this section prior to filling out this window. See Table 2-1 for descriptions of the fields on the Maintenance: Back Up Data window.

```
03/10/95 00:30 AM              CentreVu(TM) CMS           Windows: 1 of 4 ^

  Maintenance: Back Up Data

  Backups completed today: xx              Cancel
  Status:                                  List device
  Errors:                                  Run
                                           Select tables
  Device name: _____
  Verify tape can be read after backup? (y,n): y_

  ACD(s) to back up (Select one):
   <x> All ACDs
   < > Current ACD

  Data to back up (Select any you wish):
  [x] System administration data
  [x] ACD specific administration data
  [x] Historical data,
        Select one:
        <x> Full
        < > Incremental
  [x] Non-CMS data
  [x] Specific tables
```

Figure 2-1: Back Up Data Window

.

Table 2-1: 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.
`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.

Table 2-1: Back Up Data Field Descriptions (Contd)

Field	Description

`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.
	`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.

Table 2-1: Back Up Data Field Descriptions (Contd)

Field	Description
`Data to back up (contd)` `(Select any you wish):`	**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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Setting Authorizations

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

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

- Add authorizations to features.

- Increase the number of agents or ACDs.

- Remove authorizations from the following:

    — Vectoring (if no administered ACDs use vectoring)

    — Graphics

    — External Call History (if the package is not installed)

    — Expert Agent Selection (if no administered ACDs use Expert Agent Selection).

- Reduce the maximum number of agents provided the total number of agents across all administered ACDs does not exceed the reduced number.

- Reduce the maximum number of ACDs provided the total number of all administered ACDs does not exceed the reduced number.

Do the following steps to run the `auth_set` option:

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

```
# cmssvc
```

The program responds:

```
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) patch_inst   Install a single CMS patch from CD
  8) patch_rmv    Backout an installed CMS patch
  9) load_all     Install all CMS patches found on CD
 10) back_all     Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit:
```

2. Select the `auth_set` option. The program responds:

```
Password:
```

3. Enter the appropriate password.

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

The program responds:

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

> **Note** This response only occurs the first time you run `auth_set` on the machine.

If you answer yes, the program responds (for example):

```
What version has the customer purchased?
1) R3V1
2) R3V2
3) R3V4
4) R3V5
Enter choice (1-4):
```

4. Enter the option number of the version the customer originally purchased. *If this is a bugfix load, do* not *select the r3v5 option.*

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

The program continues with the following questions:

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

5. Enter `y` if the customer purchased Forecasting; otherwise, press **Return**.

    The program responds:

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

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

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

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

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

8. Enter y if the customer purchased the External Call History feature; otherwise, press Return. The program responds:

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

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

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

10. Enter y if the customer purchased the External Application feature; otherwise press Return. The program responds:

```
Enter the number of CentreVu(TM) Supervisor logins the customer
purchased (0-250): (default: 0)
```

11. Enter the number of simultaneous logins purchased: The system responds:

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

12. Enter y if the customer purchased report designer; otherwise, press Return. The program responds:

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

The number represented by "xxxx" will be either 5200 (for *Intel* machines and *Sun* machines without *Solstice DiskSuite* software) or 10000 (for *Sun* machines with *Solstice DiskSuite* software installed).

13. Enter the maximum possible number of split/skill members that the customer might use based on the switch agent size purchased. "Split/skill members" are defined as the number of CMS-measured agent-split and agent-skill combinations logged in at the same time. Each split an agent logs into is an agent-split combination. Each skill assigned to an agent while logged in is an agent-skill combination. The numbers recommended are those in the following table:

	Provisioning for ACD Members (split/skill pairs)			
	Non-EAS		**EAS**	
Switch Agent Size Range Purchased	*INTEL / Sun without Solstice DiskSuite*	*Sun with Solstice DIskSuite*	*INTEL / Sun without Solstice DiskSuite*	*Sun with Solstice DIskSuite*
0-12	100	100	500	500
0-25	100	100	500	500
0-50	200	200	1000	1000
0-100	400	400	2,000	2,000
0-300	1,200	1,200	5,200	6,000
0-600	2,400	2,400	5,200	10,000
0-max. agents	5,200	10,000	5,200	10,000

Note that the minimum size configuration for CMS is 0-25; that's the reason groups 0-12 and 0-25 have the save provisioning. You should also note that the customer will be able to limit the split/skill RAM memory allocation to the size actually needed for the current configuration of agents and splits/skills. That is accomplished via the "Total split/skill members summed over all splits/skills" field, which is accessed through the `setup` option of the CMS Services menu.

14. The program responds:

```
Enter the maximum number of ACDs that can be installed (1-4):
(default: 1)
```

15. Enter the number of ACDs the customer purchased.

16. Verify that authorizations were set by entering:

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

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

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

Setting Up Data Storage Parameters

TSC engineers modify specific data storage parameters on the *Sun SPARCserver* computer so the *CentreVu* CMS R3V5 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 *CentreVu™ CMS R3V5 Administration* (585-215-820) document.

Setting Up the *CentreVu* CMS Application

Prerequisites: You must be logged in as *root*, the computer must be in run-level `2` or `3`, and all file systems must be mounted.

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

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

To set up the *CentreVu* CMS application using this option, see the "Setting Up *CentreVu* CMS Interactively from a Terminal" section in this chapter.

b. *UNIX* **System Flat File** — Using the flat file option, you edit a *UNIX* system flat file which contains the necessary information (for example, system type, number of agents, trunks, vectors, VDNs, etc.) to set up the *CentreVu* CMS application. When you execute the program, it runs in the background and uses the *UNIX* System flat file data to set up the *CentreVu* CMS application.

To set up the *CentreVu* CMS application using this option, see the "Setting Up *CentreVu* CMS Using a *UNIX* System Flat File" section in this chapter.

Setting Up *CentreVu* CMS Interactively from a Terminal

Perform the following steps to set up *CentreVu* CMS interactively from a terminal:

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

```
# cmssvc
```

The program responds:

```
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) patch_inst    Install a single CMS patch from CD
  8) patch_rmv     Backout an installed CMS patch
  9) load_all      Install all CMS patches found on CD
 10) back_all      Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit:
```

2. Select the `setup` option.

   The program responds:

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

3. Enter the host name of the computer. This name was assigned
   during the factory installation procedures and is used by the TSC to
   maintain and identify this specific *CentreVu* CMS.

   The program responds:

```
Select the type of backup device you are using
   1) SCSI QIC-150 cartridge tape - 150MB tape
   2) SCSI QIC-60 cartridge tape - 60MB tape
   3) 14.0 Gbyte 8mm tape
   4) 5.0 Gbyte 8mm tape
   5) SCSI QIC-2.5 cartridge tape - 2.5GB tape
Enter choice (1-5):
```

4. Enter the appropriate number to specify the type of cartridge tape
   you are using as the backup device. The program responds:

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

5. Press ⃞Return⃞ to select the default, or enter your choice for the backup device path.

   ⃞Note⃞ All systems are shipped with one or more tape drives (QIC-150, QIC 2.5-GB, 5-GB, and/or 14-GB). For systems with multiple tape drives, either the QIC-150 or the QIC 2.5-GB is the first drive in the SCSI chain. Valid device paths are as follows:

   `/dev/rmt/0`   Indicates the tape drive with the lowest target number in the SCSI chain. (See Table 9-23 in Chapter 9, "Maintenance," for a list of SCSI target numbers.)

   `/dev/rmt/1`   Indicates the tape drive with the second lowest target number in the SCSI chain.

   `/dev/rmt/0c` Indicates the tape drive with the lowest target number in the SCSI chain in compressed mode (the QIC 2.5-GB and the 14-GB tape drives support compressed mode).

   `/dev/rmt/1c` Indicates the tape drive with the second lowest target number in the SCSI chain in compressed mode (the QIC 2.5-GB and the14-GB tape drives support compressed mode).

   The program responds:

```
Enter number of ACDs being administered (1-4):
```

6. Enter the number of ACDs to be administered. (This number may be less than the number of ACDs authorized.)

   The program responds:

```
Information for ACD 1

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

7. Enter the name for the switch associated with ACD1. Include "R3" in the name to indicate R3 CMS. The program responds (for example):

```
Select the model of switch for this ACD
  1) Definity-G2.1
  2) Definity-G2.2
  3) Definity-G3i
  4) Definity-G3r
  5) Definity-G3V2
  6) Definity-G3V3
  7) Definity-G3V4
  8) Definity-G3V5

Enter choice (1-8):
```

8. Enter the number that represents the switch model associated with this ACD.

   If the switch supports vectoring and vectoring is authorized, this message appears; otherwise, go to Step 11.

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

9. Enter `y` if vectoring is enabled on this switch; otherwise, enter `n`.

   The following message appears if vectoring is enabled, the switch supports EAS, and EAS is authorized. If the message does not appear, go to Step 11.

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

10. Enter y if Expert Agent Selection is enabled on this switch; otherwise, enter n. The program responds:

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

11. Enter y if the CentreVu CMS is located in the U.S., and go to Step 13. If you answer n, the system responds with the following:.

```
ACD calls shorter than the Phantom Abandon Call Timer value will
be counted as abandoned.

Enter the Phantom Abandon Call Timer value in seconds (1-10):
(default:10)
```

12. Enter the Phantom Abandon Call Timer value.

Note The Phantom Abandon Call Timer value can be changed through the cmssvc: swsetup menu.

The program responds:

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

13. Enter the local port or channel number on the switch. The program responds:

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

14. Enter the remote port or channel number on the switch. The program responds:

```
Select the device used for x.25 connectivity to the switch:
1) Serial Port B
2) HSI link 0
3) HSI link 1
4) HSI link 2
5) HSI link 3
6) Software loopback link 0
7) Software loopback link 1

Enter choice (1-7):
```

Note	

These numbers correspond to the different hardware connections that can be made between the *CentreVu* CMS and the switch, except for 6 and 7 which are only for testing.

    1 corresponds to Serial Port B

    2 corresponds to HSI/S link 0

    3 corresponds to HSI/S link 1

    4 corresponds to HSI/S link 2

    5 corresponds to HSI/S link 3

    6 corresponds to testing via software loopback link 0

    7 corresponds to testing via software loopback link 1.

| Note | If you choose 2 through 5 but do not have an HSI/S card, you will get the following error message: |

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

If you choose 1 and you have an HSI/S card, you will get the following error message:

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

If you choose either 6 or 7, the program responds with the following message:

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

If you choose y, then the selection takes effect. If you choose n, then the system displays the initial selection command again.

15. Enter the number that corresponds to the device used for x.25 connectivity. The program responds:

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

16. Enter the number of splits/skills in this ACD. The program responds:

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

17. Enter the maximum number of agents that can be logged into this ACD simultaneously. The program responds:

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

18. Enter the number of shifts. The program responds:

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

19. Enter the start time for shift 1; for example, `08:00AM`. The program responds:

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

20. Enter the stop time for shift 1; for example, `05:00PM`.

    The program responds:

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

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

    Note Steps 19 through 21 will repeat for the number of shifts entered in Step 18.

    The program continues:

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

22. Enter the number of trunk groups associated with this ACD. The program responds:

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

23. Enter the number of trunks associated with this ACD. The program responds:

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

24. Enter the number of unmeasured facilities associated with this ACD.

    • If the switch supports call work codes, you will see a message to enter the number of codes.

    • If vectoring is enabled on the switch (you entered y for Step 9), you will see this message:

      ```
      Creating database tables.
      ```

      Then, you will be prompted to enter the number of vectors and VDNs.

    • The program repeats Steps 7 through 24 for each ACD entered in Step 6. After you define the last ACD, the program continues:

```
Updating database

Computing space requirements and file system space availability.

Setup completed successfully.
```

25. If the setup completes with warnings, you will get the following warning message:

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

26. Verify the installation completed successfully by entering:

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

The *CentreVu* CMS software is successfully set up when you see a message similar to the following:

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

File systems/current blocks free:
  /cms XXXXXXXX
/cms: AGENT,SPLIT,VDN,TRUNK,TKGRP,VECTOR,AGENT_LOG_REC,
      AGENT_ TRACE_REC, EXCEPTIONS_REC,WORKCODE,CALL_REC,
Setup completed successfully <date/time>
```

You may edit this file for additional information.

If you need to install Forecasting or External Call History, go to the appropriate section and follow the procedures. (See "Installing the Forecasting Feature Package" on page 2-55 and "Installing the External Call History Package" on page 2-58.)

Finally, you can turn on the *CentreVu* CMS software. See "Turning CMS On and Off" on page 2-13.

Setting Up *CentreVu* CMS Using a *UNIX* System Flat File

Setting up the *CentreVu* CMS feature package using a *UNIX* System flat file consists of editing the *cms.inst.skl* file (the flat file) and starting the install program.

1. Change to the following directory by entering:

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

2. Copy the *cms.inst.skl* file by entering:

```
# cp cms.inst.skl cms.install
```

3. Edit the *cms.install* file by entering:

```
# vi cms.install
```

The flat file contains a series of questions and value ranges that pertain to the ACD/switch configuration.

4. Enter the appropriate values for your configuration.
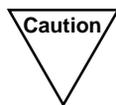
> **Caution** Use the computer's host name for the *UNIX* system name. The computer's host name should have been assigned during the factory installation.

The `cms.inst.skl` file might look like this:

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

# Select the type of backup device you are using
#    1) SCSI QIC-150 cartridge tape - 150MB tape
#    2) SCSI QIC-60 cartridge tape - 60MB tape
#    3) 14.0 Gbyte 8mm tape
#    4) 5.0 Gbyte 8mm tape
#    5) SCSI QIC-2.5 cartridge tape - 2.5GB tape
# Enter choice (1-5):

# Default backup device paths based on device type:
# Device                                Default backup path
# SCSI QIC-150 cartridge tape - 150MB tape /dev/rmt/0
# SCSI QIC-60 cartridge tape - 60MB tape   /dev/rmt/0
# 14.0 Gbyte 8mm tape                      /dev/rmt/0c
# 5.0 Gbyte 8mm tape                       /dev/rmt/0
# SCSI QIC-2.5 cartridge tape - 2.5GB tape /dev/rmt/0c
# Enter the default backup device path:

# Enter number of ACDs being administered (1-4):

# The following information is required per ACD:
# Information for ACD 1:
# Enter switch name (up to 20 characters):

# Select the model of switch for this ACD
# System 85-R2V4 and Definity-G1.1 are only valid if this load is being used as a bugfix
# Definity-G3V5 is only valid if the CMS release purchased is R3V5 or greater.
#    1) System85-R2V4
#    2) Definity-G1.1
#    3) Definity-G2.1
#    4) Definity-G2.2
#    5) Definity-G3i
#    6) Definity-G3r
#    7) Definity-G3V2
#    8) Definity-G3V3
#    9) Definity-G3V4
#   10) Definity-G3V5
# Enter choice (1-10):

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

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

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

# If the Central Office has disconnect supervision, enter 0.  Otherwise,
# ACD calls shorter than the Phantom Abandon Call Timer
# value will be counted as abandoned.
# Enter the Phantom Abandon Call Timer value in seconds (0-10):

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

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

```
# Select the device used for x.25 connectivity to the switch
#    1) Serial port B
#    2) HSI link 0
#    3) HSI link 1
#    4) HSI link 2
#    5) HSI link 3
#    6) Software loopback link 0
#    7) Software loopback link 1
# Enter choice (1-7):

# Skip the next question if you did not enter choices 6 - 7. These are used for testing
only. If you select one of these, you will not be able to collect data from your ACD.
# Are you sure you want to do this? (y/n):

# Maximum number of splits/skills based on switch type:
# Release(s)                               Value
# System85-R2V4/Definity-G2.1/Definity-G2.2       60
# Definity-G1.1/Definity-G3i/Definity-G3r         99
# Definity-G3V2/Definity-G3V3/Definity-G3V4      255
# Definity-G3V5/Definity-G2.2(EAS)               600
# Number of splits/skills (0-Maximum):

# Maximum number of split/skill members based on switch type:
# Release(s)                                       Value
# Definity-G1.1                                       400
# Definity-G3i                                        500
# System85-R2V4/Definity-G2.1/Definity-G2.2/Definity-G3r   1023
# Definity-G2.2(EAS)                                 5115
# Definity-G3V2/Definity-G3V3/Definity-G3V4          5200
# Definity-G3V5                                     10000
# Total split/skill members, summed over all splits/skills (0-Maximum):

# Number of shifts (1-4):

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

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

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

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

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

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

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

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

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

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

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

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

```
# Maximum number of trunk groups based on switch type:
# Release(s)                                                  Value
# Definity-G1.1/Definity-G3i                                     99
# System85-R2V4/Definity-G2.1/Definity-G2.2/Definity-G3r        255
# Definity-G3V2/Definity-G3V3/Definity-G3V4/Definity-G3V5       666
# Number of trunk groups (0-Maximum):

# Maximum number of trunks based on switch type:
# Release(s)                                                      Value
# DefinityG1.1/DefinityG3i                                          400
# System85-R2V4/Definity-G2.1/Definity-G2.2/Definity-G3r/Definity-G3V2/Definity-G3V3/Definity-
G3V4/Definity-G3V5                                                 4000
# Number of trunks (0-Maximum):

# Number of unmeasured facilities (0 to (Maximum trunks - Number of trunks)):

# Minimum number of call work codes based on switch type:
# Release(s)                                                                                    V
# System85-R2V4/Definity-G1.1/Definity-G2.1
# Definity-G2.2/Definity-G3i/Definity-G3r/Definity-G3V2/Definity-G3V3/Definity-G3V4/Definity-G3V5

# Maximum number of call work codes based on switch type:
# Release(s)                                                                                    V
# System85-R2V4/Definity-G1.1/Definity-G2.1
# Definity-G2.2/Definity-G3i/Definity-G3r/Definity-G3V2/Definity-G3V3/Definity-G3V4/Definity-G3V5
# Number of call work codes (Minimum-Maximum):

# Maximum number of vectors based on switch type:
# Release(s)                                                  Value
# Definity-G1.1                                                   0
# System85-R2V4/Definity-G2.1                                   128
# Definity-G3i                                                  256
# Definity-G2.2                                                 511
# Definity-G3r/Definity-G3V2/Definity-G3V3/Definity-G3V4/Definity-G3V5     512
# Enter number of vectors (0-Maximum):

# Maximum number of VDNs based on switch type:
# Release(s)                                                  Value
# Definity G1.1                                                   0
# Definity-G3i                                                  500
# System85-R2V4/Definity-G2.1/Definity-G2.2/Definity-G3r/Definity-G3V2/Definity-G3V3/Definity-
G3V4/Definity-G3V5                                              2000
# Enter number of VDNs (0-Maximum):
```

The flat file repeats the previous statements for ACDs 2 through 4.

5. After you have entered all the appropriate values, write and quit the file.

6. Change to the root directory by entering:

```
# cd /
```

7. Access the *CentreVu* CMS Services menu by entering:

```
# cmssvc
```

The program responds:

```
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) patch_inst    Install a single CMS patch from CD
  8) patch_rmv     Backout an installed CMS patch
  9) load_all      Install all CMS patches found on CD
 10) back_all      Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit:
```

8. Select the `setup` option. The program responds:

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

9. Enter 2 to specify that the setup will use the flat file. The program responds:

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

10. Verify that the installation completed successfully by entering:

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

The $-f$ option in the previous command updates the console terminal as messages are written to the admin.log file.

The *CentreVu* CMS software is successfully set up when you see a message similar to the following:

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

File systems/current block free:
/cms        XXXXXXXXX
/cms: AGENT,SPLIT,VDN,TRUNK,TKGRP,VECTOR,AGENT_LOG_REC,
      AGENT_TRACE_REC, EXCEPTIONS_REC,WORKCODE,CALL_REC,
Setup completed successfully <date/time>
```

Press Del to break out of the tail -f command.

Installing the Forecasting Feature Package

Prerequisites: You must be logged in as *root*, the computer must be in run-level 2 or 3, all file systems must be mounted, and *CentreVu* CMS must be turned off.

Do these steps to install the Forecasting feature package:

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

```
# cmssvc
```

The program responds:

```
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) patch_inst    Install a single CMS patch from CD
  8) patch_rmv     Backout an installed CMS patch
  9) load_all      Install all CMS patches found on CD
 10) back_all      Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit:
```

2. Select auth_display, and verify that the system is authorized to install the Forecasting package. Sample response:

```
        Capability/Capacity        Authorization
       -------------------        -------------
               vectoring          authorized
             forecasting          authorized
                graphics          authorized
     external call history        authorized
   expert agent selection         authorized
      external application        authorized
   CentreVu(TM) Supervisor        authorized
           Report Designer        authorized
    Maximum number of agents      5200
       Maximum number of ACDs     4
 Simultaneous CentreVu logins     5
```

> **Note** If Forecasting has not been authorized but should be, go to the "Setting Authorizations'' section and follow the procedures outlined in that section.

3. Access the *CentreVu* CMS Administration menu by entering:

```
# cmsadm
```

The program responds:

```
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 ACI
 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 `pkg_install` option.

   The program responds:

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

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

5. Enter the number that corresponds to Forecasting. The program responds:

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

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

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

 Forecasting package installed
```

6. Verify that the installation completed successfully by entering:

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

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

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

You may edit this file for additional information.

If you need to install the External Call History package, go to the next section and follow the procedures.

Installing the External Call History Package

Prerequisites: The customer must have a separate computer for the storage and reporting of call records. Both the storage machine and the *CentreVu* CMS machine must be administered in *uucp*. If the storage machine is not running the *UNIX* System, a DOS version of *uucp* must be used.

You must be logged in as *root*, the computer must be in run-level 2 or 3, all file systems must be mounted, and *CentreVu* CMs must be turned off.

Note | Once the External Call History package is installed, you will no longer be able to access any call record data from *CentreVu* CMS. For more information, see the *CentreVu™ CMS R3V5 External Call History Interface* (585-215-824) document. It explains how to administer the UUCP link port on network terminal servers.

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

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

```
# cmssvc
```

The program responds:

```
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:
```

2. Select `auth_display,` and verify that the system is authorized to install the External Call History package.

Sample response:

```
         Capability/Capacity      Authorization
         -------------------      -------------
                    vectoring     authorized
                  forecasting     authorized
                     graphics     authorized
        external call history     authorized
       expert agent selection     authorized
         external application     authorized
        CentreVu(TM) Supervisor   not authorized
              Report Designer     authorized
      Maximum number of agents    5200
         Maximum number of ACDs   4
  Simultaneous CentreVu logins    5
```

> **Note** If External Call History is not authorized but should be, go to the "Setting Authorizations" section in this chapter and follow the procedures.

3. Access the *CentreVu* CMS Administration menu by entering:

```
# cmsadm
```

The program responds:

```
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:
```

4. Enter 7 to select the `pkg_install` option.

   The program responds:

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

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

5. Enter the number that corresponds to External Call History. The program responds:

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

6. Enter the name of the Call History Reporting machine that was administered in *uucp*. The program responds:

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

7. Enter the password for *nuucp* of the Call History Reporting machine that was administered in *uucp*. The program responds:

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

8. Enter the *CentreVu* CMS port administered for the Call History Reporting machine. This port can either be on one of the NTS patch panels or on one of the 8- or 16-port NTSs. For more information on administering the ports on the NTS, see Chapter 4, "Administering Terminals, Printers, and Modems."

The program responds:

```
Select a speed for this connection
1) 19200
2) 38400
```

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

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

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

> **Note** Step 10 is repeated for each administered ACD.

The program responds:

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

External Call History package installed
```

11. Verify that the installation completed successfully by entering:

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

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

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

You may edit this file for additional information on packages which were installed or authorized.

R3 Migrate Data Window

Use the window in Figure 2-2 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 R3V5 *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.

```
09/26/96 07:30 PM              CentreVu(TM) CMS           Window: 1 of 10

 System Setup: R3 Migrate Data                               All ACDs
                                                        Cancel
 Device name: default_____                             List device
                                                        Run
 Data type (Select one):
   [x] System Administration data (single-user required)
   [ ] ACD Administration data (data collection off required)
   [ ] Historical Data
         Stop date: _____
         Stop time: 11:59_PM


  Specify ACD(s) to migrate (Select one):
    <x> All ACDs
    <_> Single ACD
          from: _____  to: _____


  Status:
```

Figure 2-2: 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 |

- **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 Requirements

- You cannot execute this window to migrate data for a nonsupported migration path.

- You cannot run this window on a timetable.

- In CMS R3V5, 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 (via the Dict/Database Items/ Custom Items option).

- 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 that you have the appropriate write permission. See the *CentreVu™ CMS R3V5 Administration* (585-215-820) 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 `Return` 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 Return 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 Return 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 `Return` 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 Return 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 Return 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 | Only enter y 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.

R2 Migrate Data Window

The R2 Migrate Data window (Figure 2-3) is used to migrate R2 CMS data to the *CentreVu* CMS R3V5. This section is a general description of the use of the R2 Migrate Data window.

```
09/30/94 00:30 PM          Call Management System       Window: 1 of 4

 System Setup: R2 Migrate Data                             AllACDs
                                                       List device
 Device name: default_____                      Run

 Data type (Select one):
   <x> Administration, Dictionary, and Custom Reports
   < > Historical and Forecast Administration Data
         Stop date: _____
         Stop time: 11:59_PM

 Status:
```
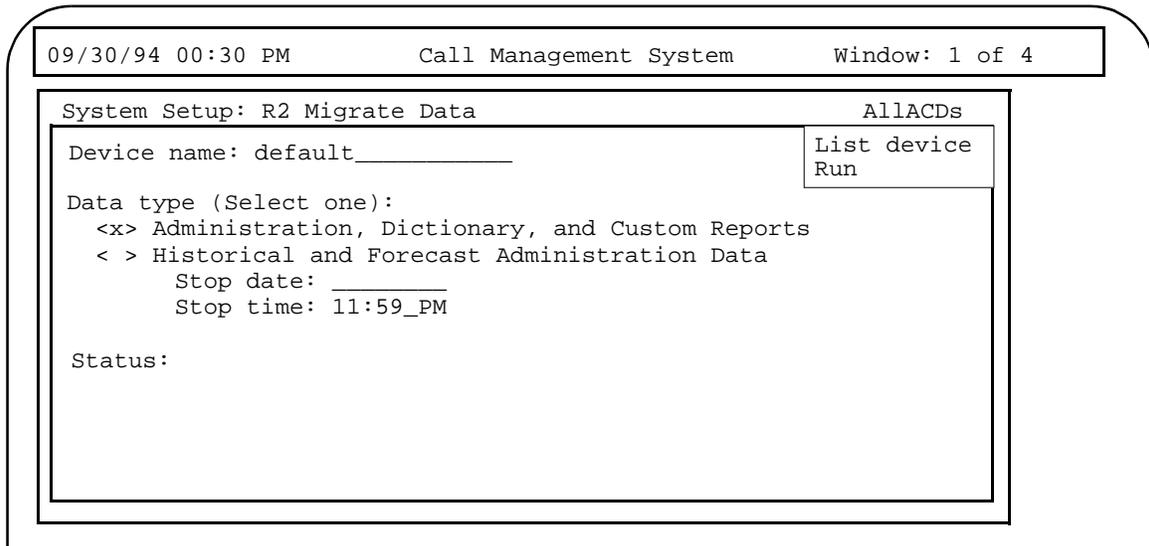
Figure 2-3: R2 Migrate Data Window

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`). This field is 20 characters long.

Data type:

Choose the type of data you are migrating: system administration, dictionary, and custom report; or historical data.

Stop date:

Enter the date through which you wish to have data migrated to the CMS. The migration process will 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 have data migrated to the CMS. The migration process will 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.

Action List Entries

`List device`

Brings up a secondary window listing the available device names defined in the "Backup/Restore Devices" window. The window lists the device names, paths, descriptions, and device types.

`Run`

Starts the migration.

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 cannot complete successfully, the status line displays this message: `Failed to migrate: Examine the file, /cms/migrate/migrate.log, for problems.`

If the migration cannot complete successfully, the status line displays this message: `The target ACD(x) has not been installed. Restart the migration after installing the ACD.`

| Note |

- 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 cannot be merged.

Operational Cases

The following cases may occur during the execution of the R2 Migrate Data window. Each case describes the input conditions, the application action, and what you should do.

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 off
or no to rerun the migration from the beginning.
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 administration migration, numerous already exists messages will appear in the migration log due to the data already migrated.

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?
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 R2 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.)

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 has been run 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 drive?
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.

                                            If you enter `n`, the program returns you to the action list in the R2 Migrate Data window.

Stop Date/Stop Time Validation   **Input Condition**   You selected to migrate historical data, and you enter `Run`.

                          Application Action The following window appears:

```
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:__
```

                          What To Do   Enter `y` if you are sure that the stop date and stop time are correct. `Working` appears in the lower left-hand corner of the R2 Migrate Data window. The `Status` field displays various messages that tell you what is being processed.

                                            Enter `n` if you wish to enter a new stop date and stop time. The program returns you to the `Stop date` field of the R2 Migrate Data window. Enter a new stop date and stop time, and select `Run`.

End of Current Volume

Input Condition   The historical data migration spans multiple tapes, and the current tape is not the last one.

Application Action   The following window is displayed:

```
***** END OF CURRENT TAPE *****
Insert proper tape; wait for retension pass to complete
then press <return> to continue.
```

What To Do   Replace the current tape with the next tape, wait for the retension to complete (about 3 minutes), and then press Return.

Print Migration Log

Input Condition   Either the migration completed successfully or failed.

Application Action   The following window is displayed:

```
Do you want to print the migration log?
Enter y for yes or n for no:__
```

What To Do   Enter y to print the log or n to not print the log. The program returns you to the R2 Migrate Data window.

Chapter 3
Upgrading a *Sun SPARCserver* Computer

List of Tables

General Information

This chapter describes how to upgrade the CMS software on *Sun SPARCserver*[*] computers. Follow these instructions carefully..
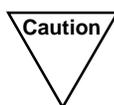
<div style="display:inline-block">▽ Caution</div> If your current disk space allocation specifies more items to be measured for longer lengths of time than you actually have space for on your disks, you must do one of the following:

- Purchase additional disks.

- Reduce the length of time for which the data is stored.

- Reduce the number of entities measured before upgrading

Selecting Upgrade Procedures

This chapter allows an installer with a reasonable knowledge of *UNIX*[†] and CMS commands to follow the upgrade procedure with minimal referral to other chapters or supplemental procedures. The sections you will follow depend in part upon your situation. See Table 3-1, below.

Table 3-1: Selecting Upgrade Procedures

If you are ...:	and *Solstice DiskSuite is* ...:	... then use these procedures:
upgrading from a previous version	<u>not</u> being installed	"Preupgrade Procedure" on page 3-2[a] "Step 7: Do a CMSADM Backup" on page 3-10
(e.g. from R3V4 to R3V5)	being installed	"Preupgrade Procedure" on page 3-2[b] "Upgrading to R3V5 (10,000-agent Capacity)" on page 3-33
upgrading to a new V5 base load (e.g. from	already installed or is not being installed	"Upgrading the R3V5 Base Load" on page 3-117
r3v5xx.x to r3v5.xx.y)	being installed	"Preupgrade Procedure" on page 3-2[b] "Upgrading to R3V5 (10,000-agent Capacity)" on page 3-33
patching the current V5 load ...	(irrelevant)	"Patching CentreVu CMS" on page 3-112

a. Begin this procedure at least 5 days before the scheduled upgrade

Preupgrade Procedure

Before you upgrade a system to a new base load or release, you need to verify that your machine is loaded with a version of CMS that supports the upgrade, and that your file system has enough free space to accommodate it. If you have any custom database items to be propagated to the new version, you should also begin dealing with those at this time.

We recommend that you perform the verification at least 5 business days before the upgrade. If not enough space is available, TSC engineers can log into your machine and free up space, allowing you to upgrade with minimal interruptions and delays. The best time to call the Customer Care Center about upgrades is between 6:00 a.m. and 4:00 p.m. MST.

Table 3-2: Preupgrade Checklist

Step	Action
1	Verify CMS version and load
2	Verify free space
3	Begin to deal with custom database items
4	Check and record CMS system information ❍ Free space allocation ❍ Data storage allocation parameters ❍ Data storage parameters for Forecasting (if installed) ❍ Storage intervals ❍ Backup and restore devices ❍ System information
5	Copy non-CMS files (*Solstice DiskSuite* installations only)
6	Do a manual full maintenance backup
7	Do a CMSADM backup

Step 1: Verify CMS Version and Load

To verify your CMS version, log in as root and enter the command:

```
# pkginfo -x cms
```

The system lists the cms version installed on your machine. For example:

```
cms      Lucent Technologies CentreVu(TM) Call Mangement System
         (sparc) r3v4ap.f
```

To proceed with the upgrade, you must have one of these load numbers:

- R3V2: any 3rxxx load
- R3V4: any load

- R3V5: any load

Step 2: Verify Free Space

To verify your free space, follow this procedure:

1. Log in as *root*.

2. Display the amounts of available space in the / (root), */var,* and */dump* file systems by entering the following command:

```
# df / /var /dump /cms
```

The system responds

```
/     (/dev/dsk/c0t3d0s0 ):  xxxxx blocks    xxxx files
/var  (/dev/dsk/c0t3d0s7 ):  xxxxxx blocks   xxxxx files
/dump (/dev/dsk/c0t3d0s3 ):  xxxxxx blocks   xxxxx files
```

3. Compare the "blocks" figures from the df command to the Blocks Required values in Table 3-3, below.

Table 3-3: Space Requirements for the *Sun* Platform

File System	Blocks Required to Upgrade
/ (root)	13,400 or more
/var	41,000 or more
/dump	100,000 or more

If the results of the df command show fewer blocks than required for any of the three file systems, discontinue the preupgrade procedure and telephone the Customer Care Center at 1-800-242-2121, or contact your Lucent Technologies distributor or Customer Representative.

4. To verify that you have sufficient space in */cms*, do the following:

   a. Determine the amount of space available in */cms* by entering the df /cms command. For example:

   ```
   #  df  /cms
   /cms (/dev/dsk/c0t3d0s4 ):   xxxxxx blocks   xxxxxx files
   ```

   b. Determine the amount of space required by the current CMS load by entering the following command:

   ```
   pkgparam  cms  IBSblocks  IBSinodes
   ```

   The system responds by displaying the number of blocks and inodes required by the current CMS. For example:

   ```
   pkgparam  cms  IBSblocks  IBSinodes
   xxxxxx
   xxxx
   #
   ```

   c. Subtract the number of blocks of your current CMS load from 106,700, which is the number of blocks required by R3V5:

   106,700 - *(number of blocks from step b)* = *block_diff*

   Verify that *block_diff* does not exceed the number of blocks displayed by the df command in Step a.

   d. Subtract the number of inodes of your current CMS from 1600, which again is the number required by R3V5:

   1600 - *(number of inodes from step b)* = *inode_diff*

   Verify that *inode_diff* does not exceed the number of files displayed by the df command in Step a.

   If *CentreVu™* CMS requires more blocks or inodes than are available, discontinue the preupgrade procedure. Telephone the Lucent Technologies National Customer Care Center at 1-800-242-2121, or contact your Lucent Technologies distributor or representative. (The Customer Care Center can log in remotely and remove files to make more room for the upgrade.)

Step 3: Begin to Deal with Custom Database Items

If you have custom data items or database tables you wish migrated to R3V5, you should begin to deal with those items now, since the migration program will <u>not</u> migrate them for you.

For now, you need only investigate and record the details of any custom items you wish to save. Later, when R3V5 is up and running, you will have to create the custom items in *INFORMIX*[*]. Once the items have been created in *INFORMIX*, they can be added into CMS.

The easiest way to find out about your CMS custom items is to ask CMS itself. The procedure (briefly) is as follows:

1. Start CMS, and go into the `Dictionary / Database items / Custom items` option.

2. When the "Custom Items" window displays, press Enter, select `List All,` and press Enter again.

3. When the "List All" window appears, press F3, select `Print window`, and press Enter yet again. That gets you a listing of all your custom data items.

4. Press F5 to go back to the MainMenu. Then select `Logout` and press Enter.

Step 4: Check and Record CMS System Information

Next you must check and record all of the following:

- switch information for each ACD
- authorization information
- free space allocation information
- data storage allocation parameters for each ACD
- storage interval information
- backup and restore devices information
- system information

Most of this information can be obtained by simply displaying certain CMS windows and dumping those windows to a printer. Remember that to execute an option from the cmsadm or cmssvc menu, you must be logged in as *root*.

---

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

Switch Information

Repeat this procedure for each ACD in the system.

1. Enter the cmssvc command.

2. Select swinfo. The system asks you to select an ACD :

3. Select the ACD you want. The system lists the switch administration data for that ACD.

4. Write down the information, or dump the screen or window to a printer.

See also "Displaying Switch Information" on page 2-4.

Authorizations

1. Enter the cmssvc command. The system displays the CMS Services menu.

2. Select auth_display. The system lists the authorizations for your system.

3. Write down the information, or dump the screen or window to a printer.

See also "Displaying CMS Authorizations" on page 2-5.

Free Space Allocation

1. Start CMS.

2. From the CMS MainMenu, select System Setup.

3. Select Free Space Allocation. The system displays the free space allocation data window.

4. Print the window (Commands menu) and save the printout.

Note that A Blocks Available number in parenthesis, or preceded by a minus sign, indicates that more blocks are required than are available.

See also "Displaying Switch Information" on page 2-4 and "Printing a CMS Window" on page 2-6.

Data Storage Allocation Parameters

Repeat this procedure for each ACD in your system.

1. Redisplay the CMS MainMenu (F5 or F8).

2. Select System Setup.

3. Select Data Storage Allocation. The system displays data storage allocation parameters for the current ACD.

4. Print the window and save the printout.

See also "Checking Data Storage Allocation Parameters" on page 2-11, "Printing a CMS Window" on page 2-6, "Selecting an ACD within CMS" on page 2-17.

Data Storage Allocation Parameters for Forecasting (if installed)

Repeat this procedure for each ACD in your system.

1. Redisplay the CMS MainMenu (F5 or F8).

2. Select `Forecast - Administration - Data Storage Allocation`. The system displays Forecast data storage allocation parameters for the current ACD.

3. Print the window and save the printout.

See also "Checking Data Storage Allocation Parameters" on page 2-11, "Printing a CMS Window" on page 2-6, and "Selecting an ACD within CMS" on page 2-17.

Storage Interval Information

Repeat this procedure for each ACD in the system.

1. Redisplay the CMS MainMenu (F5 or F8).

2. Select `System Setup`.

3. Select `Storage Intervals`. The system displays the Storage Intervals window.

4. Print the window and save the printout.

See also "Printing a CMS Window" on page 2-6 and "Selecting an ACD within CMS" on page 2-17.

Backup and Restore Devices

1. Redisplay the CMS MainMenu (F5 or F8).

2. Select `Maintenance`.

3. Select `Backup/Restore Devices`. The system displays the Backup/Restore Devices window.

4. Press `Return` to access the Action menu.

5. Select `List All`. The system displays the List all window.

6. Print the window and save the printout.

See also "Printing a CMS Window" on page 2-6.

System Information
During the upgrade, you may need to know the hostname and hostid of your system, and the X.25 license password. You can get the information by listing the `/etc/opt/licenses/licenses_combined` file. For example:

```
# cat /etc/opt/licenses/licenses_combined
SERVER hooch 723086a6 1726
DAEMON lic.SUNW /etc/opt/licenses/lic.SUNW /etc/opt/licenses/optns
INCREMENT sunlink_x.25 lic.SUNW 8.000 01-jan-0 1 1BAAB10155CAD "0"
```

In this example:

- The hostname is `hooch`
  Another way to get this information is to enter the command:

  `uname -a`

- The hostid is `723086a6`
  Another way to get this information is to enter the command:

  `/usr/ucb/hostid`

- The X.25 license password is `1BAAB10155CAD`.

You will also need to know your system's I.P. address. You can get that by using a `grep` command to search the `/etc/hosts` file for a line containing your machine's hostname. For example:

```
# grep hooch /etc/hosts
136.7.136.45   hooch   loghost

#
```

In this example, the `hooch` system has an I.P. address of `136.7.136.45`.

Research the information for your system. Record what you find in the spaces below (or obtain a printout of `licenses_combined` and annotate it with your system's I.P. address):

Host Name: _____

Host ID: _____

X.25 Passwd:_____

I.P. Address:_____

Step 5: Copy Non-CMS Files (*Solstice DiskSuite* Installations Only)

If you will be installing the *Solstice DiskSuite* package, and your system contains non-CMS files (UNIX command files, shell scripts, and so on) that you want to still exist after the system has been upgraded, you must copy them to tape before beginning the upgrade. Later, when your system has been upgraded and your CMS data migrated, you may copy them from tape to the upgraded system.

Typically, non-CMS data files are saved on an 8-mm cartridge tape—though you may use any valid, blank medium that is not write protected—following a procedure similar to this one:

1. Insert a blank 8-mm cartridge tape into the SCSI tape drive.

2. Log into the system as *root.*

3. Identify the non-CMS files in the `/cms, /cms1 ... /cms12` directories that you wish to save for reinstalling later.

4. Copy the identified files into a single area large enough to hold them all, to make the backup process easier.

5. Copy the files to tape.

6. Use a cpio command to verify that the files were successfully saved to the tape, and label the tape for future reference.

Step 6: Do a Manual Full Maintenance Backup

A full maintenance backup provides the migration data for the new CMS version. It is recommended that you perform the backup manually, as opposed to relying upon one of your regular, automatic backups, and that you verify the tape before assuming that it will work for the migration.

You should perform the full maintenance backup a day or two before beginning the upgrade and data migration. The backups are done via the CMS Back Up Data window. 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 the options indicated in the following table:

Field	Value to enter or select
`Device name`	tape drive device name (or `default`)
`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 2-26.

Step 7: Do a CMSADM Backup

The CMSADM backup provides a system backup in case the migration should go wrong. "Doing a CMSADM Backup on a Solaris System" on page 2-22 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.

Upgrading to R3V5 (5200-agent Capacity)

This section presents procedures for upgrading to R3V5 when you intend your system to have a maximum capacity of 5200 agents. If you wish to be able to have more than 5200 agents (up to 10,000), you will have to install the *Solstice DiskSuite* software package on your system. In that case, use the upgrade procedure "Upgrading to R3V5 (10,000-agent Capacity)" on page 3-33.

Prerequisites: You must be logged in as *root*, the computer must be in run-level 2 or 3, all file systems must be mounted, and CMS must be turned OFF. Also, you must have the CD-ROM that contains the new CMS base load.

Table 3-4: Checklist for Upgrading to R3V5 (5200-agent Capacity)

Step	Action
1	Back up CMS file systems
2	Install *Solaris* patches
3	Remove existing CMS software
4	Install new CMS base package
5	Verify CMS installation
6	Install CMS patches
7	Set up CMS
8	Check system parameters
9	Install feature packages
10	Do a CMSADM packup
11	Migrate CMS system administration data
12	Migrate ACD administration data
13	Migrate full historical data
14	Migrate incremental historical data
15	Back up the upgraded system

Step 1: Back up CMS File Systems

The first order of business is to do an incremental historical backup in order to back up the data that has been collected since the last full maintenance backup. The incremental backup maximizes data collection while moving to R3V5. Briefly, an incremental backup 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`	tape drive device name (or `default`)
`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 2-26.

Step 2: Install *Solaris* Patches

Perform these steps to install *Solaris* patches:

1. Load the CMS CD-ROM into your CD-ROM drive and enter the following command:

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

The system responds with an installation menu. For example:

```
The following packages are available:
 1 cms       Lucent Technologies CentreVu(TM) Call Management
             System (sparc) r3v5xx.x
 2 spatches  CMS Supplied Solaris Patches
             (sparc) 1.0

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

2. Select the *spatches* package.

| Note | Do **not** enter `all`. The *spatches* package **must** be installed before the CMS software package.

The system responds:

```
Processing package instance <spatches> from </dev/rmt/0>

CMS Supplied Solaris Patches
(sparc) 1.0
Lucent Technologies
   .
   .
   .
This package contains scripts which will be executed with
super-user permission during the process of installing this
package.

Do you want to continue with the installation of <spatches>
[y,n,?] y
```

3. Enter `y` to continue with the installation of the *spatches* package.

The system continues with the installation. When it finishes, it redisplays the installation menu. For example:

```
Installing CMS Supplied Solaris Patches as <spatches>

## Installing part 1 of 1.
Spooling 100982-02
Spooling 100992-03
   .
   .
   .
Once the Solaris patches are installed, a reboot is necessary.
The reboot command will be provided by the install_patches
script.

The following packages are available:
 1 cms       Lucent Technologies CentreVu(TM) Call Management
             System (sparc) r3v5xx.x
 2 spatches  CMS Supplied Solaris Patches
             (sparc) 1.0

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

4. Answer `q` to quit.

> **Note** Make certain CMS is turned **off** before executing the next command.

5. Run the installation script by entering the following command:

```
# /tmp/patches/install_patches
```

The system responds:

```
# /tmp/patches/install_patches
@(#) installpatch 4.11 94/06/23

generating list of files to be patched
Save old verisons of files to be patched
.
.
.
Installation of <SUNWcsr.2> was successful.
generating
```

6. A message displays indicating that you need 20 MB of space in */var* to install the Jumbo Kernel patch.

If you did not follow the preupgrade instructions, enter `n` and refer to the Preupgrade Procedures.

If you followed the preupgrade instructions, you already checked this. Enter `y` or wait 60 seconds and the installation will continue.

Depending on the number and size of the *Solaris* patches being installed, the installation may take over an hour.

Eventually, you receive an "installation finished" message, and the system prompt reappears:

```
   .
   .
   .
 Installation of <SUNWcsr.7> was successful.
 Patch installation finished
 To complete the solaris patch installation, one should reboot
 with the following command: shutdown -y -i6 -g0
 #
```

| Note | The *Solaris* patch installation may fail and display a message about bad permissions on */kernel* and */kernel/drv.* Do this to resolve the problem: |

   a. Enter the `/usr/sbin/installf SUNWcar /kernel` command.

   b. Enter the `/usr/sbin/installf SUNWcar /kernel/drv` command.

   c. Restart the *Solaris* patch installation from Step 2.

7. Reboot your system using the following command:

```
# shutdown -y -i6 -g0
```

When the system prompt returns to your screen, the installation of the patches is complete.

Step 3: Remove Existing CMS Software

There are. in general, two steps to removing the existing CMS software:

- Removing CMS patches
- Removing the base CMS software

Removing CMS Patches

Remove all existing CMS patches with this procedure:

1. Log in as *root*.

2. Enter the `cmssvc` command. The CMS Services menu displays:

```
 AT&T 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) patch_inst    Install a single CMS patch from CD
  8) patch_rmv     Backout an installed CMS patch
  9) load_all      Install all CMS patches found on CD
 10) back_all      Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit:
```

> **Note** If your Services menu does not have a `back_all` option, you have no CMS patches. In that case, enter a `q` (to quit the menu) and skip to "Removing the Current CMS Base Package," below.

3. Enter the number corresponding to `back_all`.

   If there are no patches installed, the system responds:

   ```
   No CMS patches found on this machine
   patch_rmv can remove installed patches only
   #
   ```

   In that case, skip to "Removing the Current CMS Base Package," below.

   If there are patches installed on the machine, the system lists them and asks if you really want them removed. For example:

   ```
   The following patches are installed on this machine:
           cmsp1-s
           cmsp2-s
           cmsp3-s
              .
              .
              .
    Are you sure you wish to remove all these patches? (y|n)
   ```

4. Enter `y`.

   The system removes the patches. For each patch removed, the system displays messages similar to the following:

   ```
   @(#) backout patch 1.0 96/08/02

   Removing patch package for cmspx-s:
   Removal of <cmspx-s> was successful.
   Restoring previous version of files...
      .
      .
      .
   x blocks
   Making package database consistent with restored files:
   Patch x has been backed out.
   #
   ```

Removing the Current CMS Base Package

Do these steps to remove the current CMS base package:

1. Start the procedure by entering:

```
# pkgrm cms
```

The program responds:

```
The following package is currently installed:
   cms                Call Management System
                       (sparc) r3v5xx.x

Do you want to remove this package?
```

2. Answer y. The system responds:

```
## Removing installed package instance <cms>

This package contains scripts which will be executed with
super-user permission during the process of removing this
package.

Do you want to continue with the removal of this package
[y,n,?,q]
```

3. Answer y. The system responds:

```
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.

Do you want to preserve CMS data? [y,n,?]
```

4. Answer n.

The system responds:

```
CMS will be removed from this machine; the data will not be
preserved.

Are you sure this is correct? [y,n,?]
```

5. Answer y. The system responds:

```
All file systems should be backed up before continuing.
See the Maintenance chapter in the Sun CMS Installation and
Maintenance Manual for instructions.

Have you backed up the file systems? [y,n,?]
```

6. Answer y. The system responds:

```
## Removing pathnames in class <ind>
/usr/lib/cms/trmaps
/usr/informix/etc/termcap
/usr/bin/cmssvc
    .
    .
    .
```

If the removal is successful, this message displays:

```
Removal of <cms> was successful.
```

The system prompt returns to your screen.

Step 4: Install New *CentreVu* CMS Base Package

Perform these steps to install the new *CentreVu* CMS base package:

1. Load the CMS CD into the CD-ROM drive, and enter the following command:

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

The system responds (for example):

```
The following packages are available:
 1 cms       Lucent Technologies CentreVu(TM) Call Management
             System (sparc) r3v5xx.x
 2 spatches  CMS Supplied Solaris Patches
             (sparc) 1.0

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

2. Select the `cms` option. The system responds:

```
Processing package instance <cms> from </dev/rmt/0>
        .
        .
        .
Installing the CentreVu(TM) Call Management System (r3v5xxx)

This is an upgrade.
        .
        .
        .
*-conflict with a file which does not belong to any package.
Do you want to install these conflicting files? [y,n,?,q]
```

3. Answer `y`. The system responds:

```
## Checking for setuid/setgid programs.

The following files are being installed with setuid and/or
setgid permissions:
        /cms/bin/mqpeek <setuid root>
        /cms/bin/spi <setuid root>
        /cms/toolsbin/cmsu <setuid root>
        /cms/toolsbin/initSimConf <setuid root>
        /cms/toolsbin/initSimConf <setuid root>
        /cms/toolsbin/psx <setuid root>
        /cms/toolsbin/psx <setuid root>
        /cms/toolsbin/shmdump <setgid sys>

Do you want to install these setuid/setgid files [y,n,?,q]
```

4. Answer `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 <cms>
[y,n,?,q]
```

5. Answer `y`.

The system continues with the installation, and eventually redisplays the installation menu:

```
Installing CentreVu(TM) Call Management System as <cms>

  .
  .
  .
/etc/SUNWconn/x25/template/cms.spin1.wan
/etc/rc0.d/K92cms
/usr/bin/cms
/usr/bin/cmsadm

  .
  .
  .
Installation of <cms> was successful.
#The following packages are available:
 1 cms        Lucent Technologies CentreVu(TM) Call Management
              System (sparc) r3v5xx.x
 2 spatches   CMS Supplied Solaris Patches
              (sparc) 1.0

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

6. Enter q to quit the menu and return to the system prompt.

   Warning

   If you made changes to your *cms* or *cmssvc* .profiles, the following message will appear:

   ```
   A manual merge may be necessary to restore
   custom entries. The original content was
   saved in profile.save prior to changes.
   ```

   The machine will either reboot if needed or return to the system prompt.

7. If you are instructed to run a shutdown, shut down the system using the command displayed with the message.

   The installation of the new *CentreVu* CMS base package is now complete. The system prompt returns to your screen.

8. Enter the following command:

```
# eject cdrom
```

9. Remove the *CentreVu* CMS CD from the drive.

Step 5: Verify CMS Software Installation

Verify the installation of the new *CentreVu* CMS software by entering a `pkgchk` command:

```
# pkgchk -n cms
```

If the software installation was successful, the system prompt returns to the screen after a few seconds. You will have no indication of success other than the absence of error messages.

If the command detects errors, see "CentreVu CMS Package Installation Problems" on page 6-11.

Step 6: Install *CentreVu* CMS Patches

1. Enter the `cmssvc` command. The CMS Services menu displays:

```
Lucent 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) patch_inst   Install a single CMS patch from CD
   8) patch_rmv    Backout an installed CMS patch
   9) load_all     Install all CMS patches found on CD
  10) back_all     Backout all installed CMS patches from machin
Enter choice (1-10) or q to quit:
```

2. Select `load_all` and press Return.

The system responds by listing all the patches available on the CD. For example:

```
The following patches are available for installation:
1.      cmsp1-s
2.      cmsp2-s
3.      cmsp3-s
   .
   .
   .
Are you sure you want to install all these patches? (y|n)
```

If no patches are listed, skip the rest of this procedure and go directly to Step 7 on page 3-23.

3. Enter y to install all patches.

   For each patch installed, the system responds with messages similar to the following:

```
@(#) installpatch 1.0 96/04/01
Generating list of files to be patched...
Creating patch archive area...
Saving a copy of existing files to be patched...
xxx blocks
        File compression used
Installing patch packages...

Doing pkgadd of cmspx-s package:
Installation of <cmspx-s> was successful.

Patch packages installed:
        cmspx-s

Patch installation completed.
See /cms/patch/cmspx-s/log for details.
```

   When the system is finished installing the patches, it returns you to the system prompt.

Step 7: Set Up R3V5 CMS

Setting up the new, R3V5 CMS software consists of three steps:

1. Setting authorizations

2. Setting data storage parameters

3. Configuring CMS.

Setting 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. Unless the customer has purchased R3V5 features they did not have in their previous version, the V5 authorizations will be the same as they were before. The procedure goes something like this:

1. Retrieve your authorizations list. (That's the record you made of authorizations in Step 4 of the preupgrade procedure.)

2. Enter a cmssvc command and select the auth_set option.

3. When prompted, enter the appropriate password and answer the questions asked.

    If you are asked whether this is an upgrade, answer:

    - y if this is a bug-fix upgrade

    - n if the customer purchased R3V5

    You are then asked to verify the following:

    - Which of the following features and packages were purchased:

vectoring	forecasting
graphics	external call history
expert agent selection	external application
Report Designer	*CentreVu* Supervisor

    - How many simultaneous supervisor logins the site is licensed for.

    - The maximum number of split/skill members available to the site (see the table on page 2-34).

    - The number of ACDs installed.

    For a more detailed rendering of the procedure, see "Setting Authorizations" on page 2-30.

Setting Data Storage Parameters

1. Retrieve the saved printouts of the Data Storage Allocation and Storage Intervals windows. (You saved those printouts in Step 4 of the preupgrade procedure; there should be a printout for each ACD.)

2. Edit the text file:

   `/cms/install/cms_install/storage.def`

   The file lists all the data storage parameters for each ACD in the system. Each parameter is phrased as a prompt on one line of the file; the answer to a prompt is on the next line of the file.

   Compare the values in the file to the values in the printouts. Change any file values that differ from the corresponding printout values. (**Note,** however, that in R3V5 the number of agent trace records may not exceed 500,000 for <u>all</u> ACDs.)

3. Save the file and quit the editor.

| Note | If you should accidentally delete or damage *storage.def,* you can find another copy saved as *storage.skl* in the same directory. |

Configuring CMS

You configure the CMS software through the `setup` option of the `cmssvc` command. The `setup` option gives you the choice of answering a series of questions interactively through the terminal, or of supplying a *UNIX* flat file (cms.install) containing the answers to all the questions. In either case, you need to know the following information:

- Your system's host name.

- The type of backup device on your system.

- The path name of your backup device.

- The number of ACDs in your system.

- For each ACD, the following:

      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 agents 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

You should have checked and recorded all this information early in the upgrade procedure. (See "Step 4: Check and Record CMS System Information" on page 3-5.)

For a detailed procedure, see "Setting Up the CentreVu CMS Application" on page 2-39.

Step 8: Check System Parameters

1. Turn CMS on (via the `run_cms` option of `cmssvc` or `cmsadm`).

2. Check the data storage allocation and free space allocation parameters to make certain they are correct and what is needed. For comparison, use the window printouts you made in Step 4 of the preupgrade procedure.

   You check the storage and free space allocations through the CMS MainMenu's `System Setup` option. For detailed procedures, see "Checking the Free Space Allocation" on page 2-7 and "Checking Data Storage Allocation Parameters" on page 2-11.

Step 9: Install Feature Packages

Now you must install the feature packages authorized for the site. There are only two feature packages that need installing: Forecasting and External Call History.

If you don't recall whether those features are authorized, do this:

1. Type a `cmssvc` command and press **Return**. The machine displays the CMS Services Menu.

2. Type the number corresponding to the `auth_display` option, and press **Return**. The machine responds by listing CMS capabilities and indicating which ones have been authorized.

3. Check the `forecasting` and `external call history` lines. If either one has "`authorized`" in the second column, the corresponding package needs to be installed.

Feature packages are installed via the `pkg_install` option of the CMS Administration menu. Chapter 2 of this manual contains a detailed, step-by-step procedure. Briefly, the procedure goes like this:

1. Enter a `cmsadm` command.

2. Select the `pkg_install` option.

3. Select the feature to install.

The Forecasting installation is entirely automatic. To install External Call History, however, you must answer a few prompts. The answers you need you can get from the `/etc/uucp/Systems` and `/etc/uucp/Devices` files (both of which you should dump to a printer before you begin the installation), and from the data storage allocation window you printed out during the preupgrade. Table 3-13, below, tells you what you need and where to find it:

Table 3-5: External Call History Installation Prompts

Prompt/Item	Where to find it
Name of the remote computer	Machine-Name field of `/etc/uucp/Systems`
nuucp login password	Login field of `/etc/uucp/Systems`
CMS port	`/etc/uucp/Devices`, on the line specified in the Type field of `/etc/uucp/Systems`
Connection speed	Class field of `/etc/uucp/Systems`
The number of call records to be held in the buffer	"Number of call records" field in the Data Storage Allocation window printout.

Step 10: Do a CMSADM Backup

The CMSADM backup provides a backup of the R3V5 system files in case the migration should go wrong. "Doing a CMSADM Backup on a Solaris System" on page 2-22 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.

Step 11: Migrate CMS System Administration Data

System administration data is migrated via the R3 Migrate Data window, using the full maintenance backup tapes prepared during the preupgrade.

Warning 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 some data irretrievably.

1. Start CMS. The CMS MainMenu displays.

2. Put CMS into single-user mode (via `System Setup - CMS State`).

3. Insert the full maintenance backup tape into the tape drive.

4. From the CMS MainMenu, 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 (or `default`)
`Data Type`	`System Administration data`
`Specify ACD(s)`	`All ACDs`

6. Press `Return` to access the action list in the top right corner.

7. Select `Run` and press `Return`. 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. The customer migration log is file `/cms/migrate/r3mig.log`. You can print out the log with the command:

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

The services migration log is in `/cms/maint/r3mig/mig.log`. The log may contain information inappropriate for the customer.

See also "Migration Log Messages" on page 6-15 and "R3 Migrate Data Window" on page 2-63.

Step 12: 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.

> **Note** 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. Start CMS. The CMS MainMenu displays.

3. Select the `System Setup - Data Collection` option, 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 2-14.

   Do not continue until you have verified that data collection is turned off for every ACD in your system.

4. Return to the CMS MainMenu and 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 (or `default`)
`Data Type`	`ACD Administration data`
`Specify ACD(s)`	`All ACDs`

6. Press `Return` to access the Action list in the top right corner of the menu.

7. Select `Run` and press `Return`.

   As the migration progresses, messages in the 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.

   The customer migration log is in the file /cms/migrate/r3mig.log. You can print out the log with this command:

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

   The services migration log is in /cms/maint/r3mig/mig.log. The log may contain information inappropriate for the customer.

See also "Migration Log Messages" section of Chapter 6 for explanations of log messages, and "R3 Migrate Data Window" on page 2-63.

Step 13: Migrate Full Historical Data

To migrate full historical data, use this procedure:

1. From the CMS MainMenu, put CMS in a multi-user state via the System Setup - CMS State option.

2. Return to the CMS MainMenu and turn on data collection for all ACDs via the System Setup - Data Collection option. (See "Turning Data Collection On or Off" on page 2-14.)

3. Verify that the full maintenance backup tape is in the tape drive.

4. From the CMS MainMenu, 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	tape drive device name (or default)
Data Type	Historical data
Stop date	leave blank
Stop time	11:59
Specify ACD(s)	All ACDs

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

7. Select Run and press **Return**.

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

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.

The customer migration log is in the file `/cms/migrate/r3mig.log`. You can print out the log with this command:

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

The services migration log is in `/cms/maint/r3mig/mig.log`. The log may contain information inappropriate for the customer.

See also "Migration Log Messages" section of Chapter 6 for explanations of log messages, and "R3 Migrate Data Window" on page 2-63.

Step 14: Migrate Incremental Historical Data

The procedure for migrating incremental historical data is almost identical to that for migrating full historical data. The primary difference is the backup tape you restore from.

To run an incremental historical data migration, 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 1 of the upgrade procedure.

2. From the CMS MainMenu, 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`	tape drive device name (or `default`)
`Data Type`	`Historical data`
`Stop date`	leave blank
`Stop time`	`11:59`
`Specify ACD(s)`	`All ACDs`

4. Press ⟨Return⟩ to access the Action list in the top right corner of the menu.

5. Select `Run` and press ⟨Return⟩.

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

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

6. Investigate the customer migration log and take any necessary corrective action. The customer migration log is in the file `/cms/migrate/r3mig.log`. You can print out the log with this command:

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

   The services migration log is in `/cms/maint/r3mig/mig.log`. The log may contain information inappropriate for the customer.

See also "Migration Log Messages" section of Chapter 6 for explanations of log messages, and "Back Up Data Window" on page 2-26.

> **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 full maintenance backup was done.

Step 15: Back Up the Upgraded System

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.

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	tape drive device name (or default)
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 2-26.

Upgrading to R3V5 (10,000-agent Capacity)

This section presents procedures for upgrading to R3V5 when you intend your system to have a maximum capacity of 10,000 agents. For that capacity, you will need *Solstice DiskSuite* software on your system. If you wish your maximum agent capacity to be only 5200, you do not need the *Solstice DiskSuite* software package. If you prefer not to install it, use the procedure "Step 7: Do a CMSADM Backup" on page 3-10.

Prerequisites: You must be logged in as *root*, the computer must be in run-level 2 or 3, all file systems must be mounted, and CMS must be turned OFF. Also, you must have the CD-ROM that contains the new CMS base load.

Table 3-6: Checklist for Upgrading to R3V5 (10,000-agent Capacity)

Step	Action
1	Remove CMS patches
2	Back up CMS file systems
3-5	Repartition disks / install *Solaris* system software
6	Restore previous CMS software
7	Remove the CMS base load
8-10	Install the *Solstice DIskSuite* package
11	Install *Solaris* patches
12-14	Install the new CMS software
15	Set up R3V5 CMS
16	Check system parameters
17	Install feature packages
18	Do a CMSADM backup
19	Migrate CMS system administration data
20	Migrate ACD administration data
21	Restart CMS data collection
22	Migrate full historical data
23	Migrate incremental historical data
24	Back up the upgraded system
25	Restore customer files

Step 1: Remove CMS Patches

Remove all existing CMS patches with this procedure:

1. Log in as *root*.

2. Enter the `cmssvc` command. The CMS Services menu displays:

```
 AT&T 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) patch_inst    Install a single CMS patch from CD
  8) patch_rmv     Backout an installed CMS patch
  9) load_all      Install all CMS patches found on CD
 10) back_all      Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit:
```

3. Enter the number corresponding to `back_all`.

   If there are no patches installed, the system responds:

```
No CMS patches found on this machine
patch_rmv can remove installed patches only
#
```

   In that is the case, skip to "Step 2: Back Up CMS File Systems" on page 3-35.

   If there are patches installed on the machine, the system lists them and asks if you really want them removed. For example:

```
The following patches are installed on this machine:
        cmsp1-s
        cmsp2-s
        cmsp3-s
          .
          .
          .
Are you sure you wish to remove all these patches? (y|n)
```

4. Enter `y`.

The system removes the patches. For each patch removed, the system displays messages similar to the following:

```
@(#) backout patch 1.0 96/08/02


Removing patch package for cmspx-s:
Removal of <cmspx-s> was successful.
Restoring previous version of files...
   .
   .
   .
x blocks
Making package database consistent with restored files:
Patch x has been backed out.
#
```

Step 2: Back Up CMS File Systems

Next, you need to do an incremental historical backup.

An incremental backup saves any data collected since the last full backup, and is a way of maximizing data collection while moving to R3V5. Briefly, an incremental backup 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	tape drive device name (or `default`)
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 2-26.

Step 3: Repartition Disks Locally

If the disk repartition will be performed remotely, go to "Step 4: Repartition the Disks Remotely" on page 3-53.

Before you proceed, be aware that repartitioning the disks means reinstalling the operating system. Make sure you have the *Solaris* 2.4 operating system CD, the *Solstice DiskSuite* CD, the CMS CD, and the CMSADM backup tape.

1. Sync your system by entering the command:

```
# init 0
```

2. Insert the *Solaris* 2.4 CD into the CD-ROM drive. From the `ok` prompt, reboot from the CD by entering the command:

```
ok> boot cdrom
```

The boot process takes about 5-10 minutes. After the boot process, the system starts the *Solaris* Installation Program:

```
┌─────────────────────────────────────────────┐
│ ▽│        The Solaris Installation Program    │
├─────────────────────────────────────────────┤
│                                               │
│   You are now interacting with the Solaris    │
│   installation program.  The program is       │
│   divided into a series of short sections.     │
│   At the end of each section, you will see     │
│   a summary of the choices you've made, and    │
│   be given the opportunity to make changes.    │
│                                               │
│   As you work with the program, you will       │
│   complete one or more of the following tasks: │
│                                               │
│     1 – Identify peripheral devices            │
│     2 – Identify your system                    │
│     3 – Install Solaris software                │
│                                               │
│   > To begin the installation process, choose  │
│     Continue.                                   │
│                                               │
│   ┌──────────┐                  ┌──────┐       │
│   │ Continue │                  │ Help │       │
│   └──────────┘                  └──────┘       │
└─────────────────────────────────────────────┘
```

3. Click `Continue`. The Identify This System screen displays:
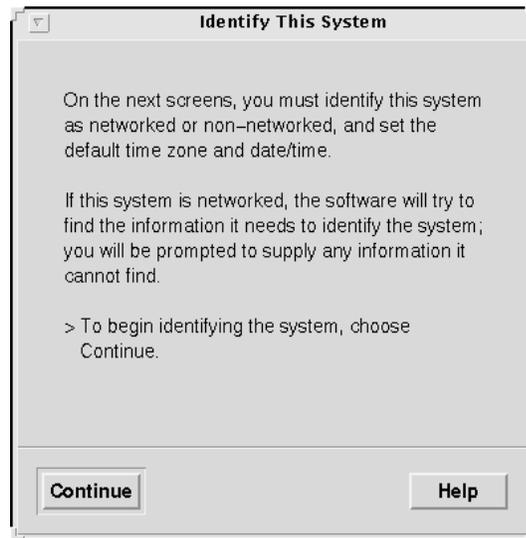
4. Click `Continue`. The Host Name screen displays:
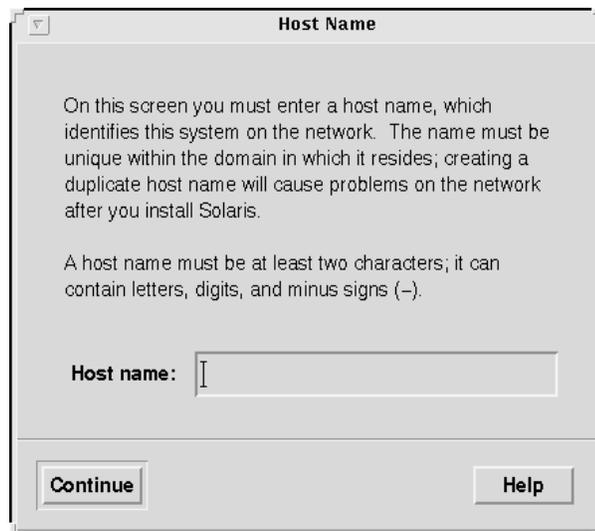
5. Click the `Host name` box, type the host name for the workstation, and then click `Continue`. (The host name for the system was designated by TSC Provisioning personnel. To keep the same name as before, refer to the name recorded on page 3-8.)

The Network Connectivity screen displays:

Network Connectivity

On this screen you must specify whether this system is connected to a network. If you specify Yes, the system should be connected to the network by an Ethernet or similar network adapter.

Networked: ◆ Yes

◇ No

Continue   Help
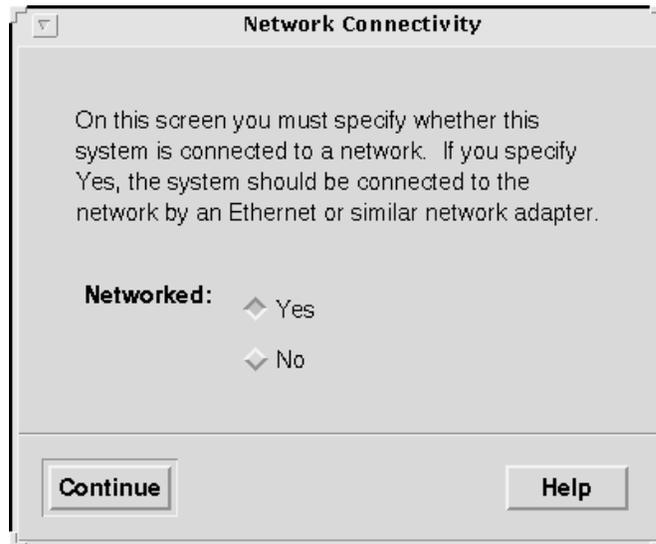
6. Click on `Yes`, then on `Continue`.

> **Note** If the system is equipped with more than one network board, the Primary Network Interface screen displays. You should click `le0`, and then `Continue`.

The IP Address screen displays:

IP Address

On this screen you must enter the Internet Protocol (IP) address for this system. It must be unique and follow your site's address conventions, or a system/network failure could result.

IP addresses contain four sets of numbers separated by periods (for example 129.200.9.1).

IP address:

Continue   Help
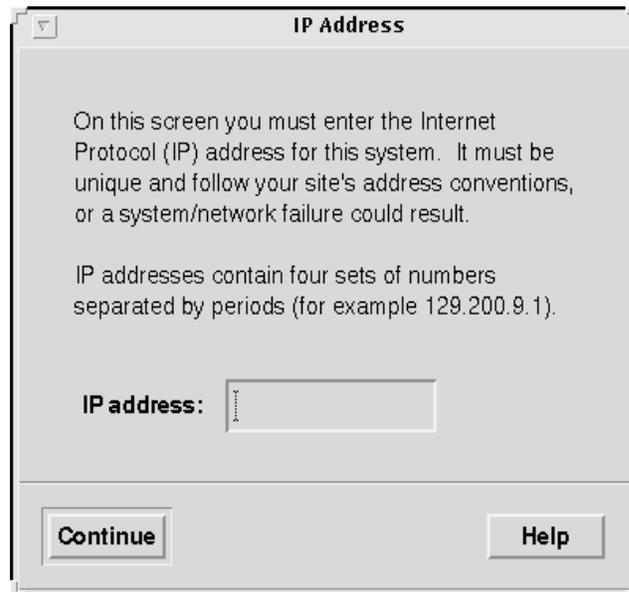
7. Click the `IP address` box, type the I.P. address (129.200.9.1 is recommended), and then click `Continue`. To keep the same

address as before the upgrade, refer to the I.P. address recorded on page 3-8.

The Confirm Information screen displays:
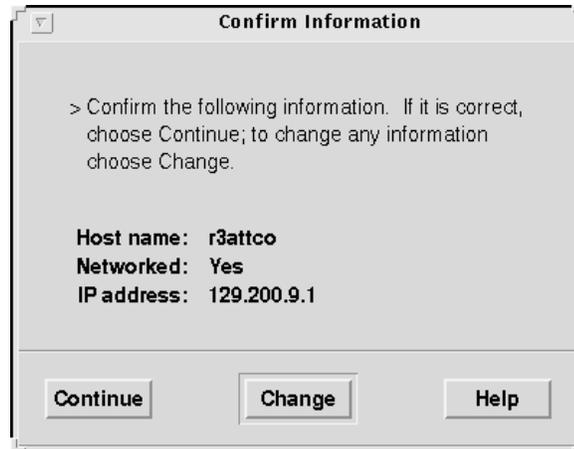
8. Click `Continue` if the displayed information is correct. If you click `Change`, the program returns to the Host Name screen.

The Name Service screen displays:
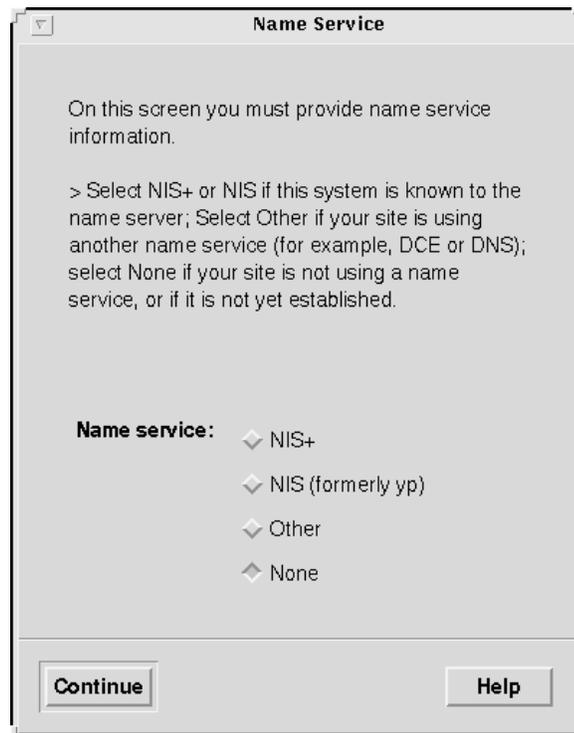
9. Click `None`, and then click `Continue`. The Subnets screen displays:
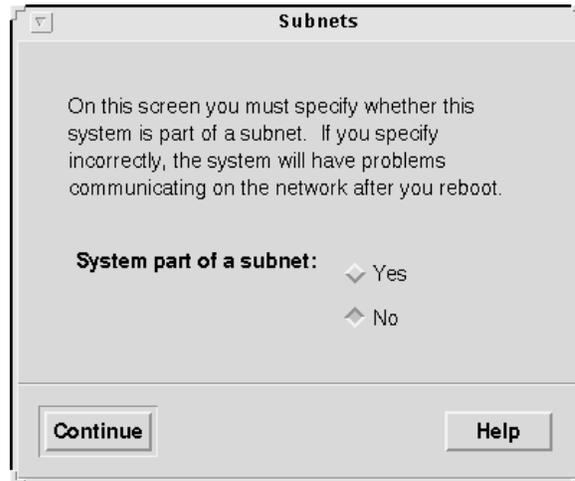
10. Click `No`, and then click `Continue`. The Confirm Information screen displays:
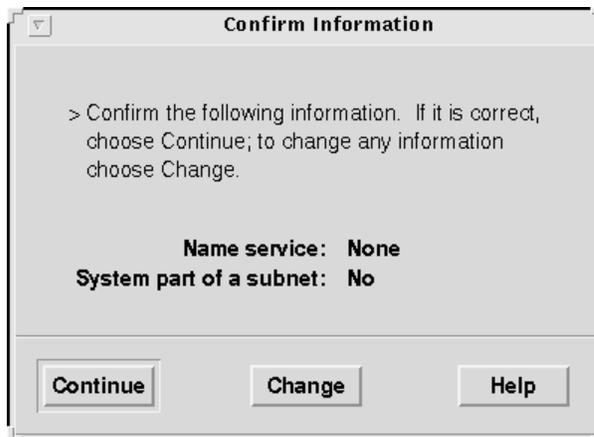
11. Click `Continue` if the displayed information is correct. If you click `Change`, the program returns to the Name Service screen (step 8).

The Time Zone screen displays:
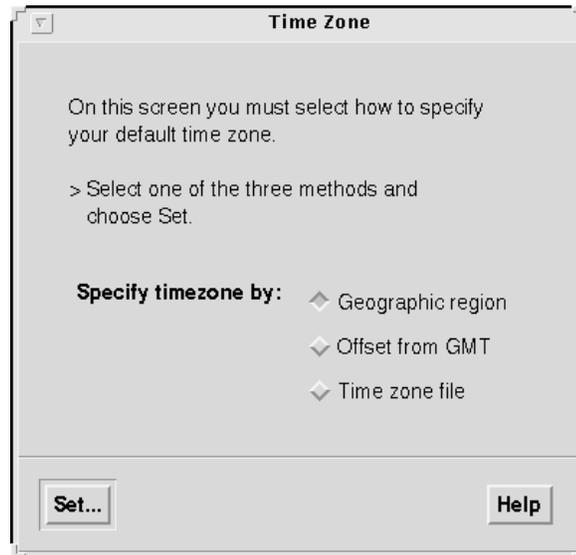
12. Click `Geographic region`, and then click `Set`.

The Geographic Region screen displays:
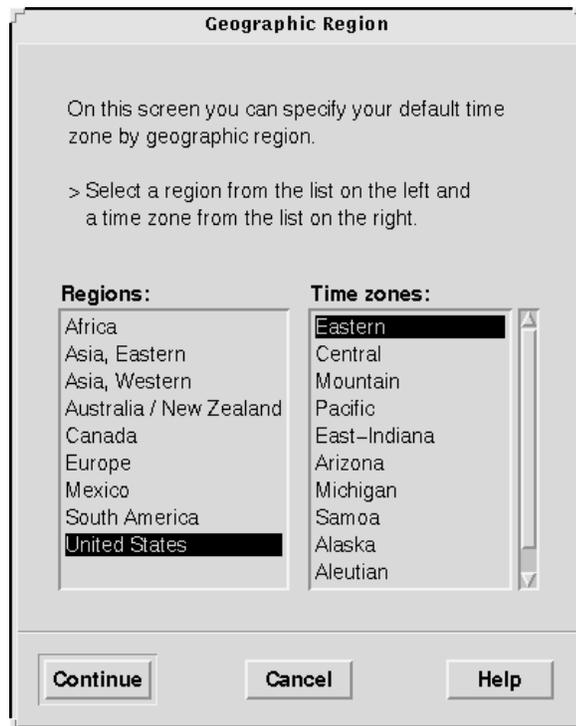
13. Click to highlight the region and time zone where this system is located, and then click `Continue`.

The Date and Time screen displays:

```
┌─────────────────────────────────────────────┐
│  ▽│           Date and Time                  │
│ ┌─────────────────────────────────────────┐  │
│ │                                         │  │
│ │  > Accept the default date and time or enter │
│ │    new values.                          │  │
│ │                                         │  │
│ │                                         │  │
│ │     Date and time:  02/22/95 14:29      │  │
│ │                                         │  │
│ │   Year  (4 digits) :   │1995│           │  │
│ │                                         │  │
│ │   Month  (1–12)   :   │02│              │  │
│ │                                         │  │
│ │    Day   (1–31)   :   │22│              │  │
│ │                                         │  │
│ │   Hour  (0–23)    :   │14│              │  │
│ │                                         │  │
│ │   Minute (0–59)   :   │29│              │  │
│ │                                         │  │
│ │                                         │  │
│ │  ┌──────────┐            ┌────────┐     │  │
│ │  │ Continue │            │  Help  │     │  │
│ │  └──────────┘            └────────┘     │  │
│ └─────────────────────────────────────────┘  │
└─────────────────────────────────────────────┘
```

14. Click `Continue` to accept the default date and time, or click and drag a value in a field you wish to change, and enter the appropriate information. Click `Continue` when all the information is correct.

    The Confirm Information screen displays:
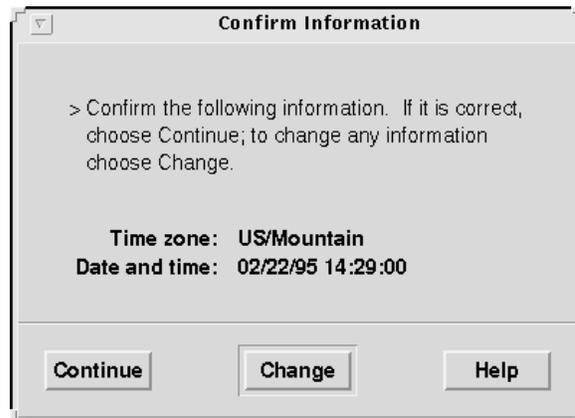
```
┌─────────────────────────────────────────────┐
│  ▽│         Confirm Information              │
│ ┌─────────────────────────────────────────┐  │
│ │                                         │  │
│ │  > Confirm the following information.  If it is correct, │
│ │    choose Continue; to change any information │
│ │    choose Change.                       │  │
│ │                                         │  │
│ │     Time zone:  US/Mountain             │  │
│ │   Date and time:  02/22/95 14:29:00     │  │
│ │                                         │  │
│ │  ┌──────────┐ ┌────────┐   ┌────────┐   │  │
│ │  │ Continue │ │ Change │   │  Help  │   │  │
│ │  └──────────┘ └────────┘   └────────┘   │  │
│ └─────────────────────────────────────────┘  │
└─────────────────────────────────────────────┘
```

15. Click `Continue` if the displayed information is correct. (If you click `Change`, the program returns to the Time Zone screen, and you must back up to step 12.)

    If *Solaris* is already installed on the machine, which is the case for machines in the field, the Upgrade screen (not shown) displays. In that case, click on `Initial`.

The program displays the Install *Solaris* Software screen:
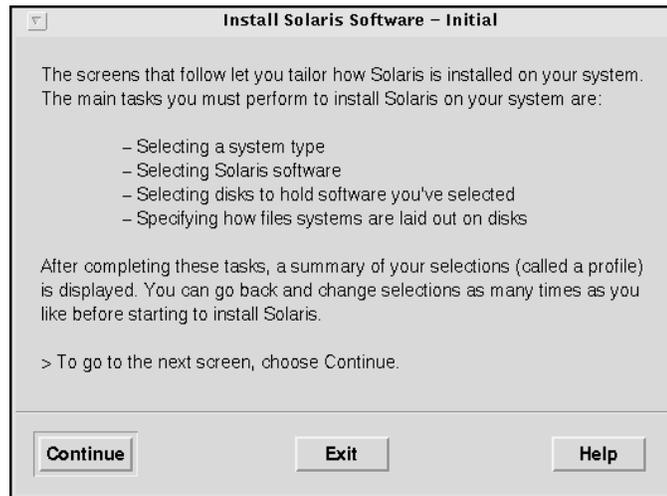
16. Click `Continue`.

The System Type screen displays:
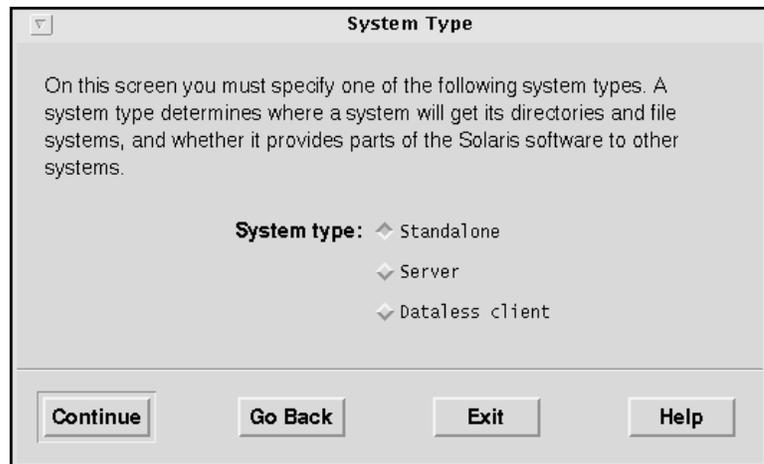
17. Click `Standalone`, and then click `Continue`.

The Software screen displays:
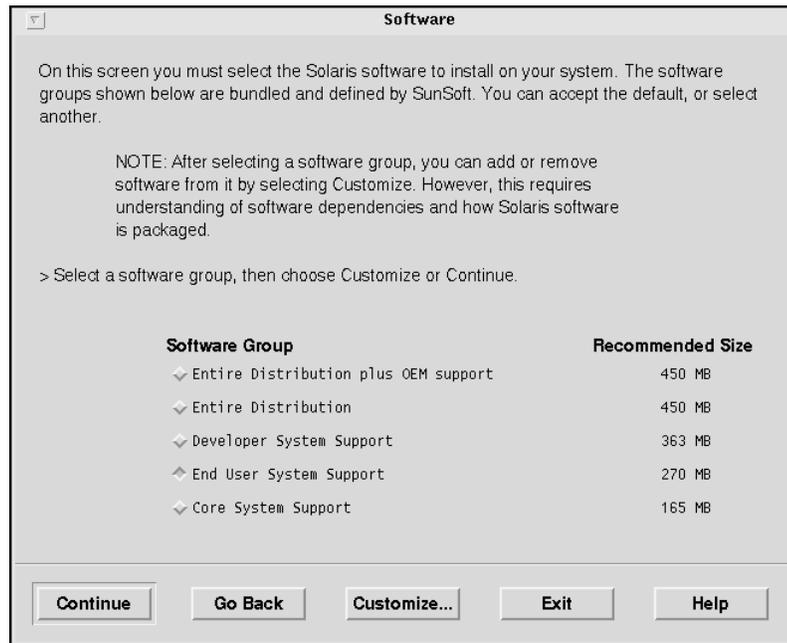
18. Click `End User System Support`, and then click `Continue`.

19. Click `Continue`. The Disks screen displays:
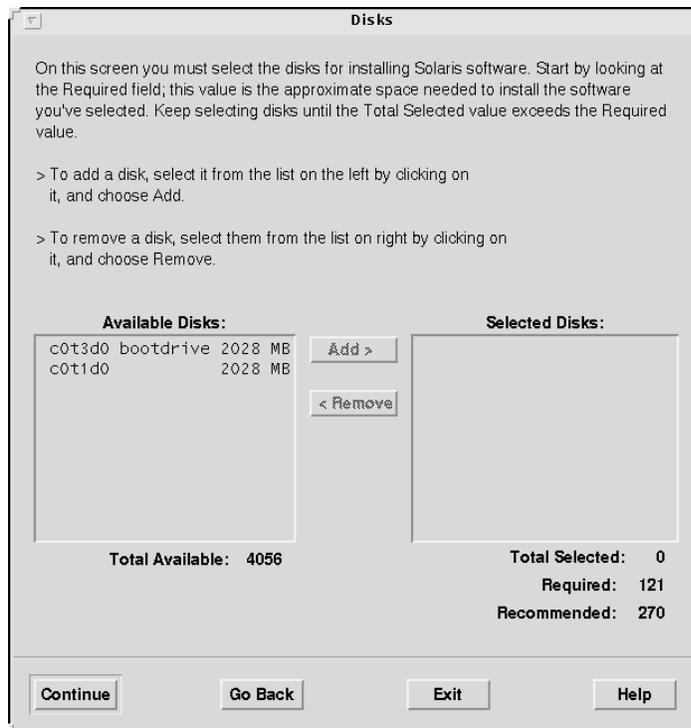
> **Note** All the disks equipped with the system should be listed as available. If not, you may have a connectivity problem. The size values shown here are for 2.10-GB disks.Those values will differ according to your disk configuration.

20. Click to highlight an available disk.

21. Click `Add` so the available disk becomes a selected disk.

22. Repeat Steps 20 and 21 until all available disks are selected.

23. Click `Continue`.

     The Preserve Data screen displays:

```
┌────────────────────────────────────────────────────────────┐
│ ▽                      Preserve Data?                       │
├────────────────────────────────────────────────────────────┤
│                                                            │
│  Do you want to preserve existing data? At least one of the disks you've │
│  selected for installing Solaris has file systems or unnamed slices that you │
│  may want to save.                                         │
│                                                            │
│  > To go to the Preserve Data screen to save file systems or unnamed │
│    slices, choose Preserve.                                │
│                                                            │
│  > To continue and allow current file systems and unnamed slices to be │
│    overwritten, choose Continue.                           │
│                                                            │
│                                                            │
│  ┌──────────┐  ┌──────────┐  ┌──────────┐  ┌────────┐  ┌────────┐ │
│  │ Continue │  │ Go Back  │  │ Preserve...│ │  Exit  │  │  Help  │ │
│  └──────────┘  └──────────┘  └──────────┘  └────────┘  └────────┘ │
└────────────────────────────────────────────────────────────┘
```

24. Click `Continue`.

     The Automatically Layout File Systems screen displays:

```
┌────────────────────────────────────────────────────────────┐
│ ▽              Automatically Layout File Systems?           │
├────────────────────────────────────────────────────────────┤
│                                                            │
│  Do you want to use the auto-layout feature to automatically layout file systems? Manually laying out │
│  file systems requires advanced system administration skills. │
│                                                            │
│  > To use the auto-layout feature, choose Auto-layout.     │
│                                                            │
│  > To manually lay out file systems, choose Manual Layout. │
│                                                            │
│  ┌────────────┐  ┌──────────┐  ┌──────────────┐  ┌────────┐  ┌────────┐ │
│  │ Auto-layout│  │ Go Back  │  │ Manual Layout│  │  Exit  │  │  Help  │ │
│  └────────────┘  └──────────┘  └──────────────┘  └────────┘  └────────┘ │
└────────────────────────────────────────────────────────────┘
```
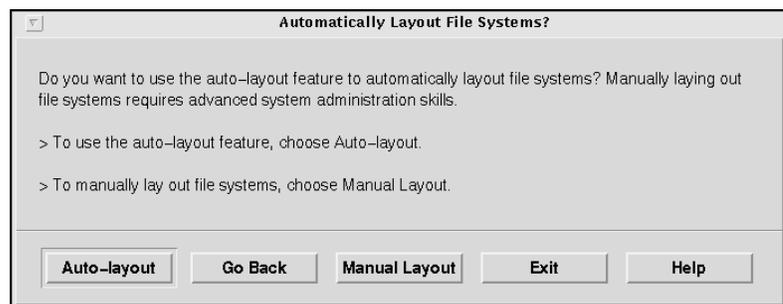
25. Click `Manual Layout`.

The File System and Disk Layout screen displays:
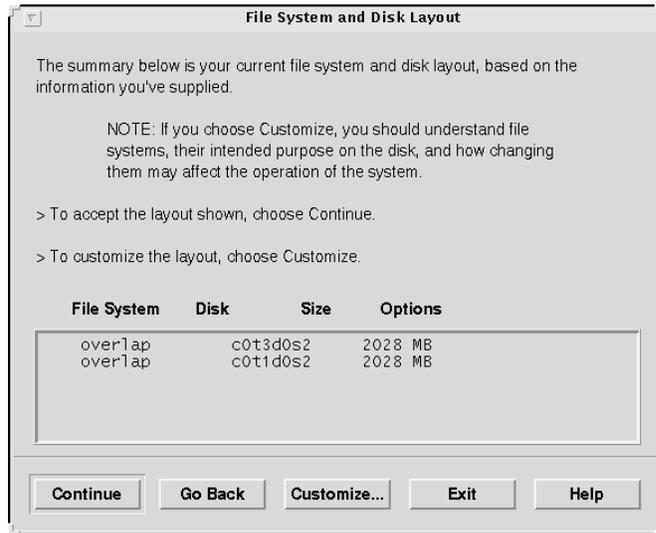
26. Click `Customize`. The Customize Disks screen displays:
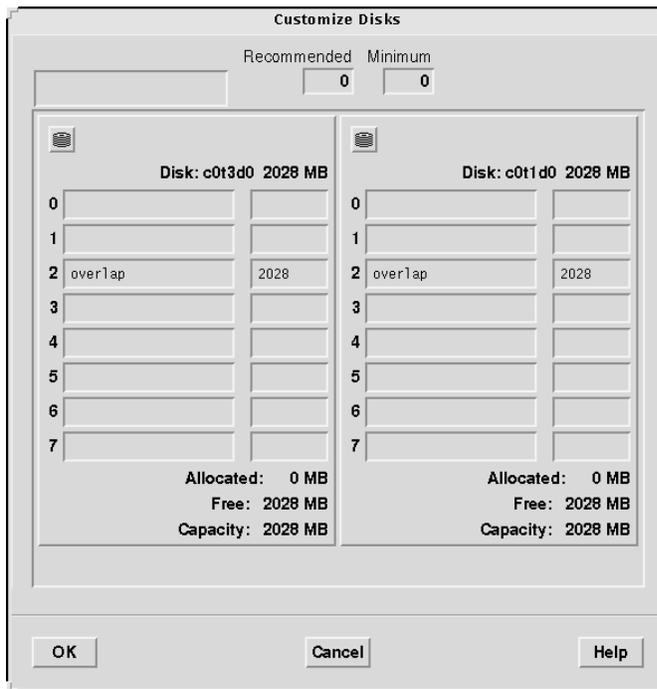
27. Click the cylinders icon in the upper left-hand corner of the disk 1 (c0t3d0) column.The Customize Disks by Cylinders screen displays:

Customize Disks by Cylinders

Recommended   Minimum

                    0   0

Disk: c0t3d0   2733 CYLS

		Size	Start	End
0				
1				
2	overlap	2733	0	2732
3				
4				
5				
6				
7				

Allocated: 0 CYLS
Free: 2733 CYLS
Capacity: 2733 CYLS

OK   Load...   Cancel   Help
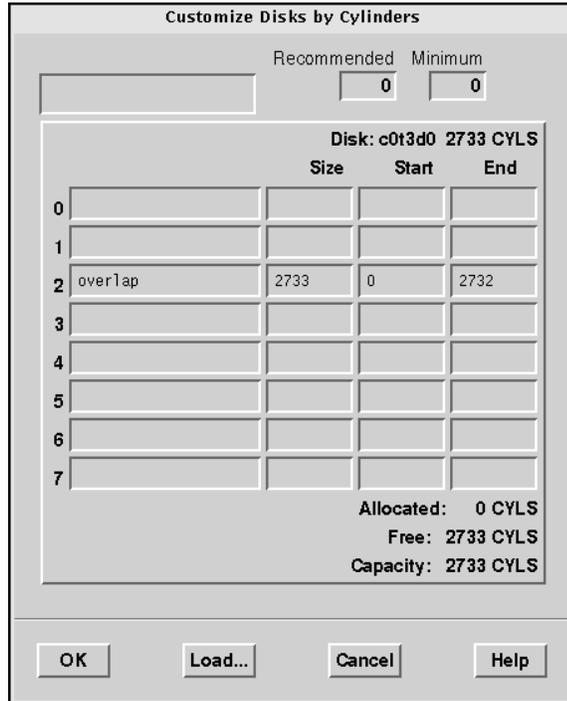
28. Partition disk 1 (c0t3d0) by filling in the system name and size for each slice, using the names and numbers in Table 3-7.

> **Note** The size of the overlap file system always defaults to the size of the entire disk. Do not change this value.

Table 3-7: Internal Disk 1 (c0t3d0) Partitioning

Slice	File System Name	1.05G Disk Partition Size (cylinders	2.1G Disk Partition Size (cylinders)
0	/	1630	1081
1	(unnamed)	150	100
2	overlap	2036	2733
3	(unnamed)	256	1552

The following example shows how the Customize Disks by Cylinders screen looks for a system with a 2.1-GB disk 1:
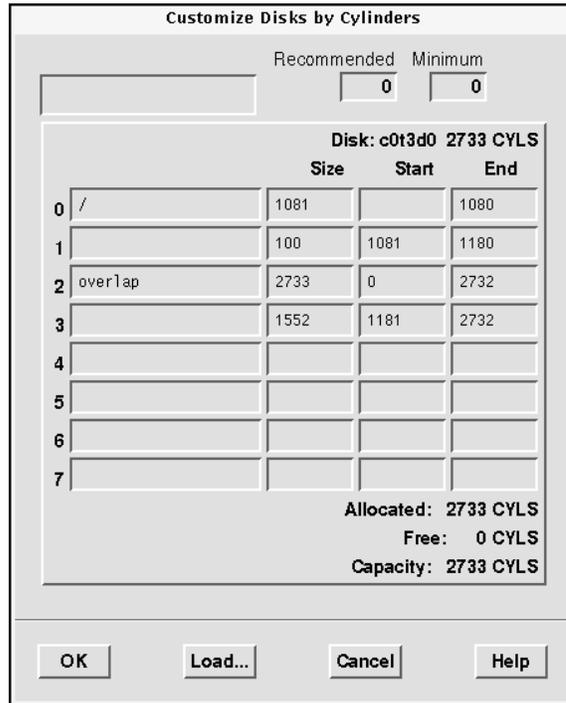
29. Click OK after setting up the partitions for disk 1. The program returns to the Customize Disks screen.
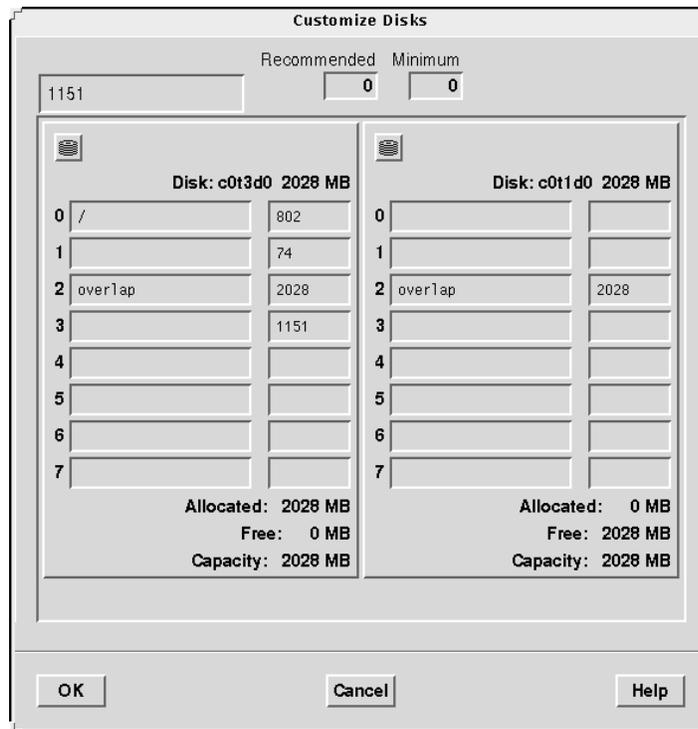
30. Click the cylinders icon for the next disk to be partitioned, if there is one. The Customize Disks by Cylinders screen displays.
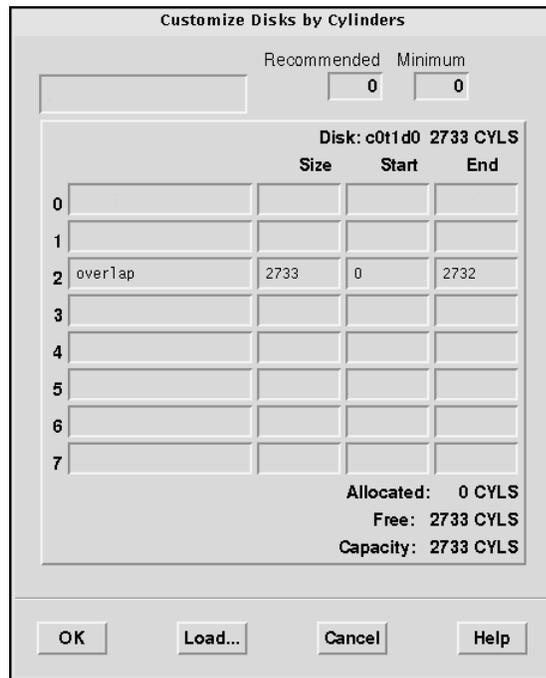
Partition the disk by filling in the system name and size for each slice. Use Table 3-8 to determine the name and size of each slice.

| Note | The size of the overlap file system always defaults to the size of the entire disk. Do not change this value.

Table 3-8: Partitioning for Disks 2-12

Slice #	File System	1.05GB DiskSize (cylinders)	2.10GB Disk Size (cylinders)
0	(unnamed)	2	2
1	(unnamed)	2034	2731
2	overlap	2036	2733

Properly set up, for example, the Customize Disks by Cylinders screen for a 2.1-GB disk would look like this:

Customize Disks by Cylinders

Recommended   Minimum
0   0

2733

Disk: c0t1d0 2733 CYLS

		Size	Start	End
0		2		1
1		2731	2	2732
2	overlap	2733	0	2732
3				
4				
5				
6				
7				

Allocated: 2733 CYLS
Free: 0 CYLS
Capacity: 2733 CYLS

OK   Load...   Cancel   Help
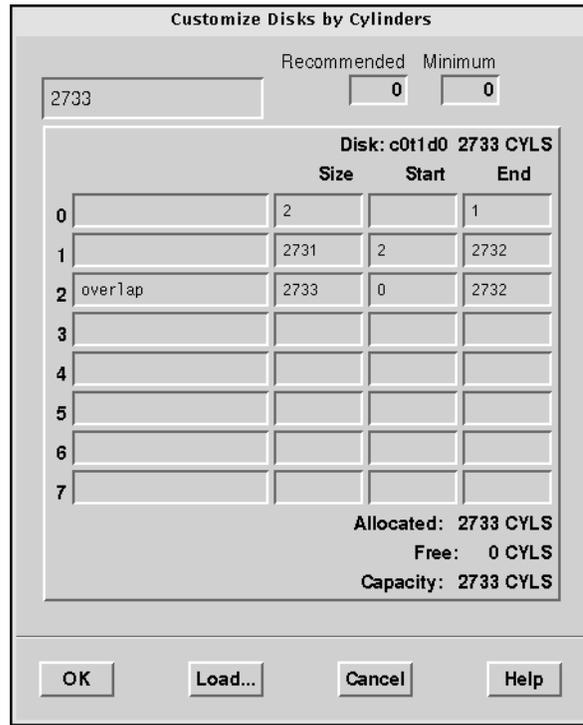
31. Click OK. The Customize Disks screen reappears:

Customize Disks

Recommended   Minimum
0   0

2026

Disk: c0t3d0 2028 MB

0	/	802
1		74
2	overlap	2028
3		1151
4		
5		
6		
7		

Allocated: 2028 MB
Free: 0 MB
Capacity: 2028 MB

Disk: c0t1d0 2028 MB

0		1
1		2026
2	overlap	2028
3		
4		
5		
6		
7		

Allocated: 2028 MB
Free: 0 MB
Capacity: 2028 MB

OK   Cancel   Help
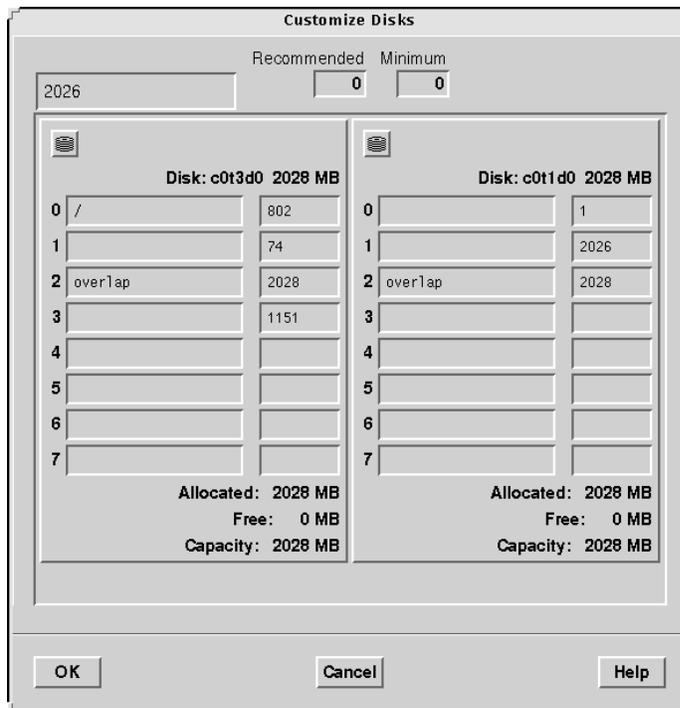
> If there is another disk attached to your system, repeat steps 30 and 31 for that disk. Continue on to step 32 <u>only</u> when you have partitioned <u>every</u> hard disk on your system.

32. Click the `OK` button on the Customize Disks screen.

    The File System and Disk Layout screen displays:
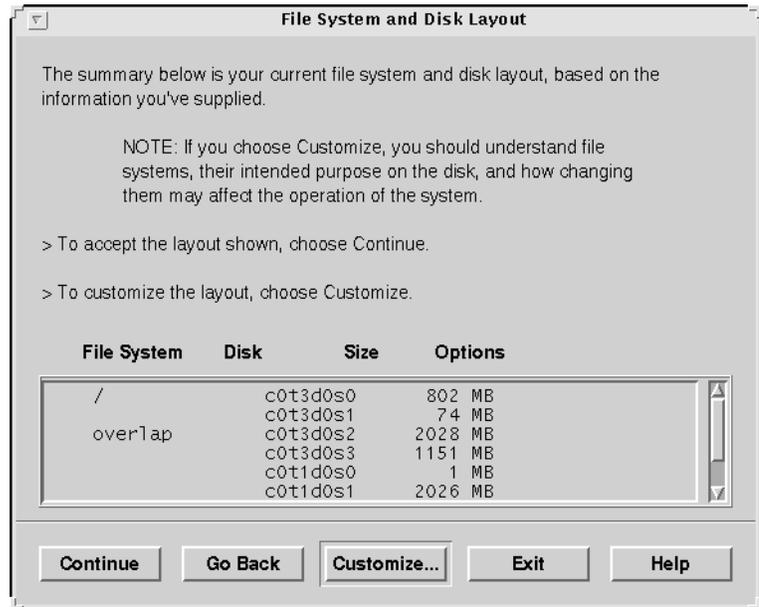
33. Click `Continue`.

    The Mount Remote File Systems screen displays:
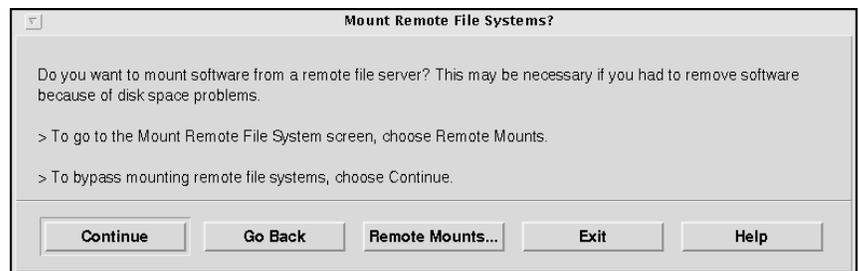
34. Click `Continue`.

    The Profile screen displays:
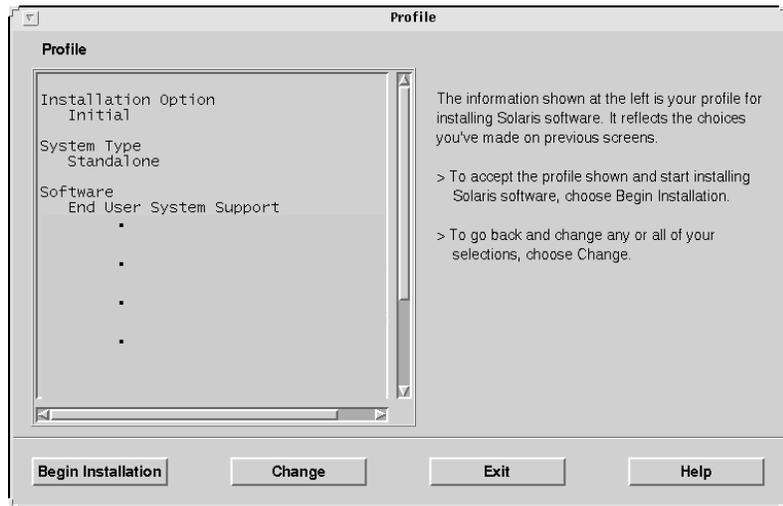
35. Click `Begin Installation`.

    The program responds:
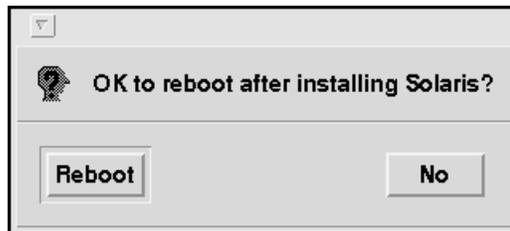
36. Click `Reboot`.

    The disk partitioning process begins with the display of the Installing *Solaris* - Progress screen:

The disk partitioning may take 40 minutes to 2 hours depending on the number of disks being partitioned. As the disks are partitioned and *Solaris* 2.4 system files are copied to the disk, the progress gauge is updated to indicate the progress of the partitioning.

At this point, skip ahead to "Step 5: Complete the Solaris 2.4 Software Installation" on page 3-77

Step 4: Repartition the Disks Remotely

This step presents in detail the procedures necessary to remotely partition a system for the *Solstice DiskSuite* software package.

Dialing In for a Remote Upgrade

If you are doing the upgrade remotely, use the following instructions to dial in to a system remotely:

1. Dial up the local system.

2. Enter the terminal type for the remote terminal. You will be prompted for this information when you dial up the system.

3. Log in with the *root* login and password.

Giving Control to the Remote Console

If you are doing the *Solaris* part of the upgrade remotely, use the following instructions to transfer control of the console from the local system to the remote system. This procedure takes about 10 minutes.
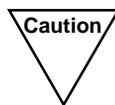
⚠ **Caution** If you control the console remotely and the phone line is interrupted during the *Solaris* upgrade, you cannot dial back in to the system. If that should happen, you can reset back to the local console with this procedure:

    a. Turn off the SPARCstation.

    b. Hold down the Ctrl-N key combination as you turn the machine back on. Keep holding down Ctrl-N until the screen displays an OK prompt.

You may now redirect the console again.

1. Turn off the administration at serial port A by enter the following command:

```
# /cms/install/bin/abcadm -r ttya
```

The system responds:

```
ttya is currently turned off

Are you sure you want to change it? [y,n,?]
```

2. Answer y.

    The system responds:

```
ttya administration removed
#
```

3. Enter the following command to enable the console for remote operation on serial port A:

```
# /cms/install/bin/abcadm -c ttya
```

The system responds:

```
Console set to remote

This change requires a reboot to take affect

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

4. Answer y.

    The shutdown begins:

```
Starting port monitor
Setting console parameters
Proceeding to reboot
      .
      .
      .
system console login:
```

5. Log in with the *root* login and password.

   The local console screen blanks out and displays a console login
   and password prompt. Nothing should be done at the local console
   while the upgrade is being done remotely.

Booting from the *Solaris* 2.4 CD-ROM

To boot the *Sun SPARCserver* computer from the CD-ROM, do the
following:

1. Make sure CMS is turned off.

2. Sync your system by entering the command:

```
init 0
```

1. Load the *Solaris 2.4 Hardware: 3/95* CD into the CD-ROM drive and,
   from the ok prompt, enter the command:

```
ok boot cdrom
```

The boot process takes about 5-10 minutes. When it completes, you are prompted to enter the terminal type of the remote console:

```
What type of terminal are you using?
 1) ANSI Standard CRT
 2) DEC VT52
 3) DEC VT100
 4) Heathkit 19
 5) Lear Siegler ADM31
 6) PC Console
 7) Sun Command Tool
 8) Sun Workstation
 9) Televideo 910
 10) Televideo 925
 11) Wyse Model 50
 12) X Terminal Emulator (xterms)
 13) Other
Type the number of your choice and press Return:
```

2. Enter the number that corresponds to your terminal type. If you select 13) Other, you are prompted to enter your terminal type (for example, tty5425).

   After you identify your terminal type, the system displays this screen:

```
The Solaris Installation Program

You are now interacting with the Solaris installation
program. The program is divided into a series of short
sections. At the end of each section, you will see a summary
of the choices you've made, and be given the opportunity to
make changes.

As you work with the program, you will complete one or more
of the following tasks:

  1 - Identify peripheral devices
  2 - Identify your system
  3 - Install Solaris software

About navigation...

  - The mouse cannot be used.

  - If your keyboard does not have function keys, or they do
    not respond, press ESC; the legend at the bottom of the
    screen will change to show the ESC keys to use for
    navigation.

 F2_Continue     F6_Help
```

|Note| • The keys you need to press for a given function differ depending on the terminal type. This manual refers only to function names; text at the bottom of each screen tells you how to execute available functions.

• If you need help during the installation, use the Help function to get more information about the current procedure.

3. To continue, select the Continue function.

Identifying the System The following screen displays:

```
Identify This System

On the next screens, you must identify this system as
networked or non-networked, and set the default time zone
and date/time.

If this system is networked, the software will try to find
the information it needs to identify your system; you will
be prompted to supply any information it cannot find.

> To begin identifying this system, press F2.



  F2_Continue     F6_Help
```

1. To continue, select Continue.

The following screen displays:

```
Host Name

On this screen you must enter your host name, which
identifies this system on the network. The name must be
unique within your domain; creating a duplicate host name
will cause problems on the network after you install Solaris

A host name must be at least two characters; it can contain
letters, digits, and minus signs (-).


  Host name: _____



  F2_Continue     F6_Help
```

2. Type the host name for the workstation (also known as the system name). Then select `Continue`. To use the same name as before the upgrade began, see page 3-8.

   The following screen displays:

```
Network Connectivity

On this screen you must specify whether this system is
connected to a network. If you specify Yes, the system
should be connected to the network by an Ethernet or
similar network adapter.

> To make a selection, use the arrow keys to highlight the
  option and press Return to mark it [X].


    Networked

    [X] Yes
    [ ] No




  F2_Continue     F6_Help
```

3. Use the arrow keys to select the `Yes` box; then press **Return** to mark it. Then select `Continue`.

| Note | If the system is equipped with more than one network board, the `Primary Network Interface` screen displays. You should: |

    a. select the `le0` option

    b. press `Return`

    c. select `Continue`.

The following screen displays:

```
IP Address


On this screen you must enter the Internet Protocol (IP)
address for this system. It must be unique and follow your
site's address conventions, or a system/network failure
could result.

IP addresses contain four sets of numbers separated by
periods (for example 129.200.9.1


  IP address: _____




  F2_Continue      F6_Help
```

4. Type the IP address for the workstation; then select `Continue`. To use the same address as before the upgrade began, see page 3-8.

The following screen displays:

```
Confirm Information

> Confirm the following information. If it is correct, press
  F2; to change any information, press F4.


   Host name: abcxyz
   Networked: Yes
  IP address: 123.45.6.789




  F2_Continue     F4_Change     F6_Help
```

5. If the displayed information is correct, select `Continue`. If you select `Change`, the program returns to the `Host Name` screen.

   The following screen displays:

```
Name Service

On this screen you must provide name service information.
Select NIS+ or NIS if this system is known to the name
server; select Other if your site is using another name
service (for example, DCE or DNS); select None if your site
is not using a name service, or if it is not yet established.

> To make a selection, use the arrow keys to highlight the
  option and press Return to mark it [X].


  Name service

  [ ] NIS+
  [ ] NIS (formerly yp)
  [ ] Other
  [X] None




  F2_Continue     F6_Help
```

6. Use the arrow keys to select the `None` box; then press **Return** to mark it. Then select `Continue`.

The following screen displays:

```
Subnets

On this screen you must specify whether this system is part
of a subnet. If you specify incorrectly, the system will
have problems communicating on the network after you reboot.

> To make a selection, use the arrow keys to highlight the
  option and press Return to mark it [X].


  System part of a subnet

  [ ] Yes
  [X] No




  F2_Continue       F6_Help
```

7. Use the arrow keys to select the No box; then press Return to mark
    it. Select Continue.

    The following screen displays:

```
  Confirm Information

  > Confirm the following information. If it is correct, press
    F2; to change any information, press F4.


            Name service: None
  System part of a subnet: No






    F2_Continue       F4_Change       F6_Help
```

8. If the displayed information is correct, select Continue. If you
    select Change, the program returns to the Name Service screen.

Setting the Date and Time

The following screen displays:

```
Time Zone

On this screen you must specify your default time zone. You
can specify a time zone in three ways: select one of the
geographic regions from the list, select other - offset from
GMT, or other - specify time zone file.

> To make a selection, use the arrow keys to highlight the
  option and press Return to mark it [X].


  Regions
  [ ] Asia, Western
  [ ] Australia / New Zealand
  [ ] Canada
  [ ] Europe
  [ ] Mexico
  [ ] South America
  [X] United States
  [ ] other - offset from GMT
  [ ] other - specify time zone file

F2_Continue      F6_Help
```

1. Choose an option by using the arrow keys to position the cursor in the selection box next to the region appropriate to the customer's location. Press Return to mark your choice. Finally, select Continue to record your choice and move on.

   The following screen displays:

```
> To make a selection, use the arrow keys to highlight the
  option and press Return to mark it [X].

    Time zones

    [ ] Eastern
    [ ] Central
    [X] Mountain
    [ ] Pacific
    [ ] East-Indiana
    [ ] Arizona
    [ ] Michigan
    [ ] Samoa
    [ ] Alaska
    [ ] Aleutian
    [ ] Hawaii


    F2_Continue      F5_Cancel      F6_Help
```

2. Select the appropriate time zone for the customer's location by using the arrow keys to position the cursor, and then pressing `Return` to mark your choice. Select `Continue` to record your choice and move on.

    The following screen displays:

```
  Date and Time

 > Accept the default date and time or enter
   new values.

 Date and time: 06/08/95 10:08

   Year   (4 digits) : 1995
   Month  (1-12)     : 06
   Day    (1-31)     : 08
   Hour   (0-23)     : 10
   Minute (0-59)     : 13




     F2_Continue      F6_Help
```

3. Select `Continue` to accept the default data and time, or use the arrow keys to select the fields that need correction and enter the correct information. When all the information is correct, select `Continue`.

   The following screen displays:

```
Confirm Information

> Confirm the following information. If it is correct, press
  F2; to change any information, press F4.



     Time zone: US/Mountain
  Date and time: 06/08/95 10:13:00













   F2_Continue      F4_Change      F6_Help
```

4. Select `Continue` if the displayed information is correct. If you select `Change`, the program returns to the `Time Zone` screen.

   The system date and time are now set. After a brief pause, the program continues with the installation of *Solaris* 2.4 system files.

Installing the
Solaris **2.4 System**
Files

The following screen displays:

```
Upgrade System?

This system is upgradable. Choosing the upgrade option means
any bundled Solaris software will be updated to the new
release, and as many local modifications as possible will be
saved.

While your system is upgradable, you can choose the initial
option; however, files on your disk will be overwritten and
data will be lost.

CAUTION: If you choose the upgrade option, it is
especially important to back up your system. However,
backing up is also recommended for the initial option if
there is any data on the disk that you want to save.

> To start the upgrade option, choose F2.

> To start the initial option, choose F4.


  F2_Upgrade     F4_Initial     F5_Exit     F6_Help
```

1. To continue, select `Initial`.

   The following screen displays:

2. Select continue. The following screen displays:

```
System Type

On this screen you must specify one of the following system
types. A system type determines where a system will get its
directories and file systems, and whether it provides portions
of Solaris software to other systems.

> To make a selection, use the arrow keys to highlight the
  option and press Return to mark it [X].

                          [ ] Standalone
                          [ ] Server
                          [ ] Dataless Client




  F2_Continue     F3_Go Back     F4_Customize     F5_Exit
```

Put the cursor in the box next to `Standalone` and select
`Continue`.

The following screen appears:

```
Software

On this screen you must select the Solaris software to install
on your system. The software groups shown are bundled and
defined by SunSoft. You can accept the default [X], or select
another.

     NOTE: After selecting a software group, you can add or
     remove software from it by selecting F4 to customize.
     However, this requires understanding of software
     dependencies and how Solaris is packaged.

> To make a selection, use the arrow keys to highlight the
  option and press Return to mark it [X]; then press F4 to
  customize or F2 to continue.

   [ ] Entire Distribution p[lus OEM support .. 449.34 MB
   [ ] Entire Distribution ................... 449.21 MB
   [ ] Developer System Support .............. 362.06 MB
   [X] End User System Support ............... 269.22 MB (F4 to
         customize)
   [ ] Core System Support ................... 164.89 MB




    F2_Continue      F3_Go Back      F4_Customize      F5_Exit
```

Move the cursor to the box next to `End User System Support`
and press Return. Then select `Continue`.

The following screen displays:

```
Disks

On this screen you must select the disks for installing Solaris
software. Start by looking at the Suggested Minimum field; this
value is the approximate space needed to install the software
you've selected. Keep selecting disks until the Total Selected
value exceeds the Suggested Minimum value.

> To make selections, use the arrow keys to highlight options
  and press Return to mark them [X].

       Disk Device     (Size)                   Available Space
    ========================================================
    [X] c0t3d0        (2028 MB) bootdrive          2028 MB
    [X] c0t1d0        (2028 MB)                     2028 MB

                              Total Selected:       0 MB
                          Suggested Minimum:      269 MB


  F2_Continue      F3_Go Back      F4_Customize      F5_Exit
```

3. Select every disk listed by marking each one. (Mark a disk by following the directions on the screen.) When all are marked, select Continue.

   The following screen displays:

```
At least one of the disks you've selected has file system or
unnamed slices that you may want to save.

> To save file systems or unnamed slices, press F4.

> To allow current file systems and unnamed slices to be
  overwritten when Solaris software is installed, press F2.




  F2_Continue      F3_Go Back      F4_Customize      F5_Exit
```

4. Select Continue.

   The following screen displays:

```
Automatically Layout File Systems?

Do you want to use the auto-layout feature to automatically
layout dile systems on your disks? Manually laying out file
systems on disks requires advanced system administration skills.

> To use the auto-layout feature, press F2.


> To manually layout file systems, press F4.





 F2_Auto Layout     F3_Go Back     F4_Manual Layout     F5_Exit
```

5. Select Manual Layout. The system responds with this screen:

```
Select Disk to Customize


> To select a disk, use the arrow keys to highlight it
  and press F4.

     Disk (Size)            Configured File Systems
     ============================================
     c0t3d0      (2028 MB)
     c0t1d0      (2028 MB)





  F2_OK     F4_Customize     F6_Help
```

6. Highlight the first disk and select Customize. The system displays
   this screen:

```
Customize Disk: c0t3d0

 Entry:              Recommended:   MB    Minimum   MB


 ============================================================
 Slice  Mount Point          Size (MB)
        1                         0
        2      overlap          2028
        3                         0
        4                         0
        5                         0
        6                         0
        7                         0
 ============================================================
                      Capacity:   2028 MB
                     Allocated:      0 MB
                          Free:   2028 MB

   F2_OK      F4_Options      F5_Cancel      F6_Help
```

7. Select Options (in order to partition disks by cylinders instead of MegaBytes). The system responds:

```
 Select options (F4)


  Disk Editing Options

        Show size in:
             [ ]  MB
             [X]  Cylinders

        Other Options:
             [ ] cylinder boundaries
             [ ] Load existing slices from VTOC label




   F2_OK      F5_Cancel          F6_Help
```

8. Mark Cylinders and select OK.

   The system responds:

```
Customize Disk: c0t3d0

 Entry:              Recommended:    Cyls  Minimum:    Cyls


 ============================================================
 Slice   Mount Point            Size (Cyls)
   0       /                        1081
   1                                 100
   2     overlap                    2733
   3                                1552
   4                                   0
   5                                   0
   6                                   0
   7                                   0
 ============================================================
                       Capacity:    2733 Cyls
                      Allocated:    2733 Cyls
                           Free:       0 Cyls


   F2_OK      F4_Options      F5_Cancel       F6_Help
```

9. Partition c0t3d0 according to Table 3-9 (below). Use `Tab` to move
   between fields. When you have filled out the necessary fields, select
   OK.

Table 3-9: Internal Disk 1 (c0t3d0) Partitioning

Slice	File System Name	1.05G Disk Partition Size (cylinders	2.1G Disk Partition Size (cylinders)
0	/	1630	1081
1	(unnamed)	150	100
2	overlap	2036	2733
3	(unnamed)	256	1552

The system responds:

```
Select Disk to Customize


> To select a disk, use the arrow keys to highlight it
  and press F4.

      Disk (Size)              Configured File Systems
      ================================================
      c0t3d0    (2733 Cyls)    /
      c0t1d0    (2028 MB)
      c0t1d0    (2028 MB)




   F2_OK      F4_Customize      F6_Help
```

10. Select the next disk (c0t1d0, for example) and select Customize.

    The system responds:

```
Customize Disk: c0t1d0

 Entry:              Recommended:   Cyls  Minimum:   Cyls


 ============================================================
 Slice  Mount Point          Size (Cyls)
   0                              0
   1                              0
   2    overlap                2733
   3                              0
   4                              0
   5                              0
   6                              0
   7                              0
 ============================================================
                  Capacity:    2733 Cyls
                 Allocated:       0 Cyls
                      Free:    2733 Cyls

   F2_OK      F4_Options     F5_Cancel      F6_Help
```

11. Configure this disk using the Table 3-10, and select OK.

Table 3-10: Partitioning for Disks 2-12

Slice #	File System	1.05GB DiskSize (cylinders)	2.10GB Disk Size (cylinders)
0	(unnamed)	2	2
1	(unnamed)	2034	2731
2	overlap	2036	2733

The system responds:

```
Customize Disk: c0t1d0

 Entry:              Recommended:    Cyls  Minimum:   Cyls


================================================================
 Slice  Mount Point          Size (Cyls)
   0                              2
   1                            2731
   2     overlap                2733
   3                              0
   4                              0
   5                              0
   6                              0
   7                              0
================================================================
                   Capacity:    2733 Cyls
                   Allocated:   2733 Cyls
                        Free:      0 Cyls

  F2_OK      F4_Options     F5_Cancel     F6_Help
```

12. Select OK. The system responds:

```
Select Disk to Customize


> To select a disk, use the arrow keys to highlight it
  and press F4.

     Disk (Size)             Configured File Systems
     =============================================
     c0t3d0   (2733 Cyls)    /
     c0t1d0   (2733 Cyls)




  F2_OK      F4_Customize      F6_Help
```

Note: If there are more disks to configure, repeat steps 10 through 12 for each one. Do not go on until all disks in the system have been configured.

13. Select OK.

    The following screen displays:

```
File System and Disk Layout

The current file system layout for your disks is shown below.

   NOTE: If you press F4 to customize, you should understand
   file systems, their intended purpose on the disk, and how
   changing the plan may affect the operation of the system.

> To accept the layout and continue, press F2.
> To customize the layout, press F4.

     File system/Mount point    Disk/Slice        Size
     =================================================
     /                          c0t3d0s0       802 MB



  F2_Continue     F3_Go Back     F4_Customize     F5_Exit
```

14. Select Continue. The system responds:

```
Mount Remote File System?

   Do you want to mount software from a remote file server?
   This may be necessary if you had to remove software because
   of disk space problems.

   > To go to the Mount Remote File System screen, press F4.
   > To bypass mounting remote file systems, press F2.




   F2_Continue      F3_Go Back      F4_Customize      F5_Exit
```

15. Select Continue.

    The following screen displays:

```
   Profile

   The information below is your profile for installing Solaris
   software. It is a summary of the choices you've made on
   previous screens.

   > To go back to the beginning to make changes, press F4.

   ============================================================

         System Type:    Standalone
         Software: Solaris 2.4, End User System Support

     File System and Disk Layout:  /          c0t3d0    802 MB

               Software: Solaris 2.4, End User System Support



     F2_Continue     F4_Change     F5_Exit     F6_Help
```

16. Select `Continue`. The system displays the following screen:

```
Begin Installing Solaris

   By default, your system will reboot after Solaris is
   installed. However, you can bypass rebooting and access a
   UNIX shell to make changes before rebooting.

> To begin installing Solaris, press F2; to go back and make
  changes, press F5.
=============================================================

           [X]  Reboot
           [ ]  Do not reboot




     F2_Begin Installation           F5_Cancel
```

17. Select `Begin Installation`. The installation begins showing the
    following messages:

```
Finding modified files. This may take several minutes.
Calculating space requirements.
Space check complete.
Starting upgrade:
Removing obsolete packages and saving modified files:
   .
   .
   .
```

This part of the upgrade takes about one hour, and does the
following:

- Finds modified files
- Calculates space requirements
- Starts the upgrade
- Removes obsolete packages and saves modified files
- Removes patches
- Installs new packages.

18. The installation ends by displaying the log files used:

```
      .
      .
  The messages printed to the screen by this upgrade have
  been saved to:

          /a/var/sadm/install_data/upgrade_log

  After this system is rebooted, the upgrade log can be
  found in the file:

          /var/sadm/install_data/upgrade_log

  Please examine the file:

          /a/var/sadm/install_data/upgrade_log

  It contains a list of actions that may need to be performed to
  complete the upgrade. After this system is rebooted, this file
  can be found at:

          /var/sadm/install_data/upgrade_log

  #
```

The disk partitioning is now complete. Complete the installation of *Solaris* 2.4 with Step 5.

Step 5: Complete the *Solaris 2.4* Software Installation

When disk partitioning completes, the following displays:

```
On this screen you can create a root password.

A root password can contain any number of characters, but only
the first eight characters in the password are significant. (For
example, if you create 'a1b2c3d4e5f6' as your root password, you
can use 'a1b2c3d4' to gain root access.)

You will be prompted to type the root password twice; for
security, the password will not be displayed on the screen as
you type it.

> If you do not want a root password, press RETURN twice.

Root password:

Press Return to continue.
```

1. Enter the *root* password. The program responds:

```
Please re-enter your root password?

Press Return to continue.
```

2. Reenter the *root* password. The program responds:

```
. . . . .
. . . . .
syslog services starting.
Print services started.
volume management starting.
The system is ready.

hostname console login:
```

3. Log in as *root*. The system prompt displays.

4. Edit the `/etc/vfstab` file by entering:

```
# vi  /etc/vfstab
```

You need to comment out the line in the file that sets up the swap space. Accordingly, you will insert a pound sign at the beginning of the line that begins with the word `swap`. In the following screen, for example, the line in boldface type has been commented out:

```
#device            device           mount    FS      fsck  mount    mount
#to mount          to fsck          point    type    pass  at boot  options
#
#/dev/dsk/c1d0s2 /dev/dsk/c1d0s2  /usr     ufs     1     yes      –
/proc              –                /proc    proc    –     no       –
fd                 –                /dev/fd  fd            no       –
#swap              –                /tmp     tmpfs   –     yes      –
     .
     .
     .
```

Step 6: Restore Previous System Information

Load the CMSADM-backup tape into your tape drive, and restore the old system information by entering the command:

```
# nohup cpio -icmudf -C 10240 -I <device-name> -M
"Insert next tape and press ENTER." "/etc/vfstab"
"/etc/mnttab" "/usr/dbtemp" "/etc/path_to_inst" "/cms*"
"/cms*/*" | tee
```

where *<device name>* indicates the tape drive the CMSADM tape is loaded into, 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 tape drive with the lowest target number in the SCSI chain (the QIC 2.5-GB and the 14-GB drives support compressed mode).
/dev/rmt/1c	The 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).

The cpio command searches through the CMSADM backup tapes looking for the files. When all the files have been found and restored, the system prompt reappears.

Note

- You may get error messages concerning the /home directory. These errors display when the directory is already present, so you can ignore them.

- If you are running on a local terminal, you may omit the nohup and | tee parts of the command.

Step 7: Remove the CMS Base Load

These steps remove the current CMS base package:

1. Start the procedure by entering:

```
# pkgrm cms
```

The program responds:

```
The following package is currently installed:
   cms              Call Management System
                        (sparc) r3v5xx.x

 Do you want to remove this package?
```

2. Answer y. The system responds:

```
## Removing installed package instance <cms>

This package contains scripts which will be executed with
super-user permission during the process of removing this
package.

Do you want to continue with the removal of this package
[y,n,?,q]
```

3. Answer y. The system responds:

```
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.

Do you want to preserve CMS data? [y,n,?]
```

4. Answer n. The system responds:

```
All file systems should be backed up before continuing.
See the Maintenance chapter in the Sun CMS Installation and
Maintenance Manual for instructions.

Have you backed up the file systems? [y,n,?]
```

5. Answer y. The system responds:

```
## Removing pathnames in class <ind>
/usr/lib/cms/trmaps
/usr/informix/etc/termcap
/usr/bin/cmssvc
    .
    .
    .
```

If the removal is successful, this message displays:

```
Removal of <cms> was successful.
```

The system prompt returns to your screen.

Step 8: Install the *Solstice DiskSuite* Package

1. Enter the command:

```
# eject cdrom
```

Remove the *Solaris* 2.4 CD from the drive and replace it with the *Solstice DiskSuite* 4.0 CD.

2. Verify the CD-ROM name by entering the mount command:

```
#  mount
     .
     .
/cdrom/disksuite_4_0 on /vol/dsk/c0t6d0/disksuite_4_0
read only on Mon Jul 8 12:36:55 1996
```

3. Begin the installation by entering:

```
#  pkgadd  -d  /cdrom/disksuite_4_0
```

The system responds by listing the packages available on the CD:

```
The following packages are available:
  1  SUNWabmd  DiskSuite 4.0 AnswerBook
        (all)68.1.5
  2  SUNWmd  Solstice DiskSuite
        (all)4.0,REV=1.0
  3  SUNWmdg  Solstice DiskSuite Tool
        (all)4.0,REV=1.0

Select package(s) you wish to process (or 'all' to process
```

4. Select the `SUNWabmd` (*Solstice DiskSuite AnswerBook*) option. The program responds by requesting an installation option:

```
Processing package instance SUNWabmd from
</cdrom/disksuite_4_0>
    .
    .
    .
The installation options are as follows:
Option:    Description:
------------------------------------------------------------
1.nil:  less than 1 Megabyte disk space required (slowest)
2.heavy: 14.21 Megabytes disk space required [best performance]
Note: If the install option which you choose below fails
due to lack of space, try another location, or
choose a lower install option number.

Enter an installation option from the list above (1 or 2).
```

5. Select the `nil` option. The program responds:

```
Installation option: nil selected

The next request for input asks you to specify the parent
directory of AnswerBook. Make sure to choose a parent directory
on a file system big enough to accommodate all the files to be
moved for the INSTALL OPTION you selected.

Specify the parent directory of the AnswerBook home directory:
```

6. Enter `/opt` as the name of the directory. The program responds:

```
Processing package information.
Pocessing system information.
    .
    .
    .
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 <SUNWabmd>
```

7. Enter `y`.

The program installs the *Solstice DiskSuite AnswerBook* software and then returns to the installation menu:

```
The following packages are available:
  1  SUNWabmd  DiskSuite 4.0 AnswerBook
         (all)68.1.5
  2  SUNWmd  Solstice DiskSuite
         (all)4.0,REV=1.0
  3  SUNWmdg  Solstice DiskSuite Tool
         (all)4.0,REV=1.0

Select package(s) you wish to process (or 'all' to process
all packages).(default:all)[?,??,q]:
```

> **Note** The installation may fail and display a message about bad permissions on */kernel* and */kernel/drv*. Do this to resolve the problem:

   a. Enter the `/usr/sbin/installf SUNWcar /kernel` command.

   b. Enter the `/usr/sbin/installf SUNWcar /kernel/drv` command.

   c. Restart the step with item 3 on page 3-80.

8. Select the `SUNWmd` option. The program responds:

```
Processing package information.
Pocessing system information.
    .
    .
    .
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 <SUNWabmd>
[y,n,?]
```

> **Note** If you receive a message about conflicting packages or conflicting files, answer `y` to continue the installation.

9. Answer y.

   The program installs the *Solstice DiskSuite* software, displaying a series of messages as it does so. When the install menu again reappears, the *Solstice DiskSuite* installation is complete:

   ```
   The following packages are available:
    1  SUNWabmd  DiskSuite 4.0 AnswerBook
           (all)68.1.5
    2  SUNWmd  Solstice DiskSuite
           (all)4.0,REV=1.0
    3  SUNWmdg  Solstice DiskSuite Tool
           (all)4.0,REV=1.0

   Select package(s) you wish to process (or 'all' to process
   ```

Note	The *Solstice DiskSuite* installation may fail and display a message about bad permissions on */kernel* and */kernel/drv*. Do this to resolve the problem:

   a. Enter the `/usr/sbin/installf SUNWcar /kernel` command.

   b. Enter the `/usr/sbin/installf SUNWcar /kernel/drv` command.

   c. Restart the installation at item 3 on page 3-81.

10. Enter q.

    The program replies with a reboot notification, and then the system prompt reappears:

    ```
    *** IMPORTANT NOTICE ***
    This machine must now be rebooted in order to ensure sane
    operation. Execute
            shutdown  -y  -i6  -g0
    and wait for the "Console Login:" prompt.
    #
    ```

11. Unload the CD-ROM and reboot the system by entering the shutdown command:

    ```
    #  shutdown  -y  -i6  -g0
    ```

    The system begins to reboot.

    Note: Ignore any warning messages during the boot about `forceload of ... failed.`

12. When the system prompt reappears, insert the CMS CD into the CD-ROM drive.

13. *Optional:* You may enter the following commands to make the remainder of the upgrade go a bit more smoothly:

```
# stty  erase  <Ctrl-H>
# ksh  -o  vi
#
```

(where *<ctrl-H>* indicates you should press and hold the Control key as you press the H key)

The stty command sets up your backspace key as an actual backspace. If you don't enter this command, you will have to use your Delete key as a backspace, which can be frustrating if you are not used to it.

The ksh command gets you a "k shell," which will make it easier to execute multiple commands that are similar.

Step 9: Run the Solstice DiskSuite Setup Scripts

1. 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
```

2. Check disk partitioning with an olds -checkdisks command:

```
# export  PATH=$PATH:/usr/opt/SUNWmd/sbin:/olds
# olds  -check_disks
   .
   .
   .
disk:c0t0d0 is partitioned ok
disk:cot1d0 is partitioned ok
disk:c0t2d0 is partitioned ok
Warning: Current disk has mounted partitions.
disk:c0t3d0 is partitioned ok
Success, checking. disks.
```

> | Note | If the `olds -checkdisks` command should fail because of an
> improperly partitioned disk, you should be able to repartition the
> disk using the `format` command. For details, look up the error
> message in "Common Error Messages" on page 6-5.

3. Create system tables for the *Solstice DiskSuite* software by entering
   an `olds -mkfiles` command:

```
# olds  -mk_files
   .
   .
   .
Success, creating md.tab.new and/or vfstab.new.
#
```

When the system prompt reappears, you must check to make sure
that all the disk drives on your system have been recognized. To do
that, read the file `/olds/md.tab.new` into an editor. For example:

```
# vi  /olds/md.tab.new
```

Find the `#/cms` section. It should reflect the precise number of disk
drives on your system. The example below, for instance, shows two
disk drives on the system:

```
   .
   .
   .
#/cms
d19 2 1 /dev/dsk/c0t1d0s1 1 /dev/dsk/c0t3d0s3
d21  -m  d19
```

***If the /cms section reports the correct number of disks, skip to
item 4 on page 3-89.***

If there is a discrepancy, do this:

a. Reboot the system with an `init 0` command. The system
   reboots and displays the ok prompt:

```
# init 0
   .
   .
   .
ok
```

b. Do the following in sequential order:

1. Turn off the system unit.

2. Turn off the SBus Expansion Subsystem.

3. Turn off the system monitor.

4. Continue turning off system devices, moving away from the system unit.

5. Turn off all external disk drive units, starting with the unit closest to the system unit.

c. 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. (A normal external disk unit has a rotary switch on the rear of the unit that sets the SCSI ID.)

d. Turn on the power to the system units in the opposite order in which you powered them off.

Power on the SCSI devices first, beginning with the device at the end of the chain and working your way toward the system unit. Then power on other devices, again working your way toward the system unit. Then power on the system unit itself and, finally, the system monitor.

When you power on the system unit, the system begins to boot. Interrupt the boot by entering `Stop` `A` . The system responds:

```
ok
```

e. To verify that the system sees all SCSI devices, including the new disk drive, enter the following command:

```
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
```

f. When you have verified that the system is recognizing all its disk drives, enter the following command:

```
   ok boot -r
```

The system responds:

```
 Boot device ...
    .
    .
    .
 Configuring the /dev directory
    .
    .
    .
 /dev/rdsk/c0t1d0s1 mounted
    .
    .

 hostname console login:
```

g. Log in as *root,* and press ⏎Return. The system displays the last login on the console (same date and time) and returns you to the system prompt. For example:

```
 Sun Microsystems Inc. SunOS 5.2 Generic November 1995
 #
```

h. Return to item 2 on page 3-85, and restart this step.

4. Set up the metadevice replicas by entering the following command:

```
# nohup  olds  -metadbs  |  tee
```

Note If you are running on a local terminal, you may omit the "nohup" and "| tee" parts of the command.

You will know the command has run successfully when it displays a Success message:

```
Success, setting up metadb replicas
#
```

If the command should fail, make a note of the error message and see "Troubleshooting a Solstice DiskSuite File System" on page 6-2.

5. Set up the /cms metadevice by entering the following command:

```
# nohup  olds  -setup  |  tee
```

Note If you are running on a local terminal, you may omit the "nohup" and "| tee" parts of the command.

The system responds with a series of lines reflecting the structure of your disk system. Those lines will look something like this (though the specific disk names will vary from system to system):

```
   ..
   ..
prtvtoc:  /dev/rdsk/c0t6d0s0
device:  c0t6d0 will not be used
   ..
   ..
valid disks are c0t0d0 c0t1d0
disk: c0t0d0 is partitioned ok
disk: c0t1d0 is partitioned okay
   ..
   ..
d19: Concat/Stripe is setup
   ..
   ..
```

The program begins to construct the new file system, displaying system information as it does so. When the Success message

displays, and the system prompt reappears, the file system is complete and you are ready to continue with the installation. For example:

```
/dev/md/rdsk/d19:  23017680 sectors in 22835 cylinders
  11239.1MB in 1428 cyl groups (16 c/g, 7.88MB/g, 3776 i/g)

32,16240,32448,48656,64864,81072,97280,113488,129696,145904,
    ..
    ..
    ..
1564528,1580736,1596944,1613152,1629360,1645568,1661776,
    ..
    ..
#Success, activating or growing /cms metadevice

#
```

6. Create and mount /cms and verify the disk space by entering the following commands:

```
# mkdir  /cms
# mount /cms
# df -k
```

The system responds by displaying file system information:

```
Filesystem          kbytes    used    avail capacity  Mounted on
/dev/dsk/c0t3d0s0  10772308 310956  383882      45%   /
/proc                    0      0       0       0%   /proc
fd                       0      0       0       0%   /dev/fd
/dev/md/dsk/d19    10811937 xxxxxx  xxxxxx       0%   /cms
    .
    .
    .
```

The /cms "used" and "avail" figures (shown here as "xxxxxx") are the critical numbers. Use them to verify that the *Solstice DiskSuite* software is administering all the available disks. Use the following table to make the necessary calculations:

Table 3-11: Disk Drive Verification

Calculation (1)	Result (1)	Calculation (2)	Result (2)
(1a) Enter /cms 'used' figure :		(2a) If Disk1=1.05G, enter 109 If Disk1=2.10G, enter 998	
(1b) Enter /cms 'avail' figure:		(2b) Enter: (# of other 1G disks) * 866	
(1c) Add (1a) and (1b):		(2c) Enter: (# of other 2G disks) * 1755	
(1d) Divide (1c) by 1000:		(2d) Add (2a) through (2c):	

If results (1d) and (2d) are *approximately* equal (they needn't be exact), then all the disk drives are being administered by the *Solstice DiskSuite* software and all is well.

If there appears to be a problem, there are two files you can check to verify the installation. The file names are `/etc/vfstab` and `/etc/opt/SUNWmd/md.tab,` and you check them simply by loading them into your editor.

`vfstab` should name the *Solstice DiskSuite* metadevice (`/dev/md/rdsk/d19`) as the /cms file system; old /cms entries (in the form `/cms[0-12]`) should either be commented out or be nonexistent.

`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. In the following example, the lines indicate there are three disks being administered by the *Solstice DiskSuite* software:

```
   .
   .
   .
#/cms
d19 3 1 /dev/dsk/c0t1d0s1 1 /dev/dsk/c0t3d0s3 1 /dev/dsk/c0t2d0s1
```

If the files accurately reflect your system, go to Step 10, below.

If there is any discrepancy between either file and reality, you may choose to reconfigure your system by doing this:

a. Check to make certain that all your disk drives are turned on and are properly configured.

b. Enter this command:

```
# olds -cleanup
#
```

This command prepares for the readministration of the *Solstice DiskSuite* software by removing the current administration and prompting you to reboot the system. After you have rebooted and the system prompt reappears, rerun the *Solstice DiskSuite* setup scripts (begin with item 2 on page 3-85).

Step 10: Create a Swap File

1. Determine the amount of random access memory in your system by entering a `prtconf | grep` command. The system responds by displaying the amount of RAM installed. For example:

```
# prtconf | grep Mem
Memory size:  96 Megabytes
#
```

2. Determine the required size of your swap file from Table 3-12, below.

Table 3-12: Swap File Size

If megabytes of RAM is at least ...	... but not more than...	... your swap file must be this size (MB):
0	32	61
33	64	122
65	96	183
97	128	244
129	160	305
161	192	366
193	224	427
225	256	488
257	320	610
321	384	732
385	448	931
449	512	977

3. Determine whether you have enough space to set up the swap file. You can do that by analyzing the system's response to a `df -k /cms` command. For example:

```
# df  -k  /cms
Filesystem          kbytes   used    avail  capacity  Mounted
/dev/md/dsk/d19  10811937    xxx  xxxxxxx        0%  /cms
```

All you need to do is divide the "avail" number by 1000. The result of the division must be greater than the swap file size you determined from Table 3-12. If it isn't, delete files from /cms until you have enough space to set up your swap file.

4. Create the swap file by entering:

```
# mkfile  <x>m  /cms/swap
```

where *<x>* is the swap file size from Table 3-12.

5. Activate the swap file by entering the command:

```
# swap  -a  /cms/swap
```

6. Verify that the space has been allocated by entering:

```
# swap  -l
```

The system responds by displaying something like the following:

```
# swap  -l
swapfile          dev    swaplo  blocks     free
/cms/swap          -          8  374776  353808
#
```

7. Edit the /etc/vfstab file. For example:

```
# vi  /etc/vfstab
```

Go to the end of the file and add the following line (using tabs, not spaces, to separate fields):

```
/cms/swap     -    -    swap    -    no    -
```

> | Note | If the line already exists but is commented out, simply remove the pound sign at the start of the line.

8. Save the file and exit your editor.

9. Reboot the system by entering the command:

```
# init 6
```

The swap file you just created should be set up automatically on the reboot. When the boot completes, log in as *root* and verify the swap file setup by entering another swap -l command. The system should respond by listing the swap file you just set up. For example:

```
# swap  -l
swapfile          dev     swaplo  blocks     free
/cms/swap          -           8  374776  353808
#
```

If you get a message to the effect that the swap file was not set up, recheck the /etc/vfstab file as described above.

Step 11: Install *Solaris* Patches

Perform these steps to install *Solaris* patches:

1. Load the CMS CD-ROM into your CD-ROM drive and enter the following command:

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

The system responds with an installation menu. For example:

```
The following packages are available:
 1 cms          Lucent Technologies CentreVu(TM) Call Management
                 System (sparc) r3v5xx.x
 2 spatches     CMS Supplied Solaris Patches
                 (sparc) 1.0

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

2. Enter the number that corresponds to the *spatches* package.

> | Note | Do **not** select `all` to process all packages. The *spatches* package **must** be installed before the CMS software package.

The system responds:

```
Processing package instance <spatches> from </dev/rmt/0>


CMS Supplied Solaris Patches
(sparc) 1.0
Lucent Technologies

This appears to be an attempt to install the same architecture
and version of a package which is already installed.  This
installation will attempt to overwrite this package.


## Processing package information.
## Processing system information.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with
super-user permission during the process of installing this
package.
```

3. Enter `y`. The system continues installing the *spatches* p[ackage and, when it finishes, redisplays the installation menu:

```
Installing CMS Supplied Solaris Patches as <spatches>

## Installing part 1 of 1.
Spooling 100982-02
Spooling 100992-03
Spooling 100999-51
Spooling 101014-05
   .
   .
   .
The following packages are available:
 1  cms        Lucent Technologies CentreVu(TM) Call Management
               System (sparc) r3v5xx.x
 2  spatches   CMS Supplied Solaris Patches
               (sparc) 1.0

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

4. Answer `q` to quit.

The patch files are now installed on your disk drive. The next step is to run the installation script, which executes the patching process.

5. Enter the following command:

```
# /tmp/patches/install_patches
```

The system responds:

```
# /tmp/patches/install_patches
@(#) installpatch 4.11 94/06/23

generating list of files to be patched
Save old verisons of files to be patched
/var/sadm/patch/100982-02/save/kernel
/var/sadm/patch/100982-2/save/kernel/fs
/var/sadm/patch/100982-2/save/kernel/fs/fifofs
XXX blocks
Installing patch packages
.
.
.
```

6. A message displays indicating that you need 20 MB of space in */var* to install the Jumbo Kernel patch.

If you did not follow the preupgrade instructions, enter n and refer to the Preupgrade Procedures.

If you followed the preupgrade instructions, enter y or wait 60 seconds for the installation to continue. Depending on the number and size of the *Solaris* patches being installed, the installation may take over an hour. Eventually, you receive an "installation finished" message, and the system prompt reappears:

```
   .
   .
   .
Installation of <SUNWcsr.7> was successful.
Patch installation finished
To complete the solaris patch installation, one should re
with the following command: shutdown -y -i6 -g0
#
```

| Note | The *Solaris* patch installation may fail and display a message about bad permissions on */kernel* and */kernel/drv.* Do this to resolve the problem: |

  a. Enter the `/usr/sbin/installf SUNWcar /kernel` command.

  b. Enter the `/usr/sbin/installf SUNWcar /kernel/drv` command.

  c. Restart the *Solaris* patch installation starting with item 1 on page 3-94.

7. Reboot your system using the command indicated in the message:

```
# shutdown -y -i6 -g0
```

When the system prompt returns to your screen, the installation of the patches is complete.

Step 12: Install the New *CentreVu* CMS Base Package

Perform these steps to install the new *CentreVu* CMS base package:

1. Log in as *root.*

2. Load the CMS CD into the CD-ROM drive.

3. Enter the following command:

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

The system responds:

```
The following packages are available:
 1 cms      Lucent Technologies CentreVu(TM) Call Management
           System (sparc) r3v5xx.x
 2 spatches CMS Supplied Solaris Patches
           (sparc) 1.0

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

4. Enter the number that corresponds to the cms option. The system responds:

```
Processing package instance <cms> from </dev/rmt/0>

CentreVu(TM) Call Management System
(sparc) r3v5xx.x
        .
        .
        .
*-conflict with a file which does not belong to any package.
Do you want to install these conflicting files? [y,n,?,q]
```

5. Answer y. The system responds:

```
## Checking for setuid/setgid programs.

The following files are being installed with setuid and/or
setgid permissions:
        /cms/bin/mqpeek <setuid root>
        /cms/bin/spi <setuid root>
        /cms/toolsbin/cmsu <setuid root>
        /cms/toolsbin/initSimConf <setuid root>
        /cms/toolsbin/initSimConf <setuid root>
        /cms/toolsbin/psx <setuid root>
        /cms/toolsbin/psx <setuid root>
        /cms/toolsbin/shmdump <setgid sys>

Do you want to install these setuid/setgid files [y,n,?,q]
```

6. Answer 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 <cms>
[y,n,?,q]
```

7. Answer y. The system continues with the installation, and eventually redisplays the installation menu:

```
Installing CentreVu(TM) Call Management System as <cms>
    .
    .
    .
Installation of <cms> was successful.
The following packages are available:
  1  cms     Lucent Technologies CentreVu(TM) Call Management
             System (sparc) r3v5xx.x
  2 spatches CMS Supplied Solaris Patches
             (sparc) 1.0

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

8. Enter q to quit the menu and return to the system prompt

> **Note** If you made changes to your *cms* or *cmssvc* .profiles, the following message displays:
>
> ```
> A manual merge may be necessary to restore
> custom entries. The original content was
> saved in profile.save prior to changes.
> ```

Before returning the system prompt, the system may inform you that a reboot is needed. ***If you are instructed to perform a shutdown, use the command displayed in the message.***

Step 13: Verify *CentreVu* CMS Software Installation

To verify the installation of the new *CentreVu* CMS software, log in as *root* and enter a pkgchk command:

```
# pkgchk -n cms
```

If the software installation was successful, the system prompt returns to your screen after a few seconds. The only indication of success you will get is the lack of an error message. If errors are detected, see "CentreVu CMS Package Installation Problems" on page 6-11.

Step 14: Install *CentreVu* CMS Patches

1. Enter the `cmssvc` command. The CMS Services menu displays:

```
Lucent 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) patch_inst   Install a single CMS patch from CD
    8) patch_rmv    Backout an installed CMS patch
    9) load_all     Install all CMS patches found on CD
   10) back_all     Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit:
```

2. Select `load_all` and press Return.

    The system responds by listing all the patches available on the CD. For example:

```
The following patches are available for installation:
1.      cmsp1-s
2.      cmsp2-s
3.      cmsp3-s
   .
   .
   .
Are you sure you want to install all these patches? (y|n)
```

    If no patches are listed, skip the rest of this procedure and go directly to Step 15 on page 3-101.

3. Enter `y` to install all patches.

For each patch installed, the system responds with messages similar to the following:

```
@(#) installpatch 1.0 96/04/01
Generating list of files to be patched...
Creating patch archive area...
Saving a copy of existing files to be patched...
xxx blocks
        File compression used
Installing patch packages...

Doing pkgadd of cmspx-s package:
Installation of <cmspx-s> was successful.

Patch packages installed:
        cmspx-s

Patch installation completed.
See /cms/patch/cmspx-s/log for details.
```

When the system is finished installing the patches, it returns you to the system prompt.

Step 15: Set Up R3V5 CMS

Setting up the new R3V5 CMS software consists of three steps:

1. Setting authorizations.

2. Setting data storage parameters.

3. Configuring CMS.

Setting Authorizations

"Authorizations" define the set of features this CMS installation will have, and are set by Lucent Technologies technicians from the CMS Services menu. Unless the customer has purchased R3V5 features they did not have in their previous version, the V5 authorizations will be the same as they were before. The procedure goes something like this:

1. Retrieve your authorizations list. (That's the record you made of authorizations in Step 4 of the preupgrade procedure.)

2. Enter a cmssvc command and select the auth_set option.

3. When prompted, enter the appropriate password and answer the questions put to you. You are asked to verify the following:

- Which of the following features and packages were purchased:

vectoring	forecasting
graphics	external call history
expert agent selection	external application
Report Designer	CMS Supervisor

- How many simultaneous supervisor logins the site is licensed for.

- The maximum number of split/skill members available to the site (see the table on page 2-34).

- The number of ACDs installed.

For a more detailed rendering of the procedure, see "Setting Authorizations" on page 2-30.

Setting Data Storage Parameters

To set data storage parameters, edit the text file:

/cms/install/cms_install/storage.def

and set the parameters to the values recorded when you began the upgrade. (See "Data Storage Allocation Parameters" on page 3-6.) For a sample storage.def file, see "Setting Up Data Storage Parameters" on page 2-36.

Remember that in R3V5, the number of agent trace records may not exceed 500,000.

Configuring CMS

You configure the CMS software through the setup option of the cmssvc command. This subsection presents a brief synopsis of that procedure; for step-by-step instructions, see "Setting Up the CentreVu CMS Application" on page 2-39.

The setup option gives you the choice of answering a series of questions interactively through the terminal, or of supplying a *UNIX* flat file containing the answers to all the questions. In either case, you need to know the following information:

- Your system's host name

- The type of backup device on your system

- The path name of your backup device

- The number of ACDs in your system

- For each ACD, the following:

    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.

You should have checked and recorded all this information early in the upgrade procedure. (See "Step 4: Check and Record CMS System Information" on page 3-5.)

See also "Setting Up the CentreVu CMS Application" on page 2-39.

Step 16: Check System Parameters

Check the data storage allocation parameters and the free space allocation and compare them to those you recorded for your previous release of CMS. (They should be the same.)

To check data storage allocation parameters, start up CMS and, from the main CMS menu, select `System Setup - Data Storage Allocation`. To check free space allocation, select `System Setup - Free Space Allocation`.

See also "Checking Data Storage Allocation Parameters" on page 2-11; "Checking the Free Space Allocation" on page 2-7.

Step 17: Install Feature Packages

You must now install the feature packages authorized for the site. There are only two feature packages that need installing: Forecasting and External Call History. If you don't recall whether those features are authorized, do this:

1. Type a `cmssvc` command and press **Return**. The machine responds by displaying the CMS Services Menu.

2. Type the number corresponding to the `auth_display` option, and press **Return**. The machine responds by listing CMS capabilities and indicating which ones have been authorized.

3. Check the `forecasting` and `external call history` lines. If either one has "`authorized`" in the second column, the corresponding package needs to be installed.

Feature packages are installed via the `pkg_install` option of the CMS Administration menu (see "Installing the Forecasting Feature Package" on page 2-55 and "Installing the External Call History Package" on page 2-58). Briefly, the procedure goes like this:

1. Enter a `cmsadm` command.

2. Select the `pkg_install` option.

3. Select the feature to install.

The Forecasting installation is entirely automatic. To install External CAll History, however, you must answer a few prompts. The answers you need you can get from the `/etc/uucp/Systems` and `/etc/uucp/Devices` files (both of which you should dump to a printer before you begin the installation), and from the data storage allocation window you printed out during the preupgrade. Table 3-13, below, tells you what you need and where to find it:

Table 3-13: External Call History Installation Prompts

Prompt/Item	Where to find it
Name of the remote computer	Machine-Name field of `/etc/uucp/Systems`
nuucp login password	Login field of `/etc/uucp/Systems`
CMS port	`/etc/uucp/Devices`, on the line specified in the Type field of `/etc/uucp/Systems`
Connection speed	Class field of `/etc/uucp/Systems`
The number of call records to be held in the buffer	"Number of call records" field in the Data Storage Allocation window printout.

Step 18: Do a CMSADM Backup

The CMSADM backup provides a backup of the R3V5 system files in case the migration should go wrong. "Doing a CMSADM Backup on a Solaris System" on page 2-22 contains a detailed procedure for performing a CMSADM backup. Briefly, that procedure goes like this:

1. Make sure the system is in a multi-user state.

2. Enter a `cmsadm` command and select the `backup` option.

3. Feed tapes to the system until it stops asking for them.

Step 19: Migrate CMS System Administration Data

System administration data is migrated via the R3 Migrate Data window, using the backup tapes you prepared in Step 1.

⬡ **Warning** This step is to be executed only one time. Any attempt to migrate system administration data more than once will result in catastrophic errors from which you will not be able to recover. Failure to heed this warning may mean a full factory software installation, and may destroy some data irretrievably.

To migrate system administration data, use this procedure:

1. Turn CMS on (via the `run_cms` option of `cmssvc` or `cmsadm`.

2. Start CMS. The CMS MainMenu displays.

3. Put CMS into single-user mode (via `System Setup - CMS State`).

4. Insert the full maintenance backup tape into the tape drive.

5. From the CMS MainMenu, select the `System Setup -> R3 Migrate Data` option.

6. Set up the R3 Migrate Data Window to migrate the data:

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

7. Press **Return** to access the action list in the top right corner.

8. Select `Run` and press **Return**.

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.

9. Investigate the customer migration log and take any necessary corrective action.

   The customer migration log is file `/cms/migrate/r3mig.log`. You can print out the log with the command:

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

   The services migration log is in `/cms/maint/r3mig/mig.log`. The log may contain information inappropriate for the customer.

See also "Migration Log Messages" section of Chapter 6 for explanations of log messages, and "R3 Migrate Data Window" on page 2-63.

Step 20: 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.

> **Note** Like the System Administration data migration, ACD administration data should be migrated only once.

To migrate ACD administration data, use this procedure:

1. Verify that the full maintenance backup tape is in the tape drive.

2. Start CMS. The MainMenu displays.

3. Select the `System Setup - Data Collection` option, and turn off data collection for all ACDs in the system. Briefly, the procedure is:

   a. Enter the ACD name or number.

   b. Move the cursor to the `Off` field and press the X key.

   c. Access the action list and select `Modify`.

   d. Repeat steps a through c for each ACD in your system.

   For more information on the procedure, see "Turning Data Collection On or Off" on page 2-14.

> **Do not continue until you have verified that data collection is turned off for every ACD in your system.**

4. Return to the CMS MainMenu and 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 (or `default`)
`Data Type`	`ACD Administration data`
`Specify ACD(s)`	`All ACDs`

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

7. Select `Run` and press **Return**.

   As the migration progresses, messages in the 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. The customer migration log is in the file `/cms/migrate/r3mig.log`. You can print out the log with this command:

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

   The services migration log is in `/cms/maint/r3mig/mig.log`. The log may contain information inappropriate for the customer.

See also "R3 Migrate Data Window" on page 2-63, and the "Migration Log Messages" section of Chapter 6 for explanations of log messages; .

Step 21: Restart CMS Data Collection

Start CMS, and turn data collection back on for all ACDs. You do that through the `System Setup - Data Collection` option of the CMS MainMenu. Briefly, the procedure is:

1. Start CMS to display the MainMenu.

2. Put CMS into multi-user mode (via `System Setup - CMS State`).

3. Select the `System Setup - Data Collection` option.

4. Type in the name of an ACD.

5. Move the cursor to the `On` field and press the X key.

6. Access the action list and select `Modify`.

7. Repeat steps 2 through 4 for each ACD in your system.

See also "Turning Data Collection On or Off" on page 2-14.

Step 22: Migrate Full Historical Data

To migrate full historical data, use this procedure:

1. Verify that the full maintenance backup tape is in the tape drive.

2. From the CMS MainMenu, 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	tape drive device name (or `default`)
Data Type	Historical data
Stop date	leave blank
Stop time	11:59
Specify ACD(s)	All ACDs

4. Press Return to access the Action list in the top right corner of the menu.

5. Select `Run` and press Return.

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

   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.

6. Investigate the customer migration log and take any necessary corrective action.

The customer migration log is in the file
`/cms/migrate/r3mig.log`. You can print out the log with this
command:

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

The services migration log is in `/cms/maint/r3mig/mig.log`.
The log may contain information inappropriate for the customer.

See also "Migration Log Messages" section of Chapter 6 for explanations
of log messages, and "Back Up Data Window" on page 2-26.

Step 23: Migrate Incremental Historical Data

The procedure for migrating incremental historical data is identical to that
for migrating full historical data. The only difference is the backup tape
you restore from.

To run an incremental historical data migration, 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 MainMenu, 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	tape drive device name (or `default`)
Data Type	`Historical data`
Stop date	leave blank
Stop time	`11:59`
Specify ACD(s)	`All ACDs`

4. Press `Return` to access the Action list in the top right corner of the
   menu.

5. Select `Run` and press `Return`.

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

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

6. Investigate the customer migration log and take any necessary corrective action.

   The customer migration log is in the file `/cms/migrate/r3mig.log`. You can print out the log with this command:

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

   The services migration log is in `/cms/maint/r3mig/mig.log`. The log may contain information inappropriate for the customer.

See also "Migration Log Messages" section of Chapter 6 for explanations of log messages, and "Back Up Data Window" on page 2-26.

> **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 full maintenance backup was done.

Step 24: Back Up the Upgraded System

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

1. From the CMS MainMenu, select `Maintenance - Back Up Data`.

2. In the Back Up Data window, select these options:

Field	Value to enter or select
`Device name`	tape drive device name (or `default`)
`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)

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

See also Chapter 2, "Back Up Data Window" on page 2-26.

Step 25: Restore Customer Files

Typically, a customer's non-CMS files will have been saved on tape, and can be restored by following a procedure similar to this one:

1. Log into the system as *root.*

2. Load the tape into the drive and copy the files into a single area large enough to hold them all. Once the files have been restored from the tape, you can move them to other directories. For example:

```
# mkdir  /tmp/save
# cd  /tmp/save
# cpio  -icmvd  -C  10240  -I  <device-name>  "Enter next tape"
"<file1>" ... "<filen>"
    .
    .
    .
#mv <fromfile1>  <tofile1>
#      .
#      .
#      .
#mv  <fromfilen>  <tofilen>
#
```

where:

> *<device-name>* is the tape drive 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 tape drive with the lowest target number in the SCSI chain (the QIC 2.5-GB and the 14-GB drives support compressed mode).

> /dev/rmt/1c The 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).

> "*<file1>*" ... "*<filen>*"
> is a list of file names to be copied from the tape.

When customer files have been restored, the upgrade to R3V5 is complete.

Patching *CentreVu* CMS

The CMS patching process allows you to incorporate fixes into your *CentreVu* CMS software with little or no system down time.

Listing CMS Patches

You can list the patches already installed on your machine or patches that are available for installation.

Listing Installed Patches

To list CMS patches already installed on your machine, follow these steps :

1. Log in as *root*.

2. Enter the following command:

```
# /cms/toolsbin/listcmspatches
```

A list of patches installed on your machine displays.

Listing Available Patches

To list the CMS patches on the CD-ROM that are available for installation, follow Steps 1 through 4 in the "Installing CMS Patches" section. After you complete Step 4, break out of the installation script by entering either q or n depending on which option you selected.

1. Load the CMS CD into the CD-ROM drive.

2. Log in as *root*.

3. Enter the cmssvc command.

The CMS Services menu displays. For example:

```
AT&T 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) patch_inst   Install a single CMS patch from CD
  8) patch_rmv    Backout an installed CMS patch
  9) load_all     Install all CMS patches found on CD
 10) back_all     Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit:
```

4. Select `patch_inst`.

   The system responds with a list of patches you can install. For example:

```
The following patches are available for installation:
1.      cmsp1-s
2.      cmsp2-s
3.      cmsp3-s
   .
   .
   .
Enter the number of patch you wish to install(q to quit):
```

5. Enter `q`.

Installing CMS Patches

You can install a single CMS patch or all CMS patches by following these steps:

1. Load the CMS CD into the CD-ROM drive.

2. Log in as *root*.

3. Enter the `cmssvc` command.

The CMS Services menu displays. For example:

```
AT&T 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) patch_inst   Install a single CMS patch from CD
  8) patch_rmv    Backout an installed CMS patch
  9) load_all     Install all CMS patches found on CD
 10) back_all     Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit:
```

4. Select `patch_inst` to install a single CMS patch, or `load_all` to install all CMS patches.

   The system responds with a list of patches you can install. For example:

```
The following patches are available for installation:
1.      cmsp1-s
2.      cmsp2-s
3.      cmsp3-s
   .
   .
   .
```

   The list ends with a prompt. The text of that prompt differs depending on whether you are installing a single CMS patch or all CMS patches. For example, if you are installing a single patch, the prompt is:

```
Enter the number of patch you wish to install(q to quit):
```

   If you are installing all CMS patches, the prompt is:

```
Are you sure you want to install all these patches? (y|n)
```

5. Enter the number of the patch you want to install, or enter `y` if you are installing all patches. For each patch installed, the system

responds with messages similar to the following:

```
@(#) installpatch 1.0 96/04/01
cmspx-s
Generating list of files to be patched...
Creating patch archive area...
Saving a copy of existing files to be patched...
xxxx blocks
        File compression used
Installing patch packages...

Doing pkgadd of cmspx-s package:
Installation of <cmspx-s> was successful.

Patch packages installed:
        cmspx-s

Patch installation completed.
See /cms/patch/cmspx-s/log for details.
```

6. When the system prompt reappears, unload the CD-ROM drive.

Backing Out CMS Patches

You can back out a single CMS patch or all CMS patches by following these steps:

1. Log in as *root.*

2. Enter the `cmssvc` command. The CMS Services menu displays. For example:

```
 AT&T 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) patch_inst   Install a single CMS patch from CD
  8) patch_rmv    Backout an installed CMS patch
  9) load_all     Install all CMS patches found on CD
 10) back_all     Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit:
```

3. Select `patch_rmv` to backout a single CMS patch, or `back_all` to backout all CMS patches.

The system responds with a list of patches you can backout. For example:

```
The following patches are installed on this machine:
        cmsp1-s
        cmsp2-s
        cmsp3-s
  .
  .
  .
```

The list ends with a prompt. The text of that prompt differs depending on whether you are backing out just one CMS patch or backing out all CMS patches. For example, if you backing out a single patch, the prompt is:

```
Enter the name of the patch you wish to remove(q to quit):
```

If you are backing out all CMS patches, the prompt is:

```
Are you sure you wish to remove all these patches? (y|n)
```

4. If you are removing _all_ CMS patches, skip this step and go immediately to Step 5.

Enter the name of the patch exactly as it appears in the displayed list. For example, you would enter `cmsp3-s` to remove CMS Patch 3.

The program then verifies the patch to be removed:

```
Are you sure you wish to backout patch cmspx-s? (y|n)
```

5. Enter `y` to remove the patch or patches. For each patch removed, the system displays messages similar to these:

```
@(#) backout patch 1.0 96/08/02

Removing patch package for cmspx-s:
Removal of <cmspx-s> was successful.
Restoring previous version of files...

x blocks
Making package database consistent with restored files:
Patch x has been backed out.
#
```

Upgrading the R3V5 Base Load

This section presents procedures for upgrading to a new R3V5 base load when you already have an earlier R3V5 base load installed.

If your *Sun SPARCserver* system currently has a maximum capacity of 5200 agents, and you wish to increase it to 10,000 agents, you will have to install the *Solstice DiskSuite* software package. In that case, perform the entire preupgrade procedure (see "Preupgrade Procedure" on page 3-2) and use the upgrade procedure "Upgrading to R3V5 (10,000-agent Capacity)" on page 3-33.

Prerequisites: You must be logged in as *root*, the computer must be in run-level 2 or 3, all file systems must be mounted, CMS must be turned OFF, and the link on the switch must be busied out. Also, you must have the CD-ROM that contains the new CMS base load.

Upgrading CMS requires the following procedures (in order):

- Perform a CMSADM backup.
- Install the new *Solaris*[*] patches.
- Remove the current CMS software.
- Install the new *CentreVu* CMS software.
- Verify the installation.
- Restart CMS.
- Do a full maintenance backup of the upgraded system.

Step 1: Verify CMS Version and Load

To verify your CMS version, log in as root and enter the command:

```
# pkginfo -x cms
```

The system lists the cms version installed on your machine. For example:

```
cms     Lucent Technologies CentreVu(TM) Call Mangement System
        (sparc) r3v5xx.x
```

---

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

Step 2: Verify Free Space

To verify your free space, follow this procedure:

1. Log in as *root*.

2. Display the amounts of available space in the / (root), */var,* and */dump* file systems by entering the following command:

```
#  df  /  /var  /dump  /cms
```

The system responds

```
/      (/dev/dsk/c0t3d0s0 ):   xxxxx blocks    xxxx files
/var   (/dev/dsk/c0t3d0s7 ):   xxxxxx blocks   xxxxx files
/dump  (/dev/dsk/c0t3d0s3 ):   xxxxxx blocks   xxxxx files
```

3. Compare the "blocks" figures from the df command to the Blocks Required values in Table 3-3, below.

Table 3-14: Space Requirements for the *Sun* Platform

File System	Blocks Required to Upgrade
/ (root)	13,400 or more
/var	41,000 or more
/dump	100,000 or more

If the results of the df command show fewer blocks than required for any of the three file systems, discontinue the preupgrade procedure and telephone the Customer Care Center at 1-800-242-2121, or contact your Lucent Technologies distributor or Customer Representative.

4. To verify that you have sufficient space in */cms*, do the following:

   a. Determine the amount of space available in */cms* by entering the df /cms command. For example:

```
#  df  /cms
/cms (/dev/dsk/c0t3d0s4 ):  xxxxxx blocks  xxxxxx files
```

b. Determine the amount of space required by the current CMS load by entering the following command:

```
pkgparam  cms  IBSblocks  IBSinodes
```

The system responds by displaying the number of blocks and inodes required by the current CMS. For example:

```
pkgparam  cms  IBSblocks  IBSinodes
xxxxxx
xxxx
#
```

c. Subtract the number of blocks of your current CMS load from 106,700, which is the number of blocks required by R3V5:

106,700 - *(number of blocks from step b)* = *block_diff*

Verify that *block_diff* does not exceed the number of blocks displayed by the df command in Step a.

d. Subtract the number of inodes of your current CMS from 1600, which again is the number required by R3V5:

1600 - *(number of inodes from step b)* = *inode_diff*

Verify that *inode_diff* does not exceed the number of files displayed by the df command in Step a.

If *CentreVu* CMS requires more blocks or inodes than are available, discontinue the preupgrade procedure. Telephone the Lucent Technologies National Customer Care Center at 1-800-242-2121, or contact your Lucent Technologies distributor or representative. (The Customer Care Center can log in remotely and remove files to make more room for the upgrade.)

Step 3: Perform a CMSADM backup

The cmsadm backup provides backup CMS data in case the upgrade should go wrong. See the "Performing a CMSADM Backup" section of Chapter 2, *Common Processes and Procedures,* for a step-by-step procedure.

Step 4: Install *Solaris* Patches

If the CMS CD contains any new *Solaris* patches, perform these steps to install them:

1. Load the CMS CD-ROM into your CD-ROM drive and enter the following command:

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

The system responds with an installation menu. For example:

```
The following packages are available:
  1 cms      Lucent Technologies CentreVu(TM) Call Management
            System (sparc) r3v5xx.x
  2 spatches CMS Supplied Solaris Patches
            (sparc) 1.0

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

2. Enter the number that corresponds to the *spatches* package.

> **Note** Do **not** enter `all`. The *spatches* package **must** be installed before the CMS software package.

The system responds:

```
Processing package instance <spatches> from </dev/rmt/0>

CMS Supplied Solaris Patches
(sparc) 1.0
Lucent Technologies
   .
   .
   .
This package contains scripts which will be executed with
super-user permission during the process of installing this
package.

Do you want to continue with the installation of <spatches>
[y,n,?] y
```

3. Enter `y` to continue with the installation of the *spatches* package.

The system continues with the installation. When it finishes, it redisplays the installation menu. For example:

```
Installing CMS Supplied Solaris Patches as <spatches>

## Installing part 1 of 1.
Spooling 100982-02
Spooling 100992-03
    .
    .
    .
Once the Solaris patches are installed, a reboot is necessary.
The reboot command will be provided by the install_patches
script.

The following packages are available:
 1 cms        Lucent Technologies CentreVu(TM) Call Management
              System (sparc) r3v5xx.x
 2 spatches   CMS Supplied Solaris Patches
              (sparc) 1.0

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

4. Answer `q` to quit.

5. Run the installation script by entering the following command:

```
# /tmp/patches/install_patches
```

The system responds:

```
# /tmp/patches/install_patches
@(#) installpatch 4.11 94/06/23

 generating list of files to be patched
 Save old verisons of files to be patched
 .
 .
 .
 Installation of <SUNWcsr.2> was successful.
 generating
```

6. A message displays indicating that you need 20 MB of space in */var* to install the Jumbo Kernel patch. You already checked this in Step 2. Enter `y`, or wait 60 seconds, and the installation will continue.

   If you have not checked your available space, enter `n` and refer to "Step 2: Verify Free Space" on page 3-118.

Depending on the number and size of the *Solaris* patches being installed, the installation may take over an hour.

Eventually, you receive an "installation finished" message, and the system prompt reappears:

```
  .
  .
  .
Installation of <SUNWcsr.7> was successful.
Patch installation finished
To complete the solaris patch installation, one should
reboot with the following command: shutdown -y -i6 -g0
#
```

> **Note** The *Solaris* patch installation may fail and display a message about bad permissions on */kernel* and */kernel/drv*. Do this to resolve the problem:
>
> a. Enter the `/usr/sbin/installf SUNWcar /kernel` command.
>
> b. Enter the `/usr/sbin/installf SUNWcar /kernel/drv` command.
>
> c. Restart the patch installation (item 1, page 3-120).

7. Reboot your system using the command indicated in the message:

```
# shutdown -y -i6 -g0
```

When the system prompt returns to your screen, the installation of the patches is complete.

Step 5: Remove Existing CMS Software

There are, in general, two steps to removing the existing CMS software:

- Removing CMS patches
- Removing the base CMS software

Removing CMS Patches

Remove all existing CMS patches with this procedure:

1. Log in as *root*.

2. Enter the `cmssvc` command. The CMS Services menu displays:

```
 AT&T 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) patch_inst   Install a single CMS patch from CD
  8) patch_rmv    Backout an installed CMS patch
  9) load_all     Install all CMS patches found on CD
 10) back_all     Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit:
```

3. Enter the number corresponding to back_all.

   If there are no patches installed, the system responds:

```
No CMS patches found on this machine
patch_rmv can remove installed patches only
#
```

   In that case, skip to "Removing the Current CMS Base Package" on the next page.

   If there are patches installed on the machine, the system lists them and asks if you really want them removed. For example:

```
The following patches are installed on this machine:
        cmsp1-s
        cmsp2-s
        cmsp3-s
          .
          .
          .
Are you sure you wish to remove all these patches? (y|n)
```

4. Enter y.

The system removes the patches. For each patch removed, the system displays messages similar to the following:

```
@(#) backout patch 1.0 96/08/02

Removing patch package for cmspx-s:
Removal of <cmspx-s> was successful.
Restoring previous version of files...
   .
   .
   .
x blocks
Making package database consistent with restored files:
Patch x has been backed out.
#
```

Removing the Current CMS Base Package

Do these steps to remove the current CMS base package:

1. Start the procedure by entering:

```
# pkgrm cms
```

The program responds:

```
The following package is currently installed:
   cms                 Call Management System
                        (sparc) r3v5xx.x

Do you want to remove this package?
```

2. Answer y. The system responds:

```
## Removing installed package instance <cms>

This package contains scripts which will be executed with
super-user permission during the process of removing this
package.

Do you want to continue with the removal of this package
```

3. Answer y. The system responds:

```
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.

Do you want to preserve CMS data? [y,n,?]
```

4. Answer y.

   The system responds:

```
CMS will be removed from this machine; the data will be
preserved.

Are you sure this is correct? [y,n,?]
```

5. Answer y. The system responds:

```
All file systems should be backed up before continuing.
See the Maintenance chapter in the Sun CMS Installation and
Maintenance Manual for instructions.

Have you backed up the file systems? [y,n,?]
```

6. Answer y. The system responds:

```
## Removing pathnames in class <ind>
/usr/lib/cms/trmaps
/usr/informix/etc/termcap
/usr/bin/cmssvc
    .
    .
    .
```

   If the removal is successful, this message displays:

```
Removal of <cms> was successful.
```

   The system prompt returns to your screen.

Step 6: Install New *CentreVu* CMS Base Package

Perform these steps to install the new *CentreVu* CMS base package:

7. Start the installation by entering a pkgadd command:

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

The system responds:

```
The following packages are available:
 1 cms        Lucent Technologies CentreVu(TM) Call Management
              System (sparc) r3v5xx.x
 2 spatches  CMS Supplied Solaris Patches
              (sparc) 1.0

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

8. Enter the number that corresponds to the cms option. The system responds:

```
Processing package instance <cms> from </dev/rmt/0>

CentreVu(TM) Call Management System
(sparc) r3v5xx.x
       .
       .
       .
*-conflict with a file which does not belong to any package.
Do you want to install these conflicting files? [y,n,?,q]
```

9. Answer y. The system responds:

```
## Checking for setuid/setgid programs.

 The following files are being installed with setuid and/or
 setgid permissions:
          /cms/bin/mqpeek <setuid root>
          /cms/bin/spi <setuid root>
          /cms/toolsbin/cmsu <setuid root>
          /cms/toolsbin/initSimConf <setuid root>
          /cms/toolsbin/initSimConf <setuid root>
          /cms/toolsbin/psx <setuid root>
          /cms/toolsbin/psx <setuid root>
          /cms/toolsbin/shmdump <setgid sys>

 Do you want to install these setuid/setgid files [y,n,?,q]
```

10. Answer 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 <cms>
[y,n,?,q]
```

11. Answer `y`.

    The system continues with the installation, and eventually redisplays the installation menu:

```
Installing CentreVu(TM) Call Management System as <cms>
  .
  .
  .
/etc/SUNWconn/x25/template/cms.spin1.wan
/etc/rc0.d/K92cms
/usr/bin/cms
/usr/bin/cmsadm
  .
  .
  .
Installation of <cms> was successful.
#The following packages are available:
  1 cms          Lucent CentreVu(TM) Call Management System
                 (sparc) r3v5xx.x
  2 spatches     CMS Supplied Solaris Patches
                 (sparc) 1.0

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:
```

12. Enter `q` to quit the menu and return to the system prompt.

    Warning If you made changes to your *cms* or *cmssvc* .profiles, the following message will appear:

    ```
    A manual merge may be necessary to restore
    custom entries. The original content was
    saved in profile.save prior to changes.
    ```

    The machine will either reboot if needed or return to the system prompt.

13. If you are instructed to run a `shutdown`, shut down the system using the command displayed with the message.

    The installation of the new *CentreVu* CMS base package is now complete. The system prompt returns to your screen.

14. Enter the following command:

```
# eject cdrom
```

15. Remove the *CentreVu* CMS CD from the drive.

Step 7: Verify *CentreVu* CMS Software Installation

Do the following to verify the installation of the new *CentreVu* CMS software:

1. Enter the `pkgchk` command:

```
# pkgchk -n cms
```

If the software installation was successful, the system prompt returns to your screen.

If errors are detected, see the *CentreVu™ CMS R3V5 Sun*® *SPARCserver™ Computers Installation and Maintenance* (585-215-827) document for information on checking installed software packages.

Step 8: Install *CentreVu* CMS Patches

1. Enter the `cmssvc` command. The CMS Services menu displays:

```
Lucent 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) patch_inst    Install a single CMS patch from CD
 8) patch_rmv     Backout an installed CMS patch
 9) load_all      Install all CMS patches found on CD
10) back_all      Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit:
```

2. Select `load_all` and press Return.

The system responds by listing all the patches available on the CD. For example:

```
The following patches are available for installation:
1.      cmsp1-s
2.      cmsp2-s
3.      cmsp3-s
   .
   .
   .
Are you sure you want to install all these patches? (y|n)
```

If no patches are listed, skip the rest of this procedure and go directly to Step 9, below.

3. Enter `y` to install all patches.

   For each patch installed, the system responds with messages similar to the following:

```
@(#) installpatch 1.0 96/04/01
Generating list of files to be patched...
Creating patch archive area...
Saving a copy of existing files to be patched...
xxx blocks
        File compression used
Installing patch packages...

Doing pkgadd of cmspx-s package:
Installation of <cmspx-s> was successful.

Patch packages installed:
        cmspx-s

Patch installation completed.
See /cms/patch/cmspx-s/log for details.
```

When the system is finished installing the patches, it returns you to the system prompt.

Step 9: Restart CMS

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 "Turning CMS On and Off" on page 2-13.

Step 10: Back Up the Upgraded System

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.

Use the backup procedure in Chapter 2. In the Back Up Data window, use these defaults:

- `y` (yes) for `Verify volume can be read after backup`
- All ACDs
- ACD-specific data
- System administration data
- Historical data
  - Full.

Migrating Generic-2.2 Switch Data from Non-EAS to EAS

This section describes how to migrate data from a *Sun SPARCserver* platform running on a Generic 2.2 (G2.2) switch without Expert Agent Selection (EAS) to the *same Sun SPARCserver* patform running on a G2.2 switch with EAS. This migration converts the *CentreVu*™ Call Management System (CMS) G2.2 EAS format (splits are multiplied by 10 during the migration).

In the following steps, CMS refers to the *CentreVu* CMS on the *Sun SPARCserver* platform for which you are doing the in-place migration.

Step	Action	Responsible Party
1	Do a "cmsadm" backup of CMS without G2.2 EAS	customer
2	Do a full maintenance backup of CMS without G2.2 EAS	customer
3	Turn Off CMS	Technical Service Center (TSC)
4	Execute the "swsetup" command	TSC
5	Activate EAS on the switch	Lucent field technician
6	Change data storage allocation for CMS with EAS	TSC
7	Start CMS data collection	TSC
8	Migrate full historical data	customer
9	Do a "cmsadm" backup of CMS with G2.2 EAS	customer
10	Do a full maintenance backup of CMS with G2.2 EAS	customer

Note	The customer may contract Lucent Technologies to complete Steps 8 through 10 on a time-and-materials basis.

Split/Skill Numbers

After the G2.2 without EAS to G2.2 with EAS migration, splits are multiplied by 10 to convert them to the G2.2 EAS format. For example, split 1 becomes split 10, split 2 becomes split 20, and so on. In the Dictionary subsystem, however, split names (synonyms) still reference the G2.2 non-EAS split number (split 1, split 2, etc.).

After the migration, you need to access the Split/Skills window in the Dictionary subsystem, and change the Split/Skill numbers from 1 to 10, 2 to 20, etc.

For more information about split/skills, see Appendix D of the *CentreVu CMS R3V5 Administration* manual (585-215-820).

Step 1: Back Up *CentreVu* CMS without G2.2 EAS

The first thing you need to do is to make sure that all data can be moved to the new version of CMS. You do that by performing a CMSADM backup and a full maintenance backup.

1. *A CMSADM backup.* The cmsadm backup provides backup CMS data in case the data migration should go wrong. See the "Performing a CMSADM Backup" section of Chapter 2, *Common Processes and Procedures,* for a step-by-step procedure.

2. *A full CMS maintenance backup.* The full maintenance backup provides the migration data for the new version. See the "Performing a Full Maintenance Backup" section of Chapter 2, *Common Processes and Procedures*, for a step-by-step procedure.

Doing a cmsadm Backup

Task Performed By: Customer

The customer does a "cmsadm" backup of the *CentreVu* CMS without G2.2 EAS. The "cmsadm" backup provides a complete backup of all file systems on the *Sun SPARCserver* computer in case of failure.

The procedure involves the following general steps:

1. Print the /etc/vfstab file and save the printout.

2. Enter a cmsadm command.

3. Select the backup option.

4. Select a tape drive option.

5. When the backup completes, label the tape, bundle it with the vfstab printout, and put it in a safe place.

For a more detailed procedure, see "Doing a CMSADM Backup on a Solaris System" on page 2-22.

Doing a Full Maintenance Backup

Task Performed By: Customer

The customer does a full CMS maintenance backup of the *CentreVu* CMS R3V5 without G2.2 EAS. This backup provides the data for the migration.

Briefly, the procedure is as follows:

1. Start CMS and, from the MainMenu, select the `Maintenance - Back Up Data` option.

2. Make certain that the Back Up Data window has the following settings:

Table 3-15: Backup Settings for G2.2 Non-EAS

Field	Setting
`Device name:`	`default` (or the name of the backup device being used)
`Verify tape can be read after backup?`	`y`
`ACD(s) to back up:`	`All ACDs`

`Data to back up:`	`System Administration`
	
	`ACD-specific administration data`
	
	`Historical data,`
	`    Full`

3. Access the Action List and select `Run`.

For a more thorough discussion of the Back Up Data window, see "Back Up Data Window" on page 2-26.

Step 2: Turn Off *CentreVu* CMS

Task Performed By:TSC

The TSC turns off *CentreVu* CMS so it can execute the `swsetup` command in the next step.

See the *CentreVu™ CMS Sun® SPARCserver™ Computers Installation and Maintenance* (585-215-827) document, Chapter 2, "CMSADM and CMSSVC Menus — run_cms."

Step 3: Execute the swsetup Command

Task Performed By: TSC

From the *CentreVu* CMS R3V5, the TSC accesses the "cmssvc" menu and executes the `swsetup` command, which allows *CentreVu* CMS to run the EAS feature.

See the *CentreVu™ CMS R3V5 Sun® SPARCserver™ Computers Installation and Maintenance* (585-215-827) document, Chapter 2, "CMSADM and CMSSVC Menus — swsetup."

Step 4: Activate EAS on the Switch

Task Performed By: Lucent field technician

This step terminates data collection on the *CentreVu* CMS R3V5. An Lucent field technician busies out the *CentreVu* CMS R3V5 link via the switch. Use **PROC 028** for the Generic 2 switch.

The switch technician activates the EAS feature on the switch. After the EAS feature is activated, the Lucent field technician releases busy out.

Step 5: Change the Data Storage Allocation for *CentreVu* CMS with EAS

Task Performed By: TSC

The TSC changes data storage allocation to add skills.

See the *CentreVu™ CMS R3V5 Administration* (585-215-820) document, Chapter 11, "System Setup — Data Storage Allocation."

Step 6: Start *CentreVu* CMS Data Collection

Task Performed By: TSC

The TSC restores the *CentreVu* CMS R3V5 on the *Sun SPARCserver* Platform to multi-user mode, starts data collection, and verifies that the link is up.

See the following sections in the *CentreVu™ CMS R3V5 Administration* (585-215-820) document:

- Chapter 11, "System Setup — CMS State"
- Chapter 11, "System Setup — Data Collection"

- Chapter 12, "Maintenance — Connection Status."

At this point, the TSC hands the migration back to the customer.

| Note | The customer may contract with Lucent to have the TSC complete the migration on a time and materials basis. |

Step 7: Migrate Full Historical Data

Task Performed By: Customer

Now that the EAS *CentreVu* CMS is collecting data, the customer can migrate the non-EAS *CentreVu* CMS historical data.

The *CentreVu* CMS on the *Sun SPARCserver* Platform may be in single-user or multi-user mode to migrate historical data.

Briefly, the procedure is as follows:

1. Insert the *CentreVu* CMS R3V5 full maintenance backup tape (from Step 1) into the appropriate tape drive.

2. Log in as *cms,* and access the *CentreVu* CMS MainMenu.

3. Select the `System Setup - R3 Migrate Data` option, and set the following fields:

Table 3-16: R3 Migrate Data Settings for G2.2 Non-EAS-to-EAS

Field	Setting
Device name:	**default** (or the name of the tape device)
Data Type:	**Historical data**
Specify ACD(s) to migrate:	**All ACDs**
Stop time	**11:59PM**

4. Press `Return` to access the Action List.

5. Select `Run` and press `Return`.

`Working` appears in the lower left-hand corner of the window. The `Status:` field displays various messages that tell you what the program is processing.

> **Note** Since the migration runs in the background, you can exit the migration window and perform other tasks. You should access the migration window occasionally to check the progress.

The migration of full historical data may take several hours.

If the migration completes successfully, the `Status:` line displays a "successful" message similar to the following:

```
Last migration completed (Tue Jul 13 09:49:27
1993)
```

If the migration fails, the `Status:` line displays a "failed" message, and an error is logged to the customer and services logs.

Step 8: Back Up *CentreVu* CMS with G2.2 EAS

The next thing you need to do is to back up the data you have just migrated. There are two backups required:

1. *A CMSADM backup.*

2. *A full CMS maintenance backup.*

Doing a cmsadm Backup

Task Performed By: Customer

The customer does a "cmsadm" backup of the *CentreVu* CMS with G2.2 EAS. The "cmsadm" backup provides a complete backup of all file systems on the *Sun SPARCserver* Platform in case of failure.

The procedure involves the following general steps:

1. Print the `/etc/vfstab` file and save the printout.

2. Enter a `cmsadm` command.

3. Select the `backup` option.

4. Select a tape drive option.

5. When the backup completes, label the tape, bundle it with the vfstab printout, and put it in a safe place.

For a more detailed procedure, see "Doing a CMSADM Backup on a Solaris System" on page 2-22.

Doing a Full Maintenance Backup

Task Performed By: Customer

The customer does a full CMS maintenance backup of the *CentreVu* CMS R3V5 with G2.2 EAS. This backup protects you from losing the migrated data plus the R3V5 data collected since the migration.

Briefly, the procedure is as follows:

1. Start CMS and, from the MainMenu, select the `Maintenance - Back Up Data` option.

2. Make certain that the Back Up Data window has the following settings:

Table 3-17: Backup Settings for G2.2 Non-EAS

Field	Setting
`Device name:`	**default** (or the name of the backup device being used)
`Verify tape can be read after backup?`	**y**
`ACD(s) to back up:`	**All ACDs**
`Data to back up:`	**System Administration** **ACD-specific administration data** **Historical data,** 　　**Full**

3. Access the Action List and select `Run`.

For a more thorough discussion of the Back Up Data window, see "Back Up Data Window" on page 2-26.

Chapter 4
Migrating Data to a New *Sun SPARCserver* Computer

List of Figures

List of Tables

Overview

This chapter describes how to migrate data from a Call Management System (CMS) on an *INTEL*[*] or *Sun*[†] *SPARCserver*[‡] computer to *CentreVu*™ CMS Release 3 Version 5 (R3V5) on a *Sun SPARCserver* computer newly purchased from Lucent Technologies. You can use the steps in this chapter to migrate one or more ACDs to the *Sun SPARCserver* computer.

Note | 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 cannot be merged.

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*INTEL is a registered trademark of Intel Corporation.
†Sun is a registered trademark of Sun Microsystems, Inc.
‡SPARCserver is a trademark of SPARC International, Inc.

Migrating R2 Data from a 3B2 Computer

The steps involved in migrating data from a 3B2 computer to a *Sun SPARCserver* computer are these:

Step	Action	Responsible Party
1	Perform premigration tasks	customer
2	Install the migration program on R2 CMS	customer
3	Install the *Sun SPARCserver* computer	Lucent field technician
4	Administer printers for the *Sun SPARCserver* computer	customer
5	Transfer R2 administration data to tape	customer
6	Migrate R2 administration data	customer
7	Perform post administration migration tasks	customer
8	Move link	Lucent field technician
9	Transfer R2 historical data to tape	customer
10	Migrate R2 historical data	customer
11	Perform post historical migration tasks	customer
12	Do a cmsadm backup from the *Sun SPARCserver* computer	customer
13	Do a full maintenance backup from the *Sun SPARCserver* computer	customer

> **Note** The customer is responsible for performing the 3B2-to-*Sun SPARCserver* computer migration steps (except Steps 3 and 8). The customer can, however, contract Lucent to do the migration on a time-and-materials basis.

> **Note** Steps 1 through 7 allow you to complete the administration of the CMS R3V5 before it goes into service. You should consider starting these steps 2 to 3 days before the cutover to the *Sun SPARCserver* computer.

Multiple ACD Migration

Moving multiple R2 Automatic Call Distributors (ACDs) to the *Sun SPARCserver* computer can cause collisions in the System

Administration data. See the "Migrations" section in Chapter 1, "Introduction," for information on potential collisions and their solutions.

Options for Multiple ACD Migration

When you migrate data from multiple R2 ACDs to a *Sun SPARCserver* computer, you can use one or a combination of the following scenarios:

- First, migrate the R2 administration data for all the ACDs to the *Sun SPARCserver* computer. This allows you to clean up the administration data (user IDs, dictionary, etc.) for all of the ACDs at once. After the administration data is cleaned up, you can start CMS R3V5 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 SPARCserver* computer. This allows you to migrate the administration data for an ACD, clean up the administration data, start CMS R3V5 data collection for that ACD, and then migrate the ACD's R2 historical data. You would repeat this process for the next ACD, until all the ACDs are migrated.

Migration Procedure

Perform the following steps to do a 3B-to-*Sun* Migration.

| Note | Login/logout data does not migrate. |

Step 1. Perform Premigration Tasks

Perform the following tasks from the R2 CMS.

1. Change R2 archive parameters for any files that will be set up for R3V5 to store the amount of data you want to migrate to R3V5. This should be done 2 or 3 days before performing the R2 to R3V5 historical migration.

| Note | For Steps 2 and 3, 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 SPARCserver* computer CMS R3V5. You can view the R2 screens and then enter the appropriate information into the CMS R3V5 windows. |

2. 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 SPARCserver* computer. You will need to re-create these programs on the *Sun SPARCserver* computer machine. The printout and the written information will aid you in re-creating the programs.

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

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

4. Clean up the dictionary:

   a. Print out each area in the Dictionary subsystem except "Login Identifications" and "Database Items."

   b. Remove synonyms, constants, and calculations.

   c. In calculations, you *must* replace all references to standard CMS database items in lower case with upper-case versions.

   d. Modify names (synonyms), constants, and calculations so that all of them start with a letter.

   e. Replace any occurrences of * \ - " ' | ? ; ~ in names (synonyms) with legal characters. R3V5 does not consider these to be legal characters. All other typewriter characters are legal. If you choose not to replace these characters, the migration program will replace 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.

   | Note | These symbols will not be replaced for calculations.

f. Create agent groups for all extension groups. Then delete the extension groups.

g. 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.

5. Look carefully at custom reports:

a. Decide whether all custom report designs from R2 will be needed in R3V5. You may find that some R2 custom reports are covered by new, standard R3V5 reports.

b. 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 R3V5.

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

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

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

Step 2. Install the Migration Program on R2 CMS

To install the migration program, do these steps at the R2 CMS console terminal:

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. Enter the following command to start the installation process:

```
# sysadm installpkg
```

The program responds:

```
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 Return. The program responds:

```
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.

6. Remove the diskette from the drive.

Step 3. Install the *Sun SPARCserver* Computer

Task Performed By:Lucent field technician

Involved Parties:TSC and customer

Lucent field technicians install the *Sun SPARCserver* computer. The TSC provisions the system by setting authorizations, setting up data storage parameters, and setting up the CMS R3V5 application. The customer can turn on the CMS R3V5 and install the additional feature packages, if applicable.

See the following chapters in the *CentreVu™ CMS R3V5 Sun® SPARCserver™ Computers Installation and Maintenance* (585-215-827) document:

- Chapter 3, "Installing the *Sun SPARCserver* Computer"

- Chapter 5, "Connecting the *Sun SPARCserver* Computer to the Switch"

- Chapter 6, "Setting Up *CentreVu* CMS and Installing Feature Packages."

Step 4. Administer Printers for the *Sun SPARCserver* Computer

Task Performed By: Customer

The customer administers the printers for the *Sun SPARCserver* computer since the migration process does **not** migrate the printer administration data.

See these chapters in the following documents:

- Chapter 3, "Getting Started and Using CMS Daily — Printers Worksheet," in the *CentreVu*™ *Call Management System R3V5 Administration* (585-215-820) document.

- Chapter 4, "Installing Terminals, Printers, and Modems — Administering Printers," in the *CentreVu*™ *CMS R3V5 Sun*® *SPARCserver*™ *Computer Installation and Maintenance* (585-215-827) document.

Step 5. Transfer R2 Administration Data to Tape

To transfer the R2 CMS administration data, which also includes dictionary and custom report data, do these steps on the 3B2 computer:

1. Insert the tape into the tape drive.

   > **Note** Make sure the tape is not write protected (black arrow in the upper left-hand corner of the cartridge points 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 SPARCserver* 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 SPARCserver* computer. Tapes used with a CTC tape system must be formatted.

2. At a terminal logged into R2 CMS, access the *UNIX* system through the CMS Main Menu.

> **Note** Make sure that you access the *UNIX*[*] system through the R2 CMS Main Menu; otherwise, you will get this error message: `CMS system error, setup getenv failed for ACDHOME.`
>
> *UNIX* is a registered trademark of Novell, Inc. in the United States and other countries, licensed exclusively through X/Open Corporation

3. Enter the following command to start the migration program:

```
$ /usr/bin/migrate
```

The program responds:

```
              R2 CMS to R3 CMS Data Migration

Please answer a few questions before continuing ...

You will need to map the R2 ACD to an R3 ACD.
To complete this mapping process, you will be asked to
enter the following:
    -> The number of the existing R2 ACD
    -> The number of the corresponding R3 ACD.

For example, the R2 ACD 2 will be mapped to the R3 ACD 1.
The mapping is as follows:
      R2 acd2 --> R3 acd1
When prompted for the number of the existing R2 ACD, enter "2".
When prompted for the number of the corresponding R3 ACD, enter "1".

Enter the number of the existing R2 ACD:
```

4. Enter the appropriate R2 ACD number. For example, enter `1` for ACD1, `2` for ACD2, etc. Response:

5. Enter the R3V5 ACD number to which this R2 ACD will be mapped.

```
Enter the number of the corresponding R3 ACD number:
```

After the program has established the ACD mapping, it responds
with:

```
Select one: <a> for administration and dictionary
            <h> for historical data
            <b> for both options:
```

6. Enter a to migrate the administration, dictionary, and custom
   reports information. The program responds:

```
Collecting the set of R2 CMS files to migrate ...

Only one tape is required for the administration, dictionary,
and custom reports migration
```

The program continues:

```
Continuing with the migration ...
Retensioning the tape. This can take up to 3 minutes ...
Migrating synonym ...
Migrating constant ...
Migrating calculation ...
     ....
     ....
Migrating users ...
```

The program continues to display the files and records being
migrated to the tape.

When the migration program is finished, the following displays:

```
Migration succeeded.
$
```

The `Migration succeeded` message indicates that the program has finished migrating the information to tape and has returned you to the *UNIX* system prompt.

You can return to the R2 CMS Main Menu by entering:

```
$ exit
```

Transfer Tape Media — CTC to SCSI

If your 3B2 computer is equipped with a CTC tape system, the Technical Service Center (TSC) needs to transfer the data on the CTC tape to a medium that is compatible with the *Sun SPARCserver* computer. Call the CMS Provisioning Group at the TSC to have the data transferred:

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 Step 6.

Step 6. Migrate R2 Administration Data

You migrate the R2 CMS administration, dictionary, and custom report data to the *Sun SPARCserver* computer using the R2 Migrate Data window.

Prerequisite Administration

From the *Sun SPARCserver* computer:

- A device name needs to be defined in the CMS R3V5 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 R3V5 Administration* (585-215-820) document:

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

Procedure

From the *Sun SPARCserver* computer:

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 R3V5, 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.
   - cms replaces acd1 as the administration logid.

3. Select the System Setup subsystem.
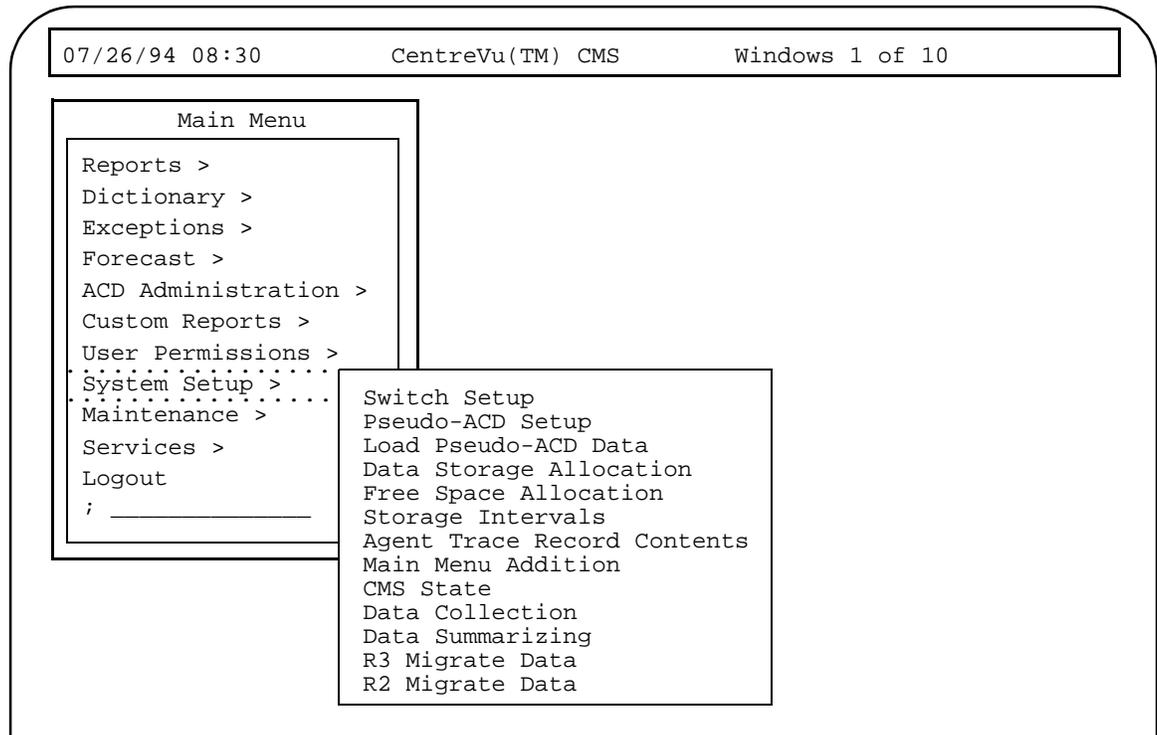
   The System Setup menu displays:

```
07/26/94 08:30        CentreVu(TM) CMS        Windows 1 of 10

         Main Menu
   Reports >
   Dictionary >
   Exceptions >
   Forecast >
   ACD Administration >
   Custom Reports >
   User Permissions >
   ...................
   System Setup >          Switch Setup
   ...................      Pseudo-ACD Setup
   Maintenance >           Load Pseudo-ACD Data
   Services >              Data Storage Allocation
   Logout                  Free Space Allocation
   ; _____        Storage Intervals
                           Agent Trace Record Contents
                           Main Menu Addition
                           CMS State
                           Data Collection
                           Data Summarizing
                           R3 Migrate Data
                           R2 Migrate Data
```

4. Select R2 Migrate Data.
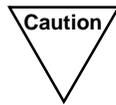
> **Caution** ⊽ Do **not** exit this window during the migration. If you exit this window or turn the terminal off, the migration will stop. If the migration stops in the middle, you must restart it.

The R2 Migrate Data window displays:

```
09/30/94 00:30 PM          CentreVu(TM) CMS        Window: 1 of 4

  System Setup: R2 Migrate Data                          All ACDs
                                                  ┌──────────────
   Device name: default_____               List device
                                                   Run
   Data type (Select one):
     <x> Administration, Dictionary, and Custom Reports
     < > Historical and Forecast Administration Data
            Stop date: _____
            Stop time: 11:59_PM

   Status:
```

5. Select the device name from which the data being migrated will be read (normally `default` or `alternate`).

6. Select `Administration, Dictionary, and Custom Reports` (the default) in the `Data type` field.

   > **Note** Do not enter data in the `Stop date:` and `Stop time:` fields. You use these fields only when migrating historical data.

7. Press `Return` to access the Action List.

8. Select `Run` and press `Return`.

   `Working` appears in the lower left corner of the window. The `Status:` field displays various messages that inform you what the program is processing. The migration of administration data, dictionary, and custom reports takes approximately 1 hour.

   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 7, Perform Post Administration Migration Tasks.

Step 7. Perform Post Administration Migration Tasks

Perform the following tasks after you have migrated the R2 administration data to the *Sun SPARCserver* computer. You may want a copy of the *CentreVu™ Call Management System R3V5 Administration* (585-215-820) document on hand as you complete these tasks.

1. Use the *CentreVu™ Call Management System R3V5 Administration* (585-215-820) document to:

   a. Reference Chapter 3, "Getting Started and Using CMS Daily." If your switch supports the EAS (Expert Agent Selection) 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.

   | Note | If you have not already printed the migration log, enter the following command at the *UNIX* system prompt to print it: `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 R3V5 Administration* (585-215-820) 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 R3V5 Administration* (585-215-820) 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 R3V5 Administration* (585-215-820) document.

7. If you have vectoring, set up VDN call profile parameters. See Chapter 9, "ACD Administration," in the *CentreVu*™ *Call Management System R3V5 Administration* (585-215-820) 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 R3V5 standard report can be used instead of the migrated R2 custom report. The R3V5 report may require modification through the Custom Report subsystem.

> | Note | It is strongly recommended that you find an R3V5 standard report to use instead of the migrated R2 custom report. Migrated custom reports do not fully migrate, take time to fix, and run 60 percent slower than their R3V5 counterparts.

b. If you found an R3V5 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 R3V5 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 R3V5 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 SPARCserver* 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 R3V5 Administration* (585-215-820) 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 SPARCserver* 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 R3V5. For example, if you did not have vectoring on the R2 system but have it on the *Sun SPARCserver* 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.

Step 8. Move Link

The Lucent technicians take down the R2 CMS link to the switch.

> **Note** It is important that you write down the exact date and time the R2 CMS link was brought down. This information will be needed when migrating the historical data.

The technicians bring up the link between the *Sun SPARCserver* computer and the switch. A switch technician needs to make sure that the switch is administered for CMS R3V5. At this point, data collection begins on the CMS R3V5. There will be a period of time, while the historical data migration takes place, that full historical reporting capabilities are not available.

Step 9. Transfer R2 Historical Data to Tape

To transfer the R2 CMS historical data, do the following steps from the 3B2 computer:

1. Insert the tape into the tape drive.

> **Note** Make sure the tape is not write protected (black arrow in the upper left-hand corner of the cartridge points away from "safe").

> **Note** If your 3B2 is equipped with a SCSI tape system, use the tapes that came with the *Sun SPARCserver* 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 CTC tape system, use standard R2 backup tapes. The TSC then transfers the data to a media that is compatible with the *Sun SPARCserver* computer. Tapes used with a CTC tape system must be formatted.

2. At a terminal logged into R2 CMS, access the *UNIX* system through the CMS Main Menu.

> **Note** Make sure that you access the *UNIX* system through the R2 CMS Main Menu; otherwise, you will get this error message: `CMS system error, setup getenv failed for ACDHOME`.

3. Enter the following command to start the migration program:

```
$ /usr/bin/migrate
```

The program responds:

```
                R2 CMS to R3 CMS Data Migration

Please answer a few questions before continuing ...

You will need to map the R2 ACD to an R3 ACD.
To complete this mapping process, you will be asked to
enter the following:
     -> The number of the existing R2 ACD
     -> The number of the corresponding R3 ACD.

For example, the R2 ACD 2 will be mapped to the R3 ACD 1.
The mapping is as follows:
        R2 acd2 --> R3 acd1
When prompted for the number of the existing R2 ACD, enter "2".
When prompted for the number of the corresponding R3 ACD, enter "1".

Enter the number of the existing R2 ACD:
```

4. Enter the appropriate R2 ACD number. For example, enter `1` for ACD1, `2` for ACD2, etc. Response:

```
Enter the number of the corresponding R3 ACD number:
```

5. Enter the R3V5 ACD number to which this R2 ACD will be mapped.

    After the program has established the ACD mapping, it responds with:

```
Select one: <a> for administration and dictionary
            <h> for historical data
            <b> for both options:
```

6. Enter h to migrate the historical data. Response:

```
Collecting the set of R2 CMS files to migrate ...

Calculating the number of tapes needed for the historical
 data migration ...

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 enter n, the following message displays:

```
Signing off.
$
```

    The migrate data program has been interrupted and exited. You are currently in the *UNIX* system. Once you have the necessary number of tapes, you can begin the migrate program again from Step 9.1.

    If you enter y, the program responds:

    The migration of historical data can take up to 2 to 3 hours to download data to a single tape. Therefore, if your database requires multiple tapes, this process could take several hours.

```
Continuing with the migration ...
Retensioning the tape. This can take up to 3 minutes ...
```

The program continues:

```
Migrating hagent....
Migrating dagent....
     ....
     ,,,,
```

If the data is being migrated to more than one tape, the following
message 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.
```

7. Replace the current tape with a blank tape, wait for the retension to
   complete (about 3 minutes), and then press `Return`.

   | Note | Make sure the tape is not write protected (black arrow in the upper left-hand corner of the cartridge points away from "safe"). |

   The program responds:

```
Continuing with the operation ...
```

When the migration is finished, the following message displays:

```
Migration succeeded.
$
```

The `Migration succeeded` message indicates that the program has finished migrating the information to the tape and has returned you to the *UNIX* system prompt.

You can return to the R2 CMS Main Menu by entering:

```
$ exit
```

Transfer Tape Media — CTC to SCSI

If your 3B2 computer is equipped with a CTC tape system, the TSC needs to transfer the data on the CTC tape(s) to media that is compatible with the *Sun SPARCserver* computer. Call the CMS Provisioning Group at the TSC to have the data transferred:

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 you receive the tapes back from the TSC, you can proceed with Step 10.

Step 10. Migrate R2 Historical Data

You migrate the R2 CMS historical and forecast administration data to the *Sun SPARCserver* 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.

Prerequisite Administration

- A device name needs to be defined in the CMS R3V5 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 R3V5 System Setup subsystem to migrate the data.

- You need to set the CMS R3V5 interval size to 30 minutes for the migration of R2 CMS historical data. R2 CMS has an interval size of 30 minutes, but CMS R3V5 can have interval sizes of 15, 30, or 60 minutes. If you wish a different R3V5 interval size, you can change it after the migration.

See the following sections in the *CentreVu™ Management System R3V5 Administration* (585-215-820) document:

- Chapter 12, "Maintenance — Back Up/Restore Devices"

- Chapter 11, "System Setup — Feature Access"

- Chapter 11, "System Setup — Storage Intervals."

Procedure

Do the following steps from the *Sun SPARCserver* 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 R3V5, access the CMS Main Menu.

3. Select the System Setup subsystem.

   The System Setup menu displays:

```
┌─────────────────────────────────────────────────────────────────────┐
│                                                                       │
│  02/20/95 08:30              CentreVu(TM) CMS            Windows: 1 of 10  │
│  ┌──────────────────────────────┐                                     │
│  │        Main Menu             │                                     │
│  │  ┌────────────────────────┐  │                                     │
│  │  │ Reports >              │  │                                     │
│  │  │ Dictionary >           │  │                                     │
│  │  │ Exceptions >           │  │                                     │
│  │  │ Forecast >             │  │                                     │
│  │  │ ACD Administration >   │  │                                     │
│  │  │ Custom Reports >       │  │                                     │
│  │  │ User Permissions >     │  │                                     │
│  │  │ ·················      ·┌─────────────────────────────────┐     │
│  │  │ System Setup >     ····│ Switch Setup                    │     │
│  │  │ ·················      │ Pseudo-ACD Setup                │     │
│  │  │ Maintenance >          │ Load Pseudo-ACD Data            │     │
│  │  │                        │ Data Storage Allocation         │     │
│  │  │ Logout                 │ Free Space Allocation           │     │
│  │  │ ; _____       │ Storage Intervals               │     │
│  │  └────────────────────────┘ Agent Trace Record Contents     │     │
│  │                             Main Menu Addition              │     │
│  └──────────────────────────── CMS State                      │     │
│                               Data Collection                 │     │
│                               External Application Status     │     │
│                               Data Summarizing                │     │
│                               R3 Migrate Data                 │     │
│                               R2 Migrate Data                 │     │
│                             └─────────────────────────────────┘     │
└─────────────────────────────────────────────────────────────────────┘
```
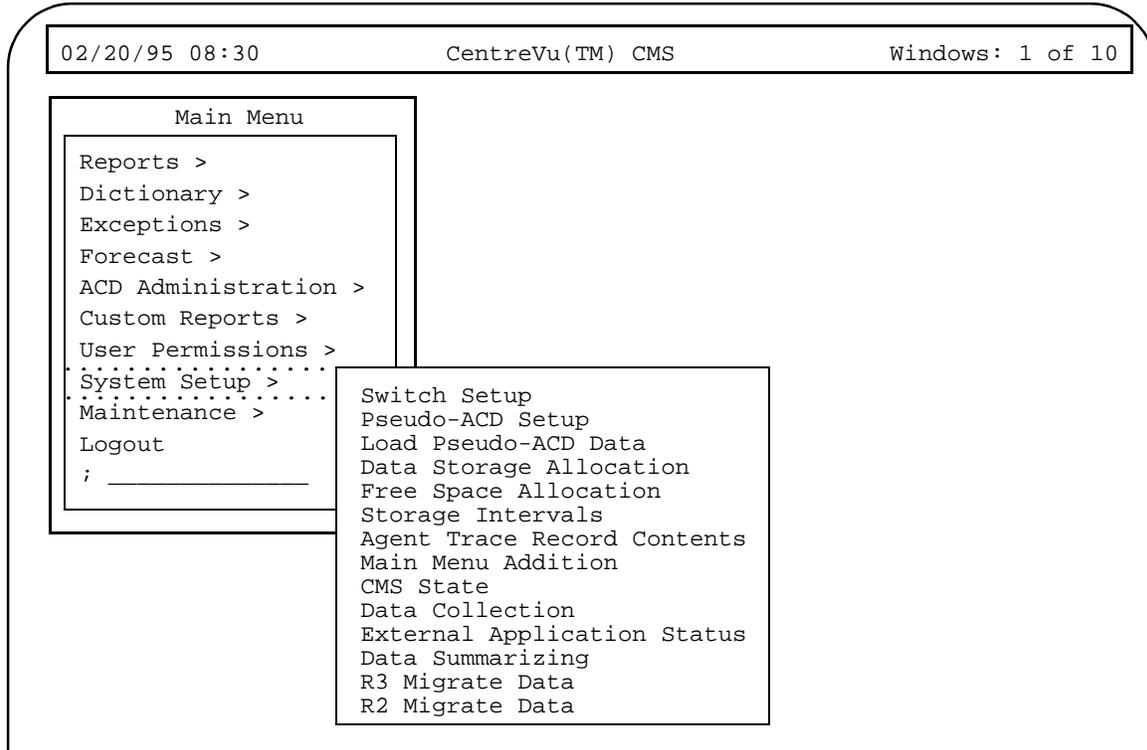
4. Select `R2 Migrate Data`.

> ⚠ **Caution** Do **not** exit this window during the migration. If you exit this window or turn the terminal off, the migration will stop and then must be restarted.

The R2 Migrate Data window displays:
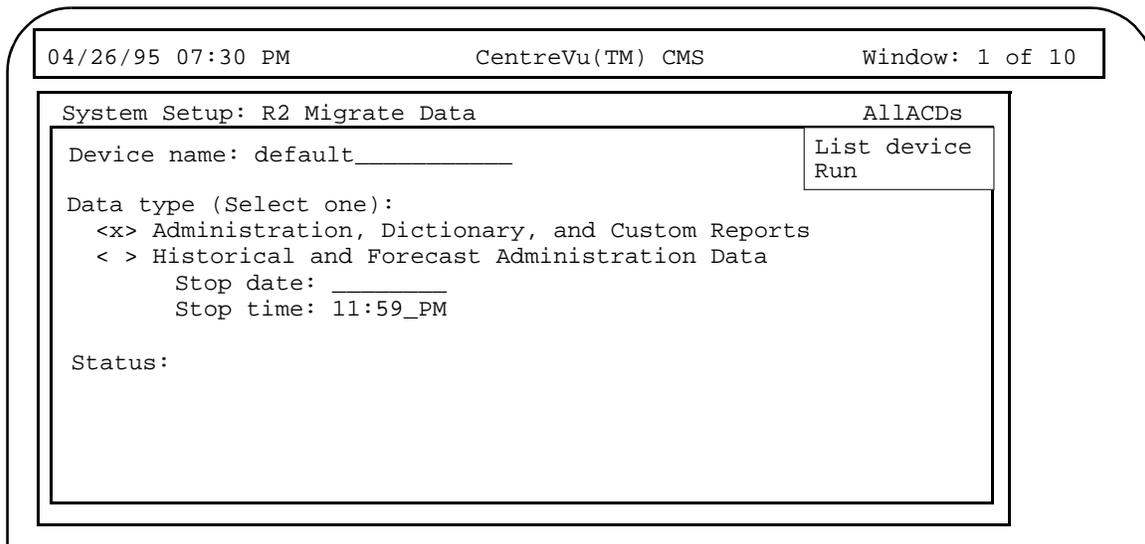
```
┌─────────────────────────────────────────────────────────────────────┐
│                                                                       │
│  04/26/95 07:30 PM           CentreVu(TM) CMS            Window: 1 of 10   │
│  ┌──────────────────────────────────────────────────────────────┐    │
│  │ System Setup: R2 Migrate Data                        AllACDs  │    │
│  │                                              ┌───────────────┐ │    │
│  │  Device name: default_____             │ List device   │ │    │
│  │                                              │ Run           │ │    │
│  │  Data type (Select one):                     └───────────────┘ │    │
│  │    <x> Administration, Dictionary, and Custom Reports          │    │
│  │    < > Historical and Forecast Administration Data             │    │
│  │          Stop date: _____                                   │    │
│  │          Stop time: 11:59_PM                                   │    │
│  │                                                                │    │
│  │  Status:                                                       │    │
│  │                                                                │    │
│  │                                                                │    │
│  │                                                                │    │
│  └──────────────────────────────────────────────────────────────┘    │
└─────────────────────────────────────────────────────────────────────┘
```
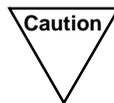
5. Select the device name from which the data being migrated will be read (normally `default` or `alternate`).

6. Select `Historical and Forecast Administration Data` in the `Data type` field.

7. In the `Stop date` field, type the date you recorded when the technicians brought down the R2 link. The stop date can be typed in the month/day/year format (09/08/93) or in the relative date format (-1).
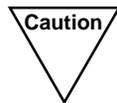
> ⚠ **Caution** If you enter a date and time more recent than when the R2 link was brought down, you will delete any R3V5 data collected up to the date/time you enter.

8. In the `Stop time` field, type the time you recorded when the technicians brought down the R2 link. The stop time is entered in the `hh:mm AM/PM` format. The default for this field is `11:59 PM`.

9. Press **Return** to access the Action List.

10. Select `Run`, and press **Return**.

    After entering `Run`, 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:__
    ```

11. If you are sure that 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 inform 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.
```

12. Replace the current tape with the next tape, wait for the retension to complete (about 3 minutes), and then press **Return**.

    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:__
    ```

13. Enter `y` to print the log. You will need a copy of the log for Step 11, Perform Post Historical Migration Tasks.

Step 11. Perform Post Historical Migration Tasks

Perform the following tasks after you have restored the R2 historical data to the *Sun SPARCserver* computer. You may want a copy of the *CentreVu*™ *Call Management System R3V5 Administration* (585-215-820) document on hand as you complete the tasks in this section.

1. If you have not already 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 R3V5 Administration* (585-215-820) document.

Step 12. Do a cmsadm Backup from the *Sun SPARCserver* Computer

Task Performed By: Customer

The customer does a cmsadm backup from the *Sun SPARCserver* computer. The cmsadm backup provides a complete backup of all file systems on the *Sun SPARCserver* computer in case of failure.

See "Doing a CMSADM Backup on a Solaris System" on page 2-22.

Step 13: Do a Full Maintenance Backup from the *Sun SPARCserver* Computer

Task Performed By: Customer

The customer does a full CMS maintenance backup from the *Sun SPARCserver* computer. This backup protects you from losing the migrated CMS data plus the CMS R3V5 data initially collected.

In the Back Up Data window, select `y` (yes) for the `Verify volume can be read after backup` field. In addition, the following fields should contain an `x`:

- All ACDs
- ACD specific data
- System administration data

- Historical data

  — Full.

See "Back Up Data Window" on page 2-26 for more information.

This completes the R2-to-CMS R3V5 migration steps.

Migrating Data from *INTEL* to *Sun*

This section describes how to migrate data from an R3V1, R3V2, or R3V4 Call Management System (CMS) on an *INTEL*[*] platform to Release 3 Version 5 (R3V5) *CentreVu*[™] CMS on a *Sun*[†] *SPARCserver*[‡] platform. This chapter applies to single- or multiple-ACD (Automatic Call Distribution) systems.

Table 4-1 presents the steps necessary to migrate data from an existing *INTEL* platform to a newly installed *Sun SPARCserver* platform.

| Note |

- Moving multiple ACDs to the *Sun SPARCserver* platform can cause collisions in the System Administration data. See the "Migrations" section in Chapter 1, "Introduction," for information on potential collisions and their solutions.

- 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 cannot be merged.

---

[*]

[†]

[‡]

Table 4-1: *INTEL*-to-*Sun* Migration — R3V1, R3V2, R3V4 → R3V5 Procedures

Step	Action	Responsible Party
Steps for both single- and multiple-ACD systems		
1	Install external 2.5-gigabyte tape drive	Lucent field technician
2	Do a cmsadm backup from the *INTEL* platform	customer
3	Do a full maintenance backup from the *INTEL* platform	customer
4	Back up customer *UNIX* system files	customer
5	Install the *Sun SPARCserver* platform	Lucent field technician
6	Record Information on Existing ACDs	customer
7	Create ACDs on the *Sun SPARCserver* platform	TSC
8	Migrate system administration data (Do this step once if subsequent ACDs are from the same *INTEL* box.)	TSC
9	Investigate the migration log	TSC
10	Migrate ACD administration data	TSC
11	Restore customer *UNIX* system files	customer
12	Busy out link	Lucent field technician
13	Move link	Lucent field technician
14	Start *Sun SPARCserver* platform data collection	TSC
15	Do an incremental backup on the *INTEL* platform	customer
16	Migrate full historical data	customer
17	Migrate incremental historical data	customer
18	Do a cmsadm backup on the *Sun SPARCserver* platform	customer
19	Do a full maintenance backup in the *Sun SPARCserver* platform	customer
20	Remove 2.5-gigabyte drive	Lucent field technician
21	Return the tape drive kit	customer

| Note | The customer may contract Lucent Professional Services to complete Steps 16 through 20 on a time-and-materials basis. |

Step 1: Install the External 2.5-Gigabyte Drive

Task Performed By: Lucent field technician

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

if the **Sun SPARCserver** *system already has a 2.5-gigabyte tape drive, skip this step and go directly to Step 2 (page 4-35).*

How to Order the Drive

To order a tape drive kit, call the Lucent Technologies National Customer Care Center at the TSC:

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.

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)

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, you need to complete the table below.

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

Table 4-2: SCSI Bus Distance Limitations

Step	Action	Distance
1	Start with the value of 4 feet for the internal SCSI cabling in the host computer.	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).	
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 in Step 4 is 18 feet or less, proceed with the tape drive installation as normal. If the total is more than 18 feet, call the Lucent Technologies National Customer Care Center at 1-800-242-2121.

Adding the Drive

When adding or replacing 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(s).

- Connect the tape drive(s) to the SCSI chain.

- Reboot and reconfigure the system.

To remove SCSI device files, do the following:

1. Enter the following command:

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

Note	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 Steps 1 through 10.

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 SPARCserver* computer (system unit).

   b. Turn off the system monitor.

   c. Continue turning off each device moving away from the system unit.

   d. Turn off external drive units, starting with the unit closest to the system unit.

4. Set the SCSI ID on the tape drive by doing the following:

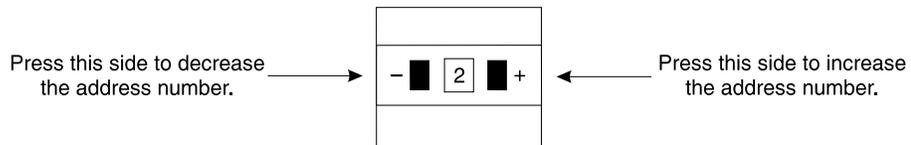   a. Locate the target address switch on the rear panel of the SCSI device (see Figure 4-1).

Press this side to decrease the address number.   Press this side to increase the address number.

Figure 4-1: 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 left or right button on the switch in the rear of the drive until the appropriate SCSI ID number appears in the window.

5. Connect the tape drive to the other SCSI devices.

   Figure 4-2 shows how to connect a SCSI cable from the out-connector of the last device on the SCSI chain to the in-connector of the 2.5-gbyte tape drive, which then becomes the last device in the chain.

   Since UniPack devices are auto-terminated, the last UniPack device in a SCSI chain does not require a 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 SCSI chain, then *neither* LED is lit.
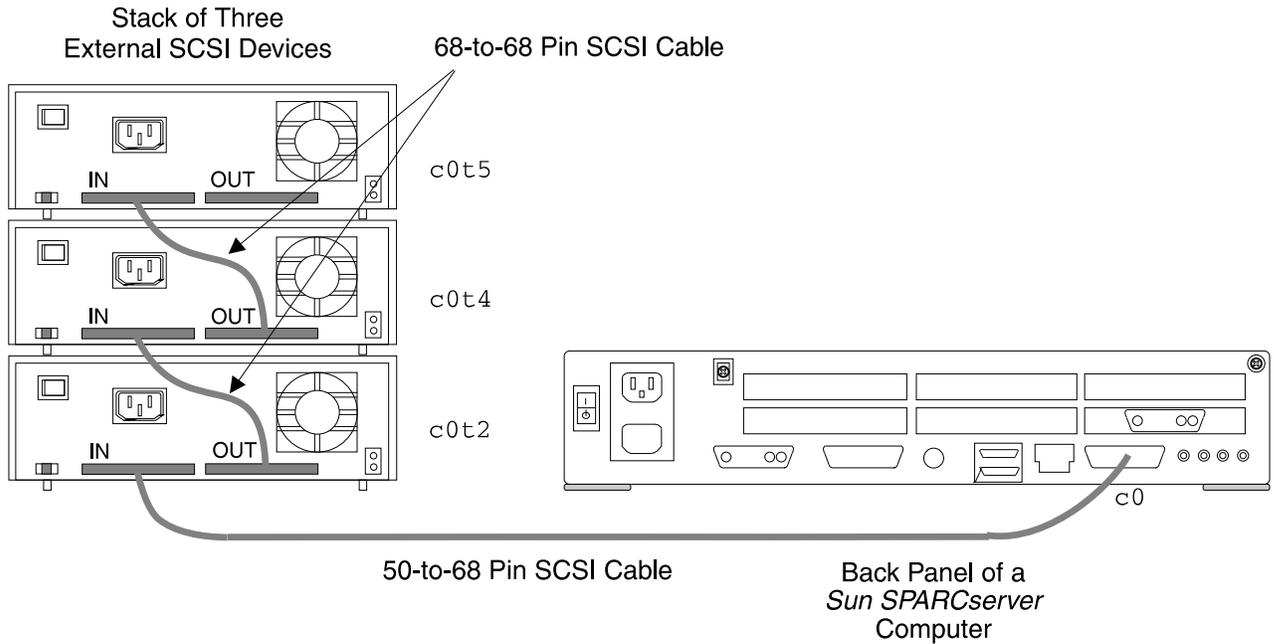
Figure 4-2: Sample Daisy Chaining of External SCSI Devices

Figure 4-3 shows the SCSI cabling scheme when one or more UniPack enclosures are present.

W = 68-pin wide SCSI III bus connection
N = 50-pin narrow SCSI II bus connection
A = Auto-terminated
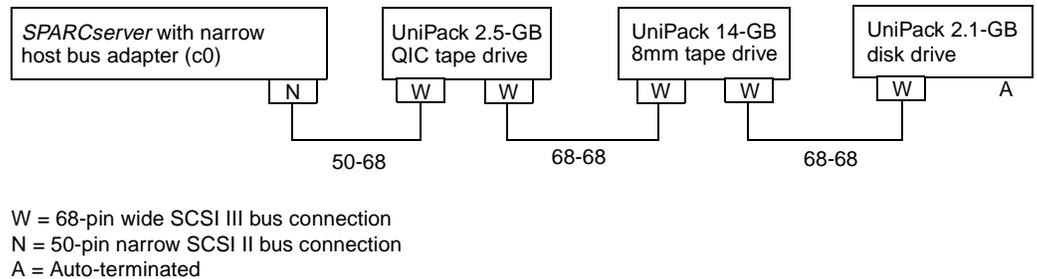
Figure 4-3: SCSI Cabling Schemes

6. Connect the power cord from the tape drive to a power source.

7. Do the following in sequential order:

    a. Turn on devices attached to the *Sun SPARCserver*.

    Note │ Remember to power on the SCSI devices starting with the 2.5-gbyte tape drive (at the end of the SCSI chain) and working toward the *Sun SPARCserver* computer.

    b. Turn on the *Sun SPARCserver* computer.

    c. Turn on the system monitor.

The power-on diagnostics will occur when the computer is turned on.

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

   a. 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
   ```

   b. 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 4
     Unit 0 Removable Tape Tandberg TDC 4200
   Target 6
     Unit 0 Disk Removable Read Only Device SONY CD-ROM CDU-8012

   ok
   ```

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

   c. Enter the following command to reboot the system and reconfigure the devices.

   ```
   ok boot -r
   ```

9. Log in as root.

10. Edit the `/kernel/drv/st.conf` file by entering the following command:

```
# vi /kernel/drv/st.conf
```

The program responds:

```
<contents of the file is displayed>
   .
   .
   .
```

11. Add the following four lines to the */kernel/drv/st.conf* 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;
```

12. Write and quit the file.

Step 2: Do a CMSADM Backup from the *INTEL* Platform

Task Performed By: Customer

The customer does a cmsadm backup from the *INTEL* platform. The cmsadm backup provides a complete backup of all file systems on the *INTEL* machine in case of failure. See "Doing a CMSADM Backup on an INTEL System" on page 2-19.

Step 3: Do a Full Maintenance Backup on the *INTEL* Platform

Task Performed By: Customer

The customer does a full CMS maintenance backup from the *INTEL* platform. This backup provides the data for the migration.

R3.0 CMS Backup

In the Back Up Data window, select `xtape` in the `Device name` field and `y` (yes) in the `Verify backup` field. In addition, the following fields should contain an `x`:

- ACD-specific data

    — Full

    — All ACDs

- System data.

See the *CMS R3.0 Administration* (585-215-511) document, Chapter 12, "Maintenance — Back Up Data."

R3V2 or R3V4 CMS Backup

In the Back Up Data window, select `xtape` in the `Device name` field and `y` (yes) in the `Verify volume can be read after backup` field. In addition, the following fields should contain an `x`:

- All ACDs

- ACD specific data

- System administration data

- Historical data

    — Full.

See the *CentreVu™ CMS R3V5 Administration* (585-215-820) document, Chapter 12, "Maintenance — Back Up Data."

| **Warning** | When the full maintenance backup is complete, turn off all backup timetables. If you fail to turn them off, a backup timetable may run before the migration is complete, destroying the contents of the backup tape. |

Step 4: Back Up Customer *UNIX* System Files

Task Performed By: Customer

If CMS users on the *INTEL* platform created *UNIX* system files (for example, *UNIX* system commands, shell scripts, etc.), the CMS administrator backs up these files.

At this time, you should also investigate and record the details of any custom data items or database tables you wish to transfer to the new version of CMS. Custom data items and custom tables are <u>not</u> migrated along with the other data.

Later, when R3V5 is up and running, reproduce the custom items in *INFORMIX*[*] and then add them into CMS (via the Dict/Database Items/ Custom Items option).

Step 5: Install the *Sun SPARCserver* Platform

Task Performed By:Lucent field technician

Involved Parties:TSC and customer

Lucent field technicians install the *Sun SPARCserver* platform. The TSC provisions the system by setting authorizations, setting up data storage parameters, and setting up the *CentreVu* CMS R3V5 application. The customer can turn on the *CentreVu* CMS R3V5 and install the additional feature packages, if applicable.

See the following chapters in the *CentreVu CMS R3V5 Sun® SPARCserver™ Computers Installation and Maintenance* (585-215-827) document:

- Chapter 3, "Installing the *Sun SPARCserver* Computer"

- Chapter 5, "Connecting the *Sun SPARCserver* Computer to the Switch"

- Chapter 6, "Setting Up *CentreVu* CMS and Installing Feature Packages."

Step 6: Record Information on Existing ACDs

Task Performed By:TSC

From the *INTEL* machine, 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`)

- Authorizations (use the `auth_display` option of `cmssvc`)

- Data storage allocation (`System Setup` option of CMS Main Menu)

- Storage intervals (`System Setup` option of CMS Main Menu)

- Data storage allocation for Forecasting package (`Forecast` option—if present—of CMS Main Menu)

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Chapter 2 of this manual contains sections detailing the procedures necessary to collect this data; for more information, see the section in Chapter 2 appropriate to the type of information you are collecting.

Step 7: Create ACDs on the *Sun SPARCserver* Platform

Task Performed By: TSC

The TSC creates an ACD on the *Sun SPARCserver* platform using the information obtained in the previous step.

See the *CentreVu CMS R3V5 Sun*® *SPARCserver*™ *Computers Installation and Maintenance* (585-215-827) document, Chapter 2, "CMSADM and CMSSVC Menus — acd_create."

Step 8: Migrate System Administration Data

Task Performed By: TSC

Involved Parties: Customer or Lucent field technician

The TSC migrates the system administration data from the *INTEL* platform to the *Sun SPARCserver* platform. The customer or a Lucent field technician needs to be on site to insert the backup tape into the tape drive.

> ⬡ **Warning** 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 some data irretrievably.

Prerequisite Administration

From the *Sun SPARCserver* platform:

- A device name needs to be defined in the Backup/Restore Devices window (normally `default`). This is the device from which the data being migrated is read.

- CMS must be turned on and in single-user mode.

See the following sections in the *CentreVu*™ *CMS R3V5 Administration* (585-215-820) document:

- Chapter 12, "Maintenance — Back Up/Restore Devices"

- Chapter 11, "System Setup — CMS State."

Procedure

From the *Sun SPARCserver* platform:

1. Insert the CMS full maintenance backup tape (from Step 3) into the 2.5-Gbyte tape drive.

2. Log in as *cms,* and access the CMS Main Menu.

3. Select the `System Setup - R3 Migrate Data` option.

4. Enter the device name from which the data being migrated will be read (normally `default`).

5. Select `System Administration data` (the default) in the `Data type` field.

> **Note** Do not enter data in the `Stop date:` and `Stop time:` fields.

6. Select `All ACDs` in the `Specify ACD(s) to migrate` field

7. Press [Return] to access the Action List.

8. Select `Run` and press [Return].

   `Working` appears in the lower left-hand corner of the window. The `Status:` field displays various messages that tell you what is being processed.

   The migration of system administration data can take from several minutes to several hours depending on the size of the system.

   If the migration completes successfully, the `Status:` line displays a "successful" message similar to the following:

   `Last migration completed (Tue Jul 13 09:49:27 1993)`

   If the migration fails, the `Status:` line displays a "failed" message and an error is logged to the customer and services logs.

   See also: "R3 Migrate Data Window" on page 2-63.

Step 9: Investigate the Migration Log

Task Performed By: TSC

Involved Parties: Customer

The TSC investigates the customer migration log and takes any necessary corrective action. This log includes the status and progress of all migrations and any problems that arose during the migration.

The customer migration log is located in */cms/migrate/r3mig.log*.

The customer may print this log by entering:

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

See Chapter 6, "Troubleshooting" to look up the message and determine what action you need to take.

> **Note** A migration log also exists for services. The services migration log is located in */cms/maint/r3mig/mig.log.* Some information in this log may be too cryptic for the customer to read.

Step 10: Migrate ACD Administration Data

Task Performed By: TSC

Involved Parties: Customer or Lucent field technician

After migrating the system administration data, the TSC migrates the ACD administration data, for all ACDs, from the *INTEL* platform to the *Sun SPARCserver* platform. The customer or a Lucent field technician needs to be on site to insert the backup tape into the tape drive.

> **Note** This step should be performed only once, and should not be performed until scheduled cutover, for the following reasons:
>
> - If you migrate ACD administration data before the cutover, and then again (presumably by accident) at the time of the cutover, you will lose any administration changes you have made on the *SPARCserver* platform.
>
> - The haglog table (the agent login/logout table) is migrated with the ACD aministration data, not with historical data. If you migrate ACD admin data, say, one week before cutover, you will lose that week's worth of haglog data.

Prerequisite Administration

From the *Sun SPARCserver* platform:

- A device name needs to be defined in the Backup/Restore Devices window. This is the device from which the data being migrated is read.

- CMS must have data collection turned off for all ACDs.

See the following: sections :

- Chapter 12, "Maintenance — Back Up/Restore Devices" in the *CentreVu™ CMS R3V5 Administration* (585-215-820) document.

- "Turning Data Collection On or Off" on page 2-14 of this document.

Procedure

Use the procedure outlined in Step 8, "Migrate System Administration Data," except select ACD Administration data in the Data type field.

Investigate the migration log (see Step 9: Investigate the Migration Log).

Step 11: Restore Customer *UNIX* System Files

Task Performed By: Customer

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

From the *Sun SPARCserver* platform:

1. Insert the tape that contains the backup of customer *UNIX* system files into the 2.5-Gbyte tape drive.

2. Log in as *root*.

3. Enter these commands:

```
# cd <copy-to directory>
# cpio -icvdm < <devicename>

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

> **Note**
>
> - The *<copy-to directory>* is the directory you're copying the files to. Usually you will want to copy all the files to a temporary directory, and then distribute them from there to other parts of your file system.
>
> - When executing `cpio` on the *Sun SPARCserver* platform, the `-M` option is required when data spans more than one tape.
>
> - The *<devicename>* parameter of the cpio command specifies the device name of the tape drive. For systems with the temporary 2.5-gbyte tape drive installed, that device name will be `/dev/rmt/1c` (which indicates the second tape drive in the SCSI chain in compressed mode).

If you see messages such as `cpio: Existing "file" same age or newer`, the file already exists on the *Sun SPARCserver* platform and will not be restored. You should check with the file's owner to determine which version of the file he or she wants 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
```

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

Step 12: Busy Out Link

Task Performed By: Lucent field technician

From the switch, an Lucent field technician busies out the link between the *INTEL* platform and the switch.

Step 13: Move Link

Task Performed By: Lucent field technician

Lucent field technicians take down the link between the *INTEL* platform and the switch and bring up the *Sun SPARCserver* platform link. A switch technician needs to make sure that the switch is administered for R3V5 *CentreVu* CMS. See the *CentreVu™ CMS R3V5 Sun® SPARCserver™ Computers Installation and Maintenance* (585-215-827) document, Chapter 5, "Connecting the *Sun SPARCserver* Computer to the Switch."

Step 14: Start Data Collection on the *Sun SPARCserver* Platform

Task Performed By: TSC

Once any migration problems are resolved, the TSC restores the *CentreVu* CMS R3V5 on the *Sun SPARCserver* platform to multi-user mode, starts data collection, and verifies the link is up. See the following sections in the *CentreVu™ CMS R3V5 Administration* (585-215-820) document:

- Chapter 11, "System Setup — CMS State"
- Chapter 11, "System Setup — Data Collection"
- Chapter 12, "Maintenance — Connection Status."

At this point, the TSC hands the migration back to the customer.

| Note | The customer may contract with Lucent to complete the migration on a time-and-materials basis. |

Step 15: Do an Incremental Backup on the *INTEL* Platform

Task Performed By: Customer

The customer does a CMS incremental maintenance backup for historical data on the *INTEL* platform. An incremental backup provides historical data from the time the customer completed the full maintenance backup until the time the technicians busied out the *INTEL* platform link.

| Note | • You can do this step in parallel with Step 14. |
| | • The haglog table, which contains historical agent login and logout data, is not backed up during an incremental backup. The table will contain data up until the time the full maintenance backup was done (Step 3). |

R3.0 CMS Backup

In the Back Up Data window, select `default` in the `Device name` field and `y` (yes) in the `Verify backup` field. In addition, the following fields should contain an `x`:

- ACD specific data
    — Incremental
    — All ACDs.

See the *CMS R3.0 Administration* (585-215-511) document, Chapter 12, "Maintenance — Back Up Data."

R3V2 or R3V4 CMS Backup

In the Back Up Data window, select `default` in the `Device name` field and `y` (yes) in the `Verify volume can be read after backup` field. In addition, the following fields should contain an `x`:

- All ACDs
- Historical data
    — Incremental.

See the *CentreVu™ CMS R3V5 Administration* (585-215-820) document, Chapter 12, "Maintenance — Back Up Data."

Step 16: Migrate Full Historical Data

Task Performed By: Customer

Now that the *Sun SPARCserver* platform is collecting data, the customer can migrate the CMS historical data from the *INTEL* platform.

Prerequisite Administration

The *CentreVu* CMS R3V5 on the *Sun SPARCserver* platform may be in single-user or multi-user mode to migrate historical data.

Procedure

From the *Sun SPARCserver* platform:

1. Insert the CMS full backup tape (from Step 3) into the appropriate tape drive.

2. Log in as *cms* and access the *CentreVu* CMS Main Menu.

3. Select the `System Setup - R3 Migrate Data` option.

4. Select the device name from which the data being migrated will be read (normally `default`).

5. Select `Historical Data` in the `Data type` field.

> **Note** To migrate all historical data on the tape, use the defaults in the `Stop date:` field (blank) and the `Stop time:` field (11:59 PM).

6. Select `All ACDs` in the `Specify ACD(s) to migrate` field.

7. Press Return to access the Action List.

8. Select `Run`, and press Return.

`Working` appears in the lower left-hand corner of the window. The `Status:` field displays various messages that tell you what the program is processing.

> **Note** Since the migration runs in the background, you can exit the migration window and perform other tasks. Occasionally, you should access the migration window to check the progress.

The migration of full historical data may take several hours.

If the migration completes successfully, the `Status:` line displays a "successful" message similar to the following:

`Last migration completed (mm/dd/yy hh:mm:ss year)`

If the migration fails, the `Status:` line displays a "failed" message, and an error is logged to the customer and services logs.

(See also: "R3 Migrate Data Window" on page 2-63.)

Investigate the migration log (see Step 9: Investigate the Migration Log).

Step 17: Migrate Incremental Historical Data

Task Performed By: Customer

To complete the data migration to the *Sun SPARCserver* platform, the customer needs to migrate the incremental historical data.

Prerequisite Administration

The *CentreVu* CMS R3V5 on the *Sun SPARCserver* platform may be in single-user or multi-user mode to migrate incremental historical data.

Procedure	Use the procedure outlined in Step 16, "Migrate Full Historical Data," except use the **incremental backup tape** instead of the full backup tape.
	An Acknowledgment will ask you to verify whether to proceed with the incremental migration. Enter `y` and press `Return`.

> **Note** To migrate the incremental data on the tape, use the defaults in the `Stop date:` field (blank) and the `Stop time:` field (11:59 PM).

> **Note** The haglog table, which contains historical agent login and logout data, was not backed up during the incremental backup. This table will contain data up until the time the full maintenance backup was done (Step 3).

Step 18: Do a cmsadm Backup on the *Sun SPARCserver* Platform

Task Performed By: Customer

The customer does a cmsadm backup from the *Sun SPARCserver* platform. The cmsadm backup provides a complete backup of all file systems on the *Sun SPARCserver* platform in case of failure.

See "Doing a CMSADM Backup on a Solaris System" on page 2-22.

Step 19: Do a Full Maintenance Backup on the *Sun SPARCserver* Platform

Task Performed By: Customer

The customer does a full CMS maintenance backup from the *Sun SPARCserver* platform. This backup protects you from losing the migrated CMS data plus the *CentreVu* CMS R3V5 data initially collected.

In the Back Up Data window, select `y` (yes) for the `Verify volume can be read after backup` field. In addition, the following fields should contain an `x`:

- All ACDs
- ACD specific data
- System administration data
- Historical data
  - Full.

See "Back Up Data Window" on page 2-26 for more information about the Back Up Data window.

Step 20: Remove the Tape Drive (if applicable)

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

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

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

Note 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 SPARCserver* computer.

   b. Turn off the system monitor.

   c. Turn off all external devices starting with the device closest to the *Sun SPARCserver* computer and working toward the farthest device.

4. Remove the tape drive from the SCSI chain.

5. Disconnect the tape drive power cord from the power source.

6. Reconnect the remaining SCSI devices .

7. Do the following in sequential order:

   a. Turn on devices attached to the *Sun SPARCserver*.

   Note Remember to power on the SCSI devices starting with the device at the end of the SCSI chain and working toward the *Sun SPARCserver* computer.

   b. Turn on the *Sun SPARCserver* 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:

8. 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
   ```

9. 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
```

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

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

    ```
    ok boot -r
    ```

Step 21: 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
> Attn. Tom Curran
> 8300 East Maplewood Avenue
> Englewood, CO   80111

International customers: contact your Lucent representative or distributor.

Migrating Data between *Sun SPARCserver* Computers

This section describes how to migrate data from an existing R3V2 or R3V4 CMS system on a *Sun SPARCserver* computer to *CentreVu* CMS Release 3 Version 5 (R3V5) on a *Sun SPARCserver* 5 or 20 system newly purchased from Lucent Technologies.

Note

- Moving multiple ACDs to the *Sun SPARCserver* platform can cause collisions in the System Administration data. See the "Migrations" section in Chapter 1, "Introduction," for information on potential collisions and their solutions.

- 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 cannot be merged.

- The customer may contract Lucent to complete Steps 12 through 17 on a time-and-materials basis.

Table 4-3: *Sun*-to-*Sun* Migration — R3V1, R3V2, R3V4 → R3V5 Procedures

Step	Action	Responsible Party
1	Do a cmsadm backup from the old platform	customer
2	Do a full maintenance backup from the old platform	customer
3	Back up customer *UNIX* system files on the old platform	customer
4	Install the new platform	Lucent field technician
5	Record information about existing ACDs	Technical Service Center (TSC)
6	Create ACDs on the new platform	TSC
7	Migrate system administration data (perform this step once)	TSC
8	Investigate the migration log	TSC
9	Migrate ACD administration data	TSC
10	Restore customer *UNIX* system files	customer
11	Move the Link	TSC
12	Start data collection on the new platform	TSC
13	Do an incremental backup on the old platform	customer
14	Migrate full historical data	customer
15	Migrate incremental historical data	customer
16	Do a cmsadm backup on the new platform	customer
17	Do a full maintenance backup on the new platform	customer

Step 1: Do a cmsadm Backup on the Old Platform

Task Performed By: Customer

The customer does a cmsadm backup on the old platform. The cmsadm backup provides a complete backup of all file systems on the old machine in case of failure. See "Doing a CMSADM Backup on a Solaris System" on page 2-22.

Step 2: Do a Full Maintenance Backup on the Old Platform

Task Performed By: Customer

The customer does a full CMS maintenance backup on the *old* platform. This backup provides the data for the migration.

See "Back Up Data Window" on page 2-26."

> **Warning** When the full maintenance backup is complete, turn off all backup timetables. If you fail to turn them off, a backup timetable may run before the migration is complete, destroying the contents of the backup tape.

Step 3: Back Up Customer *UNIX* System Files

Task Performed By: Customer

If CMS users on the old platform created *UNIX* system files (for example, *UNIX* system commands, shell scripts, etc.), the CMS administrator backs up these files.

Use a blank tape for this step, and make sure the tape is not write protected.

From the old platform:

1. Insert a blank into the tape drive.

2. Log in as *root*.

3. Enter the appropriate commands to copy the relevant files to tape.

4. Remove the tape, label it, and put it in a safe place.

| Note |

- At this time, you should also investigate and record the details of any custom items you wish to transfer to your new system. Custom data items and custom tables are <u>not</u> migrated along with the other data.

    Later, when R3V5 is up and running on the new system, reproduce the custom items in *INFORMIX* and then add them into CMS (via the Dict/Database Items/ Custom Items option).

Step 4: Install the New Platform

Task Performed By:Lucent field technician

Involved Parties:TSC and customer

Lucent field technicians install the *Sun SPARCserver* platform. The TSC provisions the system by setting authorizations, setting up data storage parameters, and setting up the *CentreVu* CMS R3V5 application. The customer can turn on the *CentreVu* CMS R3V5 and install the additional feature packages, if applicable.

See the following chapters in the *CentreVu CMS R3V5 Sun® SPARCserver™ Computers Installation and Maintenance* (585-215-827) document:

- Chapter 3, "Installing the *Sun SPARCserver* Computer"

- Chapter 5, "Connecting the *Sun SPARCserver* Computer to the Switch"

- Chapter 6, "Setting Up *CentreVu* CMS and Installing Feature Packages."

Step 5: Record Information About Existing ACDs

Task Performed By:TSC

The TSC accesses the following types of information on the old machine, writing it down or printing screens and windows as necessary:

- Switch information (use the `swinfo` option of `cmsadm`)

- Authorizations (use the `auth_display` option of `cmssvc`)

- Data storage allocation (`System Setup` option of CMS Main Menu)

- Storage intervals (`System Setup` option of CMS Main Menu)

- Data storage allocation for Forecasting package (`Forecast` option—if present—of CMS Main Menu)

Chapter 2 of this manual contains sections detailing the procedures necessary to locate this information. For more details, see the section in Chapter 2 appropriate to the type of information you are collecting.

Step 6: Create ACDs on the New Platform

Task Performed By: TSC

The TSC creates an ACD on the new *Sun SPARCserver* platform using the information obtained in the previous step.

See the *CentreVu CMS R3V5 Sun® SPARCserver™ Computers Installation and Maintenance* (585-215-827) document, Chapter 2, "CMSADM and CMSSVC Menus — acd_create."

Step 7: Migrate System Administration Data

Task Performed By: TSC

Involved Parties: Customer or Lucent field technician

The TSC migrates the system administration data from the old platform to the new. The customer or an Lucent field technician needs to be on site to insert the backup tape into the tape drive.

Warning 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 some data irretrievably.

Prerequisite Administration

From the new *p*latform:

- A device name needs to be defined in the Backup/Restore Devices window (normally `default` or `alternate`). This is the device from which the data being migrated is read.

- CMS must be in single-user mode.

See the following sections in the *CentreVu™ CMS R3V5 Administration* (585-215-820) document:

- Chapter 12, "Maintenance — Back Up/Restore Devices"

- Chapter 11, "System Setup — CMS State."

Procedure   From the new platform:

1. Insert the CMS full maintenance backup tape (from Step 3) into the tape drive.

2. Log in as *cms,* and access the CMS Main Menu.

3. Select the `System Setup - R3 Migrate Data` option.

4. Enter the device name from which the data being migrated will be read (normally `default` or `alternate`).

5. Select `System Administration data` (the default) in the `Data type` field.

> **Note** Do not enter data in the `Stop date:` and `Stop time:` fields.

6. Select `All ACDs` in the `Specify ACD(s) to migrate` field.

7. Press `Return` to access the Action List.

8. Select `Run` and press `Return`.

    `Working` appears in the lower left-hand corner of the window. The `Status:` field displays various messages that tell you what is being processed.

    The migration of system administration data can take from several minutes to several hours depending on the size of the system. If the migration succeeds, the `Status:` line displays a "successful" message similar to the following:

    `Last migration completed (Tue Jul 13 09:49:27 1993)`

    If the migration fails, the `Status:` line displays a "failed" message and an error is logged to the customer and services logs.

Step 8: Investigate the Migration Log

Task Performed By: TSC

Involved Parties: Customer

The TSC investigates the customer migration log and takes any necessary corrective action. This log includes the status and progress of all migrations and any problems that arose during the migration.

The customer migration log is located in */cms/migrate/r3mig.log*.

The customer may print this log by entering:

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

See Chapter 8, "Migration Log Messages" to look up the message and determine what action you need to take.

| Note | A migration log also exists for services. The services migration log is located in */cms/maint/r3mig/mig.log.* Some information in this log may be too cryptic for the customer to read. |

Step 9: Migrate ACD Administration Data

Task Performed By:TSC

Involved Parties: Customer or Lucent field technician

After migrating the system administration data, the TSC migrates the ACD administration data, for each ACD, from the old platform to the new platform. The customer or an Lucent field technician needs to be on site to insert the backup tape into the tape drive.

| Note | Like the system sdministration data migration, ACD administration data should be migrated only one time. |

Prerequisite Administration	From the new platform:

- A device name needs to be defined in the Backup/Restore Devices window. This is the device from which the data being migrated is read.
- CMS must have data collection turned off for all ACDs.

See the following sections in the *CentreVu™ CMS R3V5 Administration* (585-215-820) document:

- Chapter 12, "Maintenance — Back Up/Restore Devices"
- Chapter 11, "System Setup — Data Collection."

Procedure	Use the procedure outlined in Step 7, "Migrate System Administration Data," except select `ACD Administration data` in the `Data type` field.

Investigate the migration log (see Step 8: Investigate the Migration Log).

Step 10: Restore Customer *UNIX* System Files

Task Performed By: Customer

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

From the new platform:

1. Insert the tape that contains the backup of customer *UNIX* system files into the appropriate tape drive.

2. Log in as *root*.

3. Enter the appropriate commands to copy the files from the tape to the hard disk of the new system.

> **Note** When executing `cpio` on the *Sun SPARCserver* platform, the `-M` option must be specified if the data spans more than one tape.

4. If you see messages such as `cpio: Existing "file" same age or newer`, the file already exists on the *Sun SPARCserver* platform and will not be restored. You should check with the file's owner to determine which version of the file he or she wants to keep. If this message occurs at all, it probably will be with the *cms* and *cmssvc* login IDs.

5. 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
```

Step 11: Move 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 new platform link. A switch technician needs to make sure the switch is administered for R3V5 *CentreVu* CMS.

See the *CentreVu™ CMS R3V5 Sun® SPARCserver™ Computers Installation and Maintenance* (585-215-827) document, Chapter 5, "Connecting the *Sun SPARCserver* Computer to the Switch."

Step 12: Start Data Collection on the New Platform

Task Performed By: TSC

Once any migration problems are resolved, the TSC restores the *CentreVu* CMS R3V5 on the *Sun SPARCserver* platform to multi-user mode, starts data collection, and verifies the link is up.

See the following sections in the *CentreVu™ CMS R3V5 Administration* (585-215-820) document:

- Chapter 11, "System Setup — CMS State"
- Chapter 11, "System Setup — Data Collection"
- Chapter 12, "Maintenance — Connection Status."

At this point, the TSC hands the migration back to the customer.

Note | The customer may contract with Lucent to complete the migration on a time-and-materials basis.

Step 13: Do an Incremental Backup on the Old Platform

Task Performed By: Customer

An incremental backup saves any data collected since the last full backup, and is a way of maximizing data collection while moving to R3V5. Briefly, an incremental backup goes like this:

1. Start 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`	tape drive device name (or `default`)
`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 Chapter 2, "Back Up Data Window" on page 2-26.

> **Note** You can do this step in parallel with Step 12.

> **Note** The haglog table, which contains historical agent login and logout data, is not backed up during an incremental backup. The table will contain data up until the time the full maintenance backup was done (Step 2).

Step 14: Migrate Full Historical Data

Task Performed By: Customer

Now that the new platform is collecting data, the customer can migrate the CMS historical data from the old platform.

The *CentreVu* CMS R3V5 on the new platform may be in single-user or multi-user mode to migrate historical data. The procedure is as follows:

1. Insert the CMS full backup tape (from Step 3) into the appropriate tape drive.

2. Log in as *cms* and access the *CentreVu* CMS Main Menu.

3. Select the `System Setup - R3 Migfrate Data` option.

4. Select the device name from which the data being migrated will be read (normally `default`).

5. Select `Historical Data` in the `Data type` field.

> **Note** To migrate all historical data on the tape, use the defaults in the `Stop date:` field (blank) and the `Stop time:` field (11:59 PM).

6. Select `All ACDs` in the `Specify ACD(s) to migrate` field.

7. Press `Return` to access the Action List.

8. Select `Run`, and press `Return`.

`Working` appears in the lower left-hand corner of the window. The `Status:` field displays various messages that tell you what the program is processing.

> **Note** Since the migration runs in the background, you can exit the migration window and perform other tasks. Occasionally, you should access the migration window to check the progress.

The migration of full historical data may take several hours.

If the migration completes successfully, the `Status:` line displays a "successful" message similar to the following:

```
Last migration completed (Tue Jul 13 09:49:27
1993)
```

If the migration fails, the `Status:` line displays a "failed" message, and an error is logged to the customer and services logs.

(See also "R3 Migrate Data Window" on page 2-63.)

When the migration completes, investigate the migration log (see Step 8: Investigate the Migration Log).

Step 15: Migrate Incremental Historical Data

Task Performed By: Customer

To complete the data migration to the new platform, the customer needs to migrate the incremental historical data. The *CentreVu* CMS R3V5 on the new platform may be in single-user or multi-user mode to migrate incremental historical data.

Use the procedure outlined in Step 14, "Migrate Full Historical Data," except use the **incremental backup tape** instead of the full backup tape.

An Acknowledgment will ask you to verify whether to proceed with the incremental migration. Enter `y` and press **Return**.

| Note | • To migrate the incremental data on the tape, use the defaults in the `Stop date:` field (blank) and the `Stop time:` field (11:59 PM).

• The haglog table, which contains historical agent login and logout data, was not backed up during the incremental backup. This table will contain data up until the time the full maintenance backup was done |

Step 16: Do a cmsadm Backup on the New Platform

Task Performed By: Customer

The customer does a cmsadm backup on the new platform. The cmsadm backup provides a complete backup of all file systems in case of failure. See "Doing a CMSADM Backup on a Solaris System" on page 2-22.

Step 17: Do a Full Maintenance Backup on the New Platform

Task Performed By: Customer

A full maintenance backup must be done as soon as possible on the new system. Incremental maintenance backups will fail if a full backup has not been done. Briefly, the procedure goes like this:

1. Start 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`	tape drive device name (or `default`)
`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: Chapter 2, "Back Up Data Window" on page 2-26.

Chapter 5
Upgrading an *INTEL* Platform

List of Tables

Overview

This chapter describes how to upgrade CMS software on the following platforms:

- 6386 WGS 33/S (bug-fix upgrades only)

- 6386 WGS 25/S (bug-fix upgrades only)

- *StarServer*® S (bug-fix upgrades only)

- 3332
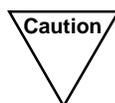
> ▽ **Caution** — To upgrade to R3V5, you must have sufficient free space on your hard disk to accommodate all the data you want to collect. See the "Preupgrade Procedures" section for details.
>
> If your current disk space allocation specifies more items to be measured for longer periods of time than you actually have space for on your hard disks, you must do one or more of the following:
>
> - Purchase additional disks.
>
> - Reduce the length of time for which the data is stored.
>
> - Reduce the number of entities measured <u>before</u> you attempt an upgrade.

Software Compatibility

The following software is required for CMS R3V5 to operate correctly:

- *UNIX** System V/386 Release 3.2. Version 2.3 Maintenance Disk #1.

- Korn Shell Version 11/16/88d 386 Release 2.0

- *INFORMIX*† SE 4.10.UD1 (Runtime Version)

  (*INFORMIX* SQL 4.10.UC2 [Development Version] is optional software with CMS R3V5.)

- X.25 Network Interface Software Version 1.2.1 SL1.51.1.25.

CMS R3V5 does not co-reside with other software packages. This includes both packages running concurrently and those merely installed. CMS R3V5 modifies the *UNIX* system tunable parameters automatically to accommodate system requirements.

---

*UNIX is a registered trademark of Novell, Inc. in the United States and other countries, licensed exclusivel through X/Open Corporation
†INFORMIX is a registered trademark of Informix Software, Inc.

This release of CMS R3V5 software is compatible only with Version 1.6 and later of the CMS R2 Migration (PG-3E257). Earlier issues of CMS R2 will not migrate successfully.

Hardware Compatibility

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

- 6386 WGS 25/S
- 6386 WGS 33/S
- *StarServer* S
- 3332.

For the 6386 processors, the alternate console configuration is required. In addition to the base processor, the following may be added based on customer configuration needs:

- GPSC-AT/E X.25 kits and 2-port RS232 cables
- 4/16 MB Memory Expansion Board
- N80387-6386/25 or 6386/33 math coprocessor
- IPC 1600 Ports Cards and Ports Cabinets or *MEGAPLEX*[*]-96 board
- Remote Maintenance Package and software, Version 2.0.

For the *StarServer* S processor, the VGA 600 card and monitor is required for the console. In addition to the base processor, the following may be added based on customer configuration needs:

- Additional SIMM memory on the system board
- SCSI Streaming Tape Unit
- GPSC-AT/E X.25 kits and 2-port RS232 cables
- IPC 1600 Ports Cards and Ports Cabinets, or *MEGAPLEX*-96 board
- Remote Maintenance Package and software, Version 2.0.

For the 3332 processor, the following may be added based on your configuration needs:

- Additional SIMM memory on the system board
- SCSI Streaming Tape Unit
- GPSC-AT/E X.25 kit(s) and 2-port RS232 cable(s)
- *MEGAPLEX*-96 board (or IPC 1600)

---

*MEGAPLEX is a trademark of Equinox Systems, Inc.

- Kickstart 2.5 Remote Maintenance Board (RMB).

Switch Compatibility

CMS R3V5 has been certified with the ACD applications on the following switches:

- *DEFINITY*® Communications System Generic 2.1 Release 3.3 and later (QPPCN 629DR)

- *DEFINITY* Communications System Generic 2.2 Release 3.0 and later (with/without call center features) (QPPCN 696DR)

- *DEFINITY* Communications System Generic 3i Release 13.3 and later (QPPCN 576)

- *DEFINITY* Communications System Generic 3r Release 8.5 and later

- *DEFINITY* Communications System Generic 3s Release 14.2 and later

- *DEFINITY* Communications System Generic 3 Version 2 Load 82 and later (QPPCN 644 G3i/s/vs) (QPPCN 646 G3r)

- *DEFINITY* Communications System Generic 1.1 Release 7.1 (QPPCN 559DR) and later

- System 85 R2V4 Release 2.3 (QPPCN 560DR) and later

- *DEFINITY* Communications System Generic 3 Version 3 GA Release (QPPCN 701) and later

- *DEFINITY* Communications System Generic 3 Version 4

- *DEFINITY* Communications System Generic 3 Version 5.

> **Note** It may be necessary to upgrade the switch release before installing CMS R3V5 or before upgrading CMS. The required switch release for *DEFINITY* Generic 3r has been changed since CMS Issue 1.3.

Choosing an Upgrade Procedure

This chapter allows an installer with a reasonable knowledge of *UNIX* and CMS commands to follow the upgrade procedure with minimal referral to other chapters or supplemental procedures. The section you will follow depends upon your situation. See Table 5-1, below.

Table 5-1: Selecting Upgrade Procedures

If you are ...:	... then use this procedures:
upgrading from a previous version	"Upgrading to R3V5 from a Previous Release of CMS" on page 5-5
upgrading to a new V5 base load	"Upgrading the R3V5 Base Load" on page 5-18
updating a current V5 load	"Updating an INTEL Platform" on page 5-25

Upgrading to R3V5 from a Previous Release of CMS

This section describes how to upgrade to R3V5 CMS from the R3.0, R3V1, R3V2, or R3V4 release of CMS.

Preupgrade Procedure

Before you upgrade your system to R3V5 CMS, you should verify that your system is loaded with a CMS release that supports the upgrade to R3V5.

We recommend that you perform that verification at least five business days before the scheduled upgrade.

Verifying the CMS Release

To display CMS software packages on an *INTEL*[*] computer, enter the `displaypkg` command:

```
# displaypkg
```

The system responds by listing the CMS packages installed. For example:

```
#    The following software packages have been installed:
Lucent Technologies CentreVu(TM) Call Management System
(r3v5ap.f)
   .
   .
   .
```

To proceed with the upgrade, you must have one of these CMS releases:

- R3.0: 3.2m5.1 (EDI 1.5) or later
- R3V2: 31amh (EDI 1.2) or later
- R3V4: any load

If you have some other CMS release, you will have to upgrade to one of the listed releases before you will be able to upgrade to R3V5.

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*INTEL is registered trademark of INTEL Corporation

Upgrade Procedure

In order to upgrade your *INTEL* platform to R3V5 CMS, you will be required to perform the following steps**:**

Table 5-2: *INTEL* R3V5 Upgrade Steps

Step	Action	Responsible Party
1	Check and record system information	Technical Service Center (TSC)
2	Do a full maintenance backup of the current CMS	customer
3	Busy Out the CMS Link	TSC
4	Do an incremental maintenance backup of the current CMS	customer
5	Do a "cmsadm" backup of the current CMS	customer
6	Turn off the current CMS	TSC
7	Remove the current CMS	
8	Replace *INFORMIX* (R3V1 <u>only</u>)	TSC
9	Install *CentreVu* CMS R3V5	TSC
10	Set authorizations	TSC
11	Change switch parameters, if necessary	TSC
12	Migrate system administration data	TSC
13	Investigate migration log	TSC
14	Migrate ACD-administration data	TSC
15	Start CentreVu CMS R3V5 data collection and verify link	TSC
16	Migrate full historical data	customer
17	Migrate incremental historical data	customer
18	Do a "cmsadm" backup of *CentreVu* CMS R3V5	customer
19	Do a full maintenance back up of *CentreVu* CMS R3V5	customer

1. Check and Record System Information

Task Performed By: TSC

The TSC prints out the following information for later use:

- authorizations
- features installed
- switch information
- data storage allocation
- free space allocation
- Forecasting data storage allocation
- storage interval data

2. Do a Full Maintenance Backup

Task Performed By: Customer

The customer does a full CMS maintenance backup of the R3 CMS. This backup provides the data for the migration.

In the Back Up Data window, select y (yes) for the `Verify backup` field. In addition, the following fields should contain an x:

- ACD specific data
    - — Full
    - — All ACDs.
- System data.

See the *R3 CMS Administration* (585-215-511) document, Chapter 12, "Back Up Data."

3. Busy Out the CMS Link

Task Performed By: Customer or Lucent Field Technician

This step terminates data collection on the source CMS. The customer or a Lucent Field Technician busies out the CMS link via the switch. You can use the **busy mis** command for the Generic 3 switch or **PROC 028** for the Generic 2 switch.

This step terminates data collection on the R3 CMS. Any further data collection will be done on the *CentreVu™* CMS R3V5.

4. Do an Incremental Maintenance Backup

Task Performed By: Customer

The customer does a CMS incremental maintenance backup for historical data only. This incremental backup provides historical data from the time the customer completed the full maintenance backup until the CMS link was busied out.

R3.0 CMS Backup

In the Back Up Data window, select `xtape` in the `Device name` field and `y` (yes) in the `Verify backup` field. In addition, the following fields should contain an `x`:

- ACD specific data
  - Incremental
  - All ACDs.
- System data.

See the *CMS R3.0 Administration* (585-215-511) document, Chapter 12, "Maintenance — Back Up Data."

R3V2 or R3V4 CMS Backup

In the Back Up Data window, select `xtape` in the `Device name` field and `y` (yes) in the `Verify volume can be read after backup` field. In addition, the following fields should contain an `x`:

- All ACDs
- Historical data
  - Incremental.

See the *CentreVu™ CMS R3V5 Administration* (585-215-820) document, Chapter 12, "Maintenance — Back Up Data."

5. Do a "cmsadm" Backup of R3 CMS

Task Performed By: Customer

The customer does a "cmsadm" backup of the R3 CMS. The "cmsadm" backup provides a complete backup of all file systems on the R3 machine in case of failure.

See "Doing a CMSADM Backup on an INTEL System" on page 2-19.

6. Turn Off R3 CMS

Task Performed By:TSC

The TSC turns off CMS to upgrade the *INFORMIX* and CMS applications. The customer calls the TSC to coordinate this step and Steps 6 through 12.

See the *CMS Installation and Maintenance* (585-215-122) document, Chapter 2, "run_cms."

7. Remove the Previous CMS Version

Task Performed By: TSC

The TSC removes the previous CMS version from the system, including all existing CMS updates.

8. Replace *INFORMIX (R3.0 CMS Only)*

Task Performed By: TSC

Involved Parties: Customer or Lucent Field Technician

The TSC replaces the existing *INFORMIX* software used by the R3 CMS.

The TSC installs the *INFORMIX* 4.10 software used by the *CentreVu* CMS R3V5 . The customer or a Lucent Field Technician needs to be on site to insert the *INFORMIX* CD-ROM into the flexible disk drive.

See the *CentreVu*^{TM} *CMS R3V5 Change Description* (585-215-823) document for information on installing the *INFORMIX* 4.10 software.

| Note | Remember to set up the environment before you install the *INFORMIX* software package. |

9. Install *CentreVu* CMS R3V5 Application

Task Performed By:TSC

Involved Parties: Customer or Lucent Field Technician

The TSC installs *CentreVu* CMS R3V5. The installation will probably fail the first time because of changes in the tuneable parameters, but it is only necessary to reboot and repeat the installation.

10. Set Authorizations

Task Performed By: TSC

The Technical Service Center (TSC) engineers need to set authorizations for CMS before CMS can be turned on.

> **Note** Setting authorizations only has to be done on the original upgrade to CMS R3V5.

To set authorizations, use the *auth_set* option in the CMS Services (cmssvc) menu. Do the following steps to run the *auth_set* option:

1. Access the CMS Services menu by entering:

```
#cmssvc
```

The program responds:

```
Lucent 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 CMS 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:
```

2. Select the *auth_set* option. The program responds:

```
Password:
```

3. Enter the appropriate password. The program responds:

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

4. Enter y. The program responds:

```
 Purchased version is CMS R3V5. Is this correct?
```

5. Enter y. The program responds:

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

> **Note** The default value will be the same as the previous one unless the customer is buying new packages. If there are no changes in the packages, the technician can press Return at each prompt.

6. Enter y if the customer purchased Forecasting; otherwise, press Return. The program responds:

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

7. Enter y if the customer purchased Vectoring package; otherwise press Return. The program responds:

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

8. Enter y if the customer purchased Graphics; otherwise, press Return. The program responds:

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

9. Enter y if the customer purchased the External Call History feature; otherwise, press Return. The program responds:

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

10. Enter y if the customer purchased the Expert Agent Selection feature; otherwise, press **Return**. The program responds:

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

11. Enter y if the customer purchased the External application feature; otherwise, press **Return**. The program responds

```
Enter the number of Simultaneous Supervisor logins the customer
has purchased (0-250): (default:0)
```

12. Enter the number of simultaneous logins purchased.The system responds:

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

13. Enter y if the customer purchased the Report Designer feature; otherwise, press **Return**. The system responds:

```
Enter the maximum number of agents that can be administered
(xx-5200):
```

14. Enter the number of agents that can be administered. The system responds:

```
Enter the maximum number of ACDs that can be installed (1-4):
(default:<the current number>)
```

15. Enter the number of ACDs that can be installed.
    The system prompt returns to your screen.

16. The program takes a few minutes to initialize the system parameters.

17. Turning on CMS initializes the communications link between the CMS software and the switch.

11. Change Switch Parameters (if necessary)

Task Performed By: TSC

The TSC changes the switch parameters if the customer upgraded to a new switch release.

See the *CMS Installation and Maintenance* (585-215-122) document, Chapter 2, "swsetup.''

12. Migrate System Administration Data

Task Performed By: TSC

Involved Parties: Customer or Lucent Field Technician

The TSC migrates the R3 system administration data to *CentreVu* CMS R3V5 using the R3 Migrate Data window. The customer or a Lucent Field Technician needs to be on site to insert the backup tape into the tape drive.

| Warning | Make sure that you migrate the system administration data ***one time only.*** Failure to heed this warning will result in an error condition from which you will not be able to recover. |

Prerequisite Administration

From the *CentreVu* CMS R3V5 :

- A device name needs to be defined in the Backup/Restore Devices window (normally "default"). This is the device from which the data being migrated is read.

- CMS must be in single-user mode.

See the following sections in the *CMS R3V5 Administration* (585-215-820) document:

- Chapter 12 "Back Up/Restore Devices"

- Chapter 11 "CMS State."

Procedure

Do these steps to migrate the system administration data:

1. Insert the R3 full maintenance backup tape (from Step 2) into the tape drive.

2. Log in as *cms* and access the CMS Main Menu.

3. Select the `System Setup - R3 Migrate Data` option.

4. Enter the device name from which the data being migrated will be read (normally `default`).

5. Select `System Administration data` (the default) in the `Data type` field.

> **Note** Do not enter data in the `Stop date:` and `Stop time:` fields.

6. Select `All ACDs` in the `Specify ACD(s) to Migrate` field.

7. Press `Return` to access the Action List.

8. Select `Run` and press `Return`.

   `Working` appears in the lower left-hand corner of the window. The `Status:` field displays various messages that tell you what is being processed.

   The migration of system administration data takes approximately 1 hour.

   If the migration completes successfully, the `Status:` line displays a "successful" message similar to the following:

   `Last migration completed (Tue Jul 13 09:49:27 1993)`

   If the migration fails, the `Status:` line displays a "failed" message, and an error is logged to the customer and services logs.

(See also "R3 Migrate Data Window" on page 2-63.)

13. Investigate Migration Log

Task Performed By: TSC

Involved Parties: Customer

The TSC investigates the customer migration log and takes any necessary corrective action. This log includes the status and progress of all migrations and any problems that arose during the migration.

The customer migration log is located in `/cms/migrate/r3mig.log`. The customer may print this log by entering the following command:

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

See Chapter 8, "Migration Log Messages" to look up messages and determine what action you need to take.

> **Note** A migration log also exists for services. The services migration log is located in */cms/maint/r3mig/mig.log*. This log may contain information inappropriate for the customer.

14. Migrate ACD Administration Data

Task Performed By: TSC

Involved Parties: Customer or Lucent field technician

After migrating the system administration data, the TSC migrates the ACD administration data. The customer or a Lucent field technician needs to be on site to insert the backup tape into the tape drive.

> **Note** Procedurally. migrating ACD administration data is nearly identical to migrating system administration data, the only difference being the options selected in the migration window. Technically, the difference lies in the data migrated. Like system admin data, ACD administration data should be migrated only one time.

15. Start *CentreVu* CMS R3V5 Data Collection and Verify Link

Once any migration problems are resolved, the TSC restores the CMS R3V5 to multi-user mode, starts data collection, and verifies that the link is up.

See the following sections in the *CentreVu CMS R3V5 Administration* (585-215-800) document:

- Chapter 11 "CMS State"
- Chapter 11 "Data Collection"
- Chapter 12 "Connection Status."

At this point, the TSC hands the migration back to the customer.

> **Note** The customer may contract Lucent to have the TSC complete the migration on a time-and-materials basis.

16. Migrate Full Historical Data

Task Performed By: Customer

Now that the R3V5 machine is collecting data, the customer can migrate the R3 historical data.

The *CentreVu* CMS R3V5 may be in single- or multi-user mode to migrate historical data.

Do these steps to migrate R3 historical data:

1. Insert R3 full maintenance backup tape (from Step 2) into the tape drive.

2. Log in as *cms* and access the CMS Main Menu.

3. Select the `System Setup - R3 Migrate Data` option.

4. Enter the device name from which the data being migrated will be read (normally `default`).

5. Select `Historical Data` in the `Data type` field.

> **Note** To migrate all historical data on the tape, use the defaults in the `Stop date:` field (blank) and the `Stop time:` field (11:59 PM).

6. Select `All ACDs` in the `Specify ACD(s) to migrate` field.

7. Press **Return** to access the Action List.

8. Select `Run` and press **Return**.

   `Working` appears in the lower left-hand corner of the window. The `Status:` field displays various messages that tell you what the program is processing.

> **Note** Since the migration runs in the background, you can exit the migration window and perform other tasks. Occasionally, you should access the migration window to check the progress.

The full migration of historical data may take several hours.

If the migration completes successfully, the `Status:` line displays a "successful" message similar to the following:

`Last migration completed (Tue Jul 13 09:49:27 1993)`

If the migration fails, the `Status:` line displays a "failed" message and an error is logged to the customer and services logs.

(See also "R3 Migrate Data Window" on page 2-63.)

17. Migrate Incremental Historical Data

Task Performed By: Customer

To complete the data migration, the customer needs to migrate the incremental historical data.

The *CentreVu* CMS R3V5 may be in single- or multi-user mode to migrate incremental historical data.

Procedure

Use the procedure outlined in Step 16 "Migrate Full Historical Data" except use the **R3 incremental backup tape** instead of the R3 full backup tape.

An Acknowledgment will ask you to verify whether to proceed with the incremental migration. Type `y` and press `Return`.

> **Note** To migrate the incremental data on the tape, use the defaults in the `Stop date:` field (blank) and the `Stop time:` field (11:59 PM).

18. Do a "cmsadm" Backup of CentreVu CMS R3V5

Task Performed By: Customer

The customer does a "cmsadm" backup of the R3V5 *CentreVu* CMS. The "cmsadm" backup provides a complete backup of all file systems on the R3V5 machine in case of failure.

See "Doing a CMSADM Backup on an INTEL System" on page 2-19.

19. Do a Full Maintenance Backup of CentreVu CMS R3V5

Task Performed By: Customer

The customer does a full CMS maintenance backup of the R3V5 *CentreVu* CMS data. This backup protects you from losing the R3 migrated data plus the R3V5 data initially collected.

In the Back Up Data window, enter `y` (yes) in the `Verify volume can be read after backup` field. In addition, the following fields should contain an `x`:

- All ACDs
- ACD specific data
- System administration data
- Historical data
    — Full.

See "Back Up Data Window" on page 2-26.

Upgrading the R3V5 Base Load

The following procedures allow you to upgrade your CMS software at your convenience. Follow these instructions carefully. These procedures pertain to an R3V5 upgrade.

Preupgrade Procedure

You **must** complete the following steps prior to beginning the upgrade.

> **⚠ Warning**
>
> **Failure to complete the preupgrade steps may result in an inability to recover from an unsuccessful upgrade, possible loss of data, and/or significant recovery time.**

1. As a precaution, ensure that copies of the current CMS R3V5 software load and the latest full backup tapes are available.

   If you do not have a current CMS R3V5 software load, call the Lucent Technologies National Customer Care Center at 1-800-242-2121. If you do not have a current full maintenance backup available, perform a full maintenance backup before proceeding with the upgrade.

2. From the system console, log in as *root*.

3. Verify that the tape drive status light is off and the drive is not being used for any other purpose (for example, scheduled backups).

   If the tape light remains on, do the following steps based on the host computer model you have:

   6386 *and StarServer computers*

   a. Put a writable tape into the drive. Wait for the tape to reposition.

   b. Eject the tape.

   c. Put the tape back in and wait for it to reposition again.

   d. Enter this command at the # prompt: `> /dev/scsi/qtape1`

   e. The tape light should go out.

   Model 3332 computers

   a. Put a writable tape into the drive. Wait for the tape to reposition.

   b. The tape light should go out.

4. Verify that the tunable parameters are set to the recommended CMS values by entering:

/cms/toolsbin/chktunes

You will see the message `Checking the System Tunables for correct CMS values.` If a message displays indicating that the check was successful, continue with Step 5.

Failure Recovery: If any messages display about the tunables not being correct, call the Lucent Technologies National Customer Care Center at 1-800-242-2121.

5. Enter the `cmsadm` command to display the CMS administration menu. Select the `backup` option.

   If CMS is turned on, it will be automatically turned off during the backup. The program takes approximately 50 minutes to write each tape needed for the backup. See *CentreVu™ CMS R3V5 Sun® SPARCserver™ Computers Installation and Maintenance* (585-215-827) for more information on performing a CMSADM backup.

Upgrade Procedure

The `installpkg` command will automatically upgrade your system.

Warning
Make sure you have the cartridge tape that contains the new base load or field update software.
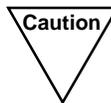
Caution You must have completed the preupgrade Procedure (above) before you continue with the steps below. The upgrade procedure will result in about 30 to 60 minutes of outage on CMS R3V5.

Note It is no longer necessary to turn off CMS; you will be prompted to do so in Step 10.

To upgrade CMS, use the following **required** procedures:

- Remove installed field updates (if present).
- Install the new CMS base package.

Use the following steps to upgrade your CMS software.

1. From the System Console, log in as *root*.
2. Enter the `installpkg` command.

3. When prompted, select the cartridge tape option, and press ⌷Return⌷.

4. The program requests that the tape be inserted into the tape drive. Insert the CMS software package cartridge tape into the tape drive, wait for the tape drive to reposition, and then press ⌷Return⌷ .

    Failure Recovery: For Steps 4 through 6, proceed through the tasks below until you recover from the tape drive failure:

    - Retry:

        a. Follow the prompts to exit the `installpkg` program.

        b. Reposition the cartridge tape in the tape drive.

        c. Restart the Software Upgrade Procedures.

    - Reboot the CMS by entering the `shutdown -i6 -g0 -y` command. Restart the Software Upgrade Procedures.

    - If tape problems persist, call the National Customer Care Center at 1-800-242-2121.

5. When prompted, press ⌷Return⌷ to retension the tape. Retensioning the tape takes approximately 3 minutes.

6. After the tape retentions, the program displays information on selecting the packages to be installed. Press ⌷Return⌷ to continue.

7. Select the Call Management System package followed by ⌷Return⌷.

8. Press ⌷Esc⌷ to indicate that all selections have been made. Press ⌷Return⌷. Press ⌷Return⌷ again in response to the `REMINDER!` message.

    The program takes about 3 minutes to locate the CMS software on the tape and then verifies that the software packages required to run with CMS are present.

    Failure Recovery: If a required software package is missing, an error message appears indicating that CMS cannot be installed. Press ⌷Esc⌷ to stop the upgrade. Since CMS is still running the old load, stopping the upgrade now is not service affecting. Write down the missing package, and call the National Customer Care Center at 1-800-242-2121. If you turned CMS off, you can turn it back on.

9. The program now asks if you backed up your file systems. If you followed the preupgrade instructions, you have already backed up your file system. Enter `y`.

    If you did not follow the preupgrade instructions, enter `n` and refer to the preupgrade Procedure for information on backing up your file system. Then, restart the Software Upgrade Procedure.

10. Next, the program asks if you want to turn off CMS. Enter `y` to proceed with the upgrade.

If you enter n, you will be returned to the system prompt.

If you answer y, the program continues:

```
Stopping UNIX log ... done
>>Retaining customer data.
/etc/conf/init.d/ilog
/etc/conf/node.d/osm
/etc/logit
/usr/bin/cms
/usr/bin/cmsadm
. . . .
. . . .
. . . .
```

The program takes about 5 to 10 minutes to remove the software associated with the previous issue of CMS. You may ignore any errors or warnings that occur during this step and the next. Critical errors will be detected during the package audit.

11. When the appropriate software has been removed, the program begins the download of the new issue of CMS.

```
Removal of Call Management System (xxxxx) is complete
## Installing files from cartridge tape
. . . . . . . . . . . . . . . . . . . . . . . . . .
. . . . . . . . . . . . . . . . . . . . . . . . . .
. . . . . . . . . . . . . . . . . . . . . . . . . .
. . . . . . . . . . . . . . . . . . . . . . . . . .
```

The program takes about 10 to 20 minutes to download the CMS R3V5 software from the cartridge tape to the hard disk. As the software is downloaded, several rows of periods display to indicate progress. Next, a list of downloaded files displays.

12. After the download, the program audits the new package installation.

```
## Auditing package installation
```

The audit takes about 5 to 10 minutes to complete.

Failure Recovery: If the audit fails, perform the following steps:

- Write down the audit errors.

- Call the National Customer Care Center at 1-800-242-2121.

- Reboot CMS by entering the `shutdown -i6 -g0 -y` command.

- Restart the Software Upgrade Procedure.

- If the audit passes, proceed to Step 13. If the audit fails again, execute the `shutdown -i6 -g0 -y` command. Install the previous issue of CMS using the `installpkg` command.

13. If the audit is successful, the program upgrades your CMS data.

    The upgrade of CMS data may take up to an hour — but in most cases takes significantly less time. Dots display to indicate progress.

    Failure recovery: If the upgrade fails, call the National Customer Care Center at 1-800-242-2121.

    In some cases, the *UNIX* kernel is rebuilt. If the rebuild fails, note the failure exactly, and call the National Customer Care Center at 1-800-242-2121.

14. If a message displays indicating an automatic shutdown is being initiated, you will need to reboot the system. You can do this in one of two ways:

    - Press the Return key which requires a manual reboot. **Wait** for the prompt `Reboot the system now` to appear, and then press the Reset button on the CMS processor.

      > **Warning** Do not press Reset until you see the `Reboot the system now` message; otherwise, file system damage may occur.

    - Press the Esc key. The *UNIX* system prompt returns. Then, execute the `shutdown -i6 -g0 -y` command.

15. After the tape finishes rewinding (tape drive light is not lit), remove the cartridge tape.

Restarting *CentreVu* CMS

Do the following to restart the *CentreVu* CMS software:

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

```
# cmssvc
```

The system responds:

```
Lucent 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 CMS 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:
```

2. Select the *run_cms* option. The system responds:

```
Select one of the following
1) Turn on CMS
2) Turn off CMS
Enter choice (1-2):
```

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

   The system prompt returns to your screen.

Post-Upgrade Procedure

After the upgrade, complete the following steps:

1. From the System Console, log in as *root*.

2. Enter the `cmsadm` command to display the CMS administration menu. Select the `backup` option.

   See Step 5 of the preupgrade Procedure for information about the cmsadm backup and the failure recovery steps.

3. Enter `exit` at the # prompt.

4. Log in as the CMS administrator.

5. A full CMS Maintenance Backup **must** be done prior to any incremental backups that are either scheduled or manually completed.

   ⬡ **Warning**   If this step is not completed, any incremental backups will fail, since they must follow a full backup of the current load.

6. Contact the National Customer Care Center at 1-800-242-2121, and notify the agent that the upgrade to the new issue of CMS has been completed.

   ⬡ **Warning**   It is important to complete this step so the TSC can check the error logs and update its database.

This completes the upgrade of the Call Management System R3V5.

Updating an *INTEL* Platform

Updating the *CentreVu* CMS software is a two-part process. First, the *CentreVu* CMS update files are downloaded from cartridge tape to hard disk. This allows the update files to be stored on the hard disk until a convenient time to do the update. Downloading the *CentreVu* CMS update files requires an on-site technician to insert the *CentreVu* CMS update tape into the tape drive.

The second part of the process is installing the update from the hard disk files. This part of the process can be done remotely. Since *CentreVu* CMS must be turned off to update from disk files, you should do the update when customer service is not interrupted.

Saving the *CentreVu* CMS Update to Disk Files

Prerequisites: You must be logged in as *root*, the computer must be in run-level 2, all file systems must be mounted, and there should be current backups available.

To save the *CentreVu* CMS software update to disk files, do the following steps:

1. Insert the *CentreVu* CMS update cartridge tape into the tape drive.

2. Access the *CentreVu* CMS Services menu by entering:

```
# cmssvc
```

The program responds:

```
Lucent 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 CMS 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. Select the *upd_save* option. The system responds:

```
Insert cartridge tape, then press ENTER:
```

4. Insert the *CentreVu* CMS update tape into the tape drive, and press
   Return.

The program begins downloading the *CentreVu* CMS update files onto the
hard disk as indicated by these messages:

```
looking for cms package ....
install.1
install.1/INSTALL
install.1/pkgname
install.1/i_data
install.1/UNINSTALL
install.1/SETtunes
install.1/adm_func
install.1/audit
install.1/auditmap
install.1/autoconfig
install.1/pkgauditmap
install.1/auditmap.1
install install/INSTALL
install/pkgname
install/i_data
install/UNINSTALL
install/SETtunes
install/adm_func
install/audit
install/auditmap
install/autoconfig
install/pkgauditmap
install/auditmap.1
578 blocks 200+0 records in
200+0 records out Software saved in /cms/cms_updates/31xxx
                                  for later installation.
```

| Note | The number of blocks, records, and filenames on your screen may differ from above depending on the size of the update release. |

The system prompt returns to your screen, and the update files are
downloaded from cartridge tape to hard disk.

Installing the *CentreVu* CMS Update from Disk Files

Prerequisites: You must be logged in as *root*, the computer must be in run-level 2, all file systems must be mounted, and CMS must be turned OFF.

You install the *CentreVu* CMS update from files stored on the hard disk. These files were created in the previous section. Installing an update from disk files can be done remotely.

Do these steps to install the *CentreVu* CMS software update from disk files:

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

```
# cmssvc
```

The program responds:

```
Lucent 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 CMS 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:
```

1. Select the *run_cms* option. The system responds:

```
Select one of the following
   1) Turn on CMS
   2) Turn off CMS
Enter choice (1-2):
```

2. Enter 2 to turn *CentreVu* CMS off. The system responds:

```
*** Turning off CMS, Please wait ***
. . . .
 *** CMS is now off ***
```

The system prompt returns to your screen.

3. Access the *CentreVu* CMS Services menu by entering:

```
# cmssvc
```

The system responds:

```
Lucent 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 CMS 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:
```

4. Select the *upd_install* option. The system responds:

```
Select update to install:
   1) r3v5xx.x.x
Enter choice (1-1):
```

5. Enter 1. The system responds:

```
578 blocks

Installing the CentreVu(TM) Call Management System (r3v5xxx).

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CentreVu(TM) Call Management System (r3v5xxx) verified.
Editing Package Version 2.1 verified.
KornShell Version 11/16/88d 386 Release 2.0 verified.
X25 Network Interface: Release 1.2.1 1.51.1.7 verified.
SCSI Support Package - Version 2.0 verified.
UNIX System V/386 Release 3.2 Version 2.3 Maintenance
                                      Disk #1 verified.

INFORMIX-SQL Version 2.10.03J   01/27/89 16:43 verified.
Remote Management Package (RMP) Version 1.0 verified.

Making backup copies of old files ...
/cms/install/update/file_bkup/cms/bin/gsearch
/cms/install/update/file_bkup/cms/db/scrdef/d_search
/cms/install/update/file_bkup/cms/install/auditmap
/cms/install/update/file_bkup/cms/install/autoconfig 342
blocks

## Installing files from /cms/cms_updates/31xxx
1820 blocks

## Installing AUDITMAP in
                    /usr/admin/menu/packagemgmt/auditmaps

## Auditing package installation
```

The audit requires several minutes to complete.

If the audit is successful, this message displays:

```
>> No errors detected during audit.

Setting UNIX system tunable parameters for CMS with
networking.
This will take approximately three minutes to complete.
No changes to tunable parameters were required.

The installation of the Call Management System (r3v5xxx)
                                              is complete.

Update installation completed successfully.

Remove saved disk files in /cms/cms_updates/r3v5xxx? (y/n):
```

6. Enter y.

> **Note** If the tunable parameters were changed, the program
> prompts you to reboot. In this case, execute the
> shutdown -i6 -g0 -y command.

The system prompt returns to your screen.

7. Access the *CentreVu* CMS Services menu by entering:

```
# cmssvc
```

The system responds:

```
Lucent 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 CMS 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:
```

8. Select the *run_cms* option. The system responds:

```
Select one of the following
1) Turn on CMS
2) Turn off CMS
Enter choice (1-2):
```

9. Enter 1 to turn on *CentreVu* CMS. Response:

```
Please wait for initialization.

*** CMS is now up ***
```

The system prompt returns to your screen, and the *CentreVu* CMS update is complete.

Removing the Currently Installed Update

Prerequisites: You must be logged in as *root*, the computer must be in run-level 2, all file systems must be mounted, and *CentreVu* CMS must be turned OFF.

The CMS software provides an option that removes the currently installed update and restores the *CentreVu* CMS software to the previous base load.

Do these steps to remove the *CentreVu* CMS update:

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

```
# cmssvc
```

The program responds:

```
Lucent 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 CMS 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:
```

2. Select the *upd_remove* option.

   The program responds with a list of files that will be changed due to the removal of the update.

```
   . . . . . . .
   . . . . . . .
   . . . . . . .
   /cms/install/auditmap
   /cms/install/autoconfig
```

   The system prompt returns to your screen.

   The update is removed from the *CentreVu* CMS software, and you can now turn on the *CentreVu* CMS software.

Migrating Generic-2.2 Switch Data from Non-EAS to EAS

This chapter describes how to migrate data from an *INTEL* platform running on a Generic 2.2 (G2.2) switch without Expert Agent Selection (EAS) to the *same INTEL* patform running on a G2.2 switch with EAS. This migration converts the *CentreVu*™ Call Management System (CMS) G2.2 EAS format (splits are multiplied by 10 during the migration).

In the following steps, CMS refers to the *CentreVu* CMS on the *INTEL* platform for which you are doing the in-place migration.

Step	Action	Responsible Party
1	Do a "cmsadm" backup of CMS without G2.2 EAS	customer
2	Do a full maintenance backup of CMS without G2.2 EAS	customer
3	Turn Off CMS	Technical Service Center (TSC)
4	Execute the "swsetup" command	TSC
5	Activate EAS on the switch	Lucent field technician
6	Change data storage allocation for CMS with EAS	TSC
7	Start CMS data collection	TSC
8	Migrate full historical data	customer
9	Do a "cmsadm" backup of CMS with G2.2 EAS	customer
10	Do a full maintenance backup of CMS with G2.2 EAS	customer

Note	The customer may contract Lucent Technologies to complete Steps 8 through 10 on a time-and-materials basis.

Split/Skill Numbers

After the G2.2 without EAS to G2.2 with EAS migration, splits are multiplied by 10 to convert them to the G2.2 EAS format. For example, split 1 becomes split 10, split 2 becomes split 20, and so on. In the Dictionary subsystem, however, split names (synonyms) still reference the G2.2 non-EAS split number (split 1, split 2, etc.).

After the migration, you need to access the Split/Skills window in the Dictionary subsystem, and change the Split/Skill numbers from 1 to 10, 2 to 20, etc.

For more information about split/skills, see Appendix D of the *CentreVu CMS R3V5 Administration* manual (585-215-820).

Step 1: Back Up *CentreVu* CMS without G2.2 EAS

The first thing you need to do is to make sure that all data can be moved to the new version of CMS. You do that by performing a CMSADM backup and a full maintenance backup.

1. *A CMSADM backup.* The cmsadm backup provides backup CMS data in case the data migration should go wrong. See the "Performing a CMSADM Backup" section of Chapter 2, *Common Processes and Procedures,* for a step-by-step procedure.

2. *A full CMS maintenance backup.* The full maintenance backup provides the migration data for the new version. See the "Performing a Full Maintenance Backup" section of Chapter 2, *Common Processes and Procedures*, for a step-by-step procedure.

Doing a cmsadm Backup

Task Performed By: Customer

The customer does a "cmsadm" backup of the *CentreVu* CMS without G2.2 EAS. The "cmsadm" backup provides a complete backup of all file systems on the *Sun SPARCserver* computer in case of failure.

The procedure involves the following general steps:

1. Print the `/etc/vfstab` file and save the printout.

2. Enter a `cmsadm` command.

3. Select the `backup` option.

4. Select a tape drive option.

5. When the backup completes, label the tape, bundle it with the vfstab printout, and put it in a safe place.

For a more detailed procedure, see "Doing a CMSADM Backup on a Solaris System" on page 2-22.

Doing a Full Maintenance Backup

Task Performed By: Customer

The customer does a full CMS maintenance backup of the *CentreVu* CMS R3V5 without G2.2 EAS. This backup provides the data for the migration.

Briefly, the procedure is as follows:

1. Start CMS and, from the Main Menu, select the `Maintenance - Back Up Data` option.

2. Make certain that the Back Up Data window has the following settings:

Table 5-3: Backup Settings for G2.2 Non-EAS

Field	Setting
`Device name:`	**default** (or the name of the backup device being used)
`Verify tape can be read after backup?`	**y**
`ACD(s) to back up:`	**All ACDs**
`Data to back up:`	**System Administration** **ACD-specific administration data** **Historical data,** **Full**

3. Access the Action List and select `Run`.

For a more thorough discussion of the Back Up Data window, see "Back Up Data Window" on page 2-26.

Step 2: Turn Off *CentreVu* CMS

Task Performed By:TSC

The TSC turns off *CentreVu* CMS so it can execute the `swsetup` command in the next step.

See the *CentreVu*™ *CMS Sun*® *SPARCserver*™ *Computers Installation and Maintenance* (585-215-827) document, Chapter 2, "CMSADM and CMSSVC Menus — run_cms."

Step 3: Execute the "swsetup" Command

Task Performed By:TSC

From the *CentreVu* CMS R3V5, the TSC accesses the "cmssvc" menu and executes the `swsetup` command, which allows *CentreVu* CMS to run the EAS feature.

See the *CentreVu™ CMS R3V5 Sun® SPARCserver™ Computers Installation and Maintenance* (585-215-827) document, Chapter 2, "CMSADM and CMSSVC Menus — swsetup."

Step 4: Activate EAS on the Switch

Task Performed By: Lucent field technician

This step terminates data collection on the *CentreVu* CMS R3V5. An Lucent field technician busies out the *CentreVu* CMS R3V5 link via the switch. Use **PROC 028** for the Generic 2 switch.

The switch technician activates the EAS feature on the switch. After the EAS feature is activated, the Lucent field technician releases busy out.

Step 5: Change Data Storage Allocation for *CentreVu* CMS with EAS

Task Performed By:TSC

The TSC changes data storage allocation to add skills.

See the *CentreVu™ CMS R3V5 Administration* (585-215-820) document, Chapter 11, "System Setup — Data Storage Allocation."

Step 6: Start *CentreVu* CMS Data Collection

Task Performed By:TSC

The TSC restores the *CentreVu* CMS R3V5 on the *Sun SPARCserver* Platform to multi-user mode, starts data collection, and verifies that the link is up.

See the following sections in the *CentreVu™ CMS R3V5 Administration* (585-215-820) document:

- Chapter 11, "System Setup — CMS State"

- Chapter 11, "System Setup — Data Collection"
- Chapter 12, "Maintenance — Connection Status."

At this point, the TSC hands the migration back to the customer.

> **Note** The customer may contract with Lucent to have the TSC complete the migration on a time and materials basis.

Step 7: Migrate Full Historical Data

Task Performed By: Customer

Now that the EAS *CentreVu* CMS is collecting data, the customer can migrate the non-EAS *CentreVu* CMS historical data.

The *CentreVu* CMS on the *Sun SPARCserver* Platform may be in single-user or multi-user mode to migrate historical data.

Briefly, the procedure is as follows:

1. Insert the *CentreVu* CMS R3V5 full maintenance backup tape (from Step 1) into the appropriate tape drive.

2. Log in as *cms,* and access the *CentreVu* CMS Main Menu.

3. Select the `System Setup - R3 Migrate Data` option, and set the following fields:

Table 5-4: R3 Migrate Data Settings for G2.2 Non-EAS-to-EAS

Field	Setting
Device name:	**default** (or the name of the tape device)
Data Type:	**Historical data**
Specify ACD(s) to migrate:	**All ACDs**
Stop time	**11:59PM**

4. Press `Return` to access the Action List.

5. Select `Run` and press `Return`.

   `Working` appears in the lower left-hand corner of the window. The `Status:` field displays various messages that tell you what the program is processing.

> **Note** Since the migration runs in the background, you can exit the migration window and perform other tasks. You should access the migration window occasionally to check the progress.

The migration of full historical data may take several hours.

If the migration completes successfully, the `Status:` line displays a "successful" message similar to the following:

```
Last migration completed (Tue Jul 13 09:49:27 1993)
```

If the migration fails, the `Status:` line displays a "failed" message, and an error is logged to the customer and services logs.

Step 8: Do a "cmsadm" Backup of *CentreVu* CMS with G2.2 EAS

Task Performed By: Customer

The customer does a "cmsadm" backup of the *CentreVu* CMS R3V5 with G2.2 EAS. The "cmsadm" backup provides a complete backup of all file systems on the *Sun SPARCserver* Platform in case of failure.

See "Doing a CMSADM Backup on an INTEL System" on page 2-19.

Step 9: Do a Full Maintenance Backup of *CentreVu* CMS with G2.2 EAS

Task Performed By: Customer

The customer does a full CMS maintenance backup of the *CentreVu* CMS R3V5 data. This backup protects you from losing the migrated data plus the R3V5 data collected since the migration.

In the Back Up Data window, enter `y` (yes) in the `Verify volume can be read after backup` field. In addition, the following fields should contain an `x`:

- All ACDs
- ACD specific data
- System administration data
- Historical data

　　— Full.

See the *CentreVu*™ *CMS R3V5 Administration* (585-215-820) document, Chapter 12, "Maintenance — Back Up Data."

Chapter 6
Troubleshooting

List of Figures

List of Tables

Overview

This chapter presents aids to help you troubleshoot an upgrade or migration, including a list of messages that might appear in the migration logs.

The chapter covers the following areas:

- "Troubleshooting a Solstice DiskSuite File System" on page 6-2 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.

- "CMSADM Backup Failures" on page 6-10 shows how to troubleshoot problems with CMSADM backups.

- "CentreVu CMS Package Installation Problems" on page 6-11 explains some of the details of the CMS package, and helps you to troubleshoot problems iwith CMS package installation.

- "Migration Log Messages" on page 6-15 lists error and informative messages that may show up in the migration log files.

Solstice DiskSuite is a trademark of Sun Microsystems, Inc.

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 (see Figure 6-1):
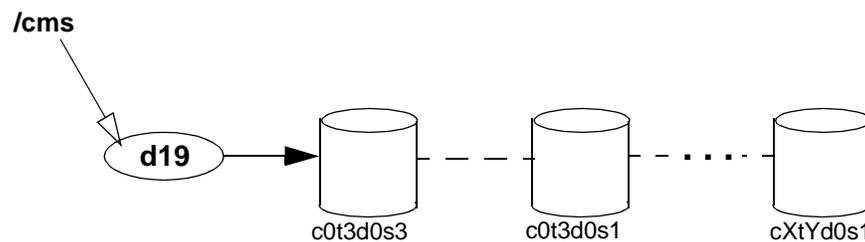

/cms

d19

c0t3d0s3   c0t3d0s1   cXtYd0s1

Figure 6-1: The Metadevice and the /cms File System

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 CMS Administration 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, you must use the `olds` script to set up the environment so CMS can access the disks. See "Setting up Your System for *Solstice DiskSuite* Software" in Chapter 3, *Upgrading a Sun SPARCserver Computer,* for step-by-step descriptions of *Solstice DiskSuite* software installation and of the use of the `olds` script. If you receive an error message from the `olds` script, see the "Common Error Messages" subsection, below.

Disk I/O Problems

Check the system console and the `/var/adm/messages` log for messages that indicate problems with a specific hard disk. If a disk is generating errors, it may need to be replaced. For procedures related to recovering from disk crashes and replacing hard disk drives, see Chapter 9, "Maintenance," in Volume 2 of the *CentreVu™ CMS R3V5 Sun SPARCserver Computers Installation and Maintenance* manual (585-215-827).

State Database Problems

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

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 R3V5 Sun*

SPARCserver Computers Installation and Maintenance manual)
(585-215-827).

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:

a. *All your disk drives must be accounted for.* You can verify that simply by checking the Size figure (it should roughly equal the total capacity of all your disks) and counting the number of devices listed (there should be a "Stripe" section for every drive). If some of your drives seem to be missing, check to make sure that all your drives are plugged in and turned on, and that each external drive has a unique target number.

b. *The device names must reflect the appropriate slice numbers.* The slice numbers are represented by the final two characters of the device name. A properly set-up /cms file system 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 be c0t3d0<u>s3;</u> all other device names must end in <u>s1.</u>

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

Problems with 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 that /cms has been unmounted)
# metastat           (determine the metadevice used for /cms)
# fsck /dev/md/rdsk/d19   (check the /cms file system)
# mount  /cms        (remount /cms after you have checked 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:

```
# ls  -ld  /cms
```

  If /cms does not exist, use a `mkdir` command to create it.

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

Common Error Messages

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

/cms: Deadlock situation detected/avoided
　　Remove all your swap files residing on /cms, and reenter the command. Remember to re-create the swap files when the `growfs` command completes.

device: c0t6d0 will not be used
　　Warning that c0t6do will not be set up for *Solstice DiskSuite*. Since c0t6d0 is the CD-ROM drive, that is not a problem.

device: *devicename* **cannot be setup, or does not exist...**
　　The disk you are trying to attach is turned off, does not exist, or was removed from the system. Power-up the disk drive, or verify the correct

name for the disk (stop-a, probe-scsi), or attach the disk to the system and reboot with a `boot -r` command from the open boot prompt.

Disk *devicename* **already attached, exiting...**
You are trying to attach a disk that is already attached. Verify the name of the disk by doing a *stop-a, probe-scsi-all.* Look at the target number on the back of the disk drive if possible, or consult the device documentation.

disk: *devicename* **partition** *n* **is not partitioned correctly**
You need to repartition disk *devicename.*

If the device name is "`c0t3xxxx`," you must restart the upgrade procedure with the disk repartition step ("Step 3: Repartition Disks Locally" on page 3-36).

If it's any other disk device, you can repartition it from the *Solaris*[*] `format` command. The procedure:

1. At the system prompt, type the word `format` and press Return. The system responds with an AVAILABLE DISK SELECTIONS menu.

2. Enter the number that corresponds to the disk in error. The system displays a FORMAT menu and the prompt, `format >`.

3. Type the word `partition` and press Return. The system displays the PARTITION menu and the prompt, `partition >`.

4. Type the word `print` and press Return. The system displays a table that reflects the current partitioning of the disk.

5. Compare the displayed table with Table 6-1, below. You will have to change the partitioning of the disk so the two tables agree. The procedure is as follows:

   a. 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.

   b. Enter, in response to the prompts, the appropriate numbers from Table 6-1. (Note that the size is always expressed as `<n>c,` where `c` indicates "cylinders.")

   c. Use a `print` command as necessary to verify changes.

   d. Repeat a - c until the disk partitions conform to Table 6-1. .

---

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

Table 6-1: Partitioning Information for External Disks

Partition Number	Partition ID Tag	Partition Permission Flags	2.1-GB Disk		1.05-GB Disk	
			Start Cylinder	Size (Cylinders)	Start Cylinder	Size (Cylinders)
0	un	wm	0	2c	0	2c
1	un	wm	2	2731c	2	2034c
2	backup	wm	0	2733c	0	2036c
3-7	un	wm	0	0c	0	0c

6. To exit back to the system prompt, enter q at the partition> prompt and q again at the format> prompt.

DiskSuite must be installed

You must install the *Solstice DiskSuite* software package. See "Upgrading to R3V5 (10,000-agent Capacity)" on page 3-33 for a procedure to upgrade your current CMS version. Or see Appendix D, "*Sun SPARCserver* Computer Factory Installation Procedures," of the *CentreVu™ CMS R3V5 Sun* SPARCserver[†] Computer Installation and Maintenance* manual (585-215-827).

In order to attach disk, /cms must already be mounted, exiting...

The /cms file system was not mounted. Execute a mount /cms command and rerun the command that failed.

metadb: *systemname***:** *devicename***: has a metadevice database replica**

There are already state database replicas existing on the indicated system and device.

metainit: *systemname***: /etc/opt/SUNWmd/md.tab line 12: d19: unit already set up**

An initial setup of the file system has already been performed.
If you are trying to attach a new disk, execute an olds -setup command for that device. To attach device c0t2d0, for example, you would enter:

```
# /olds/olds -setup c0t2d0
```

If you really need to do an initial setup, use these commands:

```
# /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. You do that with these commands:

```
# mount /cms
# df -k /cms
```

Finally, restore all your swap files and their entries in /etc/vfstab.

metainit: syntax error

This is the olds general failure message. The most likely cause is that the /etc/opt/SUNWmd/md.tab file disagrees with your configuration. (The file, for example, says you have seven disks in a given metadevice, but your configuration only has six.) 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.

newfs of cms metadevice failed

There is an internal problem with one of your disks. 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.

prtvtoc: /dev/rdsk/c0t6d0: Device busy

This message usually implies that the device probed by the script is not to be used as a disk because it is a read-only disk (i.e., a CD-ROM drive).

Warning: Current Disk has mounted partitions

Ignore this message. The format command is warning you that it is probing a mounted disk. A probe, however, is a nondestructive task that poses no danger to your data.

You must be root in order to run this command
>   Superuser privileges are necessary to run this script because most of the commands are related to system administration.

You need to have at least one disk set up, before attaching one, exiting...
>   You tried to use olds to attach a disk, but the metadevice has not yet been set up. To set it up, run the `/olds/olds -setup` command without arguments.

CMSADM Backup Failures

The following error messages are the most common during a cmsadm backup and recovery.

> — `Request failed. See /cms/install/logdir/backup.log for more information.`

If the window displays this message, you need to restart the backup after correcting the problem. Follow these steps to correct the problem:

a. Replace the tape in the tape drive. The tape may not be seated correctly, or the tape may have been removed during the backup.

b. Turn off write protect if the black arrow in the upper left-hand corner of the cartridge tape is pointed to "safe."

c. The tape is bad if this message also displays on the console terminal: `WARNING: ST01: HA 0 TC 3 LU 0: Err 60503005 CMD 0000000A Sense Key 00000004 Ext Sense 00000000`. Discard that tape and try another one.

The following error displays if you are performing a multiple tape backup, the tape you inserted is not the first tape (it is the second, third, etc.), and the tape is write protected.

> — `That didn't work, cannot open "/dev/scsi/qtape1" Change to part X and press RETURN key. [q] Permission denied.`

You do not have to restart the backup. Simply remove the tape from the tape drive, turn off write protect by moving the black arrow to point opposite "safe," reinsert the tape into the drive, and continue the backup.

As the backup progresses, the program displays a series of dots to indicate that it is writing files to tape, one dot per file.

You may have a problem if you notice one of the following:

- You see that dots are not printing (wait at least 10 minutes or longer with a huge table).

- The tape is not spinning.

- Messages are not displayed informing you to change tapes or that the backup has completed.

If you encounter problems, call the Lucent Technologies National Customer Care Center at 1-800-242-2121.

CentreVu CMS Package Installation Problems

This section provides some *CentreVu* CMS package-related details to help you solve problems that could occur during installation. For example:

- The wrong cms package instance is used.
- The system fails to remove a cms package.
- The system fails to update a cms package.

Identifying *CentreVu* CMS Package Instances

You can have up to two *CentreVu* CMS package instances:

- *cms* — the base package instance used for regular installs
- *cms.2* —the package instance used for updates.

To identify the version of *CentreVu* CMS software you need, enter the `pkginfo -x cms.*` command at the system prompt.

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/root2`
- May have run `cmssvc`.

Solution:

- Log in directly as `root/root2`
- Remove package(s) as instructed by the system.

Checking Installed Solaris Patches

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

1. Enter the `showrev -p` command at the system prompt.

```
# showrev -p
```

The system responds:

```
# showrev -p
Patch:  100982-02  Obsoletes:  Packages:  SUNWcsr.2 11.5.0,
        REV=1.0.15.2,PATCH=15
Patch:  100992-03  Obsoletes:  Packages:  SUNWcsr.3 11.5.0,
        REV=1.0.15.2,PATCH=68
Patch:  100999-51  Obsoletes: 100985-06,100998-02,10108602,
        100998-02,101086-02,1011
Patch:  101014-05  Obsoletes:  Packages:  SUNWcsu.3 11.5.0,
        REV=      1.0.15.1,PATCH=85
   .
   .
   .
```

2. Check the list to verify that all the *Solaris* Patches you need are installed.

3. step.

When Installing an Update Fails

Table 6-2 provides a list of error messages that indicate when an update save (upd_save) fails during installation (upd_inst).

Table 6-2: Error Messages When a `upd_install` Fails

Error Message	Problem	Solution
"up_install: another update is already installed"	There is already an update installed.	Remove the Update (upd_remove), and then install an Update (upd_install).
"You must remove cms.2 before installing this update"	There is already an update installed.	Remove the Update (upd_remove), and then install an Update (upd_install).
"no update spooled run upd_save and then upd_install"	There is no update spooled.	Run the Save Update (upd_save), and then reinstall the Update (upd_install).
"<X> blocks and <Y> modes are required in the <Z> file system to install this package"	There is not enough space in /cms to install the update.	Remove the failed instance with an Update Remove (upd_remove) or a Package Remove (pkgrm). Reclaim the space in the file system, and attempt to install again.
"<M> free blocks and <N> free modes exist"	There is not enough space in /cms to install the update.	Remove the failed instance with an Update Remove (upd_remove) or a Package Remove (pkgrm). Reclaim the space in the file system, and attempt to install the update again.

When an Update Save Fails

Table 6-3 provides a list of error messages that indicate when saving an update fails (upd_save).

Table 6-3: Error Messages When a `upd_save` Fails

Error Message	Problem	Solution
"upd_save: pkgadd was unable to spool the package into the temporary directory."	The */tmp* directory is out of space.	Clear out the */tmp* directory, and attempt an upd_save again.
"upd_save: cannot determine if package is an update."	The update tape is not an update.	You might be using the wrong tape, or the tape is corrupted. You must get a new tape.
"upd_save: CMS version X is not an update."	The update tape is not an update.	You are using the wrong tape. Use the correct tape.
"upd_save: cannot determine version of update."	You cannot get the version number.	You are probably using the wrong tape, or the tape is corrupted. Use the correct tape.
"Failed to save installation files."	Not enough space in /cms to spool packages.	Check the amount of free space in *CentreVu* CMS. If the space is low, try to remove or clear out unnecessary files.

When an Update Remove Fails

The following list provides some possible reasons why removing an update (upd_remove) fails:

- The original install failed (most common).

- No updates are installed.

- The `/var/sadm/pkg/cms.2/save/pkgmap` file is not present (unlikely situation).

  An update remove could fail if the *pkgmap* file was removed or was never present. You can remove the update instance, but there is no way to determine if the files are in an update, so the files cannot be restored. The checksums will not be updated and *pkgchk* could show errors.

Migration Log Messages

The migration program writes messages to different log files depending on what type of migration occurred. This chapter addresses the migration logs for Release 2 (R2) and Release 3 (R3) Call Management System (CMS) migrations to *CentreVu™* CMS Release 3 Version 5 (R3V5).

If you are performing an R3-to-R3V5 migration, you need to view the */cms/migrate/r3mig.log* file. If you are performing an R2-to-R3V5 migration, you need to view the */cms/migrate/migrate.log* file..

| Note | The *CentreVu* CMS R3V5 application also contains a migration log for services. The services migration log is */cms/maint/r3mig/mig.log*. This log may contain information inappropriate for the customer. |

Turn to one of the following sections:

- R3-to-R3V5 Migration Log Messages
- R2-to-R3V5 Migration Log Messages.

Look up the migration log message and decide what action you need to take.

R3-to-R3V5 Migration Log Messages

This section describes the messages that may be generated by an R3-to-R3V5 migration. These messages are located in the *cms/migrate/r3mig.log* and the */cms/maint/r3mig/mig.log* files.

Standard Messages

The following messages are a sample of the migration comments that should always appear in the log. The messages are offset in a constant width font. Variables in a message are italicized. For example, in the message

```
The stop date/time for all tables is: date
```

the variable *date* appears as "Tue Mar 3 13:23:10 1992." Each message is presented with an explanation for that message.

System Administration Data Migration Messages

Message:	`Migrating db/gem/h_custom...`
Explanation:	Migration of R3 custom reports source files (historical) to R3V5.
Message:	`Migrating db/gem/r_custom...`
Explanation:	Migration of R3 custom reports source files (real-time) to R3V5.
Message:	`Migrating db/journal/shortcut...`
Explanation:	Migration of R3 shortcut source files to R3V5.
Message:	`Migrating db/journal/timetable...`
Explanation:	Migration of R3 timetable source files to R3V5.
Message:	`Migrating dbitems`
Explanation:	Migration of R3 Dictionary database items, constants, and calculations to R3V5.
Message:	Migrating print_adm
Explanation:	Migration of R3 printer administration to R3V5.
Message:	`Migrating user_colors...`
Explanation:	Migration of R3 user color options to R3V5.
Message:	`Migrating user_defval...`
Explanation:	Migration of R3 user defaults to R3V5.
Message:	`Migrating users...`
Explanation:	Migration of R3 user data to R3V5.
Message:	`Migrating features...`
Explanation:	Migration of R3 feature permissions to R3V5.
Message:	`Migrating main_menu...`
Explanation:	Migration of R3 main menu data to R3V5.
Message:	`Migrating menu_add...`
Explanation:	Migration of R3 menu additions to R3V5.
Message:	`Migrating h_custom...`
Explanation:	Migration of R3 custom reports information - historical to R3V5.
Message:	`Migrating r_custom...`

Explanation:	Migration of R3 custom reports information - real-time to R3V5.
Message:	`Migrating scwininfo...`
Explanation:	Migration of R3 shortcut window information to R3V5.
Message:	`Migrating ttsc...`
Explanation:	Migration of R3 timetable information to R3V5.
Message:	`Migrating ttsched...`
Explanation:	Migration of R3 timetable information to R3V5.
Message:	`Migrating ttsctasks...`
Explanation:	Migration of R3 timetable information to R3V5.

ACD Administration Data Migration Messages

Message:	`Migrating aar_agents (ACDx) ...`
Explanation:	Migration of R3 agent trace active agents to R3V5.
Message:	`Migrating acds (ACDx) ...`
Explanation:	Migration of R3 ACD permissions to R3V5.
Message:	`Migrating ag_actv (ACDx) ...`
Explanation:	Migration of R3 agent trace data to R3V5.
Message:	`Migrating ag_ex_adm (ACDx) ...`
Explanation:	Migration of R3 agent exceptions admin data to R3V5.
Message:	`Migrating agex (ACDx) ...`
Explanation:	Migration of R3 agent exception data to R3V5.
Message:	`Migrating agroups (ACDx) ...`
Explanation:	Migration of R3 Dictionary agent groups to R3V5.
Message:	`Migrating arch_stat (ACDx) ...`
Explanation:	Migration of R3 archive status information to R3V5.
Message:	`Migrating dbstatus (ACDx) ...`
Explanation:	Migration of R3 historical database archiving status to R3V5.
Message:	`Migrating haglog (ACDx) ...`

Explanation:	Migration of R3 agent login/logout data to R3V5.
Message:	`Migrating linkex (ACDx) ...`
Explanation:	Migration of R3 link exceptions data to R3V5.
Message:	`Migrating mctex (ACDx) ...`
Explanation:	Migration of R3 malicious call trace exception data to R3V5.
Message:	`Migrating spex (ACDx) ...`
Explanation:	Migration of R3 split exceptions to R3V5.
Message:	`Migrating sp_ex_adm (ACDx) ...`
Explanation:	Migration of R3 split exceptions admin data to R3V5.
Message:	`Migrating split_pro (ACDx) ...`
Explanation:	Migration of R3 split call profile administration to R3V5.
Message:	`Migrating splits (ACDx) ...`
Explanation:	Migration of R3 split access information to R3V5.
Message:	`Migrating synonyms (ACDx) ...`
Explanation:	Migration of R3 synonym data to R3V5.
Message:	`Migrating tg_ex_adm (ACDx) ...`
Explanation:	Migration of R3 trunk group exception administration to R3V5.
Message:	`Migrating tgex (ACDx) ...`
Explanation:	Migration of R3 trunk group exceptions to R3V5.
Message:	`Migrating tgroups (ACDx) ...`
Explanation:	Migration of R3 trunk group access information to R3V5.
Message:	`Migrating vdn_pro (ACDx) ...`
Explanation:	Migration of R3 VDN call profile administration to R3V5.
Message:	`Migrating vdn_x_adm (ACDx) ...`
Explanation:	Migration of R3 VDN exceptions administration to R3V5.
Message:	`Migrating vdnex (ACDx) ...`
Explanation:	Migration of R3 VDN exceptions data to R3V5.
Message:	`Migrating vdns (ACDx) ...`

Explanation:	Migration of R3 VDN permissions to R3V5.
Message:	`Migrating vec_x_adm (ACDx) ...`
Explanation:	Migration of R3 vector exceptions administration to R3V5.
Message:	`Migrating vecex (ACDx) ...`
Explanation:	Migration of R3 vector exceptions to R3V5.
Message:	`Migrating vectors (ACDx) ...`
Explanation:	Migration of R3 vector permissions to R3V5.
Message:	`Migrating workcodes (ACDx) ...`
Explanation:	Migration of R3 work codes to R3V5.

Historical Data Migration Messages

Message:	`Migrating d_secs (ACDx) ...`
Explanation:	Migration of R3 seconds data collected in day to R3V5.
Message:	`Migrating dagent (ACDx) ...`
Explanation:	Migration of R3 daily historical agent data to R3V5.
Message:	`Migrating dtkgrp (ACDx) ...`
Explanation:	Migration of R3 daily historical trunk group data to R3V5.
Message:	`Migrating dvector (ACDx) ...`
Explanation:	Migration of R3 daily historical vector data to R3V5.
Message:	`Migrating f_dsplit (ACDx) ...`
Explanation:	Migration of R3 forecast daily split data to R3V5.
Message:	`Migrating f_itkgrp (ACDx) ...`
Explanation:	Migration of R3 forecast interval trunk group data to R3V5.
Message:	`Migrating hcwc (ACDx) ...`
Explanation:	Migration of R3 hourly historical call work code data to R3V5.
Message:	`Migrating htrunk (ACDx) ...`
Explanation:	Migration of R3 hourly historical trunk data to R3V5.
Message:	`Migrating m_secs (ACDx) ...`

Explanation:	Migration of R3 seconds data collected in month to R3V5.
Message:	`Migrating msplit (ACDx) ...`
Explanation:	Migration of R3 monthly historical split data to R3V5.
Message:	`Migrating mvdn (ACDx) ...`
Explanation:	Migration of R3 monthly historical VDN data to R3V5.
Message:	`Migrating wagent (ACDx) ...`
Explanation:	Migration of R3 weekly historical agent data to R3V5.
Message:	`Migrating wtkgrp (ACDx) ...`
Explanation:	Migration of R3 weekly historical trunk group data to R3V5.
Message:	`Migrating wvector (ACDx) ...`
Explanation:	Migration of R3 weekly historical vector data to R3V5.

Error Messages

Error messages appear in the migration log when the migration program detects a problem during migration. The following Error messages are samples of messages that might appear in the log. They are presented alphabetically. Variables in a message are italicized. Each message is presented with its cause and a resolution.

Message:	`Collision in user login:` *`username`*`. All` `ownerships are transferred to user 'cms'.`
Cause:	There is already a login ID established with this user name for CMS. 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 a different one than the user that is already established for CMS, the system administrator should create a different user name for this user and transfer the ownerships to this user after the migration. If the migrating user and the existing one are the same, the administrator should consult with the user about the disposition of ownerships.
Message:	`Dictionary collision: name='`*`custom_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, one table has to be renamed and database items must be reentered for the renamed table.
Message:	`Dictionary collision: name=`'*custom_name*' `item_type=`'const' `formula=`'*A CONSTANT*'
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=`'*custom_name*' `item_type=`'calc' `formula=`'*CALCULATION FORMULA*'
Cause:	There is already a calculation with '*custom_name*' as the name but with different contents.
Resolution:	You need to enter the formula again and rename it.
Message:	`Dictionary collision: name=`'*custom column name*' `table=` '*custom 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:	`Due to name collision, historical report` '*report name*' (*username*) `has been changed to` *tempx*
Cause:	The name of the migrated historical report, which belongs to the user specified in parentheses, collided with a historical report already present in R3V5.
Resolution:	Rename the report to something more meaningful than the automatically assigned name.
Message:	`Due to name collision, real-time report` '*report name*' (*username*) `has been changed to` *tempx*
Cause	The name of the migrated real-time report, which belongs to the user specified in parentheses, collided with a real-time report already present in R3V5.

Resolution:	Rename the report to something more meaningful than the automatically assigned name.
Message:	`Due to name collision, timetable 'timetable name' (username) has been changed to tempx`
Cause	The name of the migrated timetable, which belongs to the user specified in the parentheses, collided with a timetable already present in R3V5.
Resolution:	Rename the timetable to something more meaningful than the automatically assigned name. If the timetable is no longer needed, delete it.
Message:	`Due to name collision, short cut 'short cut name' (username) has been changed to tempx`
Cause	The name of the short cut being migrated collided with a short cut already present in R3V5.
Resolution:	Rename the short cut to something more meaningful than the automatically assigned name. If the short cut is no longer needed, delete it.
Message:	`Error in creating UNIX login for user 'username'. The user may have already had UNIX log...`
Cause:	The user already has a *UNIX*[a] system login in *CentreVu* CMS R3V5.
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:	`Menu addition: Name collision: custom 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:	`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 R3V5.

Resolution:	You must delete/change the obsolete column from the report in order to use it.
	NOTE: The only obsolete column that is 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 R3V5 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 R3V5.
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:
	ABNRINGTIMEO_ABNRINGCALLS ADJROUTETIMEO_ABNVECCALLS BH_OBUSYCALLSO_BACKUPCALLS BH_ODISCCALLSO_BUSYCALLS HOLDABNTIMEO_CONNECTCALLS INTERFLOWTIMEO_DISCCALLS LOOKFLOWTIMEO_TRANSFERRED O_ABNQUECALLS

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R2-to-R3V5 Migration Log Messages

This section describes the messages that result from an R2-to-R3V5 migration. These messages are located in the `/cms/migrate/migrate.log` file.

Standard Messages

The following messages should always appear in the log. The messages are offset in a constant width font. Variables in a message are italicized. For example, in the message

```
The stop date/time for all tables is: date
```

the variable `date` would appear as "Tue Mar 3 13:23:10 1992." Each message is presented with an explanation for that message.

Message:	`Getting user input...`
Explanation:	R2 CMS migration processing message.
Message:	`Initializing temporary database tables...`
Explanation:	R2 CMS migration processing message.
Message:	`Successfully built temporary database tables.`
Explanation:	R2 CMS migration processing message.
Message:	`The stop date/time for all tables is:` *date*
Explanation:	Gives the stop date/time input on the R2 CMS Migration window.
Message:	`Migrating Historical Custom Report` *report name*
Explanation:	This message is printed for each historical custom report that is migrated.
Message:	`Migrating realtime Custom Report` *report name*
Explanation:	This message is printed for each real-time custom report that is migrated.
Message:	`Migration completed.`
Explanation:	CMS R3V5 finished migrating either the administration or historical data.

Error Messages

These messages appear in the log when the migration program detects a problem. These messages are presented alphabetically, with two special characters presented in this order: *, <. Variables in a message are italicized. Each message is presented with its cause and a resolution.

Message:	`*** INTERNAL ERROR: contact services (`*error number*`, `*time stamp*`) ***`
Cause:	While processing data in the table listed above this message, an internal CMS R3V5 error occurred.
Resolution:	Contact services immediately and do not remove the migration log file. Services needs the `error number` and `time stamp` to find more information in their error log.
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 R3V5 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:	<*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 R3V5 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 R3V5 Dictionary subsystem to correct the spelling. Note that if you correct the spelling, the calculation or database item may work in R3V5.

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 R3V5 does not allow groups set up by extension numbers, only by login IDs. Any R2 CMS extension groups migrated to CMS R3V5 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 using extensions as login IDs is not appropriate, you need to delete the contents of the group and then add the appropriate login IDs.
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:	`<`*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 R3V5. The synonym `synonym name` does not begin with a letter and was migrated to CMS R3V5.
Resolution:	List the synonym in the R3V5 Dictionary subsystem, and modify `synonym name` to begin with a letter.
Message:	`Calculation <`*calculation name, calculation* *equation*`>: already in R3 dictionary.`
Cause:	The calculation `calculation name` already existed in the R3V5 Dictionary database when this migration was done.

Resolution:	Verify that the R3V5 calculation is appropriate for your reports, and modify it if necessary. User may choose to replace the standard calculation by the new one. If this is a standard R3V5 calculation, you must make a new R3V5 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 the administration data more than once, this message will appear 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 R3V5.
Resolution:	Modify the calculation using the CMS Dictionary: Calculation window so that it can be used in a custom report. This modification may require building other calculations to nest within this one.
Message:	`Call profile permissions exist for split` *split number* `R2 service level =` *service level* `R2 increment =` *interval size*
Cause:	The call profile parameters for split *split number* already existed in the CMS R3V5CMS R3V5 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:** *Custom 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 R3V5.

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 R3V5 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:` <*item name*>
Cause:	The database item `item name` was not found in the R3V5 Dictionary.
Resolution:	If you need the database item in a custom report, manually add it to the R3V5 Dictionary.
Message:	`Cannot migrate R2 dictionary item <`*item name*`> to R3 dictionary item.`
Cause:	The R2 item `item name` did not have a map to an R3V5 Dictionary item. One of the following conditions cause this message to occur: 1. No mapping exists. 2. The item is misspelled.
Resolution:	1. Check Appendix B for the list of R2 items that are not mapped to R3V5. If the R2 item is not mapped, you need to replace the R2 item with a similar R3V5 item. 2. If the item is misspelled, you can correct the spelling and then manually add it the R3V5 system.
Message:	`Changed name of report to TMP`*n*`. Make adjustments as necessary.`
Cause:	A custom report already existing in the R3V5 system has the same name as an R2 custom report to be migrated. The R2 custom report was migrated to the R3V5 system under the name TMP*n*.
Resolution:	If you want to change the name of the TMP*n* report, use the R3V5 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:	`Constant <`*constant name*`,` *constant value*`>:` `already exists as an R3 constant.`

Cause:	The constant *constant name* already existed in the R3V5 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 R3V5 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:	`Custom Report:` *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 R3V5 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 R3V5 database items: **R2 ItemR3 Equivalent** ASSOCIATIONSPLIT, LOGID CALLPROFCHGSVCLEVELCHG, PERIODCHG EVENTMALICIOUS, ASSIST

Resolution:	Determine which R3V5 equivalent is appropriate for the report. Use the Screen Painter to edit the report and substitute the R3V5 equivalent for the R2 database item. The custom report was the one being migrated at the time of this message. For example, to change CALLPROFCHG to SVCLEVELCHG, select the "Field" option on the Screen Painter and change CALLPROFCHG to SVCLEVELCHG. In the Dictionary subsystem, change the name (synonym) to `slvl_chg` (this indicates that the Acceptable Service Level has changed). After changing the name, the report will display 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:	You need to use the editor to add the field to the migrated report.
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 R3V5 Dictionary database.
Resolution:	List the names (synonyms) in the R3V5 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 R3V5 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 R3V5 version of the report.
Resolution:	Use the R3V5 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 <`*member number*`> to group <`*group name*`>.`
Cause:	The migration program could not add group member `member number` to group `group name`.
Resolution:	Display the contents of the group in the R3V5 Dictionary subsystem, and add the member if necessary.
Message:	`Error in adding` *user login*
Cause:	When migrating R2 CMS user logins, the migration program could not add the login `user login`.
Resolution:	Use the CMS R3V5 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: 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 R3V5 report.
Resolution:	The R2 report is not migrated. You have to re-create the report in CMS R3V5.
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 R3V5.
Resolution:	The R2 report is not migrated. You have to re-create the report in CMS R3V5.
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 R3V5.
Resolution:	If you need the information from this report, re-create it in R3V5.
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 R3V5 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:	CMS R3V5 data collection must be stopped and then restarted to cause the R3V5 system to use R2 service level parameters. You stop and start data collection in the CMS R3V5 System Setup: Data Collection window.
Message:	`Fatal errors during custom report compilation (`*file*`, `*line*`)`
Cause:	R2 CMS custom report *custom report name* had compiler errors in the R2 system, so it was not migrated to CMS R3V5.
Resolution:	Services may further investigate the problem given the *file*, *line* information.
Message:	`Full disk: call services to regain file system space.`
Cause:	The migration of R2 CMS data in conjunction with the R3V5 system collecting data, caused the disk space to fill up.
Resolution:	Call services immediately to resolve this problem.
Message:	`Insufficient number of free blocks (`*number of blocks*`) in `*CMS file system*` for temporary database tables.`
Cause:	The file system does not contain enough free blocks for CMS R3V5 to create the temporary tables needed for the migration.
Resolution:	Call services to resolve this situation.
Message:	`Invalid user <`*logname*`>. Permissions not migrated.`

Cause:	The CMS R3V5 system found permission information for a user that was deleted, so the permissions were not migrated. This message lets you know that this condition happened.
Resolution:	None needed.
Message:	`Logid in conflict with R3 CMS:` *user* (*user login*)
Cause:	When migrating the R2 CMS user logins, the program found that `user login` already existed in CMS R3V5.
Resolution:	All R2 permissions for `user login` were migrated to R3V5 except feature access permissions and split/skill access permissions. You may want to use the CMS R3V5 System Setup: User Data subsystem to verify that the R3V5 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 R3V5 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 R3V5 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 R3V5 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 R3V5 Dictionary subsystem if necessary.
Message:	`Multiple repeat statements on different rows in this report. Can't swap.`
Cause:	CMS R3V5 does not allow a vertically-repeated field to appear above another repeated field.

Resolution:	Use the R3V5 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:	`Owner (`*user ID*`) not migrated to R3 CMS,` `''cms'' will be owner of this report.`
Cause:	The R2 *user ID* was not migrated to the R3V5 system. This user owned the custom report that was being migrated at the time of this error message. Since the user was not on the R3V5 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 R3V5 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 r2dbitems.`
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:	`Problem removing table. Call services to` `drop r2loginid.`
Cause:	An internal temporary *INFORMIX* 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:	`Problem removing table. Call services to` `drop r2menuperms.`
Cause:	An internal temporary *INFORMIX* 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:	`Problem removing table. Call services to drop r2synonyms.`
Cause:	An internal temporary *INFORMIX* table was not removed when the migration finished.
Resolution:	This condition causes no CMS problems. However, you should contact services to remove the table to gain additional disk space.
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 R3V5; that is, WORKMODE and DIRECTION. The migration program maps ASTATE only to WORKMODE.
Resolution:	Use the R3V5 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 R3V5 database items>.`

Cause:	The following R2 database items map to more than one R3V5 database item: R2 ItemR3 Equivalent ASSOCIATIONSPLIT, LOGID CALLPROFCHGSVCLEVELCHG, PERIODCHG EVENT MALICIOUS, ASSIST NONACDCONNECTCALLS, OTHERCALLS RINGABANDONABNCALLS, ABNRINGCALLS RINGABNTIMEABNTIME, ABNRINGTIME
Resolution:	Determine which equivalent R3V5 database item is appropriate for the calculation. Then, in the Calculations window of the Dictionary subsystem, substitute the equivalent R3V5 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 upper case characters.
Resolution:	None. The login ID is automatically converted to all lower case characters.
Message:	`R2 standard calculation <`*calculation name*`> is` `already in R3V5 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 R3V5 calculations. Because they may be used in custom reports, these standard R2 calculations are migrated to the R3V5 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 R3V5 formulas. If the R3V5 formula is appropriate, no action needs to be taken. If you need to use the R2 formula, you can change the R3V5 calculation to contain the R2 formula. However, changing the R3V5 calculation to contain the R3V5 formula will affect R3V5 standard reports.

Message:	`Row Search Id` *row search number* `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 of nonaggregate*`). 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 R3V5 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 R3V5 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` *row search number*`: where clause contains too many characters,` *length*`, maximum is 468.`
Cause:	When the criteria for row search ID `row search number` was migrated to R3V5, 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" or "or" clauses or both.
Message:	`STARTTIME column too small:` *number of columns* `row=`*row number*`, col=`*column number*
Cause:	The R3V5 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 R3V5 Custom Reports: Screen Painter to provide additional space.
Message:	`Synonym <`*synonym name*`> already exists.`

Cause:	The synonym *synonym name* already existed in the R3V5 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 R3V5 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 R3V5 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 R3V5 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 R3V5 but does not exist as a login on the *UNIX* system.
Resolution:	Users will be unable to log into *CentreVu* CMS R3V5 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 R3V5. 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 R3V5 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 R3V5.
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 R3V5. 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:	`This report goes beyond the maximum number of rows (25).`
Cause:	This is a quad report which is not allowed in CMS R3V5. Only the first quadrant is migrated.
Resolution:	To regain the other quadrants, you must create a new R3V5 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 R3V5 report.

Resolution:	Edit the custom report via the R3V5 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 R3V5 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 R3V5 Dictionary database when this migration was done.
Resolution:	Modify the R2 VDN synonym name, and manually add it to the R3V5 Dictionary subsystem if necessary.

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 R3V5.
Resolution:	Before trying to run the custom report, review and edit it to ensure accuracy.

Appendix A

Fixing Migrated R2 Custom Reports 1

Overview

Not all Release 2 (R2) custom reports work after you migrate them to the *CentreVu™* Call Management System Release 3 Version 5 (CMS R3V5). In addition, migrated R2 custom reports run about 60 percent more slowly than R3V5 reports and may look different than the R2 versions. This appendix describes some of the steps you can do to get the migrated R2 custom reports working in R3V5.

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* (585-215-802) 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 R3V5 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. For instance, R2 Daily reports 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" clause(s) that use that input field's variable. If you change an input field to accept a range, you must ensure that the "where" clause(s) 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 R3V5 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 R3V5 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 R3V5 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 R3V5 report. Unlike R2 CMS, R3V5 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 R3V5, 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 R3V5 equivalent database items and calculations for R2 database items. The R3V5 equivalents will appear in the migrated custom reports.

Administrable Service Level Increments — For R3V5 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 R3V5 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

    1xxxxxxxxxxxxxxxxx 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 R3V5 stores data in intrahour, daily, weekly, and monthly tables. The weekly and monthly tables are used in *CentreVu* CMS R3V5 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 R3V5, 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 R3V5. 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.

Appendix B

Data Migration Tables

Data Migration Tables 1

Overview

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 5 (R3V5) system. The information is presented as follows:

- R3-to-R3V5 migration tables
- R2-to-R3V5 migration tables
    - Custom Report References to Database Items
    - Historical Database Item Mapping
    - Calculation Migration.

R3-to-R3V5 Migration Tables

Table B-1: R3-to-R3V5 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	

Table B-1: R3-to-R3V5 Migration Tables (Contd)

Table Name	Application	Description	System Admin	ACD Admin	Historical
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	
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

Table B-1: R3-to-R3V5 Migration Tables (Contd)

Table Name	Application	Description	System Admin	ACD Admin	Historical
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

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-R3V5 Migration Tables

Custom Report References to Database Items

The following table lists the R3V5 equivalent database items and calculations for R2 database items (see Table B-2). 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 R3V5 database. In these cases, you must change the custom report.

Table B-2: R2-to-R3V5 — 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	

Table B-2: R2-to-R3V5 — Custom Report References to Database Items (Contd)

R2 Item	R3 Equivalent	Note
ASSOCIATION	SPLIT, LOGID or none	Report reference
ASTATE	WORKMODE	Report that user will need to add DIRECTION
ATAGENT	ATAGENT	
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

Table B-2: R2-to-R3V5 — Custom Report References to Database Items (Contd)

R2 Item	R3 Equivalent	Note
DNEXT	VDN	
DNS	NUMVDNS	
DNSTARTDATE	–	Report reference
DNSTARTTIME	–	Report reference
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	

Table B-2: R2-to-R3V5 — Custom Report References to Database Items (Contd)

R2 Item	R3 Equivalent	Note
MAXOLDCW	MAXOCWTIME	
MBUSYCOUNT	MBUSY	
MBUSYTIME	MBUSYTIME	
MODULE	–	Report reference
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

**Table B-2: R2-to-R3V5 — Custom Report References to Database
Items (Contd)**

R2 Item	R3 Equivalent	Note
STROKE1-9	EVENT1-9	
SVCLVL	SERVICELEVEL	
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-3 through Table B-8) show how the R2 historical data values are migrated to the R3V5 database. If the R3V5 Equivalent column contains a dash, the R2 value is not migrated to *CentreVu* CMS R3V5.

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 R3V5 item INTRVL, since R2 CMS stores data in 30-minute intervals.

In some cases, the meanings of the R2 and R3V5 items are **not** the same. The migration program attempts to migrate the data values to that R3V5 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-3: 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-3: Agent Data (Contd)

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-4: 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-4: Split Data (Contd)

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-5: 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-5: Trunk Group Data (Contd)

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-6: 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-7: 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-8: 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	

Table B-8: VDN Data (Contd)

R2 Item	R3 Equivalent	Notes
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-9).

Table B-9: Calculation Migration

R2 Calculation	R3V4 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	

Table B-9: Calculation Migration (Contd)

R2 Calculation	R3V4 Equivalent	Notes
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
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

Table B-9: Calculation Migration (Contd)

R2 Calculation	R3V4 Equivalent	Notes
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	
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	

Index

V

W

X