

Lucent Technologies
Bell Labs Innovations



***CentreVu*[®] Call Management System**
Release 3 Version 5
Upgrades and Migration

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Issue 4
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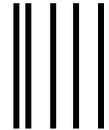
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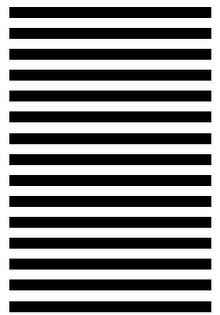
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CentreVu[®] Call Management System

Release 3 Version 5

Upgrades and Migration

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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, or R3V2 CMS, R3V4 *CentreVu* CMS, or R3V5 *CentreVu* CMS 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. Advanced features of R3V5 are not available on those platforms.

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

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†*SPARCserver* is a registered trademark of SPARC International, Inc.

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

Organization of Document

This document is organized as follows:

Table P-1: Document Organization

Chapter 1	<i>Introduction</i>
Chapter 2	<i>Migrating to R3V5</i> contains instructions for upgrading an <i>INTEL</i> or <i>Sun SPARCserver</i> platform from an R3V2 or R3V4 version of CMS to R3V5 CMS.
Chapter 3	<i>Migrating to R3V5 with Solstice DiskSuite</i> [*] contains instructions for upgrading to R3V5 CMS from any R3 version of CMS <u>without</u> <i>Solstice DiskSuite</i> software to R3V5 CMS <u>with</u> <i>Solstice DiskSuite</i> software.
Chapter 4	<i>Upgrading the R3V5 Base Load</i> contains instructions for upgrading from one release of R3V5 to another.
Chapter 5	<i>Migrating Data to a New Sun SPARCserver Computer</i> presents the procedure for migrating data from an <i>INTEL</i> or <i>Sun SPARCserver</i> platform to a <i>Sun SPARCserver</i> computer newly purchased from Lucent Technologies.
Chapter 6	<i>Migrating Data from G2.2 to G2.2/EAS</i> presents the procedure for migrating data from an <i>INTEL</i> or <i>Sun SPARCserver</i> platform running a Generic 2.2 switch without Extended Agent Selection (EAS) to the same platform running a G2.2 <u>with</u> EAS.
Chapter 7	<i>Migrating Data from a 3B2 to a Sun SPARCserver Platform</i> contains instructions for migrating data from R2 CMS on a 3B2 to R3V5 CMS on a <i>Sun SPARCserver</i> platform.
Chapter 8	<i>Patches and Updates</i> presents the procedures for patching a <i>Sun SPARCserver</i> platform and the procedures for updating an <i>INTEL</i> platform.
Chapter 9	<i>Troubleshooting</i> discusses how to troubleshoot upgrades and migrations, and explains migration error messages.
Appendix A	<i>System and CMS Functions</i> is a reference to performing system and CMS functions required during upgrade and migration procedures.
Appendix B	<i>Data Migration Tables</i> shows how R2 and R3 CMS data are migrated to the R3V5 system.
Appendix C	<i>Fixing Migrated R2 Custom Reports</i> describes how to get migrated R2 custom reports to work in R3V5.

^{*}*Solstice DiskSuite* is a trademark of Sun Microsystems, Inc.

Conventions

Table P-2 is an example of the text style conventions used in this book..

Table P-2: Style Conventions

Use	When
Constant Width	<ul style="list-style-type: none"> In general, anything seen on the screen/window is in Constant Width including field entry items. For example: In the Calculation name: field, enter <code>ACDTIME/ACDCALLS</code>. 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	<ul style="list-style-type: none"> References to other documents are in italics. For example: See the <i>CentreVu™ Call Management System R3V5 Custom Reports (585-215-822)</i> document for more information. References to file names and directories are in italics. For example, <i>/cms, root</i>. Trademarks are in italics.
Quotes	<p>Chapter and section cross-references are in plain text; titles are quoted:</p> <ul style="list-style-type: none"> See Chapter 3, “User Interface,” for more information. See the “Removing a Software Package” section in this chapter.
Initial Caps	<p>References to windows and subsystems are capitalized.</p> <ul style="list-style-type: none"> In the ACD Administration: Activate Agent Trace window... Set access permissions for CMS users from the User Permissions subsystem.
Custom symbols	<ul style="list-style-type: none"> Custom symbols are used to represent screen-labeled keys (SLKs), Enter keys, and Shift keys. For example: <code>Enter</code>, <code>Esc</code>, <code>Shift</code>, <code>J</code>, and others. Notes are separated from other text and marked by a note icon:  NOTE:

Trademarks and Registered Trademarks

Trademarks (™) and Registered Trademarks (®) used in this document are on the back of the title page. This document follows industry standards when referring to trademarks and service marks, as follows:

- Marking the first occurrence of a Lucent trademark or registered trademark in each chapter and appendix.
- Footnoting the first occurrence of each non-Lucent trademark or registered trademark in each chapter and appendix.
- Making all other occurrences of Lucent and non-Lucent registered trademarks or trademarks typographically distinctive, by using *italics*.
- 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* (585-215-820)
- *CentreVu™ Call Management System Release 3 Version 5 Reports* (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 4 Upgrades and Migration* (585-215-806)
- *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 distributor or customer representative.

Chapter 1

Introduction

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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 (bug-fix upgrades only)
 - 6386/33S (bug-fix upgrades only)
 - 6386/25S (bug-fix upgrades only)
- Perform CMS data migrations.

Upgrades, Updates, and Data Migration

Upgrading CMS involves, in general, three distinct processes: *upgrades*, *updates and patches*, and *data migrations*.

An *upgrade* involves installing new CMS software so you can move 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 the *r3v5ab.b* load.

An *update* or *patch* modifies existing CMS software to provide additional functionality or fix a problem. The two processes are platform specific: an *INTEL*‡ platform is updated, a *Sun* platform is patched. Updating and patching involve downloading new files from a cartridge tape or compact disc and installing the new files.

A *data migration* refers to the process of moving CMS data. Migration is a procedure in which data collected by an older release are processed by the new software so they fit with the new database organization. Data migration is necessary when you are moving to a new platform, as from an *INTEL* machine to a *Sun* machine, or when the database organization changes between releases or loads.

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

†SPARCserver is a trademark of SPARC International, Inc.

‡INTEL is a registered trademark of Intel Corporation

Upgrading to R3V5

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 or a *Sun SPARCserver* computer (5, 10, or 20). If your platform is not one of those, and you do not upgrade your hardware or you receive R3V5 as a *bug-fix upgrade*, you may install R3V5 on your existing machine. It will not support the Definity® ECS R5 (G3V5) switch, however, and will not support any increase in the number of split/skill members your system can accommodate.

Supported Switch Release Upgrades

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, G3V5 (ECS R5) ^b
DEFINITY System G1.1 ^a	G1.1 ^a , G3i, G3r, G3V2, G3V3, G3V4, G3V5 (ECS R5) ^b
DEFINITY System G2.1 ^a	R2V4 ^a , G2.1 ^a , G2.2, G2.2/EAS, G3r, G3V2, G3V3, G3V4, G3V5 (ECS R5) ^b
DEFINITY System G2.2	G2.2, G2.2/EAS, G3r, G3V2, G3V3, G3V4, G3V5 (ECS R5) ^b
DEFINITY System G2.2/EAS ^c	G2.2/EAS
DEFINITY System G3i	G3i, G3r, G3V2, G3V3, G3V4, G3V5 (ECS R5) ^b
DEFINITY System G3r	G3r, G3V2, G3V3, G3V4, G3V5 (ECS R5) ^b
DEFINITY System G3V2	G3V2, G3V3, G3V4, G3V5 (ECS R5) ^b
DEFINITY System G3V3	G3V3, G3V4, G3V5 (ECS R5) ^b
DEFINITY System G3V4	G3V4, G3V5 (ECS R5) ^b
DEFINITY System ECS R5(G3V5) ^b	G3V5 (ECS R5) ^b

^aSupported only by the bug-fix upgrade version of R3V5

^bSupported only by the purchased version of R3V5 CMS

^cMigration from G2.2/EAS to G3V2, G3V3, G3V4, or G3V5 (ECS R5) 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 666 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

CentreVu CMS R3V5 supports migration from these CMS software loads:

- 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 R3V4 before you will be able to upgrade to R3V5.

Supported Disk Drive Configurations

In general, R3V5 CMS supports any disk drive configuration your hardware platform supports. CMS on a *Sun* system with the *Solstice DiskSuite*^{*} package, however, is restricted to the following 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
- Two internal disk drives, 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.

^{*}Solstice DiskSuite is a trademark of Sun Microsystems, Inc.

Time Needed to Upgrade

Because upgrading to R3V5 from an earlier release always involves a data migration, the process may take considerable time, depending upon how much data you need to migrate. You should plan accordingly.

On an *INTEL* platform, it generally takes about 4 hours to get R3V5 up and running. That does not count preupgrade functions, which are normally done a week or so before beginning the actual upgrade.

On a *Sun* platform, the usual migration time is 6 to 8 hours. If you are installing *Solstice DiskSuite* software, it may take considerably longer, depending on the number of disk drives attached to your system.

⇒ NOTE:

Solstice DiskSuite is a disk management software package that allows CMS database files to grow quite large by spanning multiple disks. For most users, the package is optional. It is required only by those who must administer more than 5200 split/skill members.

Migrating Data

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 includes the following:

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

Not everything is migrated, however. User passwords, for example, are not migrated. When users log in on the upgraded system, they are prompted for passwords just as they were the first time they logged in.

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—including any existing R3.0 user IDs with uppercase letters—must be in lowercase.
 - 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 reenter them.
- Menu additions
 - The migration program discards nonunique menu additions (based on the menu name and CMS user ID). The program

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reports discarded additions in the customer migration log.

- Customized executables referenced by menu additions are not migrated. The customer is responsible for saving any such executables before performing the upgrade, and reinstalling them afterward.
- Custom data items and custom database tables are not migrated. The customer is responsible for recording, before the migration, the details of any custom items to be saved, and for recreating the items in *INFORMIX** and in CMS afterward.

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

Available Upgrade Procedures

Table 1-2, below, presents possible scenarios for upgrading to R3V5, and indicates where you will find the procedure you need to follow. .

Table 1-2: Upgrade Scenarios and References

Platform		CMS Version		Reference
"From"	"To"	"From"	"To"	
3B2	Sun	R2	R3V5	Chapter 7: <i>Migrating Data from a 3B2 to a Sun SPARCserver Platform</i> Appendix C: <i>Fixing Migrated R2 Custom Reports</i>
INTEL	same INTEL	R3V2	R3V5	Chapter 2: <i>Migrating to R3V5</i>
		R3V4	R3V5	Chapter 2: <i>Migrating to R3V5</i>
		r3v5xx.x	r3v5yy.y	Chapter 4: <i>Upgrading the R3V5 Base Load</i> , page 4-14
		R3V2 or R3V4 with G2.2 switch	R3V5 with G2.2 EAS switch	Chapter 6: <i>Migrating G2.2 to G2.2/EAS</i>
	update	n/a	Chapter 8: <i>Patches and Updates</i> , page 8-6	
	Sun	R3V2	R3V5	Chapter 5: <i>Migrating Data to a New Sun SPARCserver Computer</i>
Sun	same Sun	R3V2	R3V5	Chapter 2: <i>Migrating to R3V5</i>
		R3V4	R3V5	Chapter 2: <i>Migrating to R3V5</i>
		R3V2	R3V5 w/ Solstice DiskSuite	Chapter 3: <i>Migrating to R3V5 with Solstice DiskSuite</i>
		R3V4	R3V5	Chapter 3: <i>Migrating to R3V5 with Solstice DiskSuite</i>
	R3V5	R3V5	Chapter 3: <i>Migrating to R3V5 with Solstice DiskSuite</i>	
		r3v5xx.x	r3v5yy.y	Chapter 4: <i>Upgrading the R3V5 Base Load</i>
		R3V2 or R3V4 with G2.2 switch	R3V5 with G2.2 EAS switch	Chapter 6: <i>Migrating Data from G2.2 to G2.2/EAS</i>
		patch	n/a	Chapter 8: <i>Patches and Updates</i> , page 8-1
	newly purchased Sun	R3V2	R3V5	Chapter 5: <i>Migrating Data to a New Sun SPARCserver Computer</i>
		R3V4	R3V5	Chapter 5: <i>Migrating Data to a New Sun SPARCserver Computer</i>
		R3V5	R3V5	Chapter 5: <i>Migrating Data to a New Sun SPARCserver Computer</i>

Chapter 2

Migrating to R3V5

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General Information

This chapter describes how to upgrade the CMS software. The procedure is the basic R3V5 upgrade and migration procedure: it applies when you are upgrading to R3V5 on either an *INTEL*^{*} or a *Sun*[†] *SPARCserver*[‡] platform. It does not apply if you are installing *Solstice DiskSuite*[§] disk management software (see Chapter 3 for that procedure). See “Available Upgrade Procedures” on page 1-7 for guidance in choosing other procedures in this manual.

This chapter allows an installer with a reasonable knowledge of *UNIX*[¶] to upgrade to R3V5 with minimal referral to sources outside this manual. If your experience with *UNIX* or CMS is limited, however, you may need to refer occasionally to Appendix A; it gives more detailed characterizations of operating system and CMS processes you may have to perform during the upgrade.

*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. licensed exclusively to Sun Microsystems, Inc.

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

¶UNIX is a registered trademark of Novell, Inc. in the United States and other countries, licensed exclusively through X/Open Corporation

Table 2-1: Checklist for Upgrading to R3V5

Step	For	Action
1	All upgrades	Run the Preupgrade tool A. Install the preupgrade tool B. Run the preupgrade tool C. Remove the preupgrade tool
2	<i>Sun</i> upgrade only	Verify non-CMS free space
3	All upgrades Optional	Check free space allocations
4	All upgrades	Do a CMSADM backup
5	All upgrades	Do a full maintenance backup
6	All upgrades	Do an incremental backup
7	<i>Sun</i> upgrade only	Install R3V5 CMS A. Install <i>Solaris</i> patches B. Remove CMS patches C. Remove CMS D. Install R3V5
8	<i>INTEL</i> upgrade only	Install R3V5 CMS A. Remove CMS updates B. Install R3V5
9	All upgrades Optional	Allocate free space
10	<i>Sun</i> upgrade only	Install CMS patches
11	All upgrades	Do a CMSADM backup
12	All upgrades	Migrate system administration data
13	All upgrades	Migrate ACD administration data
14	All upgrades	Migrate full historical data
15	All upgrades	Migrate incremental historical data
16	All upgrades	Do a full maintenance backup
17	All upgrades	Do a CMSADM backup

*Solaris is a trademark of Sun Microsystems, Inc.

1: Run the Preupgrade Tool

The preupgrade tool checks to make certain you have enough disk space for the upgrade, and saves setup information for your current CMS version. You want to be certain the data is current. Consequently, **do not make any administrative changes to your CMS setup once this step is completed. If you want to make any changes in the CMS setup, either make them now, before you run the preupgrade tool, or wait until you have upgraded to the new version.**

If you encounter problems with this step, you might not be able to proceed with the upgrade. The most likely problem is that you do not have enough disk space to migrate your data to R3V5. If you have that problem, telephone the Lucent National Customer Care Center at 1-800-242-2121 or contact your Lucent representative or distributor.

1A: Install the Preupgrade Tool

The table contains instructions for both *INTEL* and *Sun* platforms; instructions for *INTEL* platforms are shaded.

Table 2-2: Procedure to Install the Preupgrade Tool

Steps on a <i>Sun</i> Platform	Steps on an <i>INTEL</i> Platform
1. Insert the CMS compact disc into the CD-ROM drive and log in as <i>root</i> . 2. Enter the following command: <pre>pkgadd -d cdrom/cdrom0</pre> A menu of installation options displays. 3. Enter the number of the CMS Supplied upgrade check tool option. You are asked to confirm. 4. Enter: <i>y</i> The installation menu redisplay. 5. Enter: <i>q</i>	1. Insert the cartridge tape into the tape drive and log in as <i>root</i> . 2. Enter the following command: <pre>installpkg</pre> You are asked to select the installation medium and prepare the tape. Press <i>C</i> to select the cartridge tape; press <i>Enter</i> in response to all other prompts. A menu of installation options displays. 3. Enter the number of the CMS Supplied upgrade check tool option. 4. Press the <i>ESC</i> key. You are asked to confirm. 5. Press <i>Enter</i> . You are again asked to confirm. 6. Press <i>Enter</i> . When the installation completes, the system displays a message to that effect and returns the system prompt.

The preupgrade tool may fail with an error message similar to this:

```
** Error **
** preupgrd cannot be installed.

The R3V5 Setup tool will run only on R3V2 or R3V4 CMS
systems. For assistance with upgrades to R3V5 from other
releases, please contact the Lucent Technologies Service
organization. Once the problem is corrected, try
installing this package again.

No changes were made to the system.
```

That means your version of CMS is prior to R3V2: the preupgrade tool will not run on your system. Contact the Lucent Technologies National Customer Care Center for help installing CMS R3V4. Once R3V4 is installed, restart the upgrade procedure.

1B: Run the Preupgrade Tool

The procedure in the table below is for both *Sun* and *INTEL* platforms.

Table 2-3: Procedure to Run the Preupgrade Tool

Action	Result
Log in as the <i>root</i> user.	#
Enter the following command: # preupgrade	Preupgrade will make disk space usage predictions ... Do you wish to continue?
Enter: y	The system continues. It takes 2 or 3 minutes, but if all goes well and there are no errors or problems, the program eventually reports success and redisplay the system prompt: Computing space requirements and file system availability. You have adequate disk storage capacity to successfully continue with the upgrade. #

If you should receive any message indicating a problem, see “Problems Running the Preupgrade Tool” on page 9-13 of this publication. Once the problem is fixed, re-execute this step.

Do not continue until the Preupgrade tool runs successfully.

1C: Remove the Preupgrade Tool

After the preupgrade tool has run successfully, you must remove it. If the preupgrade package is not removed, you will not be able to install CMS.

To remove the preupgrade tool, do the procedure in the following table (*INTEL* procedure is shaded):

Table 2-4: Procedure to Remove the Preupgrade Tool

Sun Action	INTEL Action
1. Enter this command: <pre>pkgrm preupgrd</pre> The system lists the package and asks for verification.	1. Enter this command: <pre>removepkg</pre> The system displays a menu of installed packages.
2. Answer <code>y</code> . The system again asks for verification.	2. Enter the number of the <code>CMS Supplied upgrade check tool</code> .
3. Answer <code>y</code> to remove the package. When the tool has been removed, the message <code>Removal was successful</code> appears.	3. Press <code>ESC</code> to begin. The system asks you to verify the removal.
	4. Press <code>Enter</code> to remove the package. When the tool has been removed, the message <code>Removal was successful</code> appears.

2: Verify Non-CMS Free Space (*Sun* Only)

FOR SUN PLATFORMS ONLY

This step is for *Sun* platforms only. Skip this step if you are upgrading an *INTEL* platform.

Before you begin the upgrade, you need to make certain you have enough free space available to complete it. Follow these steps:

1. Make sure you are logged in as the root user.
2. Display the available space in */* (*root*), */var*, and */dump* by entering the following command:

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

The system responds in a format similar to this:

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

3. Compare the "xxxxx" figures to these "Blocks Required" values:

Table 2-5: Non-CMS Space Requirements for a *Sun* Upgrade

File System	Blocks Required
<i>/</i> (<i>root</i>)	8,000
<i>/var</i>	41,000
<i>/dump</i>	100,000

If the `df` command shows fewer blocks than the corresponding table figure, discontinue the upgrade immediately. Telephone the National Customer Care Center at 1-800-242-2121, or contact your Lucent distributor or customer representative, for help with your upgrade.

WARNING:

The "Blocks Required" figures in the table above were accurate at publication, but the requirements may have changed since then. Be sure to check the CMS readme file on the compact disc to see whether the space requirements have changed. For Instructions on accessing the readme file, see "Viewing the CMS_README File" on page A-58.

3: Check Free Space Allocations (Optional)

Optional step. Perform only if you want to duplicate your current free space allocations.

CMS has its own way of allocating free space. If you have overridden those automatic free space allocations, and you wish to re-create those overrides in R3V5, you must record the allocations so you will have a point of reference.

You should be aware, however, that you may not, in fact, be able to exactly reproduce the setup you have now. In R3V5, the sizes of some of the tables have greatly increased, so you might not be able to allocate free space in the same way you do now.

To record free space allocations follow these steps:

1. Log in to CMS.
2. From the CMS main menu, select `System Setup`.
3. Select `Free Space Allocation`. The system displays the free space allocation data window.
4. Print the window and save the printout.

 **NOTE:**

If the number in `Blocks Available` is in parenthesis or preceded by a minus sign, it means more blocks are required than are available.

See also “Checking the Free Space Allocation” on page A-5, and “Printing a CMS Window” on page A-4.

4: Do a CMSADM Backup

The CMSADM backup provides a backup of the current system files. If the migration should go wrong, you can use this backup to recreate your current CMS system. “Doing a CMSADM Backup on an INTEL System” on page A-17, and “Doing a CMSADM Backup on a Solaris System” on page A-20, contain detailed, step-by-step procedures for performing CMSADM backups. The general procedure is:

1. Make sure you are logged in as the root user, and that the system is in a multi-user state.
2. On a *Sun* system, empty the CD-ROM drive by doing the following steps:
 - a. Enter the command: `eject cdrom`
 - b. Remove the CD
 - c. Close the drive
3. Access the Administration menu by entering a `cmsadm` command.
4. Select the `backup` option.
5. Feed tapes to the system until it stops asking for them.

5: Do a Full Maintenance Backup

Ideally, you should do this step the night before the scheduled migration.

A full maintenance backup provides migration data for the new CMS version. Ideally, you should do the full maintenance backup the night before the scheduled migration. That helps ensure the latest dictionary changes get migrated to the new release. (Dictionary changes made *after* the full maintenance backup will not be retained, and will not be migrated to the new CMS release.)

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

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

Field	Value to Enter or Select
Device name	tape drive device name
Verify tape...?	y
ACD(s) to back up	All ACDs
Data to back up	System Administration data ACD-specific administration data Historical data - Full Non-CMS data (if needed; see the description of this field on page A-26)

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

See also "Back Up Data Window" on page A-24.

6: Do an Incremental Backup

You may skip this step if you have just completed a full maintenance backup.

You may skip this step if you have just completed a full maintenance backup.

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

The incremental backup begins the upgrade proper; consequently, this backup needs to be done immediately before you begin preparing the system for the upgrade and migration.

An incremental backup goes like this

1. From 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	The tape device name.
Verify tape...?	y
ACD(s) to back up	All ACDs
Data to back up	System Administration data ACD-specific administration data Historical data - Incremental

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

See also "Back Up Data Window" on page A-24.

7: Install R3V5 CMS on a Sun Platform (Sun Only)

FOR SUN PLATFORMS ONLY

This step is for *Sun* platforms only. Skip this step if you are upgrading an *INTEL* platform.

The steps involved in installing CMS on a *Sun* system are as follows:

- A. Install *Solaris* patches
- B. Remove the old CMS patches
- C. Remove the current CMS version
- D. Install R3V5 CMS

7A: Install Solaris Patches

Install the *Solaris* patches by performing the steps in Table 2-6

Table 2-6: Procedure to Install Solaris Patches

Step	Action	Result
1.	Log in as the <i>root</i> user.	#
2.	Load the CMS compact disc into your CD-ROM drive and enter this command: <code>pkgadd -d /cdrom/cdrom0</code>	... (<i>installation menu</i>) ... Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:
3.	Enter the number corresponding to the <i>spatches</i> package. Do not enter all. The <i>spatches</i> package must be installed before the CMS software package.	Processing package instance <spatches> from </dev/rmt/0> Do you want to continue with the installation of <spatches> [y,n,?] y
4.	Enter: y	... (<i>installation menu</i>) ... Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:
5.	Enter: q	#
6.	Turn off CMS (via the <code>run_cms</code> option of <code>cmssvc</code> or <code>cmsadm</code>). See "Turning CMS On and Off" on page A-11.	#
7.	Enter the following command: <code>/tmp/patches/install_patches</code>	A message displays indicating you need 20 MB of space in <code>/var</code> to install the Jumbo Kernel patch.

Table 2-6: Procedure to Install *Solaris* Patches (Contd)

Step	Action	Result
8.	Enter <code>y</code> (or wait 60 seconds).	<p>The installation continues. Depending upon how big the patches are and how many are being installed, the installation may take over an hour. Eventually, however, you should receive an “installation finished” message:</p> <pre>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 #</pre> <p>If you receive any kind of “failure” message, contact the Lucent Technologies National Customer Care Center (1.800.242.2121), or your Lucent Technologies distributor or customer representative.</p>
9.	<p>Unload the CD-ROM drive by doing the following steps:</p> <ol style="list-style-type: none"> Enter the following command: <code>eject cdrom</code> Remove the CD Close the drive 	#
10.	<p>Reboot your system using the following command:</p> <pre>shutdown -y -i6 -g0</pre> <p>When the system prompt returns to your screen, log in as the <i>root</i> user.</p>	#

7B: Remove CMS Patches

Remove all existing CMS patches with the steps in Table 2-7.

Table 2-7: Procedure to Remove CMS Patches

Step	Action	Result
1.	Enter the command: <code>cmssvc</code>	<pre>... (CMS Services menu) ... Enter choice(1-x) or q to quit:</pre>
2.	Enter the number corresponding to the <code>back_all</code> option. If you do not have a <code>back_all</code> option, enter <code>q</code> (to quit) and skip the rest of this procedure.	<p>If the system responds with a No CMS patches message, there are no patches to remove. In that case, skip the rest of this procedure.</p> <p>If there are patches installed, the system responds as follows:</p> <p>The following patches are installed on this machine:</p> <pre>. . .</pre> <p>Are you sure you wish to remove all these patches? (y n)</p>
3.	Enter: <code>y</code>	<p>For each patch removed, the system displays messages similar to the following:</p> <pre>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. When all patches have been removed, the system prompt returns.</pre>

7C: Remove the Current CMS Version

Do these steps to remove the current CMS base package:

Table 2-8: Procedure to Remove the CMS Package

Step	Action	Screen/Prompt
1.	Enter: <code>pkgrm cms</code>	The following package is currently installed: cms Call Management System (sparc) r3v4xx.x Do you want to remove this package?
2.	Enter: <code>y</code>	This package contain scripts which will be executed with superuser permission during the process of removing this package. Do you want to continue with the removal of this package [y,n,?,q]
3.	Enter: <code>y</code>	Do you want to preserve CMS data [y,n,?]
4.	If you are upgrading from R3V2 or R3V4, enter: <code>y</code>  WARNING: If you answer "n", the system treats V5 CMS as a new installation, and you will have to manually rerun CMS setup and authorizations.	CMS will be removed from this machine; the data will be preserved. Are you sure this is correct [y,n,?]
	If you are upgrading from R3V1 or earlier, enter: <code>n</code>	CMS will be removed from this machine; the data will not be preserved. Are you sure this is correct [y,n,?]
5.	Answer: <code>y</code>	Have you backed up the file systems [y,n,?]
6.	Answer: <code>y</code>	## Removing pathnames in class <ind> /usr/lib/cms/trmaps /usr/informix/etc/termcap /usr/bin/cmssvc . . . Removal of <cms> was successful. #

7D: Install R3V5 CMS

Follow the steps in Table 2-9 below to install CMS on a Sun platform.

Table 2-9: Procedure to Install R3V5 CMS on a Sun Platform

Step	Action	Result
1.	Load the CMS CD into the CD-ROM drive.	#
2.	Enter the following command: <pre>pkgadd -d cdrom/cdrom0</pre>	... (installation menu) ... Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:
3.	Enter the number of the CentreVu(TM) Call Management System option.	*-conflict with a file which does not belong to any package. Do you want to install these conflicting files [y,n,?,q]
4.	Answer: y	## Checking for setuid /setgid programs. . . Do you want to install these setuid/setgid files [y,n,?,q]
5.	Answer: y	. . Do you want to continue with the installation of <cms> [y,n,?,q]
6.	Answer: y	Creating Pcms user id 6 blocks Assigning a new password for Pcms New password: <i>The "Pcms password" has been added for implementation of Point-to-Point Protocol (PPP) capability at a later date.</i>
7.	Enter an appropriate password.	Have you backed up your file systems?
8.	Enter: y	Do you want to turn off CMS now? <i>This prompt occurs only if CMS is turned on.</i>
9.	Enter: y	... (installation menu) ... Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:

Table 2-9: Procedure to Install R3V5 CMS on a *Sun* Platform (Contd)

Step	Action	Result
10.	Enter: <code>q</code>	<p>#</p> <p>⇒ NOTE:</p> <p>If you made changes to your <i>cms</i> or <i>cmssvc</i> .profile file, the following message appears:</p> <p style="padding-left: 40px;">A manual merge may be necessary to restore custom entries. The original content was saved in <i>profile.save</i> prior to changes.</p> <p>In that case, the machine may reboot before returning the system prompt.</p>
11.	If you are instructed to run a shutdown, shut down the system using the command displayed with the message. When prompted, log in as the <i>root</i> user.	#
12.	Enter the following command: <code>pkgchk -n cms</code>	If the software installation was successful, the system prompt returns to the screen after a few seconds. The only indication of success is the absence of error messages.

8: Install R3V5 CMS on an *INTEL* Platform (*INTEL* Only)

FOR INTEL PLATFORMS ONLY

This step is for *INTEL* platforms only. Skip this step if you are upgrading a *Sun* platform.

Installing R3V5 CMS on an *INTEL* platform involves the following two substeps:

- A. Remove the current CMS update.
- B. Install R3V5 CMS.

8A: Remove the Current *INTEL* Update

To remove the current *INTEL* update, follow the steps in Table 2-10.

Table 2-10: Procedure to Remove an *INTEL* Update

Step	Action
1.	Turn off CMS. You can turn CMS off via the <code>run_cms</code> option of the <code>cmsadm</code> or <code>cmssvc</code> menu. For a detailed procedure, see “Turning CMS On and Off” on page A-11.
2.	Enter a <code>cmssvc</code> command. The system displays the CMS Services menu.
3.	Select the <code>upd_remove</code> option. The system responds with a list of files that will be changed due to the removal. When the system prompt reappears, the update has been removed and the CMS base load has been returned to its previous state.

8B: Install R3V5 CMS

To install R3V5 CMS, follow the steps in Table 2-11.

⇒ NOTE:

If the system tuneables have changed, you must do the procedure twice in order to preserve your data. In that case, an “installation failed” message displays (see Step 5 below). The installation did not actually fail, but the procedure must be restarted in order to preserve data.

Table 2-11: Procedure to Install R3V5 CMS on an *INTEL* Platform

Step	Action	Screen/Prompt
1.	Insert the cartridge tape into the tape drive and enter the following command. <code>installpkg</code>	The system displays a series of prompts to select the installation medium and prepare the tape.
2.	When you are prompted to select the cartridge tape medium, press C. Press Enter in response to all other prompts.	... (<i>installation menu</i>) ... Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:
3.	Enter the number of the CentreVu(TM) Call Management System option and press Enter. Press ESC to begin the installation.	Confirm ... Strike ENTER when ready or ESC to stop.
4.	Press Enter.	REMINDER! ... Strike ENTER when ready.
5.	Press Enter.	The software begins a series of checks. If an idbuild is not required, you are asked: Have you backed up your file systems? In that case, go to the next step (6). If system tuneables must be changed, however, you receive this message: An idbuild will be necessary for this installation. ***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. After the system reboots, rerun the "installpkg" command to install CMS. Please disregard the following "failed" message. Confirm The installation of Lucent Technologies CentreVu(TM) Call Management System (r3v5xx.x) failed. ... Strike ENTER when ready or ESC to stop. At this point, you may press either ESC or Enter (both produce the same result). After about 2 minutes, a message displays indicating that an automatic shutdown is being initiated, and again prompting you to strike either ENTER or ESC.

Table 2-11: Procedure to Install R3V5 CMS on an *INTEL* Platform (Contd)

Step	Action	Screen/Prompt
5 (cont'd)		<p>You may respond in either of two ways:</p> <ol style="list-style-type: none"> a. You may press Enter. That requires a manual reboot. Wait for the prompt <code>Reboot the system now</code> to appear, and then press the Reset button on the CMS processor. <p>⚠ WARNING:</p> <p>Do not press Reset until you see the <code>Reboot</code> message; otherwise, you may damage the file system.</p> <ol style="list-style-type: none"> b. Alternatively, you may press ESC. Then, when the <i>UNIX</i> system prompt returns, enter the following command: <pre style="margin-left: 40px;">shutdown -i6 -g0 -y</pre> <p>Now, return to Step 1 and restart this procedure.</p>
6.	Answer: <code>y</code>	<p>Do you want to turn off CMS now?</p> <p><i>This prompt occurs only if CMS is turned on.</i></p>
7.	Answer: <code>y</code>	<p>#</p> <p>⇒ NOTE:</p> <p>If you made changes to your <i>cms</i> or <i>cmssvc</i> .profile file, the following message appears:</p> <pre style="margin-left: 40px;">A manual merge may be necessary to restore custom entries. The original content was saved in profile.save prior to changes.</pre> <p>The machine reboots if needed before returning the system prompt.</p>

9: Allocate Free Space (Optional)

Optional step. Perform only if you want to duplicate your previous free space allocations.

Optional. If you are concerned about your free space allocations (see “3: Check Free Space Allocations (Optional)” on page 2-7), now is the time to change them. To do that, follow this procedure:

- a. Turn on CMS and log in to a CMS session.
- b. From the main menu, select `System Setup - Free Space Allocation`.
- c. Retrieve the printout you made earlier and use it as a point of reference to change the Free Space Allocation settings.
- d. Press Enter twice (the first accesses the action list; the second modifies the settings).
- e. Log out of CMS (`Logout` option of the main menu).
- f. Turn off CMS (via the `run_cms` option of `CMSADM` or `CMSSVC`).

10: Install CMS Patches (*Sun* Only)

FOR SUN PLATFORMS ONLY

This step is for *Sun* platforms only. Skip this step if you are upgrading an *INTEL* platform.

Table 2-12: Procedure to Install CMS Patches

Step	Action	Result
1.	Enter the <code>cmssvc</code> command.	... (<i>CMS Services menu</i>) ... Enter choice(1-x) or q to quit:
2.	Enter the number of the <code>load_all</code> option.	If there are no patches to be installed, the system displays a message to that effect and returns the system prompt. Otherwise, the following prompt displays: The following patches are available for installation: 1. <code>cmspl-s</code> . . . Are you sure you want to install all these patches? (y n)
3.	Enter: <code>y</code>	The system installs patches. As the installation proceeds, the system keeps you informed of its progress: Generating list of files to be patched... . . . Patch installation completed. See <code>/cms/patch/cmspx-s/log</code> for details. When all patches are installed, the system prompt returns.

11: Do a CMSADM Backup

The CMSADM backup provides a backup of the R3V5 system files. If the migration should go wrong, you can use this backup to recreate a clean R3V5 CMS system.

“Doing a CMSADM Backup on an INTEL System” on page A-17, and “Doing a CMSADM Backup on a Solaris System” on page A-20, contain detailed, step-by-step procedures for performing CMSADM backups. Briefly, that procedure goes like this:

1. Verify that CMS is turned on and 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.

12: Migrate 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 may cause catastrophic errors from which you are unable to recover. Failure to heed this warning may destroy data irretrievably.

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

For more information on the procedure, see “Turning Data Collection On or Off” on page A-12.

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

3. **Put CMS into single-user mode** by selecting `System Setup - CMS State` from the CMS main menu.
4. Insert the **most recent** backup tape into the tape drive. The most recent backup is either the full maintenance backup from Step 7 (page 2-9) or the incremental backup from Step 8 (page 2-10).
5. From the CMS Main Menu, 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
Data Type	System Administration data
Specify ACD(s)	All ACDs

7. Press Enter to access the action list in the top right corner.

8. Select `Run` and press `Enter`. System administration data generally takes about an hour to migrate. The `Status:` field reports the progress of the migration. When the migration ends, `Status:` indicates the success or failure of the run.
9. Investigate the customer migration log and take any necessary corrective action. For help interpreting the log and its messages, U.S. customers can telephone the Lucent National Customer Care Center at 1-800-242-2121; international customers should contact their Lucent distributors or customer representatives.

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

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

See also “Migration Log Messages” on page 9-18 and “R3 Migrate Data Window” on page A-46.

13: 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.

WARNING:

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

To migrate ACD administration data, use this procedure:

1. Verify that the **most recent** backup tape is in the tape drive. The most recent backup is either the full maintenance backup from Step 7 (page 2-9) or the incremental backup from Step 8 (page 2-10).
2. Return to the CMS MainMenu and select the `System Setup → R3 Migrate Data` option.
3. Complete the fields of the R3 Migrate Data window:

Field	Value to Enter or Select
Device name	The tape drive device name
Data Type	ACD Administration data
Specify ACD(s)	All ACDs

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

As the migration progresses, messages in the `Status:` field report the migration's status. When the migration ends, `Status:` reports its success or failure.
6. Investigate the customer migration log and take any necessary corrective action. For help interpreting the log and its messages, U.S. customers can telephone the Lucent National Customer Care Center at 1-800-242-2121; international customers should contact their Lucent distributors or customer representatives.

The customer migration log is in file `/cms/migrate/r3mig.log`.

You can print out the log with this command:

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

See also “Migration Log Messages” on page 9-18 for explanations of log messages, and “R3 Migrate Data Window” on page A-46.

⇒ NOTE:

Once ACD administration data has been migrated, data collection may be turned on. The remainder of the data migration may be performed at the same time as live data collection.

14: 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. **Turn on data collection for all ACDs** (via the System Setup - Data Collection option). (See "Turning Data Collection On or Off" on page A-12.)
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	The tape drive device name
Data Type	Historical data
Stop date	Leave blank
Stop time	11:59
Specify ACD(s)	All ACDs

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

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

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

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

8. Investigate the customer migration log and take any necessary corrective action. For help interpreting the log and its messages, U.S. customers can telephone the Lucent National Customer Care Center at 1-800-242-2121; international customers should contact their Lucent distributors or customer representatives.

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

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

See also “Migration Log Messages” on page 9-18 for explanations of log messages, and “R3 Migrate Data Window” on page A-46.

15: Migrate Incremental Historical Data

ONLY FOR THOSE WHO DID AN INCREMENTAL BACKUP EARLIER

If you skipped “6: Do an Incremental Backup” on page 2-10, skip this step also.

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 “6: Do an Incremental Backup” on page 2-10.
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	The tape drive device name
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.
5. Select `Run` and press Return.

As the migration progresses, the `Status:` field displays various messages indicating its status. When the migration ends, the `Status:` field reports the migration's success or failure.

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

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

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

See also “Migration Log Messages” on page 9-18 for explanations of log messages, and “R3 Migrate Data Window” on page A-46.

16: Do a Full Maintenance Backup

After migrating all the data, you should do a full *CentreVu* CMS maintenance backup as soon as possible. *CentreVu* CMS incremental maintenance backups will fail if a full maintenance backup is not done.

Briefly, the procedure goes like this:

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

Field	Value to Enter or Select
Device name	The tape drive device name
Verify tape...?	y
ACD(s) to back up	All ACDs
Data to back up	System Administration data ACD-specific administration data Historical data - Full Non-CMS data (if needed)

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

See also "Back Up Data Window" on page A-24.

17: Do a CMSADM Backup

The CMSADM backup provides a backup of the R3V5 system files. If there should be a disastrous failure, you can use this backup to recreate a clean R3V5 CMS system.

“Doing a CMSADM Backup on an INTEL System” on page A-17, and “Doing a CMSADM Backup on a Solaris System” on page A-20, contain detailed, step-by-step procedures for performing CMSADM backups. 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.

Chapter 3

Migrating to R3V5 with *Solstice DiskSuite*

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General Information

This chapter describes how to upgrade the CMS software on a *Sun*^{*} *SPARCserver*[†] platform to use the *Solstice DiskSuite*[‡] disk management package. The procedure in this chapter applies only when you are upgrading an existing R3V2, R3V4, or R3V5 CMS system to R3V5 with *Solstice DiskSuite*. See “Available Upgrade Procedures” on page 1-7 for guidance in choosing upgrade procedures for other situations.

This chapter allows an installer with a reasonable knowledge of *UNIX*^{**} and CMS to upgrade to the latest version with minimal referral to other chapters or to supplemental procedures. If your experience with *UNIX* or with CMS is limited, however, you may need to refer periodically to the procedures in Appendix A; they give more detailed explanations of operating system commands and CMS processes.

Timing the Procedure

Step 1 of the procedure in this chapter must be performed before you upgrade your CMS version and migrate your old data. Consequently, you should begin the procedure at least one week before you plan to do the upgrade and migration. That way, potential problems can be uncovered early and taken care of before they delay the upgrade to the new version.

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†SPARCserver is a trademark of SPARC International, Inc.

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

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Table 3-1: Checklist for Upgrading to *Solstice DiskSuite*

Step	Action
1	Preupgrade (<i>start this one week before the upgrade</i>) A. Verify CMS version and load B. Check and record CMS system information C. Copy non-CMS files D. Do a full maintenance backup
2.	Remove CMS patches
3.	Back up CMS A. Do a CMSADM backup B. Do an incremental historical backup
4.	Repartition disks
5.	Restore the CMSADM backup
6.	Remove CMS
7.	Install <i>Solstice DiskSuite</i>
8.	Set up <i>Solstice DiskSuite</i>
9.	Create a swap file
10.	Install <i>Solaris</i> * Patches
11.	Install R3V5 CMS
12.	Set up CMS A. Set authorizations B. Install CMS patches C. Set data storage parameters D. Configure CMS E. Check system parameters F. Install feature packages G. Run a CMSADM backup
13.	Migrate data to R3V5 A. Migrate system administration data B. Migrate ACD administration data C. Migrate full historical data D. Migrate incremental historical data E. Restore non-CMS files
14.	Back up the system A. Do a full maintenance backup B. Do a CMSADM backup

1: Preupgrade

NOTE: Begin this step at least 1 week before the scheduled upgrade.

Before you upgrade your system to R3V5 with *Solstice DiskSuite* software, you need to verify that your machine will support it. If you have custom database items to be propagated to the new version, you should begin dealing with those at the same time.

We recommend that you begin 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.

The procedure consists of the following steps:

- A. Verify CMS version and load
- B. Check custom database items
- C. 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
- D. Copy non-CMS files
- E. Do a full maintenance backup
- F. Do a CMSADM backup

1A: Verify CMS Version and Load

To verify your CMS version and load, 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 Management 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

1B: 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
- External Call History technical data (if installed)

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`.

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. Copy the information, or dump the screen or window to a printer.

See also “Displaying Switch Information” on page A-2.

Authorizations

1. Enter the `cmssvc` command.
2. Select `auth_display`. The system lists the authorizations for your system.
3. Copy the information, or dump the screen or window to a printer.
4. Check the `external call history` and `forecasting` entries. If either entry is indicated `installed`, the corresponding feature is installed on your system. This is information you need to know.

See also “Displaying CMS Authorizations” on page A-3.

Free Space Allocation

1. Start a CMS session.
2. From the CMS main menu, select `System Setup`.
3. Select `Free Space Allocation`. The system displays the free space allocation data window.
4. Print the window and save the printout.

NOTE:

If the number in `Blocks Available` is in parenthesis or preceded by a minus sign, it means more blocks are required than are available.

See also “Checking the Free Space Allocation” on page A-5, and “Printing a CMS Window” on page A-4.

Data Storage Allocation Parameters

Repeat this procedure for each ACD in your system.

1. Redisplay the CMS main menu.
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.
5. Press `F5` (to redisplay the main menu) followed by `Enter` (to enter the `System Setup` option).
6. Select `Storage Intervals`. The system displays the `Storage Intervals` window.
7. Print the window and save the printout.
8. Press `F5` to redisplay the CMS main menu.
9. If Forecasting is installed on your system, do this:
 - a. Select `Forecast - Administration - Data Storage Allocation`. The system displays `Forecast data storage allocation parameters` for the current ACD.
 - b. Print the window and save the printout.
10. Select the next ACD (see “Selecting an ACD Within CMS” on page A-15) and return to item 1.

See also “Checking Data Storage Allocation Parameters” on page A-7, and “Printing a CMS Window” on page A-4.

Backup and Restore Devices

1. Redisplay the CMS main menu (**F5** or **F8**).
2. Select **Maintenance**.
3. Select **Backup/Restore Devices**. The system displays the Backup/Restore Devices window.
4. Press **Enter** 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 A-4.

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 1BAAB10155CAD30B30C5 "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 `01BAAB10155CAD30B30C5`.
(The X.25 password is 21 characters long. If the base password has fewer than 21 characters, as shown above, the password entered must be left-filled with the character in quotation marks.)

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: _____

External Call History Technical Data

Do this procedure only if External Call History is installed.

When you have finished upgrading your system, the External Call History feature package will have been lost, and you will have to reinstall it. To do that, you need technical data recorded on the following system files:

/etc/uucp/Systems
/etc/uucp/Devices

You need to get that information now, before you upgrade.

The `/etc/nuucp/Systems` file specifies external computer systems that this machine communicates with. The opening lines of the `Systems` file look like the following:

```
# Entries have this format:
#
#      Machine-Name Time Type Class Phone Login
#
# Machine-Name      node name of the remote machine
# Time              day-of-week and time-of-day when you may call
#                  (e.g., MoTuTh0800-1700). Use "Any" for any day.
#                  Use "Never" for machines that poll you, but that
#                  you never call directly.
# Type              device type
# Class             transfer speed
# Phone             phone number (for autodialers) or token (for
#                  data switches)
# Login             login sequence is composed of fields and subfields
#                  in the format "[expect send] ...". The expect field
#                  may have subfields in the format "expect[-send-expect]
#
# Example:
#      cuuxb Any ACU 1200 chicago8101242 in:--in: nuucp word: panzer
#
```

Those introductory comments are followed by a line of information for the remote computer that is collecting the call records. From that line, extract and record the following information:

Table 3-2: *Systems* File Values

Item Type	Location in <i>Systems</i> File	Value in <i>Example</i> (above)	Record actual value here:
remote computer name	<i>Machine-Name</i> field	cuuxb	
nuucp login password	<i>Login</i> field	panzer	
device type	<i>Type</i> field	ACU	
connection speed	<i>Class</i> field	1200	

/etc/uucp/Devices specifies system communication devices. The file begins with an extensive comment giving examples of the file format; the comments are followed by lines defining the devices. For example:

```
#ident "@(#)Devices 1.6 92/07/14 SMI" /* from SVR4 bnu:Devices 2.7 *
# Some sample entries:
.
.
.
#
ACU cua/b - Any hayes
Direct cua/b - Any direct
Direct cua/a - Any direct
Direct s_pdevm7 - Any direct
CHRM s_pdevm7 - 19200 direct
```

In each data line, field 1 specifies a device type and field 2 specifies the CMS port that device type uses. All you need to do here is find the line that matches the device type in the *Systems* file, and record the CMS port value:

Table 3-3: *Devices* File CMS Port Value

Enter Device Type from <i>Systems</i>	Enter CMS Port Value from <i>Devices</i> File
<i>Example: ACU</i>	<i>Example: cua/b</i>

1C: Copy Non-CMS Files

If 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. The steps to be followed are similar to these:

1. Insert a blank 8-mm cartridge tape into the SCSI tape drive.
2. Log in to 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. Create a temporary directory to hold the identified files, and copy into it all the files you've identified. For example:

```
mkdir /cms/tmp
cp /cms1/myfiles /cms/tmp
```

5. Copy the files from the temporary directory to a tape. For example:

```
find /cms/tmp -print | cpio -oVc -C 10240 -O $<device>
-M "Please remove the current tape, number it, insert tape
number %d, and press ENTER"
```

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

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

6. Use a cpio command to verify that the files were copied successfully. For example:

```
cpio -itc -C 10240 -I /dev/rmt/<device>
-M "Please insert tape .."
```

The system responds by listing the files on the tape.

1D: Do a Full Maintenance Backup

A full maintenance backup provides the migration data for the new CMS version. You should perform the full maintenance backup the night before the scheduled upgrade. That helps ensure that all administration changes are migrated to the new CMS version.

The backups are done via the CMS Back Up Data window. The procedure is as follows:

1. Log in to CMS.
2. From the CMS main menu, 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	the tape drive device name
Verify tape...?	y
ACD(s) to back up	All ACDs
Data to back up	System Administration data ACD-specific administration data Historical data - Full Non-CMS data (if needed)

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

See also "Back Up Data Window" on page A-24.

2: Remove CMS Patches

If you have any CMS patches installed, you must remove them now. The procedure:

1. Log in as *root*.
2. Enter the `cmssvc` command. The CMS Services menu displays.
3. Enter the number corresponding to `back_all`. The system's response will be one of the following:

No patches installed:	Patches installed:
<pre>No CMS patches found on this machine. patch_rmv can remove installed patches only</pre>	<pre>The following patches are installed on this machine: <patch-name-1> . . . <patch-name-n> Are you sure you wish to remove all these patches? (y n)</pre>
<p>If you get this message, no further action is required.</p>	<p>Answer <code>y</code> to this prompt. The system backs out all patches, displaying messages like this for each patch removed:</p> <pre>@(#) backout patch 1.0 96/08/02 Removing patch package for cmspx-s Removal of <cmspx-s> successful. Restoring previous version of files... x blocks Making package database consistent with restored files: Patch x has been backed out.</pre>

3: Back Up CMS

3A: 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 A-20 contains a detailed, step-by-step procedure for performing a CMSADM backup. 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.

3B: Do an Incremental Historical Backup

An incremental historical backup backs up the data that has been collected since the last full maintenance backup, and maximizes data collection for the upgrade. The procedure is as follows:

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

Field	Value to enter or select
Device name	tape drive device name
Verify tape...?	y
ACD(s) to back up	All ACDs
Data to back up	System Administration data ACD-specific administration data Historical data - Incremental

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

See also “Back Up Data Window” on page A-24.

4: Repartition Disks

The *Solstice DiskSuite* package requires different disk partitioning than your system has had in the past. In order to repartition those disks, you must also reinstall parts of your operating system.

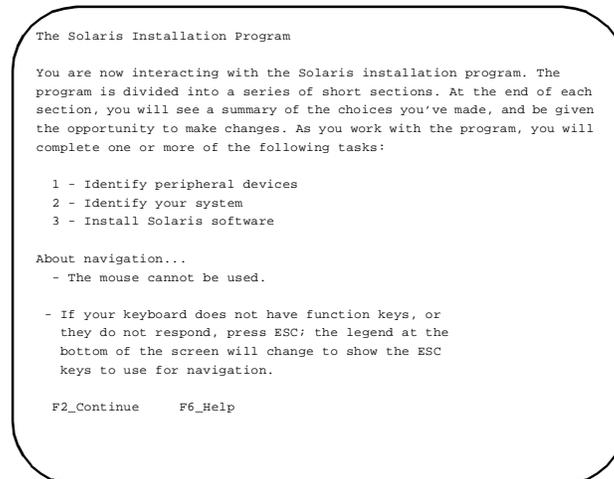
The disk repartition may require some time, and in many cases may be performed by a member of the Lucent Technologies Provisioning group from a location remote to the site being upgraded.

Whether the procedure is local or remote makes for some differences in the procedure. The major difference is in the appearance of the screens. Local screens are graphical; remote screens, text-based. For example:

Local Screen:



Remote Screen:



The difference in screens translates to differences in control mechanisms and procedures. The two procedures are presented in the tables that follow.

Table 3-4, immediately below, contains the procedure for local installation of the operating system.

When the installation is being done remotely, the remote operator should follow the steps in Table 3-5 and Table 3-6 beginning on page 3-18.

Table 3-4: Repartitioning Disks from a Local Console

Step	Current Screen Display	Action/Notes/Explanation
1.	<i>(system prompt)</i>	Enter the command: <code>init 0</code>
2.	<code>ok></code>	Insert the <i>Solaris 2.4</i> CD into the CD-ROM drive.
3.	<code>ok></code>	Enter the command <code>boot cdrom</code>
4.	Solaris Installation Program	Click on Continue.
5.	Identify This System	Click on Continue,
6.	Host Name	Click on the Host name box. Type the system's host name. (You recorded it on page 3-7 during the preupgrade procedure.) Click on Continue.
	Network Connectivity	Click on the Yes option. Click on Continue.
	Primary Network Interface	This screen usually does not appear. If it does, however, it means there is more than one network board in the system. The response should be as follows: <ol style="list-style-type: none">1. Click On the <code>le0</code> option.2. Press Enter.3. Click On Continue.
	IP Address	Click on the IP address box and type the IP address of the system. (The IP address is the one you recorded on page 3-7.) Click on Continue
	Confirm Information	Check the information displayed. To change any value, click on Change and repeat this step. If all values are as desired, click on Continue.
7.	Name Service	Click on the None option. Click on Continue.
	Subnets	Click on the No option. Click on Continue.
	Confirm Information	Check the information displayed. To change either value, click on Change and repeat this step. If both values are as desired, click on Continue.

Table 3-4: Repartitioning Disks from a Local Console

Step	Current Screen Display	Action/Notes/Explanation																																																								
8.	Time Zone	Click on Geographic Region. Click on the Set... button.																																																								
	Geographic Region	Click on a region from the Regions list and a time zone from the Time zones list. Then click on Continue.																																																								
	Date and Time	Change the date and time as necessary to reflect the local time. Then click on Continue.																																																								
	Confirm Information	Check the information displayed. To change any value, click on Change and return to the Time Zone screen. If all values are as you want them, click on Continue.																																																								
9.	Upgrade System?	Click on Initial.																																																								
10.	Install Solaris Software - Initial	Click on Continue.																																																								
11.	System Type	Click on Standalone. Click on Continue.																																																								
12.	Software	Click on End User System Support, then click on Continue.																																																								
13.	Disks	This screen should list every disk drive on the system. If it doesn't, you may have a connectivity problem. Move every disk name (one at a time) to the Selected Disks list by clicking on a disk name and then clicking on Add. Click on Continue.																																																								
14.	Preserve Data?	Click on Continue.																																																								
15.	Automatically Layout File Systems?	Click on Manual Layout.																																																								
16.	File System and Disk Layout	Click on Customize.																																																								
17.	Customize Disks	Click on the cylinders icon in the top left corner of the c0t3d0 column.																																																								
	Customize Disks by Cylinder	Change values as needed until the field values agree with Table 3-4a. Then click on OK. Table 3-4a: Partitioning for Disk 1 (c0t3d0)																																																								
		<table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="3">1.05-Gigabyte Disk</th> <th colspan="3">2.10-Gigabyte Disk</th> </tr> <tr> <th>Slice</th> <th>Name</th> <th>Size</th> <th>Start</th> <th>End</th> <th>Size</th> <th>Start</th> <th>End</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>/</td> <td>1630</td> <td>-</td> <td>1629</td> <td>1081</td> <td>-</td> <td>1080</td> </tr> <tr> <td>1</td> <td>-</td> <td>150</td> <td>1630</td> <td>1779</td> <td>100</td> <td>1081</td> <td>1180</td> </tr> <tr> <td>2</td> <td>overlap</td> <td>2036</td> <td>0</td> <td>2035</td> <td>2733</td> <td>0</td> <td>2732</td> </tr> <tr> <td>3</td> <td>-</td> <td>256</td> <td>1780</td> <td>2035</td> <td>1552</td> <td>1181</td> <td>2732</td> </tr> <tr> <td>4-7</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>			1.05-Gigabyte Disk			2.10-Gigabyte Disk			Slice	Name	Size	Start	End	Size	Start	End	0	/	1630	-	1629	1081	-	1080	1	-	150	1630	1779	100	1081	1180	2	overlap	2036	0	2035	2733	0	2732	3	-	256	1780	2035	1552	1181	2732	4-7	-	-	-	-	-	-	-
		1.05-Gigabyte Disk			2.10-Gigabyte Disk																																																					
Slice	Name	Size	Start	End	Size	Start	End																																																			
0	/	1630	-	1629	1081	-	1080																																																			
1	-	150	1630	1779	100	1081	1180																																																			
2	overlap	2036	0	2035	2733	0	2732																																																			
3	-	256	1780	2035	1552	1181	2732																																																			
4-7	-	-	-	-	-	-	-																																																			

Table 3-4: Repartitioning Disks from a Local Console

Step	Current Screen Display	Action/Notes/Explanation																																																
18.	Repeat this step for each additional disk drive in your system.																																																	
	Customize Disks	Click on the cylinders icon in the top left corner of the column naming the next disk to be repartitioned.																																																
	Customize Disks by Cylinder	Change values as needed until the display agrees with Table 3-4b. Click on OK.																																																
		<p style="text-align: center;">Table 3-4b: Partitioning for Disks 2-12</p> <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="3">1.05-Gigabyte Disk</th> <th colspan="3">2.10-Gigabyte Disk</th> </tr> <tr> <th>Slice</th> <th>File System Name</th> <th>Size</th> <th>Start</th> <th>End</th> <th>Size</th> <th>Start</th> <th>End</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>-</td> <td>2</td> <td>-</td> <td>1</td> <td>2</td> <td>-</td> <td>1</td> </tr> <tr> <td>1</td> <td>-</td> <td>2034</td> <td>2</td> <td>2035</td> <td>2731</td> <td>2</td> <td>2732</td> </tr> <tr> <td>2</td> <td>overlap</td> <td>2036</td> <td>0</td> <td>2035</td> <td>2733</td> <td>0</td> <td>2732</td> </tr> <tr> <td>3-7</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>			1.05-Gigabyte Disk			2.10-Gigabyte Disk			Slice	File System Name	Size	Start	End	Size	Start	End	0	-	2	-	1	2	-	1	1	-	2034	2	2035	2731	2	2732	2	overlap	2036	0	2035	2733	0	2732	3-7	-	-	-	-	-	-	-
		1.05-Gigabyte Disk			2.10-Gigabyte Disk																																													
Slice	File System Name	Size	Start	End	Size	Start	End																																											
0	-	2	-	1	2	-	1																																											
1	-	2034	2	2035	2731	2	2732																																											
2	overlap	2036	0	2035	2733	0	2732																																											
3-7	-	-	-	-	-	-	-																																											
		Do not go on to the next step until you have repartitioned every disk on your system.																																																
19.	Customize Disks	Click on OK.																																																
20.	File System and Disk Layout	Click on Continue.																																																
21.	Mount Remote File Systems	Click on Continue.																																																
22.	Profile	Click on Begin Installation.																																																
23.	.OK to reboot ...?	Click on Reboot.																																																
24.	Installing Solaris-Progress	Shows the progress of repartitioning as it proceeds. It may take from 40 minutes to 2 hours, depending on the number of disks involved.																																																
25.	Root password:	Type in the password you want for the <i>root</i> login and press Enter .																																																
26.	Please reenter your root password	Reenter your <i>root</i> password and press Enter .																																																
27.	<hostname> console login:	Log in as <i>root</i> .																																																
28.	(system prompt)	Enter the command: <code>vi /etc/vfstab</code> Find the line that begins with the word <i>swap</i> .																																																
29.	<code>swap - /tmp tempfs yes -</code>	Comment out the line by inserting a pound sign at position 1 of the line.																																																
30.	<code>#swap - /tmp tempfs yes -</code>	Save the file and quit the editor.																																																

Table 3-5: Procedure to Establish Remote Operation of a Local System

Step	Action at Remote Terminal	Screen Display
1.	Dial up the local system.	-
2.	Enter the terminal type for the remote terminal.	-
3.	Log in with the <i>root</i> login name and password.	-
4.	Enter: <code>/cms/install/bin/abccadm -r ttya</code>	<code>ttya is currently turned off. Are you sure you want to change it?</code>
5.	Answer: <code>y</code>	<code>ttya administration removed</code>
6.	Enter: <code>/cms/install/bin/abccadm -c ttya</code>	<code>Console set to remote. This change requires a reboot to take effect. Are you ready to reboot?</code>
7.	Answer: <code>y</code>	<code>Starting port monitor</code> <code>Setting console parameters</code> <code>. . .</code> <code>system console login:</code>
8.	Log in with the <i>root</i> login name 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!

⇒ NOTE:

If the phone line is interrupted during a remote *Solaris* installation, you may be locked out of the system. To reset, have the following steps performed at the local console:

- a. Turn off the power switch on the *Sun* CMS machine.
- b. Hold down Stop-N as you turn the machine back on. Keep holding down Stop-N until the screen displays an OK prompt.

You may now repeat steps 1 through 8 above to reestablish remote control of the system.

Table 3-6: Repartitioning Disks from a Remote Terminal

Step	Current Screen Display	Action/Notes/Explanation
1.	<i>(system prompt)</i>	Enter the command: <code>init 0</code>
2.	<code>ok></code>	Enter the command <code>probe-scsi-all</code> and record the results
3.	<code>ok></code>	Insert the <i>Solaris 2.4</i> CD into the CD-ROM drive and enter the following command <code>: boot cdrom</code>
4.	What type of terminal are you using? <i>(terminal-type menu)</i> Type the number of your choice and press Return	Enter the option number of the appropriate terminal type. ⇒ NOTE: DEC VT100 is an appropriate choice for many situations. It often works when others do not.
5.	Solaris Installation Program	Select Continue
6.	Identify This System	Select Continue
7.	Host Name	Tab to the space provided for the host name. Type the system's host name. (You recorded the host name in step 1. See page 3-3.) Select Continue.
	Network Connectivity	Mark the Yes option. Select Continue.
	Primary Network Interface	This screen usually does not appear. If it does, however, it means there is more than one network board in the system. Respond as follows: 1. Mark the <code>le0</code> option 2. Press Enter . 3. Select Continue.
	IP Address	Type the IP address of the system. (The IP address is the one you recorded during the preupgrade procedure on page 3-6). Select Continue
	Confirm Information	Check the information displayed. To change any value, select <code>Change</code> and repeat this step. If all values are as desired, select <code>Continue</code> .
8.	Name Service	Mark the <code>None</code> option and select <code>Continue</code> .
	Subnets	Mark the <code>No</code> option and Select <code>Continue</code> .
	Confirm Information	Check the information displayed. To change either value, select <code>Change</code> and repeat this step. If both values are as desired, select <code>Continue</code> .

Table 3-6: Repartitioning Disks from a Remote Terminal (Contd)

Step	Current Screen Display	Action/Notes/Explanation
9.	Time Zone	Mark the appropriate time zone option. Select Continue.
	<i>(list of time zones)</i>	Mark the appropriate time zone from the list. Select Continue.
	Date and Time	Change the displayed date and time as necessary to reflect the local time. Select Continue.
	Confirm Information	Check the information displayed. To change any value, select Change and return to the Time Zone screen. If all values are as you want them, select Continue.
10.	Upgrade System?	Select Initial.
11.	Install Solaris Software - Initial	Select Continue.
12.	System Type	Mark Standalone. Select Continue.
13.	Software	Select End User System Support. Click on Continue.
14.	Disks	Mark all the disk drives listed. Select Continue. Note: This screen should list every disk drive on your system. If it doesn't, you may have a connectivity problem.
15.	Preserve Data?	Select Continue.
16.	Automatically Layout File Systems?	Select Manual Layout.
17.	Select Disk to Customize	Use the arrow keys to highlight the name of the c0t3d0 disk (it's the first disk listed). Select Customize.
18.	Customize Disk: c0t3d0	Select Options.
19.	Select options	Mark the Cylinders option. Select OK.

Table 3-6: Repartitioning Disks from a Remote Terminal (Contd)

Step	Current Screen Display	Action/Notes/Explanation																										
20.	Customize Disk: c0t3d0	<p>Partition c0t3d0 according to Table 3-6a, below. Use the Tab key to move between fields.</p> <p>When all listed fields agree with Table 3-6a, select OK.</p> <p>Table 3-6a: Partitioning for Disk 1 (c0t3d0)</p> <table border="1"> <thead> <tr> <th rowspan="2">Slice</th> <th rowspan="2">Mount Point</th> <th colspan="2">Size (cylinders)</th> </tr> <tr> <th>1.05-GB Disk</th> <th>2.10-GB Disk</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>/</td> <td>1630</td> <td>1081</td> </tr> <tr> <td>1</td> <td>-</td> <td>150</td> <td>100</td> </tr> <tr> <td>2</td> <td>overlap</td> <td>2036</td> <td>2733</td> </tr> <tr> <td>3</td> <td>-</td> <td>256</td> <td>1552</td> </tr> <tr> <td>4-7</td> <td>-</td> <td>0</td> <td>0</td> </tr> </tbody> </table>	Slice	Mount Point	Size (cylinders)		1.05-GB Disk	2.10-GB Disk	0	/	1630	1081	1	-	150	100	2	overlap	2036	2733	3	-	256	1552	4-7	-	0	0
Slice	Mount Point	Size (cylinders)																										
		1.05-GB Disk	2.10-GB Disk																									
0	/	1630	1081																									
1	-	150	100																									
2	overlap	2036	2733																									
3	-	256	1552																									
4-7	-	0	0																									
21.	Repeat this step for each remaining disk in the customer's system.																											
	Select Disk to Customize	<p>Use the arrow keys to highlight the name of the next disk in the list. (If there are no more disks to be repartitioned, go to step 21.)</p> <p>Select Customize.</p>																										
	Customize Disk: xxxxxx	<p>Partition the disk according to Table 3-6b, below. Use the Tab key to move between fields. When the fields agree with the table, select OK.</p> <p>Table 3-6b: Partitioning for Disks 2-12</p> <table border="1"> <thead> <tr> <th rowspan="2">Slice</th> <th rowspan="2">Mount Point</th> <th colspan="2">Size (cylinders)</th> </tr> <tr> <th>1.05-GB Disk</th> <th>2.10-GB Disk</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>-</td> <td>2</td> <td>2</td> </tr> <tr> <td>1</td> <td>-</td> <td>2034</td> <td>2731</td> </tr> <tr> <td>2</td> <td>overlap</td> <td>2036</td> <td>2733</td> </tr> <tr> <td>3-7</td> <td>-</td> <td>0</td> <td>0</td> </tr> </tbody> </table>	Slice	Mount Point	Size (cylinders)		1.05-GB Disk	2.10-GB Disk	0	-	2	2	1	-	2034	2731	2	overlap	2036	2733	3-7	-	0	0				
Slice	Mount Point	Size (cylinders)																										
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0	-	2	2																									
1	-	2034	2731																									
2	overlap	2036	2733																									
3-7	-	0	0																									
Do not go on to the next step until you have repartitioned all disks in the customer's system.																												

Table 3-6: Repartitioning Disks from a Remote Terminal (Contd)

Step	Current Screen Display	Action/Notes/Explanation
22.	Select Disk to Customize	Select OK.
23.	File System and Disk Layout	Select Continue.
24.	Mount Remote File System?	Select Continue.
25.	Profile	Select Continue.
26.	Begin Installing Solaris	Mark the Reboot option. Select Begin Installation. The system partitions the disks and installs the operating system. This part of the installation can take anywhere from 40 minutes to two hours, depending upon the number of disks involved.
27.	On this screen you can create a root password . . . Root password:	Type in the password you want for the <i>root</i> login and press Enter.
28.	Please reenter your root password. Press Return to continue.	Reenter the <i>root</i> password and press Enter.
29.	<hostname> console login:	Log in as <i>root</i> .
30.	(system prompt)	Set the terminal type by entering the following commands: set TERM=<terminal type> export TERM Replace <terminal type> with the appropriate terminal-type value. The value VT100 almost always works well.
31.	(system prompt)	Edit the <i>/etc/vfstab</i> file by entering the following command: vi /etc/vfstab Find the line that begins with the word <i>swap</i> .
32.	swap - /tmp tempfs yes -	Comment out the line by inserting a pound sign at position 1 of the line.
	#swap - /tmp tempfs yes -	Save the file and quit the editor. The operating system reinstallation and disk repartition are complete. You may now terminate your connection to the customer's terminal.

5: Restore the CMSADM Backup

Load the CMSADM-backup tape into your tape drive, and restore the old R3V4 system information by entering the following command:

```
nohup cpio -icmudf -C 10240 -I <device>
-M "Insert next tape and press ENTER."
/etc/vfstab" "/etc/mnttab" "/usr/dbtemp"
"/etc/path_to_inst" "/cms*" "/cms*/*" | tee
```

where:

the elements in **bold type** are omitted if the command is being entered from the local console.

<device> 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. The errors display when the directory is already present; you can ignore them.

6: Remove CMS

The following procedure removes the current CMS base package:

Step	Prompt	Action/Notes/Comments
1.	# <i>(system prompt)</i>	Enter this command: pkgrm cms
2.	Do you want to remove this package?	Enter: y.
3.	Do you want to continue with the removal of this package? [y,n,?,q]:	Enter: y.
4.	Do you want to preserve CMS data? [y,n,?]	Enter: n.
5.	Have you backed up the file system? [y,n,?]	Enter: y.
6.	Removal of <cms> was successful. # <i>(system prompt)</i>	

7: Install *Solstice DiskSuite*

To install the *Solstice DiskSuite* package, do the steps in Table 3-7.

Table 3-7: Procedure to Install *Solstice DiskSuite*

Step	Prompt	Action/Notes/Comments
1.	# (system prompt)	Load the <i>Solstice DiskSuite</i> CD into the CD-ROM drive and enter the following command: <code>pkgadd -d /cdrom/cdrom0</code>
2.	. (installation menu) . Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:	Enter the number of the Solstice DiskSuite Answerbook (SUNabmd) option.
3.	. . . Enter an installation option from the list above (1 or 2):	Enter the number of the nil option.
4.	Specify the parent directory of the AnswerBook home directory.	Enter: /opt
5.	Do you want to continue with the installation of <SUNabmd>?	Enter: y
6.	. (installation menu) . Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:	Enter the number of the Solstice DiskSuite (SUNWmd) option.
	⇒ NOTE: If you receive a message about conflicting packages or conflicting files, answer y to continue the installation.	

Table 3-7: Procedure to Install *Solstice DiskSuite* (Contd)

Step	Prompt	Action/Notes/Comments
7.	Do you want to continue with the installation of <SUNWmd>? [y,n,?]	Enter: y
8.	. (installation menu) . Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:	Enter: q
9.	*** IMPORTANT NOTICE *** This machine must now be rebooted #	Unload the CD from the CD-ROM drive and enter the following command: shutdown -y -i6 -go When the login prompt appears, log in as the <i>root</i> user. When the system prompt reappears, the procedure is complete.
<p>As an option, you may at this point enter the following two commands:</p> <pre>stty erase <Ctrl-H> ksh -o vi</pre> <p>(where <Ctrl-H> means "press and hold the Control key as you press the H key")</p> <p>The stty command sets up your backspace key as an actual backspace. Without this command, you must use your Delete key as a backspace, which can be frustrating if you're not used to it.</p> <p>The ksh command gets you a "k shell," which will make it easier to execute multiple commands that are similar.</p>		

8: Set Up *Solstice DiskSuite*

The following procedure sets up your *Solstice DiskSuite* system.

Table 3-8: Procedure to Set Up a *Solstice DiskSuite* System

Step	Action/Notes/Comments
1.	<p>Load the CMS CD into the CD-ROM drive and enter the following commands:</p> <pre># mkdir /olds # cp /cdrom/cdrom0/cms/reloc/rdonly/olds_install/* /olds # cd /olds # chmod +x olds</pre>
2.	<p>Check disk partitioning by entering the following commands:</p> <pre># export PATH=\$PATH:/usr/opt/SUNWmd/sbin:/olds # olds -check_disks</pre> <p>The system begins checking the disk partitions, eventually reporting success. For example:</p> <pre>. . . disk:c0t3d0 is partitioned ok Success, checking disks.</pre> <p>⇒ NOTE:</p> <p>If the <code>olds</code> command fails due to an improperly partitioned disk, repartition the disk using the <code>format</code> command. For details, look up the error message in “Common Error Messages” on page 9-7.</p>
3.	<p>Enter an <code>olds -mk_files</code> command:</p> <pre># olds -mk_files . . Success, creating md.tab.new and/or vfstab.new.</pre>
4.	<p>Load <code>/olds/md.tab.new</code> into an editor and find the <code>#/cms</code> section. It should reflect the precise number of disk drives on your system. In the example below, for instance, the <code>d19</code> line indicates a two-drive system:</p> <pre>. . . #/cms d19 2 1 /dev/dsk/c0t1d0s1 1 /dev/dsk/c0t3d0s3 d21 -m d19</pre> <p>If the section reports an incorrect number of disks, see “Problems with Disk Drive Administration” on page 9-5. Then repeat the procedure in this table, beginning with item 2.</p>

Table 3-8: Procedure to Set Up a *Solstice DiskSuite* System (Contd)

Step	Action/Notes/Comments (Contd)
5.	<p>Set up metadevice replicas by entering the following command:</p> <pre>nohup olds -metadbs tee</pre> <p>The command has succeeded when it reports success as follows:</p> <pre>Success, setting up metadb replicas</pre> <p>If the command should fail, make a note of the error message and see “Common Error Messages” on page 9-7.</p>
6.	<p>Set up the <i>/cms</i> metadevice by entering the following command:</p> <pre>nohup olds -setup tee</pre> <p>The program checks your system’s disk structure and then begins to construct the new file system, displaying a variety of messages as it proceeds. When the <i>Success</i> message displays and the system prompt reappears, the file system is complete. For example:</p> <pre>.. .. prvtoc: /dev/rdisk/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 /dev/md/rdisk/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 #</pre>

Table 3-8: Procedure to Set Up a *Solstice DiskSuite* System (Contd)

Step	Action/Notes/Comments (Contd)
7.	<p>Create and mount <i>/cms</i> and verify the disk space by entering the following commands:</p> <pre>mkdir /cms mount /cms df -k /cms</pre> <p>The system responds by displaying file system information:</p> <pre>Filesystem kbytes used avail capacity Mounted on /dev/md/dsk/d19 10811937 xxxxxxx xxxxxxx 0% /cms</pre> <p>The <i>/cms</i> “used” and “avail” figures—shown here as “xxxxxx”—are the critical numbers. Together, they should equal the total space available on all your disk drives. To check, do this:</p> <p>1a. Enter the <i>/cms</i> “used” figure: _____(1a)</p> <p>1b. Enter the <i>/cms</i> “avail” figure: _____(1b)</p> <p>1c. Add (1a) and (1b) and enter here: _____(1c)</p> <p>1d. Divide (1c) by 1000 and enter here: _____(1d) (<i>This is the total space in MB currently available to /cms</i>)</p> <p>2a. If disk <i>c0t3d0</i> is 1.05 gigabytes, enter 109 If disk <i>c0t3d0</i> is 2.10 gigabytes, enter 998: _____(2a)</p> <p>2b. Multiply the number of (other) 1.05-GB disks by 866, and enter the product here: _____(2b)</p> <p>2c. Multiply the number of (other) 2.10-GB disks by 1755, and enter the product here: _____(2c)</p> <p>2d. Add (2a), (2b) and (2c), and enter here: _____(2d) (<i>This is the total space in MB provided by all disk drives</i>)</p> <p>Results (1d) and (2d) should be about equal (they need not be exact). If there seems to be a problem, verify the files <i>vfstab</i> and <i>md.tab</i>. For details, see “Problems with Disk Drive Administration” on page 9-5.</p> <p>If the files do not check out, you may reconfigure as follows:</p> <ol style="list-style-type: none"> Check to make certain all your disk drives are turned on and properly configured. Enter the command: <code>olds -cleanup</code> Unload the CD (1: Enter <code>eject cdrom</code> 2: Remove CD 3: Close drive) Reboot the system. Repeat the procedure in this table, beginning with item 2.

9: Create a Swap File

Follow the steps in Table 3-9 to create a swap file:

Table 3-9: Swap File Creation

Step	Action																																									
1.	<p>Enter the command: <code>prtconf grep Me</code></p> <p>The system responds by displaying the amount of random access memory installed. For example:</p> <pre>Memory size: 96 Megabytes</pre>																																									
2.	<p>Determine the required size of your swap file from Table 3-9a.</p> <p style="text-align: center;">Table 3-9a: Swap File Size</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2">If RAM (MB) is ...</th> <th rowspan="2">... your swap file (MB) must be:</th> </tr> <tr> <th>... at least:</th> <th>... but not more than...</th> </tr> </thead> <tbody> <tr><td>0</td><td>32</td><td>61</td></tr> <tr><td>33</td><td>64</td><td>122</td></tr> <tr><td>65</td><td>96</td><td>183</td></tr> <tr><td>97</td><td>128</td><td>244</td></tr> <tr><td>129</td><td>160</td><td>305</td></tr> <tr><td>161</td><td>192</td><td>366</td></tr> <tr><td>193</td><td>224</td><td>427</td></tr> <tr><td>225</td><td>256</td><td>488</td></tr> <tr><td>257</td><td>320</td><td>610</td></tr> <tr><td>321</td><td>384</td><td>732</td></tr> <tr><td>385</td><td>448</td><td>931</td></tr> <tr><td>449</td><td>512</td><td>977</td></tr> </tbody> </table>	If RAM (MB) is your swap file (MB) must be:	... at least:	... but not more than...	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
If RAM (MB) is your swap file (MB) must be:																																								
... at least:	... but not more than...																																									
0	32	61																																								
33	64	122																																								
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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.	<p>Enter the command: <code>df -k /cms</code></p> <p>The system lists file system info for <code>/cms</code>. For example:</p> <pre>Filesystem kbytes used avail capacity Mounted on /dev/md/dsk/d19 10811937 xxx xxxxxxxx 0% /cms</pre>																																									

Table 3-9: Swap File Creation (Contd)

Step	Action
4.	Divide the “avail” number by 1,000. The result of the division must be greater than the swap file size determined from Table 3-9a. If it isn’t, make room by deleting inconsequential files. If you are uncertain which files you can delete, contact the National Customer Care Center.
5.	Create the swap file by entering the following command: <pre>mkfile <x>m /cms/swap</pre> where <x> is the swap file size from Table 3-9a.
6.	Activate the swap file by entering the following command: <pre>swap -a /cms/swap</pre>
7.	Verify that the space has been allocated by entering the following command: <pre>swap -l</pre> The system should respond by displaying something like the following: <pre>swapfile dev swaplo blocks free /cms/swap - 8 xxxxxx xxxxxx</pre>
8.	Edit the <i>/etc/vfstab</i> file. Go to the end of the file and add the following line, using tabs to separate fields: <pre>/cms/swap - - swap - no -</pre> (If the line already exists but is commented out, remove the pound sign at the start of the line.)
9.	Save the file and exit your editor.
10.	Reboot with the command: <code>init 6</code>
11.	When the boot completes, log in as <i>root</i> and verify the swap file setup by entering the command: <pre>swap -l</pre> The system should list the swap file you just set up. If you get a message to the effect that the swap file was not set up, repeat items 8 through 11 of this table.

10: Install *Solaris* Patches

Perform these steps in Table 3-10 to install *Solaris* patches:

Table 3-10: Procedure to Install *Solaris* Patches

Step	Screen/Prompt	Action
1.	-	Load the CMS CD into your CD-ROM drive and enter the following command: <code>pkgadd -d /cdrom/cdrom0</code>
2.	... (<i>installation menu</i>) ... Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:	Enter the number that corresponds to the <i>spatches</i> package Do not enter <code>all</code> . The <i>spatches</i> package must be installed before CMS.
3.	This package contains scripts which will be executed with super-user permissions during the process of installing this package. Do you want to continue with the installation of <spatches> [y,n,?] y	Enter: <code>y</code>
4.	... (<i>installation menu</i>) ... Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:	Enter: <code>q</code>
5.	#	Enter the following command: <code>/tmp/patches/install_patches</code>
	. . . Installation of <SUNWcsr.2> was successful. generating	A message displays indicating that you need 20 MB of space in <code>/var</code> to install the Jumbo Kernel patch. Enter <code>y</code> (or wait 60 seconds) and the installation continues. Depending on how big the patches are and how many are being installed, the installation may take over an hour. Eventually, however, you receive an "installation finished" message.

Table 3-10: Procedure to Install *Solaris* Patches (Contd)

Step	Screen/Prompt	Action
6.	<pre> . . . 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 # </pre>	<p>Remove the CD from the CD-ROM drive by entering the following command:</p> <pre> eject cdrom </pre> <p>Remove the CD from the drive and close the drive tray.</p>
7.	<pre> # </pre>	<p>Reboot your system using the following command:</p> <pre> shutdown -y -i6 -g0 </pre> <p>When the system prompt returns to your screen, the installation of the patches is complete.</p>

11: Install R3V5 CMS

Perform the steps in Table 3-11 to install the CMS R3V5 release:.

Table 3-11: Procedure to Install the CMS Package

Step	Screen/Prompt	Action
1.		Insert the CMS CD into the CD-ROM drive and log in as the <i>root</i> user.
2.	#	Enter the command: <code>pkgadd -d cdrom/cdrom0</code>
3.	... (<i>installation menu</i>) ...	Enter the number of the CentreVu(TM) Call Management System option.
4.	*-conflict with a file which does not belong to any package. Do you want to install these conflicting files [y,n,?,q]	Enter: y
5.	## Checking for setuid /setgid programs. . . . Do you want to install these setuid/setgid files [y,n,?,q]	Enter: y
6.	. . . Do you want to continue with the installation of <cms> [y,n,?,q]	Enter: y
7.	Creating Pcms user id 6 blocks Assigning a new password for Pcms New password:	Enter a password.
8.	... (<i>installation menu</i>) ...	Enter: q
	<p>⇒ NOTES</p> <p>1. If you made changes to your <i>cms</i> or <i>cmssvc</i> .profile file, this message appears: A manual merge may be necessary to restore custom entries. The original content was saved in profile.save prior to changes. The machine reboots if needed and returns to the system prompt.</p> <p>2. If you are instructed to run a shutdown, shut down the system using the command displayed with the message.</p>	
9.	Verify the installation by entering the command: <code>pkgchk -n cms</code> If the installation succeeds, the system prompt returns after a few seconds. You will have no indication of success other than the absence of error messages.	

12: Set Up CMS

There are six substeps to setting up CMS:

- A. Set authorizations
- B. Install CMS patches
- C. Set data storage parameters
- D. Configure CMS
- E. Check system parameters
- F. Install feature packages
- G. Run a CMSADM backup

12A: Set 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 is as follows:

1. Retrieve the list of authorizations (you printed it in 1: Preupgrade).
2. Enter a `cmssvc` command and select the `auth_set` option.
3. Enter the appropriate password and answer the questions asked.

If you are asked whether this is an upgrade, answer `n`.

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	<i>CentreVu</i> Supervisor

- The number of simultaneous supervisor logins purchased.
- The maximum number of split/skill members purchased (see the table on page A-31).
- The number of ACDs installed.

For a more detailed rendering of the procedure, see “Setting Authorizations” on page A-27.

12B: Install CMS Patches

To install CMS patches, follow the steps in Table 3-12. Before you begin, make sure CMS is turned off and the CMS CD is loaded in the CD-ROM drive.

Table 3-12: Procedure to Install CMS Patches

	Screen/Prompt	Action
1.	#	Enter the <code>cmssvc</code> command.
2.	... (CMS Services menu) ... Enter choice(1-x) or q to quit:	Enter the number corresponding to <code>load_all</code>
	<p>⇒ NOTE:</p> <p>If there are no patches to be installed, the system displays a message to that effect and returns to the system prompt.</p>	
3.	<pre>The following patches are available for installation: 1. cmsp<x>-s . . . Are you sure you want to install all these patches? (y n)</pre>	<pre>Answer: y The system installs patches. As the installation proceeds, the system keeps you informed of its progress: Generating list of files to be patched... . . . Doing pkgadd of cmsp<x>-s package: Installation of cmsp<x>-s was successful. . . . Patch installation completed. See /cms/patch/cmsp<x>-s/log for details.</pre>

12C: Set Data Storage Parameters

To set data storage parameters, edit the following 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 3-5.) For a sample storage.def file, see “Setting Up Data Storage Parameters” on page A-35.

⇒ NOTE:

Remember that in R3V5, the number of agent trace records may not exceed 500,000.

12D: Configure CMS

You configure the CMS software through the `setup` option of the `cms svc` command. This subsection presents a brief synopsis of that procedure; for step-by-step instructions, see “Setting up the *CentreVu* CMS Application” in Chapter 6 of “CMS R3V5 *Sun SPARCserver* Computers Installation and Maintenance” manual (585-215-827).

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 “1B: Check and Record CMS System Information” on page 3-4.)

12E: 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 “Setting Up Data Storage Parameters” on page A-35 and “Displaying Switch Information” on page A-2.

12F: Install Feature Packages

There are only two feature packages that need installing: Forecasting and External Call History.

To see whether either package is authorized, retrieve your authorizations listing and 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. The procedure is as follows:

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. You should have recorded the relevant values during the preupgrade procedure; see “External Call History Technical Data” on page 3-7 for details. The values should have been recorded in Table 3-2, “Systems File Values,” on page 3-8 and in Table 3-3, “Devices File CMS Port Value,” on page 3-9.

12G: Run 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 A-20 contains a detailed, step-by-step procedure for performing a CMSADM backup. Briefly, that procedure is as follows:

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.

13: Migrate Data to R3V5

Migrating data to your the R3V5 version of CMS involves the following substeps:

- A. Migrate system administration data
- B. Migrate ACD administration data
- C. Migrate full historical data
- D. Migrate incremental historical data

13A: Migrate System Administration Data

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

 **CAUTION:**

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

The procedure is as follows:

1. Log in to CMS. The CMS main menu displays.
2. Put CMS into single-user mode (`System Setup - CMS State`).
3. Insert into the tape drive the incremental backup tape you created in Step 3B (page 3-13).
4. From the CMS main menu, select the `System Setup → R3 Migrate Data` option.
5. Set up the R3 Migrate Data Window to migrate the data:

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

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

System administration data generally takes about an hour to migrate. The `Status:` field reports the progress of the migration. When the migration ends, `Status:` indicates the success or failure of the run.

8. Investigate the customer migration log and take any necessary corrective action. For help interpreting the log and its messages, U.S. customers can telephone the Lucent National Customer Care Center at 1-800-242-2121; international customers should contact their Lucent distributors or Customer Representatives.

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

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

See also “Migration Log Messages” on page 9-18 and “R3 Migrate Data Window” on page A-46.

13B: Migrate ACD Administration Data

CAUTION:

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

ACD administration data is migrated via the R3 Migrate Data window, using the incremental backup tapes from the preupgrade. The procedure:

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

For more information on the procedure, see “Turning Data Collection On or Off” on page A-12. Do not continue until you have verified that data collection is turned off for every ACD in your system.

- Return to the CMS main menu and select the `System Setup` → `R3 Migrate Data` option.
- Complete the fields of the R3 Migrate Data window:

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

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

As the migration progresses, messages in the `Status:` field report the migration's status. When the migration ends, `Status:` reports its success or failure.

- Investigate the customer migration log and take any necessary corrective action. For help interpreting the log and its messages, U.S. customers can telephone the Lucent National Customer Care Center at 1-800-242-2121; international customers should contact their Lucent distributors or Customer Representatives.

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

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

See also the "Migration Log Messages" section on page 9-18 and "R3 Migrate Data Window" on page A-46.

13C: Migrate Full Historical Data

To migrate full historical data, use this procedure:

- From the CMS main menu, put CMS in a multi-user state via the `System Setup - CMS State` option.
- Return to the CMS main menu and turn on data collection for all ACDs via the `System Setup - Data Collection` option. (See "Turning Data Collection On or Off" on page A-12.)
- Remove the incremental backup tape from the tape drive and insert the **full maintenance** backup tape created in Step 1D (page 3-10).

4. From the CMS main menu, select the `System Setup` → `R3 Migrate Data` option.
5. Complete the fields of the R3 Migrate Data Window:

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

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

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. For help interpreting the log and its messages, U.S. customers can telephone the Lucent National Customer Care Center at 1-800-242-2121; international customers should contact their Lucent distributors or Customer Representatives.

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

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

See also "Migration Log Messages" on page 9-18 and "R3 Migrate Data Window" on page A-46.

13D: 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. The procedure is as follows:

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

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

4. Press `Enter` to access the Action list in the top right corner.
5. Select `Run` and press `Enter`.

As the migration progresses, the `Status:` field displays various messages indicating its status. When the migration ends, a message in the `Status:` field reports success or failure.

6. Investigate the customer migration log and take any necessary corrective action. For help interpreting the log and its messages, U.S. customers can telephone the Lucent National Customer Care Center at 1-800-242-2121; international customers should contact their Lucent distributors or Customer Representatives.

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

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

See also “Migration Log Messages” section of Chapter 6 for explanations of log messages, and “Back Up Data Window” on page A-24.

13E: Restore Non-CMS Files

To restore the non-CMS files you saved in Step 1C (page 3-9), do the following steps:

1. Load the appropriate tape into the tape drive.
2. Use a `cpio` command to copy files from the tape. For example:

```
cpio -icmud -C 10240 -I /dev/rmt/<device>
-M "Enter next tape..." ["<file1>" ... "<filen>"]
```

where:

<device>

specifies the tape drive you are restoring from, and must be one of the following:

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

Brackets ([])

indicate that the enclosed element is optional. Brackets are not typed as part of the command.

"<file1>" ... "<filen>"

are the names of files to be restored from the tape. The following rules apply:

- Each name must be a full path name (as `/cms/file1`, for example).
- The names are separated from one another by blanks.
- Each name must be enclosed in quotation marks.

If you omit the file names, every file on the tapes is restored to the hard disk.

14: Back up the system

14A: Do a Full Maintenance Backup

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 is as follows:

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

Field	Value to enter or select
Device name	The tape drive device name
Verify tape...?	y
ACD(s) to back up	All ACDs
Data to back up	System Administration data ACD-specific administration data Historical data - Full Non-CMS data (if needed)

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

See also "Back Up Data Window" on page A-24.

14B: 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 A-20 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.

Chapter 4

Upgrading the R3V5 Base Load

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General Information

This chapter describes how to upgrade from one load of r3v5 CMS to another. The chapter applies only when you are upgrading from r3v5xx.x to r3v5yy.y on an INTEL* or Sun† SPARCserver‡ platform. For details about selecting upgrade procedures for other situations, see “Available Upgrade Procedures” on page 1-7.

This chapter allows an installer with a reasonable knowledge of UNIX and CMS to upgrade to R3V5 with minimal referral to other chapters or to supplemental procedures. If your experience with UNIX or with CMS is limited, however, you may need to refer periodically to the procedures in Appendix A; they give more detailed (though less succinct) explanations of operating system and CMS processes you will need to perform during the upgrade.

Getting an Early Start

The first few steps of each procedure in this chapter must be performed before you upgrade your CMS version. Consequently, you should begin the appropriate procedure at least one week before you plan to do the upgrade. That way, potential problems can be uncovered early and taken care of so they do not delay the upgrade.

Upgrading the R3V5 Base Load on a *Sun* Platform

The procedures in this section apply only when you are upgrading the R3V5 base load on a *Sun* computer. To upgrade the base load on an *INTEL* computer, see “Upgrading the R3V5 Base Load on an *INTEL* Platform” on page 4-14.

Table 4-1: Checklist for Upgrading a *Sun* R3V5 Base Load

Step	Action
1	Verify the version and load
2	Check non-CMS free space
3	Check CMS free space
4	Back up the system
5	Install <i>Solaris</i> [*] patches
6	Remove CMS patches
7	Remove the current base load
8	Install the new base load
9	Verify the installation
10	Install CMS patches
11	Turn on CMS
12	Do a CMSADM backup
13	Do a full maintenance backup

*Solaris is a trademark of Sun Microsystems, Inc.

1: Verify the Version and Load

Verify the version and load of CMS currently on your machine to make sure you are running a current R3V5 load. The procedure is as follows:

Table 4-2: Sun Platform Version/Load Verification Procedure

Step	Action
1.	<p>Enter this command:</p> <pre>pkginfo -x cms</pre> <p>Your system responds by listing the currently installed CMS package, including the load number.</p>
2.	<p>Check the load number to make certain you are running an R3V5 base load.</p> <p>The number should be r3v5xx.x, where “x” is any alphabetic character. If it’s something else, check Table 1-2, “Upgrade Scenarios and References,” on page 1-7, to see what procedure you should use, or contact the Customer Care Center or your Lucent distributor or customer representative.</p>

2: Check Non-CMS Free Space

1. Make sure you are logged in as the *root* user.
2. Determine whether *Solstice DiskSuite*^{*} is currently installed on your machine. You can do that by entering the following command:

```
#pkginfo -x SUNWmd
```

If *Solstice DiskSuite* is installed, the system responds with:

```
SUNWmd Solstice DiskSuite
      (all) 4.0, REV=1.0
```

If *Solstice DiskSuite* is not installed, the system responds with:

```
ERROR: information for "SUNWmd" was not found
```

3. Enter one of the following commands:

```
#df / /var /dump (R3V5 without Solstice DiskSuite)
#df / (R3V5 with Solstice DiskSuite)
```

The system responds in a format similar to this:

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

^{*}Solstice DiskSuite is a trademark of Sun Microsystems, Inc.

4. Compare the "xxxxx" figures to the values in the following table:

Table 4-3: Non-CMS Blocks Required to Upgrade

File System	Blocks Required	
	V5 <i>without Solstice DiskSuite</i>	V5 <i>with Solstice DiskSuite</i>
/ (root)	8,000	141,000
/var	41,000	n/a
/dump	100,000	n/a

If the df results show fewer blocks than the corresponding table value, discontinue the upgrade immediately. Telephone the National Customer Care Center at 1-800-242-2121, or contact your Lucent distributor or customer representative, for help with your upgrade.

⚠ CAUTION:

The figures shown above were accurate at publication, but the requirements may have changed since then. Be sure to check the CMS_README file to see whether this table has changed. For instructions on accessing the CMS_README file, see "Viewing the CMS_README File" on page A-58.

3: Check CMS Free Space

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

1. Enter a df /cms command:

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

Record the results in Table 4-4, below. The "blocks" figure goes in space 1a, the "files" figure in space 1b.

2. List the number of blocks and files being used by CMS by entering the following pkgparam command:

```
pkgparam cms IBSblocks IBSinodes
<ibsblocks>
<ibsinodes>
```

As before, record these responses in Table 4-4. Put <ibsblocks> in space 2a, <ibsinodes> in 2b.

Table 4-4: Space Calculations for /cms

<input style="width: 80px; height: 25px;" type="text" value="106,700"/>	—	<input style="width: 80px; height: 25px;" type="text"/>	=	<input style="width: 80px; height: 25px;" type="text"/>										
# of R3V5 blocks		2a: # current blocks		3a: Blocks needed										
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; width: 25%;"><input style="width: 80px; height: 25px;" type="text" value="1600"/></td> <td style="text-align: center; width: 5%;">—</td> <td style="text-align: center; width: 25%;"><input style="width: 80px; height: 25px;" type="text"/></td> <td style="text-align: center; width: 5%;">=</td> <td style="text-align: center; width: 25%;"><input style="width: 80px; height: 25px;" type="text"/></td> </tr> <tr> <td style="text-align: center; font-size: small;"># of R3V5 files</td> <td></td> <td style="text-align: center; font-size: small;">2b: # current files</td> <td></td> <td style="text-align: center; font-size: small;">3b: Files needed</td> </tr> </table>					<input style="width: 80px; height: 25px;" type="text" value="1600"/>	—	<input style="width: 80px; height: 25px;" type="text"/>	=	<input style="width: 80px; height: 25px;" type="text"/>	# of R3V5 files		2b: # current files		3b: Files needed
<input style="width: 80px; height: 25px;" type="text" value="1600"/>	—	<input style="width: 80px; height: 25px;" type="text"/>	=	<input style="width: 80px; height: 25px;" type="text"/>										
# of R3V5 files		2b: # current files		3b: Files needed										

3. Perform the calculations indicated in the table (answers less than zero are okay).

If the figure in 3a is more than the figure in 1a, or if 3b is more than 1b, you do not have enough space for the upgrade. Discontinue the procedure and contact the National Customer Care Center or your Lucent Technologies distributor or representative. (The Customer Care Center can log in to your system remotely, and they know what files can be removed to make room for the upgrade.)

4: Back Up the System

The purpose of backing up the system is to make certain that, if you should have a problem with the upgrade, you do not lose CMS data you have already collected. You should back up your system in a way that furthers that end. An incomplete backup plan may cause you to lose data.

A typical scenario for upgrading a base load with no data migration is as follows:

1. *Do a CMSADM backup* the night before the scheduled upgrade.
2. *If you have a full maintenance backup that runs nightly*, allow it to run on schedule the night before the upgrade.
3. *Do an incremental backup* just before starting the upgrade.

That is a suggested sequence; your backup strategy needs to reflect your local situation.

CMSADM Backup

The CMSADM backup provides a system backup. If the upgrade should go wrong, you can use the CMSADM backup tape to restore the current state of your system.

“CMSADM File System Backups” on page A-17 contains detailed, step-by-step procedures for performing CMSADM backups. Briefly, that procedure is as follows:

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.

Full Maintenance Backup

If you do not have a current full maintenance backup, do one shortly before beginning the upgrade. Briefly, the procedure is as follows:

1. Start a CMS session.
2. From the main menu, select `Maintenance - Back Up Data`.
3. In the Back Up Data window, select the following options:

Field	Value to Enter or Select
Device name	The tape drive device name
Verify tape...?	Y
ACD(s) to back up	All ACDs
Data to back up	System Administration data ACD-specific administration data Historical data - Full Non-CMS data (if needed)

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

See also “Back Up Data Window” on page A-24.

Incremental Backup

An incremental historical backup backs up data that has been collected since the last full maintenance backup. The procedure is as follows:

1. Display the CMS main menu.
2. From the 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
Verify tape...?	y
ACD(s) to back up	All ACDs
Data to back up	Historical data - Incremental

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

See also “Back Up Data Window” on page A-24.

5: Install *Solaris* Patches

Install *Solaris* patches via the procedure in the following table.

Table 4-5: Procedure to Install *Solaris* Patches

Step	Screen/Prompt	Action
1.	#	Load the CMS compact disc into your CD-ROM drive and enter: <pre>pkgadd -d /cdrom/cdrom0</pre>
2.	... (<i>installation menu</i>) ... Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:	Enter the number that corresponds to the <i>spatches</i> package ⇒ NOTE: Do not enter <code>all</code> . The <i>spatches</i> package must be installed before the CMS software package.
3.	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	Enter: y
4.	... (<i>installation menu</i>) ... Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:	Enter: q
5.	# . . . Installation of <SUNWcsr.2> was successful. generating . . .	Make certain CMS is turned off and enter the following command: <pre>/tmp/patches/install_patches</pre> <p>A message displays indicating that you need 20 MB of space in <code>/var</code> to install the Jumbo Kernel patch. Enter <code>y</code> (or wait 60 seconds) and the installation continues.</p> <p>Depending on how big the patches are and how many are being installed, the installation may take over an hour. Eventually, however, you receive an "installation finished" message.</p>

Table 4-5: Procedure to Install *Solaris* Patches (Contd)

Step	Screen/Prompt	Action
6.	<pre> . . . 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 # </pre>	<p>Remove the compact disc from the CD-ROM drive by entering the following command:</p> <pre> eject cdrom </pre> <p>Remove the compact disc from the drive and close the drive tray.</p>
7.	<pre> # </pre>	<p>Reboot your system using the following command:</p> <pre> shutdown -y -i6 -g0 </pre> <p>When the system prompt returns to your screen, the installation of the patches is complete.</p>

6: Remove CMS Patches

Remove existing CMS patches with this procedure:

Table 4-6: Procedure to Remove CMS Patches

Step	Screen/Prompt	Action
1.	-	Log in as <i>root</i> and enter a <code>cmssvc</code> command.
2.	<p>... (CMS Services menu) ... Enter choice(1-x) or q to quit:</p>	Enter the number corresponding to <code>back_all</code>
	<p>⇒ NOTE:</p> <p>Your CMS Services menu may not have a <code>back_all</code> option. In that case, enter <code>q</code> to quit the menu.</p> <p>If you have the option, but there are no patches installed on your machine, the system responds with a <code>No CMS patches</code> message, and redisplayes the system prompt.</p> <p>In either case, skip the remainder of this procedure.</p>	
3.	<p>The following patches are installed on this machine:</p> <p>. . .</p> <p>Are you sure you wish to remove all these patches? (y n)</p>	<p>Answer: <code>y</code></p> <p>The system removes the patches. For each patch removed, the system displays messages similar to the following:</p> <p>Removing patch package for <code>cmstp-x-s</code>: Removal of <code><cmstp-x-s></code> was successful. Restoring previous version of files... . . . x blocks Making package database consistent with restored files: Patch x has been backed out. #</p>

7: Remove the Current Base Load

Do these steps to remove the current CMS base package:

Table 4-7: Procedure to Remove the CMS Package

Step	Screen/Prompt	Action
1.	#	Enter this command: pkgrm cms
2.	The following package is currently installed: cms Call Management System (sparc) r3v5xx.x Do you want to remove this package?	Enter: y.
3.	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]	Enter: y
4.	## Verifying package dependencies. ## Processing package information. ## Executing preremove script Do you want to preserve CMS data [y,n,?]	Enter: y
5.	CMS will be removed from this machine; the data will be preserved. Are you sure this is correct [y,n,?]	Enter: y
6.	All file systems should be backed up before continuing. . . . Have you backed up the file systems [y,n,?]	Enter: y
7.	## Removing pathnames in class <ind> /usr/lib/cms/trmaps /usr/informix/etc/termcap /usr/bin/cmssvc . . . Removal of <cms> was successful. #	(procedure complete)

8: Install the New Base Load Do the steps in the following table to install the *CentreVu* CMS base load:

Table 4-8: CMS Package Installation Procedure

Step	Screen/Prompt	Action
1.	-	Insert the CMS CD into the CD-ROM drive and log in as the <i>root</i> user.
2.	#	Enter the following command: <code>pkgadd -d /cdrom/cdrom0</code>
3.	... (<i>installation menu</i>) ...	Enter the number of the CentreVu(TM) Call Management System option.
4.	. . . *-conflict with a file which does not belong to any package. Do you want to install these conflicting files [y,n,?,q]	Answer: y
5.	## Checking for setuid /setgid programs. Do you want to install these setuid/setgid files [y,n,?,q]	Answer: y
6.	Do you want to continue with the installation of <cms> [y,n,?,q]	Answer: y
7.	Assigning a new password for Pcms New password:	Enter an appropriate password.
8.	Have you backed up your file systems?	Answer: y
9.	Do you want to turn off CMS now?	This prompt occurs only if CMS is turned on. Answer: y
10.	... (<i>installation menu</i>) ...	Enter: q
<p> NOTE:</p> <p>If you made changes to your <i>cms</i> or <i>cmssvc</i> .profile file, the following message appears:</p> <pre>A manual merge may be necessary to restore custom entries. The original content was saved in profile.save prior to changes.</pre> <p>The machine reboots if needed and returns to the system prompt.</p> <p>If you are instructed to run a <code>shutdown</code>, shut down the system using the command displayed with the message.</p>		

9: Verify the Installation

To verify the installation of the new *CentreVu* CMS software, enter the following command:

```
pkgchk -n cms
```

If the software installation was successful, the system prompt returns to the screen after a few seconds. The only indication of success is the absence of error messages.

If errors are detected, see “CentreVu CMS Package Installation Problems” on page 9-14.

10: Install CMS Patches

If there are CMS patches with the new load, use the following procedure to install them:

Table 4-9: Procedure to Install CMS Patches

Step	Screen/Prompt	Action
1.	#	Enter the <code>cmssvc</code> command.
2.	... (<i>CMS Services menu</i>) ... Enter choice(1-x) or q to quit:	Enter the number of the <code>load_all</code> option
	<p> NOTE:</p> <p>If there are no patches to be installed, the system displays a message to that effect and returns to the system prompt. If that happens, skip the remainder of this procedure.</p>	
3.	<pre>The following patches are available for installation: 1. cmspl-s . . . Are you sure you want to install all these patches? (y n)</pre>	<pre>Answer: y The system installs patches and keeps you informed of its progress: Generating list of files to be patched... . . . Installation of <cmspx-s> was successful. . . . Patch installation completed. See /cms/patch/cmspx-s/log for details.</pre>

11: Turn On CMS

Turn on CMS with the following steps:

1. Enter the command `cmsadm`.
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 X.25 software, the system prompt reappears. CMS is now on and ready to run.

12: Do a CMSADM Backup

The CMSADM backup provides a system backup. "CMSADM File System Backups" on page A-17 contains detailed, step-by-step procedures for performing CMSADM backups. Briefly, the procedure is:

1. Remove the CD from the CD-ROM drive with the following steps:
 1. Enter the command: `eject cdrom`
 2. Remove the CD from the drive tray.
 3. Close the drive tray.
2. Make sure the system is in a multi-user state.
3. Access the Administration menu by entering a `cmsadm` command.
4. Select the `backup` option.
5. Feed tapes to the system until it stops asking for them.

13: Do a Full Maintenance Backup

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

Field	Value to Enter or Select
Device name	The tape drive device name
Verify tape...?	y
ACD(s) to back up	All ACDs
Data to back up	System Administration data ACD-specific administration data Historical data - Full Non-CMS data (if needed)

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

See also "Back Up Data Window" on page A-24.

When this backup is complete, your upgrade is done.

Upgrading the R3V5 Base Load on an *INTEL* Platform

The procedures in this section apply only when you are upgrading the R3V5 base load on an *INTEL* computer. To upgrade the base load on a *Sun* computer, see “Upgrading the R3V5 Base Load on a Sun Platform” on page 4-2.

Table 4-10: Checklist for Upgrading an *INTEL* R3V5 Base Load

Step	Action
1	Verify the version and load
2	Check the tunable parameters
3	Back up the system
4	Remove field updates
5	Run the <i>installpkg</i> command
6	Turn on CMS
7	Do a CMSADM backup
8	Do a full maintenance backup

1: Verify the Version and Load

Verify the version and load of CMS currently on your machine to make sure you are running a current R3V5 load. The procedure is as follows:

Table 4-11: INTEL Platform Version/Load Verification Procedure

Step	Action
1.	Enter the following command: <pre># displaypkg</pre> Your system responds by listing the packages currently installed on the system.
2.	Find the entry for CMS and check the load number. The number should be r3v5xx.x, where "x" is any alphabetic character. If it's something else, check Table 1-2, "Upgrade Scenarios and References," on page 1-7, to see what procedure you should use, or contact the Customer Care Center or your Lucent distributor or customer representative.

2: Check the Tunable Parameters

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 the check was successful, continue with the upgrade. If any messages display about the tunables being incorrect, call the Lucent Technologies National Customer Care Center at 1-800-242-2121, or contact your Lucent distributor or customer representative..

3: Back Up the System

The purpose of backing up the system is to make certain that, if you should have a problem with the upgrade, you do not lose CMS data you have already collected. You should back up your system in a way that furthers that end. An incomplete backup plan may cause you to lose data.

A typical scenario for upgrading a base load with no data migration is as follows:

1. *Do a CMSADM backup* the night before the scheduled upgrade.
2. *If you have a full maintenance backup that runs nightly*, allow it to run on schedule the night before the upgrade.
3. *Do an incremental backup* just before starting the upgrade.

That is a suggested sequence; your backup strategy needs to reflect your local situation.

CMSADM Backup

The CMSADM backup provides a system backup. If the upgrade should go wrong, you can use the CMSADM backup tape to restore the current state of your system.

“CMSADM File System Backups” on page A-17 contains detailed, step-by-step procedures for performing CMSADM backups. Briefly, that procedure is as follows:

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.

Full Maintenance Backup

If you do not have a current full maintenance backup, do one shortly before beginning the upgrade. Briefly, the procedure is as follows:

1. Start a CMS session.
2. From the main menu, select `Maintenance - Back Up Data`.
3. In the `Back Up Data` window, select the following options:

Field	Value to Enter or Select
Device name	The tape drive device name
Verify tape...?	y
ACD(s) to back up	All ACDs
Data to back up	System Administration data ACD-specific administration data Historical data - Full Non-CMS data (if needed)

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

See also “Back Up Data Window” on page A-24.

Incremental Backup

An incremental historical backup backs up data that has been collected since the last full maintenance backup. The procedure is as follows:

1. Display the CMS main menu.
2. From the 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
Verify tape...?	y
ACD(s) to back up	All ACDs
Data to back up	Historical data - Incremental

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

See also “Back Up Data Window” on page A-24.

4: Remove Field Updates

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. (See “Turning CMS On and Off” on page A-11 for instructions on turning off CMS.)

Do these steps to remove the *CentreVu* CMS update:

Table 4-12: Removing an Update

Step	Action
1.	Enter a <code>cmssvc</code> command. The system displays the CMS Services menu.
2.	Select the <code>upd_remove</code> option. The system responds with a list of files that will be changed due to the removal. When the system prompt reappears, the update has been removed.

5: Run the *installpkg* Command

⇒ NOTE:

Before you begin, make sure you have the cartridge tape that contains the new base load 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 `Enter`.
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 `Enter`.

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 `Enter` 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 `Enter` to continue.
 7. Select the Call Management System package followed by `Enter`.
 8. Press `Esc` to indicate that all selections have been made. Press `Enter`. Press `Enter` 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, write down the audit errors and call the National Customer Care Center at 1-800-242-2121.

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 **Enter** 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.

⇒ NOTE:

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.
- Execute the `shutdown -i6 -g0 -y` command.

15. After the tape finishes rewinding (tape drive light is not lit), remove the cartridge tape.

6: Turn On CMS

Turn on CMS with the following steps:

1. Enter the command `cmsadm`.
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 X.25 software, the system prompt reappears. CMS is now on and ready to run.

7: Do a CMSADM Backup

The CMSADM backup provides a system backup. “CMSADM File System Backups” on page A-17 contains detailed, step-by-step procedures for performing CMSADM backups. Briefly, the procedure is:

1. Remove the CD from the CD-ROM drive with the following steps:
 1. Enter the command: `eject cdrom`
 2. Remove the CD from the drive tray.
 3. Close the drive tray.
2. Make sure the system is in a multi-user state.
3. Access the Administration menu by entering a `cmsadm` command.
4. Select the `backup` option.
5. Feed tapes to the system until it stops asking for them.

8: Do a Full Maintenance Backup

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

Field	Value to Enter or Select
Device name	The tape drive device name
Verify tape...?	y
ACD(s) to back up	All ACDs
Data to back up	System Administration data ACD-specific administration data Historical data - Full Non-CMS data (if needed)

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

See also “Back Up Data Window” on page A-24.

When this backup is complete, your upgrade is finished.

Chapter 5

Migrating Data to a New *Sun SPARCserver* Computer

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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 migrate one or more ACDs to the *Sun SPARCserver* computer.

⇒ 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.

⇒ 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.

⇒ NOTE:

The customer may contract Lucent to complete Steps 9 through 12 on a time-and-materials basis.

The steps involved are presented in Table 5-1, below.

*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.

Table 5-1: Checklist for Migrating Data to a New Sun Platform

Step	Action
1.	Install external 2.5-gigabyte tape drive (<i>INTEL</i> platforms only) <ul style="list-style-type: none"> A. Order the drive B. Install the drive
2.	Back up the Old System <ul style="list-style-type: none"> A. Back up CMS user directories B. Do a manual full maintenance backup C. Do a CMSADM backup
3.	Install the new platform
4.	Create ACDs <ul style="list-style-type: none"> A. Record Information on Existing ACDs B. Create ACDs on the new platform
5.	Migrate administration data <ul style="list-style-type: none"> A. Migrate system administration data B. Migrate ACD administration data C. Restore customer files
6.	Move the link <ul style="list-style-type: none"> A. Busy out link B. Move link C. Start data collection on the new platform
7.	Migrate historical data <ul style="list-style-type: none"> A. Migrate full historical data B. Do an incremental backup on the old platform C. Migrate incremental historical data
8.	Back up the new platform <ul style="list-style-type: none"> A. Do a CMSADM backup B. Do a full maintenance backup
9.	Return the tape drive <ul style="list-style-type: none"> A. Remove the tape drive B. Return the tape drive kit

1: Install a Tape Drive

Perform this step under these circumstances:

- ⊗ *INTEL* platform upgrades

NOTE: Begin this step at least one week before the scheduled migration.

if your new Sun SPARCserver system already has a 2.5-gigabyte tape drive, skip this step and go directly to Step 2 (page 5-8).

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

The steps involved are two:

- A. Order the drive from the TSC
 - B. Install the drive on the *Sun SPARCserver* system
-

1A: Order the Drive

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

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

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

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, complete the table below.

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

Table 5-2: SCSI Bus Distance Limitations

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

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

1B: Install the Drive

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

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

The procedure is as follows:

Table 5-3: Tape Drive Installation Procedure

Step	Action
1.	Remove the SCSI device files by entering the command: <pre>rm /dev/rmt/*</pre> <div style="border: 1px solid black; padding: 2px; display: inline-block; width: fit-content;">Note</div> If you do not remove the SCSI device files before rebooting the system, the files may not match the hardware configuration. If that happens, repeat this procedure.
2.	Shut down the system using the command: <pre>shutdown -i0 -g0 -y</pre>
3.	Do the following in sequential order: <ol style="list-style-type: none"> <li>a. Turn off the system unit. <li>b. Turn off the system monitor. <li>c. Turn off external devices one at a time, starting with the device nearest the system unit and proceeding to the farthest.
4.	Set the SCSI ID on the tape drive by doing the following: <ol style="list-style-type: none"> <li>a. Locate the target address switch on the drive's rear panel (see Figure 5-1). <div style="text-align: center;"> </div> <p>Figure 5-1: Setting the SCSI ID/Target Address</p> <ol style="list-style-type: none"> <li>b. Identify a SCSI ID that is not already being used. (SCSI ID 4 will almost certainly be free.) <li>c. Press the switch buttons until the ID number appears in the window.
5.	Connect the tape drive to the other SCSI devices. <p>Figure 5-2, below, 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.</p>

Table 5-3: Tape Drive Installation Procedure (Contd)

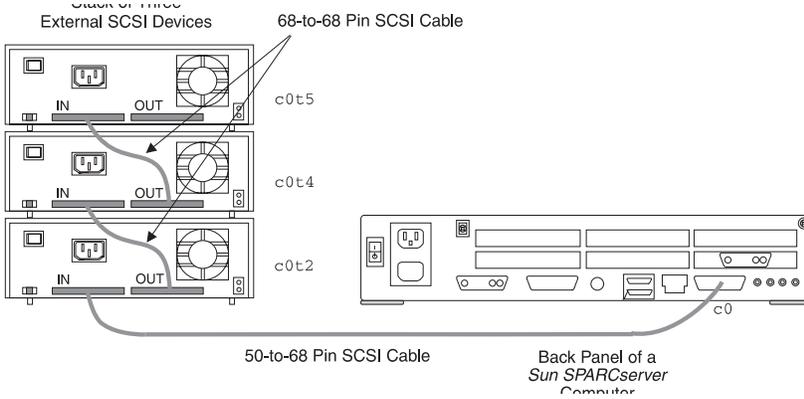
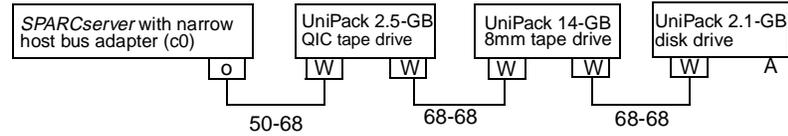
Step	Action
	<div style="text-align: center;">  </div> <p style="text-align: center;">Figure 5-2: Daisy Chaining External SCSI Devices</p> <p>Because UniPack devices are auto-terminated, the last UniPack device in a SCSI chain requires no terminator. To verify that the tape drive is terminated, check the LEDs on the drive back panel. The LEDs—labeled Auto Term High and Auto Term Low—should both be lit. If the tape drive is not the last device in the chain, then neither LED is lit.</p> <p>Figure 5-3 shows the SCSI cabling scheme when one or more UniPack enclosures is present.</p> <div style="text-align: center;">  </div> <p style="text-align: center;"> W = 68-pin wide SCSI III bus connection N = 50-pin narrow SCSI II bus connection A = Auto-terminated </p> <p style="text-align: center;">Figure 5-3: SCSI Cabling Schemes</p>
6.	Plug the tape drive into a power source.
7.	<p>Power up the system and check to see that it recognizes the drive you just installed. The procedure is as follows:</p> <ol style="list-style-type: none"> a. Turn on devices attached to the <i>Sun SPARCserver</i>. Power-on the SCSI devices one at a time, beginning with the tape drive you just installed and working toward the system unit. b. Turn on the system unit and system monitor. Power-on diagnostics occur.

Table 5-3: Tape Drive Installation Procedure (Contd)

Step	Action
	<p>c. After the display console banner appears, but before the operating system starts to boot, press the Stop and A keys simultaneously.</p> <p>The <code>ok</code> prompt appears, indicating that you are in the OpenBoot environment.</p> <p>d. Enter the command <code>probe-scsi-all</code>.</p> <p>The system responds with a list of all the SCSI devices it can find on the bus, in a format similar to this:</p> <pre>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</pre> <p>The devices listed will, of course, vary with the system.</p> <p>e. Verify that the system can see all your SCSI devices, including the tape drive you just added.</p>
8.	<p>Reboot the system as follows:</p> <p>a. Enter the command <code>boot -r</code>.</p> <p>That reboots the system and reconfigures the devices.</p> <p>b. Log in as <i>root</i>.</p>
9.	<p>Edit the <code>/kernel/drv/st.conf</code> file by entering the command:</p> <pre>vi /kernel/drv/st.conf</pre> <p>Add the following four lines to the file:</p> <pre>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;</pre>
10.	<p>Write and quit the file.</p>

2: Back Up the Old System

Perform this step under these circumstances:

⊗ Always

2A: Back Up CMS User Directories

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

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

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

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

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

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

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

Be sure to label the tape for future reference.

2B: Do a Full Maintenance Backup

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

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

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

Field	Value to enter or select
Device name	The tape drive device name
Verify tape...?	y
ACD(s) to back up	All ACDs
Data to back up	System Administration data ACD-specific administration data Historical data - Full Non-CMS data (if needed)

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

See also "Back Up Data Window" on page A-24.

2C: Do a CMSADM Backup

The CMSADM backup provides a system backup in case the migration should go wrong. "CMSADM File System Backups" on page A-17 contains detailed, step-by-step procedures for performing CMSADM backups. Briefly, the procedure goes like this:

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

3: Install the New Platform

Perform this step under these circumstances:

Always

Lucent field technicians install the new *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 *CentreVu* CMS R3V5 and install the feature packages that have been authorized.

Appendix A of this document has information about setting up CMS; see the following:

- “Setting Authorizations” on page A-27
- “Setting Up Data Storage Parameters” on page A-35
- “Installing the Forecasting Feature Package” on page A-38
- “Installing the External Call History Package” on page A-41

For additional information, 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.”

4: Create ACDs

Perform this step under these circumstances:

Always

4A: Record Information on Existing ACDs

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

- Switch information (use the `swinfo` option of `cmsadm`). See “Displaying Switch Information” on page A-2.
- Authorizations (use the `auth_display` option of `cmssvc`). See “Setting Authorizations” on page A-27.
- Data storage allocation (`System Setup` option of CMS Main Menu). See “Checking Data Storage Allocation Parameters” on page A-7.
- Storage intervals (`System Setup` option of CMS Main Menu). “Checking the Storage Interval Size” on page A-9.
- Data storage allocation for Forecasting package (`Forecast` option—if present—of the CMS main menu). See “Installing the Forecasting Feature Package” on page A-38.

4B: Create ACDs on the New Platform

Task Performed By:TSC

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

ACDs are created via the `acd_create` option of the CMSADM menu. See “Creating ACDs” on page A-33. When you create the ACDs on the new platform, you should set them up in exactly the same way they were set up on the old system.

5: Migrate Administration Data

Perform this step under these circumstances:

Always

5A: Migrate System Administration Data

CAUTION:

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

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

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

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

6. Press **Enter** to access the action list in the top right corner.
7. Select *Run* and press **Enter**. System administration data generally takes about an hour to migrate. The *Status:* field reports the progress of the migration. When the migration ends, *Status:* indicates the success or failure of the run.
8. Investigate the customer migration log and take any necessary corrective action. For help interpreting the log and its messages,

telephone the Lucent National Customer Care Center or contact your Lucent distributor or customer representative.

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

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

See also "Migration Log Messages" on page 9-18 and "R3 Migrate Data Window" on page A-46.

5B: Migrate ACD Administration Data

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

CAUTION:

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

To migrate ACD administration data, use this procedure:

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

For more information on the procedure, see "Turning Data Collection On or Off" on page A-12.

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

4. Return to the CMS main menu and select the `System Setup -> R3 Migrate Data` option.

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

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

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

7. Select **Run** and press **Enter**.

As the migration progresses, messages in the `Status:` field report the migration's status. When the migration ends, `Status:` reports its success or failure.

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

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

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

See also "Migration Log Messages" on page 9-18 and "R3 Migrate Data Window" on page A-46

5C: Restore Customer Files

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

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

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

(a list of files retrieved from tape displays)

where:

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

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

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

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

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

where `login` represents the login ID you're restoring the files to.

NOTE:

INTEL users: The restored files may contain *UNIX* system shell scripts or executable programs. Since the *Sun 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.

6: Move the Link

Perform this step under these circumstances:

Always

6A: Busy Out the Link

Task Performed By:Lucent field technician

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

6B: Move the Link

Task Performed By:Lucent field technician

Lucent field technicians take down the link between the old platform and the switch and bring up the *Sun 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.”

6C: Start Data Collection on the New Platform

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

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

See also “Checking the Storage Interval Size” on page A-9.

7: Migrate Historical Data

Perform this step under these circumstances:

⊗ Always

7A: Migrate Full Historical Data

To migrate full historical data, use this procedure:

1. From the CMS main menu, put CMS in a multi-user state via the `System Setup - CMS State` option.
2. Return to the CMS main menu and turn on data collection for all ACDs via the `System Setup - Data Collection` option. (See “Turning Data Collection On or Off” on page A-12.)
3. Verify that the full maintenance backup tape is in the tape drive.
4. From the CMS main menu, select the `System Setup → R3 Migrate Data` option.
5. Complete the fields of the R3 Migrate Data Window:

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

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

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

⇒ NOTE:

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

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

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

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

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

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

See also "Migration Log Messages" on page 9-18 and "R3 Migrate Data Window" on page A-46.

7B: Run an Incremental Backup on the Old Platform

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

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

An incremental backup goes like this

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

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

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

See also "Back Up Data Window" on page A-24.

7C: Migrate Incremental Historical Data

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

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

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

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

As the migration progresses, the `Status:` field displays various messages indicating its status. When the migration ends, the `Status:` field reports the migration's success or failure.

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

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

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

See also "Migration Log Messages" on page 9-18 and "Back Up Data Window" on page A-24.

8: Back Up the New Platform

Perform this step under these circumstances:

Always

8A: Run a CMSADM Backup

The CMSADM backup provides a complete system backup of the new platform. “CMSADM File System Backups” on page A-17 contains detailed, step-by-step procedures for performing CMSADM backups. Briefly, the procedure goes like this:

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

8B: Run a Full Maintenance Backup

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

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

Field	Value to enter or select
Device name	The tape drive device name
Verify tape...?	y
ACD(s) to back up	All ACDs
Data to back up	System Administration data ACD-specific administration data Historical data - Full Non-CMS data (if needed) Specific tables (if needed)

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

See also “Back Up Data Window” on page A-24.

9: Return the Tape Drive

Perform this step under these circumstances:

- ⊗ You borrowed an external tape drive from Lucent's Customer Care Center

If you borrowed an external, 2.5-gigabyte tape drive from the Lucent Customer Care Center, please arrange to ship it back as soon as possible, so it can be made available to other customers.

9A: Remove the Tape Drive

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/*
```

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 device at the end of the SCSI chain.
4. Remove the tape drive and disconnect it from the power source.
5. Reconnect the remaining SCSI devices.
6. Do the following in sequential order:
 - a. Turn on devices attached to the *Sun SPARCserver*, starting with the device at the end of the SCSI chain and working toward the system unit.
 - 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:

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

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

```
ok
```

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

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

The program responds:

```
/iommu@f,e0000000/sbus@f.e0001000/esp@3,200000
Target 1
  Unit 0 Disk SEAGATE ST14801 SUN04246266 Copyright (C) 1991
Target 3
  Unit 0 Disk SEAGATE ST14801 SUN04246266 Copyright (C) 1991
  .
  .
  .
Target 6
  Unit 0 Disk Removable Read Only Device SONY CD-ROM CDU-8012
ok
```

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

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

```
ok boot -r
```

9B: Return the Tape Drive Kit

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

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

International customers: contact your Lucent representative or distributor.

Chapter 6

Migrating Data from G2.2 to G2.2/EAS

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General Information

This chapter describes how to migrate data from an *INTEL*^{*} or *Sun*[†] *SPARCserver*[‡] platform running on a Generic 2.2 (G2.2) switch without Expert Agent Selection (EAS), to the same platform running on a G2.2 with EAS.

This chapter allows an installer with a reasonable knowledge of *UNIX*[§] and CMS to perform the migration with minimal referral to other chapters or to supplemental procedures. If your experience with *UNIX* or with CMS is limited, however, you may need to refer periodically to the procedures in Appendix A; they give more detailed explanations of operating system and CMS processes you may need to perform during the upgrade.

Split/Skill Numbers

After the migration from G2.2 to G2.2/EAS, 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).

This procedure consists of the steps in Table 6-1.

*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.

§UNIX is a registered trademark of Novell, Inc. in the United States and other countries, licensed exclusively through X/Open Corporation

Table 6-1: G2.2 to G2.2/EAS Migration Checklist

Step	Action
1	Back up the system A. Do a CMSADM backup B. Do a full maintenance backup
2	Set up the switch for EAS
3	Migrate data
4	Back up the migrated data A. Do a CMSADM backup B. Do a full maintenance backup

1: Back Up the System

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 backing up the existing version of CMS. Two separate backups are required:

- A. *A CMSADM backup.* The cmsadm backup provides backup CMS data in case the data migration should go wrong.
- B. *A full CMS maintenance backup.* The full maintenance backup provides the migration data for the new version.

1A: Do a CMSADM Backup

The CMSADM backup provides a complete backup of all file systems on the existing system in case of failure. The procedure involves the following general steps:

1. Print the `/etc/vfstab` file and save the printout.
2. Make sure the system is in a multi-user state.
3. Access the Administration menu by entering a `cmsadm` command.
4. Select the `backup` option.
5. Select a tape drive option.
6. When the backup completes, label the tape, bundle it with a printout of `/etc/vfstab` (*Sun* platforms) or `/etc/fstab` (*INTEL* platforms), and put it in a safe place.

For a more detailed procedure, see “CMSADM File System Backups” on page A-17.

1B: Do a Full Maintenance Backup

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 the Back Up Data window has the following settings:

Table 6-2: 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:	Make sure the G2.2 switch you are migrating is the current ACD, and select Current ACD
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 “Backup Data Window” on page A-26.

2: Set Up the Switch for EAS

To set up the switch to run with EAS, perform the procedure in the following table (note that some of the steps may need to be performed by an experienced field technician):

Table 6-3: Procedure to Set Up a G2.2 Switch for EAS

Step	Action
1.	Turn off <i>CentreVu</i> CMS (via the <code>run_cms</code> option of <code>cmsadm</code> or <code>cmssvc</code>).
2.	Enter the command <code>cmssvc</code> , and select the <code>swsetup</code> option. Set EAS to: <code>y</code> .
3.	Turn on CMS (again via the <code>run_cms</code> option).
4.	Busy out the switch using PROC 028 .
5.	Activate the EAS feature on the switch.
6.	Release busy out on the switch.
7.	Log in to CMS. Change the data storage allocation (via <code>MainMenu - System Setup - Data Storage Allocation</code>) to add skill pairs.
8.	Start <i>CentreVu</i> CMS data collection.

At this point, the TSC hands the migration back to the customer.

3: Migrate Data

Now that the EAS *CentreVu* CMS is collecting data, the customer may migrate the non-EAS *CentreVu* CMS historical data.

The customer may contract with Lucent to have the TSC complete the migration on a time and materials basis.

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 6-4: R3 Migrate Data Settings for G2.2 to G2.2/EAS

Field	Setting
Device name:	default (or the name of the tape device)
Data Type:	Historical data
Specify ACD(s) to migrate:	Single ACD The <i>from:</i> and <i>to:</i> fields should each specify the number of the G2.2 switch you are migrating to EAS.
Stop time	11:59PM

4. Press to access the Action List.
5. Select *Run* and press .

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 accessing the migration window to check 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: “Migration Log Messages” on page 9-18 and “Back Up Data Window” on page A-24.

4: Back Up the Migrated Data

Once all data has been migrated, you must do a full system backup to protect the migrated data from loss. Two separate backups are required:

- A. A *CMSADM backup*. The `cmsadm` backup allows you to recreate the system state in case of failure.
- B. A *full CMS maintenance backup*. The full maintenance backup backs up the migrated data in its new format.

4A: Do a CMSADM Backup

The “`cmsadm`” backup provides a complete backup of all file systems on the existing system in case of failure. The procedure involves the following general steps:

1. Print the `/etc/vfstab` file and save the printout.
2. Make sure the system is in a multi-user state.
3. Access the Administration menu by entering a `cmsadm` command.
4. Select the `backup` option.
5. Select a tape drive option.
6. When the backup completes, label the tape, bundle it with a printout of `/etc/vfstab` (*Sun* platforms) or `/etc/fstab` (*INTEL* platforms), and put it in a safe place.

For a more detailed procedure, see “CMSADM File System Backups” on page A-17.

4B: Do a Full Maintenance Backup

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 the Back Up Data window has the following settings:

Table 6-5: 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 “Backup Data Window” on page A-26.

Chapter 7

Migrating 3B2 Data to a *Sun SPARCserver* Platform

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Migrating R2 Data from a 3B2 Computer

This chapter provides instructions on migrating data from a 3B2 computer running R2 CMS to a *Sun*^{*} *SPARCserver*[†] computer running R3V5 CMS.

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 either—or a combination—of these two scenarios:

- First, migrate the R2 administration data for all the ACDs to the *Sun SPARCserver* computer. That allows you to clean up the administration data (user IDs, dictionary, etc.) for all ACDs at once. After the administration data is cleaned up, you can start CMS 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. That 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. Repeat the process for each remaining ACD until all the ACDs are migrated. The steps involved are presented in Table 7-1, below.

⇒ NOTE:

Phased migrations don't work. If you migrate some agents at one time and others later, you will have to decide which set of data you want to keep. The two sets cannot be merged.

⇒ NOTE:

Login/logout data does not migrate.

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⇒ NOTE:

The customer is responsible for performing the 3B2-to-*Sun SPARCserver* computer migration steps (except Steps 3 and 6A). The customer can, however, contract Lucent to do the migration on a time-and-materials basis.

⇒ NOTE:

Steps 1 through 5 allow you to complete the administration of the CMS R3V5 before it goes into service. You should start these steps 2 to 3 days before the cutover to the *Sun SPARCserver* computer.

Table 7-1: 3B2-toSun Migration Checklist

Step	Action
1	Perform premigration tasks
2	Install the R2 migration program
3	Install the <i>Sun SPARCserver</i> computer <ul style="list-style-type: none"> A. Install the computer B. Provision the system C. Install feature packages D. Administer printers
4	Transfer R2 administration data to tape
5	Migrate R2 administration data <ul style="list-style-type: none"> A. Verify prerequisites B. Migrate administration data C. Perform post migration tasks
6	Transfer R2 historical data to tape <ul style="list-style-type: none"> A. Move the link B. Transfer the data
7	Migrate R2 historical data <ul style="list-style-type: none"> A. Verify prerequisites B. Migrate the data C. Perform post migration tasks
8	Back up the new system <ul style="list-style-type: none"> A. Do a CMSADM backup B. Do a full maintenance backup

1: Perform Premigration Tasks

NOTE: You should begin this step at least three days before beginning the migration.

Perform the following tasks on the 3B2:

- A. Change R2 archive parameters for any files that will be set up for 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.

For Steps 1B and 1C, there is no need to print out scheduler screens or exceptions administration if you can access a terminal on *both* the 3B2 R2 CMS and the *Sun SPARCserver* computer CMS R3V5. You can view the R2 screens and then enter the appropriate information into the CMS R3V5 windows.

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

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

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

R2 exceptions do not migrate to the *Sun SPARCserver* computer; you must readminister them. The printout will help you readminister the exceptions.

- D. Clean up the dictionary:

1. Print out each area in the Dictionary subsystem except "Login Identifications" and "Database Items."
2. Remove synonyms, constants, and calculations.
3. In calculations, you *must* replace all references to standard CMS database items in lower case with uppercase versions.
4. Modify names (synonyms), constants, and calculations so that all of them start with a letter.
5. Replace any occurrences of * \ - " ' | ? ; ~ in names (synonyms) with legal characters. 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 are not replaced for calculations.

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

E. Look carefully at custom reports:

1. Decide whether all custom report designs from R2 will be needed in R3V5. You may find that some R2 custom reports are covered by new, standard R3V5 reports.
2. Remove any unneeded custom reports. Fix or remove any R2 reports that have not been compiled. Reports that have not been successfully compiled in R2 will not be migrated to 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.

- F. Remove Quads 2, 3, and 4 from any reports with multiple quads. Only the first quadrant will be migrated.
- G. Clean up CMS user IDs, removing any that are no longer needed. Remember that CMS user IDs must be all lower case.

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2: Install the R2 Migration Program

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

Step	Screen/Prompt	Action
1.	-	Access the <i>UNIX</i> system from the CMS Main Menu and log in as <i>root</i> .
2.	#	Insert the CMS R2 Migration Backup 3.2Q diskette into the diskette drive, and close the drive door.
3.	#	Start the installation process by entering the following command: sysadm installpkg
4.	Running subcommand 'installpkg' from menu 'softwaremgmt', SOFTWARE MANAGEMENT Insert the removable medium for the package you want to install into the diskette drive. Press <RETURN> when ready. Type q to quit.	Press <input type="button" value="Enter"/> .
5.	Starting to install the R2 CMS Migration program ... Finished installation. You may now remove the medium from the diskette drive. Insert the removable medium for the package you want to install into the diskette drive. Press <RETURN> when ready. Type q to quit.	Enter q and remove the diskette from the drive.

3: Install the *Sun SPARCserver* Computer

Installing the *Sun SPARCserver* computer consists of four substeps:

- A. Install the computer.
- B. Provision the system.
- C. Install CMS feature packages.
- D. Administer printers.

3A: Install the Computer

Lucent field technicians install the *Sun SPARCserver* computer and connect it to the switch. Installation instructions and setup hints can be found in *CentreVu™ CMS R3V5 Sun® SPARCserver™ Computers Installation and Maintenance* (585-215-827), in the following chapters:

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

3B: Provision the System

The TSC provisions the system by setting authorizations, setting up data storage parameters, and setting up the CMS R3V5 application.

For additional information and instructions, see the following references:

- “Setting Authorizations” on page A-27.
- “Setting Up Data Storage Parameters” on page A-35.
- “Installing the Forecasting Feature Package” on page A-38.
- *CentreVu™ CMS R3V5 Sun® SPARCserver™ Computers Installation and Maintenance* (585-215-827); Chapter 6, “Setting Up *CentreVu* CMS and Installing Feature Packages.”

3C: Install Feature Packages

The customer can turn on the CMS R3V5 (via the `run_cms` option of `cmssvc` or `cmsadm`) and install the feature packages (if they apply).

For instructions, see Chapter 6, "Setting Up *CentreVu* CMS and Installing Feature Packages," *CentreVu™ CMS R3V5 Sun® SPARCserver™ Computers Installation and Maintenance* (585-215-827).

Also see, as necessary, the following:

- "Checking the Storage Interval Size" on page A-9
- "Turning Data Collection On or Off" on page A-12
- "Installing the Forecasting Feature Package" on page A-38
- "Installing the External Call History Package" on page A-41

3D: Administer Printers

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

See these chapters in the following documents:

- *CentreVu™ Call Management System R3V5 Administration* (585-215-820); Chapter 3, "Getting Started and Using CMS Daily;" the section entitled "Printers Worksheet."
- *CentreVu™ CMS R3V5 Sun® SPARCserver™ Computer Installation and Maintenance* (585-215-827); Chapter 4, "Installing Terminals, Printers, and Modems;" the section entitled "Administering Printers."

4: Transfer R2 Administration Data to Tape

To transfer R2 CMS administration data, which includes dictionary and custom report data, do these steps on the 3B2 computer:

Step	Screen/Prompt	Action
1.	-	Put the tape in the tape drive.
	<p>⇒ NOTE:</p> <p>Make sure the tape is not write protected (the black arrow in the upper left corner of the cartridge must point <u>away</u> from "safe").</p> <p>⇒ NOTE:</p> <p>If your 3B2 is equipped with a Small Computer System Interface (SCSI) tape system, use the tapes provided with the <i>Sun SPARCserver</i> computer if possible. These tapes provide a better read when the data is being restored to the new platform.</p> <p>⇒ NOTE:</p> <p>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 <i>Sun SPARCserver</i> computer. Tapes used with a CTC tape system must be formatted.</p>	
2.	#	At a terminal logged into R2 CMS, access <i>UNIX</i> through the CMS Main Menu.
	<p>⇒ NOTE:</p> <p>Make sure you access the <i>UNIX</i> system through the R2 CMS Main Menu; otherwise, you will get the following error message:</p> <pre>CMS system error, setup getenv failed for ACDHOME</pre>	
3.	\$	Start the migration program by entering this command: <code>/usr/bin/migrate</code>
4.	<p>R2 CMS to R3 CMS Data Migration</p> <p>Please answer a few questions before continuing ...</p> <p>.</p> <p>.</p> <p>.</p> <p>Enter the number of the existing R2 ACD:</p>	Enter the appropriate R2 ACD number (1 for ACD1, 2 for ACD2, and so on).

Step	Screen/Prompt	Action
5.	Enter the number of the corresponding R3 ACD number:	Enter the R3V5 ACD number to which this R2 ACD will be mapped.
 NOTE: Repeat Steps 4 and 5 for each ACD on the system.		
6.	Select one: <a>for administration and dictionary <h>for historical data for both options:	Enter a to migrate the administration, dictionary, and custom reports information.
7.	Collecting the set of R2 CMS files to migrate ... Only one tape is required for the administration, dictionary, and custom reports migration Continuing with the migration . . . Migrating users ... Migration succeeded.	The Migration succeeded message means the program has finished migrating the information to tape and has returned you to the <i>UNIX</i> system prompt.
8.	\$	Enter the command: <code>exit</code> to return to the CMS main menu

Transferring Data between Tape Media

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

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

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

5: Migrate R2 Administration Data

There are three substeps to migrating the administration data:

- A. Verify prerequisites
- B. Migrate administration data.
- C. Perform post migration tasks.

5A: Verify Prerequisites

Before you can do the migration, the following situations must exist on 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.”

5B: Migrating Administration Data

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

1. Insert the tape that contains the R2 administration data, dictionary items, and custom reports into the tape drive.
2. At a terminal logged into CMS 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.

⇒ NOTE:

cms replaces *acd1* as the administration logid.

3. From the CMS main menu, select the `System Setup → R2 Migrate Data` option.
4. Complete the fields of the R2 Migrate Data Window:

Field	Value to enter or select
Device name	tape drive device name (usually default)
Data Type	Administration, Dictionary, and Custom Reports
Stop date	<i>leave blank</i>
Stop time	11:59 PM

5. Press `Enter` to access the Action List (top right corner of menu).
6. Select Run and press `Enter`.

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

⇒ NOTE:

Do **not** exit this window during the migration. If you exit this window or turn the terminal off, the migration will stop. If the migration stops in the middle, you must restart it.

The migration of administration data, dictionary, and custom reports takes about 1 hour. When the migration completes successfully, the `Status:` line displays this message:

```
Processing completed, see /cms/migrate/migrate.log. This file
may contain a list of instructions for manually completing the
migration.
```

If the migration fails, the `Status:` line displays the following:

```
Failed to migrate: Examine the file,
/cms/migrate/migrate.log,for problems.
```

In addition, a print window displays:

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

7. Enter `y` to print the log. You will need a copy of the log for Step 7, Perform Post Administration Migration Tasks.

5C: Perform Post Migration Tasks

Perform the following tasks after you have migrated 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 Expert Agent Selection (EAS) feature, see Appendix E, “CMS and Expert Agent Selection.”
 - b. Complete the appropriate worksheets in Chapter 3.
 - c. Make sure that all the tasks in the “Getting Started Checklist” (in Chapter 3) have been completed.

2. Print a copy of the migration log.

If you have not already printed the migration log, do it now by entering the following command at the *UNIX* system prompt:

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

3. Fix all problems recorded in the migration log up to but **not** including custom reports. Use the log and Chapter 8, “Migration Log Messages” to determine what action you need to take.
4. Fix user IDs. See Chapter 10, “User Permissions” in the *CentreVu™ Call Management System 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:**

We strongly recommend that you use an R3V5 standard report instead of the migrated R2 report. Migrated custom reports do not fully migrate, take time to fix, and run 60 percent slower than their 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.

6: Transfer R2 Historical Data to Tape

6A: Move the Link

The Lucent technicians take down the CMS link between the 3B2 and the switch, and bring up the link between the *Sun SPARCserver* computer and the switch.

⇒ NOTE:

It is important to write down the exact date and time the R2 CMS link was brought down. This information will be needed when migrating historical data.

A switch technician needs to make sure the switch is administered for CMS R3V5. At that point, data collection on CMS R3V5 can begin. Full historical reporting capabilities will be unavailable, however, while the historical data migration takes place.

6B: Transfer the Data

To transfer R2 CMS historical data, do these steps on the 3B2 computer:

Step	Screen/Prompt	Action
1.	-	Put the tape in the tape drive.
	<p>⇒ NOTE: Make sure the tape is not write protected (the black arrow in the upper left corner of the cartridge must point <u>away</u> from "safe").</p> <p>⇒ NOTE: If your 3B2 is equipped with a Small Computer System Interface (SCSI) tape system, use the tapes provided with the <i>Sun SPARCserver</i> computer if possible. These tapes provide a better read when the data is being restored to the new platform.</p> <p>⇒ NOTE: If your 3B2 is equipped with a Cartridge Tape Controller (CTC) tape system, use standard R2 backup tapes. The Technical Service Center (TSC) then transfers the data to a medium that is compatible with the <i>Sun SPARCserver</i> computer. Tapes used with a CTC tape system must be formatted.</p>	

6: Transfer R2 Historical Data to Tape

Step	Screen/Prompt	Action
2.	#	At a terminal logged into R2 CMS, access <i>UNIX</i> through the CMS main menu.
	<p>⇒ NOTE: Make sure you access the <i>UNIX</i> system through the R2 CMS Main Menu; otherwise, you will get the following error message: CMS system error, setup getenv failed for ACDHOME</p>	
3.	\$	Start the migration program by entering this command: /usr/bin/migrate
4.	R2 CMS to R3 CMS Data Migration Please answer a few questions before continuing Enter the number of the existing R2 ACD:	Enter the appropriate R2 ACD number (1 for ACD1, 2 for ACD2, and so on).
5.	Enter the number of the corresponding R3 ACD number:	Enter the R3V5 ACD number to which this R2 ACD will be mapped.
	<p>⇒ NOTE: Repeat Steps 4 and 5 for each ACD on the system.</p>	
6.	Select one: <a> for administration and dictionary <h> for historical data for both options:	Enter <i>h</i> to migrate historical information.
7.	. . . The number of cartridge tapes needed to migrate the CMS data is X (X, XX) Do you have enough tapes to continue the R2 CMS historical data migration (y, n)?	If you don't have enough tapes, answer <i>n</i> , hunt up the tapes you need, and restart the procedure with step 1 of this table. Otherwise, answer <i>y</i> and continue.
8.	Continuing with the migration . . . Migration succeeded.	Enter the command <i>exit</i> to return to the CMS main menu

Transferring Data between Tape Media

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

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

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

7: Migrate R2 Historical Data

There are three substeps to migrating the historical data:

- A. Verifying prerequisites
- B. Migrating the data.
- C. Performing post migration tasks.

7A: Verify Prerequisites

- 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.”

7B: Migrate the 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.

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 - R2 Migrate Data option.
4. Complete the fields of the R2 Migrate Data Window:

Field	Value to enter or select
Device name	Tape drive device name (usually default)
Data Type	Historical and Forecast Administration Data
Stop date	The date on which the technicians took down the R2 link. Can be mm/dd/yy format (09/08/93) or relative date format (-1)
Stop time	The time at which the technicians took down the R2 link. Entered in hh:mm AM/PM format. Default is 11:59PM. ⚠ CAUTION: If you enter a date and time more recent than when the R2 link was brought down, you will delete any R3V5 data collected up to the date and time you enter.

⚠ CAUTION:

Do **not** exit the R2 Migrate Data window during the migration. If you exit the window or turn the terminal off, the migration stops and must be restarted.

5. Press **Enter** to access the Action List.
6. Select Run and press **Enter**.

The following window displays:

```
The stop date and time are critical to the migration.
      <date and time>
Are you sure they are correct (y or n)?
Enter y for yes or n for no:__
```

7. If you are sure the stop date and stop time are correct, enter `y`. Working appears in the lower left-hand corner of the R2 Migrate window. The Status: field displays various messages that tell you what is being processed.

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

The migration of historical data and forecast administration data may take several hours.

If more than one tape of historical data is being migrated, this window appears when it is time to change tapes:

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

8. Replace the current tape with the next tape, wait for the retention to complete (about 3 minutes), and then press .

If the migration completes successfully, the `Status:` line displays this message:

```
Processing completed, see /cms/migrate/migrate.log. This file  
may contain a list of instructions for manually completing the  
migration.
```

If the migration fails, the `Status:` line displays the following:

```
Failed to migrate: Examine the file,  
/cms/migrate/migrate.log, for problems.
```

In addition, a print window displays:

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

9. Enter `y` to print the log. You will need a copy of the log for Step 11, Perform Post Historical Migration Tasks.

7C: Perform Post 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 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.

8: Back Up the System

8A: Do a CMSADM Backup on the Sun SPARCserver Computer

The CMSADM backup provides a system backup in case the migration should go wrong. “Doing a CMSADM Backup on a Solaris System” on page A-20 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

8B: Do a Full Maintenance Backup on the Sun SPARCserver Computer

After migrating the data, you should do a full *CentreVu* CMS maintenance backup as soon as possible. *CentreVu* CMS incremental maintenance backups will fail if a full maintenance backup is not done first. Briefly, the procedure goes like this:

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

Field	Value to enter or select
Device name	The tape drive device name
Verify tape...?	y
ACD(s) to back up	All ACDs
Data to back up	System Administration data ACD-specific administration data Historical data - Full Non-CMS data (if needed)

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

See also “Back Up Data Window” on page A-24.

Chapter 8

Patches and Updates

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General Information

This chapter contains:

- procedures for installing and removing CMS patches on a *Sun*^{*} *SPARCserver*[†] platform
- procedures for installing and removing updates on an *INTEL*[‡] platform

^{*}Sun is a registered trademark of Sun Microsystems, Inc.

[†]SPARCserver is a trademark of SPARC International, Inc.

[‡]INTEL is a registered trademark of Intel Coporation

Patching a *Sun SPARCserver* Platform

The CMS patching process allows you to incorporate fixes into your *CentreVu* CMS software with little or no system down time. Patching is relevant only to *Sun SPARCserver* platforms.

The patching process consists of three specific procedures:

1. Listing patches
2. Installing patches
3. Backing out patches.

Listing Patches

Patches that can be listed come in two flavors: those that have already been installed on a system, and those that are on the CD but have not yet been installed.

Listing Installed CMS Patches

To list CMS patches already installed on your machine, follow the steps in Table 8-1.

Table 8-1: Listing Patches Installed on the System

Step	Action
1.	Log in as <i>root</i> .
2.	Enter the following command: <pre> /cms/toolsbin/listcmspatches</pre> The system responds by displaying a list of the patches installed on your machine.

Listing Available Patches

To list CMS patches that are on the CD-ROM and available to be installed, follow the steps in Table 8-2.

Table 8-2: Listing Patches Available on the CD

Step	Action
1.	Load the CMS CD into the CD-ROM drive.
2.	Log in as <i>root</i> .
3.	Enter the following command: <pre>cmssvc</pre> The system displays the CMS Services menu.
4.	Select the <code>patch_inst</code> option. The system responds by listing the names of the patches on the CD.
5.	Enter <code>q</code> .

Installing CMS Patches

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

- Immediately after upgrading CMS
- As a bug fix

If you are loading patches just after upgrading your system, it is best to turn CMS off until you have the patches installed. The reason for that is that the prerequisites for patch installation differ with the patch. Some require that CMS be off, others require that data collection be off, and still others require CMS to be in single-user mode. To be absolutely safe, and to help the upgrade proceed as quickly as possible, just turn CMS off.

If you are loading patches as a bug fix without upgrading your base load, you may install the patches without turning CMS off. Each patch will let you know if you need to do anything special to accomplish the load.

The readme file for CMS lists CMS run level requirements for the patch. For instructions on installing and viewing the readme file, see "Viewing the CMS_README File" on page A-58.

To install CMS patches, follow the steps in Table 8-3.

⇒ NOTE:

We recommend that you always install all available patches. If you believe you should not be installing a particular patch, telephone the National Customer Care Center (1-800-242-2121), or consult with your Lucent distributor or representative, before deciding to skip it.

Table 8-3: Installing Patches

Step	To install one patch:	To install all patches :
1.	Load the CMS CD into the CD-ROM drive, and log in as <i>root</i> .	
2.	Enter the command: <code>cmssvc</code> The system displays the CMS Services menu.	
3.	Select the <code>patch_inst</code> option. The system lists the patches on the CD and prompts for a number.	Select the <code>load_all</code> option. The system lists the patches on the CD and asks if you really want to install all the patches.
4.	Enter the number of the patch you want to install.	Enter <code>y</code> .
<p>The system installs the patch or patches. As it does so, it displays—for each patch installed—messages similar to the following:</p> <pre>@(#) 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.</pre>		
5.	When the system prompt reappears, unload the CD-ROM drive.	

Backing Out CMS Patches

To remove a patch, or to back out all CMS patches, follow the steps in Table 8-4.

Table 8-4: Removing Patches

Step	To remove one patch:	To back out all patches :
1.	Load the CMS CD into the CD-ROM drive and log in as <i>root</i> .	
2.	Enter the following command: <pre>cmssvc</pre> The system displays the CMS Services menu.	
3.	Select the <code>patch_rmv</code> option. The system lists the patches installed on the system and prompts for the patch you want to remove.	Select the <code>back_all</code> option. The system lists the patches installed on the system and asks if you really want to back them all out.
4.	Type the name of the patch you want to remove, exactly as it is displayed in the list, and press Return. The system asks you to verify the removal.	Enter <code>y</code> .
5.	Enter <code>y</code> .	The system removes the patch or patches. As it does so, it displays—for each patch removed—messages similar to the following: <pre>@(#) 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. #</pre>

Updating an *INTEL* Platform

Updating the *CentreVu* CMS software is a three-part process.

First, the currently installed update must be removed. Only one update at a time can ever be installed on CMS.

Second, 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 final 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.

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. (See “Turning CMS On and Off” on page A-11 for instructions on turning off CMS.)

Do the steps in Table 8-5 to remove the *CentreVu* CMS update.

Table 8-5: Removing an Update

Step	Action
1.	Enter a <code>cmssvc</code> command. The system displays the CMS Services menu.
2.	Select the <code>upd_remove</code> option. The system responds with a list of files that will be changed due to the removal. When the system prompt reappears, the update has been removed and the CMS base load has been returned to its previous, pristine state.

Saving *CentreVu* CMS Update Files to Disk

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 update files to disk, follow the steps in Table 8-6.

Table 8-6: Saving Update Files to Disk

Step	Action
1.	Load the CMS update cartridge tape into the tape drive.
2.	Enter a <code>cmssvc</code> command. The system displays the CMS Services menu.
3.	Select the <code>upd_save</code> option. The system prompts for the tape.
4.	<p>Press Return. The program begins downloading the <i>CentreVu</i> CMS update files onto the hard disk. As it does so, it displays messages similar to the following:</p> <pre> 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/3lxxx for later installation. (File names, block counts and record counts will differ, depending upon the size of the update release.) </pre> <p>When the system prompt reappears, the files are saved.</p>

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. (See [xref] for instructions on turning off CMS.)

You install the *CentreVu* CMS update from the files previously saved on the hard disk (see Table 8-6, “Saving Update Files to Disk,” on page 8-7 for the procedure). Installing an update from disk files can be done remotely, and involves steps in the Table 8-7.

Table 8-7: Installing an Update from Disk Files

Step	Action
1.	Enter a <code>cmssvc</code> command. The system displays the CMS Services menu.
2.	Select the <code>upd_install</code> option. The system responds with a menu of updates currently available for installation. The only one listed should be the one you saved to disk most recently.
3.	Enter the number of the update you want to install (1).
4.	Press Return. The program begins the installation, displaying messages similar to the following: 578 blocks Installing the CentreVu(TM) Call Management System (r3v5xxx). Copyright (c) 1991, 1992, 1993, 1994 Lucent Technologies All Rights Reserved . . . ## Auditing package installation
	When the audit completes successfully—it requires several minutes—the following messages display: >> No errors detected during audit. . . . Remove saved disk files in /cms/cms_updates/r3v5xxx? (y/n):
5.	Enter <code>y</code> . ⇒ NOTE: If the tunable parameters were changed, the system prompts you to reboot. In that case, reboot using the following command: <code>shutdown -i6 -g0 -y</code>
6.	When the system prompt reappears, turn CMS back on. See “Turning CMS On and Off” on page A-11.

Chapter 9

Troubleshooting

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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 9-2 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 9-12 shows how to troubleshoot problems with CMSADM backups.
- “Problems Running the Preupgrade Tool” on page 9-13 explains how to troubleshoot problems installing and running the preupgrade tool.
- “CentreVu CMS Package Installation Problems” on page 9-14 explains some of the details of the CMS package, and helps you to troubleshoot problems with CMS package installation.
- “Migration Log Messages” on page 9-18 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 9-1):

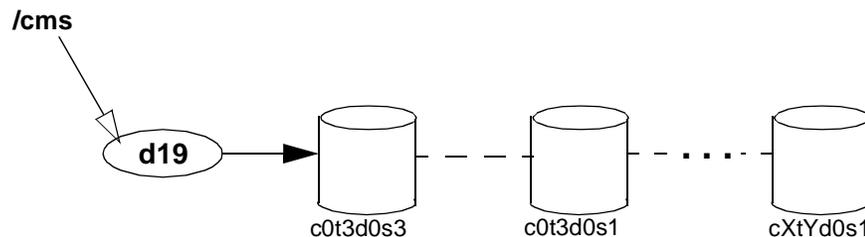


Figure 9-1: The Metadevice and the */cms* File System

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, *Migrating to R3V5 with Solstice DiskSuite*, 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.

Disk I/O Problems

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

Use the `metadb` command to check the status of the state database:

```
# metadb -i
.
.
.
#
```

If the response indicates a state database problem, you must remove and re-create the state database that is causing the problem. The procedure is as follows:

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 `metastat` 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 `c0t3d0s3`; all other device names must end in `s1`.

If there is any discrepancy between reality and the output of the `metastat` command, you will have to repartition your disks.

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 metadvice used for /cms)
# fsck /dev/md/rdisk/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 metadvice, 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 metadvice being used (see “Metadvice Problems” on the previous page). Then verify that the entry for `/cms` in the `/etc/vfstab` file is correct (see “Problems with Disk Drive Administration”). If you find any errors, correct them.

Problems with Disk Drive Administration

In a system with *Solstice DiskSuite* software installed, the total amount of disk space available to `/cms` should be about the same as the total amount of space provided by all the disk drives in the system. If there appears to be a problem, you can check the files `/etc/vfstab` and `/etc/opt/SUNWmd/md.tab` to verify that the *Solstice DiskSuite* software recognizes all the drives on your system.

`/etc/vfstab` should name the d19 metadvice (`/dev/md/rdisk/d19`) as the `/cms` file system. Old `/cms` entries (they are in the form `/cms[0-12]`)

should not exist or, if they do exist, should be commented out by pound signs at the beginnings of the lines.

/etc/opt/SUNWmd/md.tab should account for all the disk drives. Check the */cms* section of the file to make sure it names all existing disk devices. 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 there is any discrepancy between either file and reality, do the steps in Table 9-1.

Table 9-1: Procedure to Activate an Unrecognized Disk Drive

Step	Screen/Prompt	Action
1.	-	Reboot the system with the following command: init 0
2.	ok	Enter the command: probe-scsi-all
3.	/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	Check the command output. It should list every disk drive attached to your system. If every disk drive is listed, skip the remainder of this procedure. If any disk drive is missing from the list, and this is your second or third try at this procedure, contact the National Customer Care Center for assistance. If any disk drive is missing from the list, and this is your first time through the procedure, continue with step 4.
4.	ok	Power off the relevant parts of the system, as follows: a. Turn off the SBus Expansion Subsystem. b. Turn off all external SCSI devices, beginning with the device nearest the system unit and proceeding to the farthest.

Table 9-1: Procedure to Activate an Unrecognized Disk Drive (Contd)

Step	Screen/Prompt	Action
5.	ok	<p>Check all disk drive connections to make certain they are secure. Also check the SCSI IDs on the disk drives to make sure no two drives on the same SCSI chain have the same IDs. Hints:</p> <ul style="list-style-type: none"> • A normal external disk unit has a rotary switch on the rear of the unit that sets the SCSI ID. • Be sure to avoid the ID numbers 3, 1, and 6; 3 and 1 are reserved for the internal drives, and 6 is the CD ROM drive.
6.	ok	Power on the external SCSI devices in the opposite order in which you powered them off.
7.	ok	<p>Reboot the system with the following command:</p> <pre>boot -r</pre>
8.	ok	Restart this procedure beginning with step 1.

When you have verified that the system is recognizing all its disk drives, reboot the system with a `boot -r` command, and log in as *root*.

Common Error Messages

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

/cms: Deadlock situation detected/avoided

Remove all your swap files residing on */cms* and reenter the command that generated the error. Remember to re-create the swap files when the `growfs` command completes.

device: c0t6d0 will not be used

Warning that `c0t6d0` 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 ("4: Repartition Disks" on page 3-14).

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 9-2. 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 9-2. (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 9-2..

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Table 9-2: 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

- 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 Chapter 3, "Migrating to R3V5 with *Solstice DiskSuite*," for a procedure to upgrade your current CMS version.

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 metadvice 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 the following commands to reinitialize:

 **WARNING:**

Executing these commands will remove all system data. Are you SURE you want to do this?

```
# /olds/olds -cleanup
.
.
# init 6          (reboots your system)
.
.
.
      (should receive d19: Concat/Stripe is cleared message)
# /olds/olds -check_disks
# /olds/olds -mk_files
# /olds/olds -metadbs
# /olds/olds -setup
```

Once the setup has completed, verify that all the disks are being controlled by the *Solstice DiskSuite* software. Use the following commands:

```
# mount /cms
# df -k /cms
```

Finally, restore all your swap files and their entries in `/etc/vfstab`. Do that by repeating “9: Create a Swap File” on page 3-30.

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/rdisk/c0t6d0: Device busy

This message usually implies that the device probed by the script is not to be used as a disk because it is a read-only disk (that is, it is 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 metadvice 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.

Problems Running the Preupgrade Tool

The following are the messages that may be generated during a run of the preupgrade tool:

Table 9-3: Preupgrade Tool Run-time Errors

Message	Meaning/Corrective Action
<p>R3V5 CMS permits a maximum of 500,000 agent trace records across all ACDs. You will need to change this number in data storage allocation, and restart your upgrade.</p>	<p>Your total data storage allocation for agent trace records exceeds 500,000. The preupgrade terminates.</p> <p>Turn off data collection and go into System Setup - Data Storage Allocation to change the number of agent trace records. <i>Repeat for each ACD in the system</i> such that the total number of agent trace records for all ACDs is 500,000 or less. Then turn on data collection again and rerun the preupgrade tool.</p> <p>Note: agent trace record limits are checked when you turn on data collection for an ACD. If you have already collected more than the maximum for the ACD, excess records are deleted before data collection restarts.</p>
<p>With your current data storage allocation, you will eventually exhaust disk storage capacity. Please contact your Lucent Technologies Services organization for assistance with your upgrade.</p>	<p>The data storage allocations on your current system will, when duplicated in R3V5, render you dangerously close to running out of disk space. The preupgrade terminates.</p> <p>Contact the National Customer Care Center, or your Lucent distributor or customer representative, for help with the upgrade.</p>
<p>Warning! There is not enough data storage capacity on your disk to successfully upgrade. Please contact your Lucent Technologies account team to purchase additional disk storage. Once this data storage capacity has been added to the system, re-run the preupgrade tool.</p>	<p>Your current system does not have the disk storage capacity necessary for an upgrade to R3V5. The preupgrade terminates.</p> <p>Contact your Lucent representative to acquire additional disk capacity. When the additional capacity has been added, restart the preupgrade process.</p>

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 preupgrade tool was not run, or ran to completion but was not removed from the system.
- The wrong CMS package instance is used.
- The system fails to remove a CMS package.
- The system fails to update a CMS package.
- System tunables have been changed.

Problems with the Preupgrade Tool

The CMS preupgrade tool checks your system's disk space to make sure there is enough to upgrade to R3V5, and saves CMS system settings to make the upgrade easier. If the preupgrade tool does not run, or does not complete successfully, or completes but is not removed from the system, the CMS package will not install.

The error messages associated with such a failure are as follows:

Table 9-4: CMS Installation Errors related to the Preupgrade Tool

Message	Meaning/Corrective Action
<pre>** Error ** ** Lucent Technologies CentreVu(TM) Call Management System cannot be installed.</pre>	<p>Error indicator. This message is followed by a message detailing the specific problem.</p>
<pre>The following packages are installed on this machine and are not compatible with the package currently being installed: CMS Supplied upgrade checking tool.</pre>	<p>The preupgrade tool has not been removed from the system. CMS will not install until the preupgrade tool is removed.</p> <p>Remove the tool and try installing CMS again.</p>
<pre>You have not installed and run the preupgrade tool first. Please contact your Lucent Technologies Services organization.</pre>	<p>The preupgrade tool has not run. Either you never installed and ran it, or it did not complete successfully.</p> <p>Install and run the preupgrade tool. When it has completed successfully, remove it from the system and try installing CMS again.</p>

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 (on a *Sun*).

To identify the version of *CentreVu* CMS software you need, enter the `pkginfo -x cms.*` (*Sun platforms*) or `displaypkg` (*INTEL platforms*) 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 or root2`
- May have run `cmssvc`.

Solution:

- Log in directly as `root or root2`
 - Remove package(s) as instructed by the system.
-

When the System Tunables have Changed

If the upgrade on an *INTEL* fails with an error message indicating that system tunables have changed and a shutdown is needed, reboot the machine and retry the installation.

Verifying Installed Solaris Patches

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

1. At the system prompt, enter the following command:

```
showrev -p
```

The system responds by listing the patches currently installed on the machine.

2. Check the list to verify that all the *Solaris* Patches you need are installed.

The *Solaris* patches required for the current load are listed in the CMS_README file. For instructions, see “Viewing the CMS_README File” on page A-58.

When Installing an Update Fails

Table 9-5 provides a list of error messages that indicate when an update save (upd_save) fails during installation (upd_inst).

Table 9-5: 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 9-6 provides a list of error messages that indicate when saving an update fails (upd_save).

Table 9-6: 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 <i>/tmp</i> directory is out of space.	Clear out the <i>/tmp</i> 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 <i>/cms</i> to spool packages.	Check the amount of free space in <i>CentreVu</i> CMS. If the space is low, try to remove or clear out unnecessary files.

When an Update Remove Fails

If an update removal fails, it is probably because there are no updates installed on the system. That, in turn, is probably due to the original update installation having failed.

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.

To use this section, turn to one of the following subsections:

- 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

Table 9-7 describes the messages that may be generated by an R3-to-R3V5 migration. The messages are in the *cms/migrate/r3mig.log* and */cms/maint/r3mig/mig.log* files.

The table presents messages in a constant width font, with variables as necessary. Variables in a message are italicized in the table. For example, in this sample message:

```
The stop date/time for all tables is: date
```

date is a variable. In an actual message, a date appears rather than the word *date*.

Each message is presented with its cause and a resolution.

Table 9-7: R3-to-R3V5 Migration Log Messages

Message:	Collision in user login: <i>username</i> . All ownerships are transferred to user ' <i>cms</i> '.
Cause:	There is already a login ID established for this user name. The user name being migrated is causing the conflict. The CMS administrator (<i>cms</i>) becomes the owner of custom reports, timetables, shortcuts, etc., that were previously owned by the migrated user name.
Resolution:	If the migrating user is different from the user already established, the system administrator should create a different user name for the migrating user and transfer the ownerships after the migration. If the migrating user and the existing user are the same, the administrator should consult with the user about the disposition of ownerships.
Message:	Dictionary collision: name=' <i>custom_name</i> ' 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=' <i>custom_name</i> ' 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=' <i>custom_name</i> ' item_type='calc' formula='CALCULATION FORMULA'
Cause:	There is already a calculation with ' <i>custom_name</i> ' as the name but with different contents.
Resolution:	You need to enter the formula again and rename it.
Message:	Dictionary collision: name=' <i>custom column name</i> ' table= ' <i>custom table name</i> '
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.

Table 9-7: R3-to-R3V5 Migration Log Messages (Contd)

Message:	Due to name collision, historical report ' <i>report name</i> ' (<i>username</i>) has been changed to <i>tempx</i>
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 ' <i>report name</i> ' (<i>username</i>) has been changed to <i>tempx</i>
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 ' <i>timetable name</i> ' (<i>username</i>) has been changed to <i>tempx</i>
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 ' <i>short cut name</i> ' (<i>username</i>) has been changed to <i>tempx</i>
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 ' <i>username</i> '. The user may have already had UNIX log...
Cause:	The user already has a <i>UNIX</i> * system login in <i>CentreVu</i> CMS R3V5.
Resolution:	If the user <i>username</i> already has a <i>UNIX</i> system login, ignore this message. Otherwise, verify that this user can log on and report any problems to Services.
Message:	Menu addition: Name collision: <i>custom menu name</i> (/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.

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Table 9-7: R3-to-R3V5 Migration Log Messages (Contd)

Message:	Migrating <i>tablename</i> ACDn ...																
Cause:	Informational message. Table <i>tablename</i> is being migrated. If the ACDn element appears, it indicates that the table being migrated is specific to that ACD. If you want more information about the table itself, look up the table's name in Appendix B.																
Message:	WARNING: custom report ' <i>report name</i> ' (<i>username</i>) contains obsolete column ' <i>column name</i> '																
Cause:	One of the columns used directly in this custom report (owned by <i>username</i>) 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 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 ' <i>calculation name</i> ' contains obsolete column: <i>COLUMN NAME</i>																
Cause:	The <i>COLUMN NAME</i> 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: <table> <tbody> <tr> <td>ABNRINGTIME</td> <td>O_ABNRINGCALLS</td> </tr> <tr> <td>ADJROUTETIME</td> <td>O_ABNVECCALLS</td> </tr> <tr> <td>BH_OBUSYCALLS</td> <td>O_BACKUPCALLS</td> </tr> <tr> <td>BH_ODISCCALLS</td> <td>O_BUSYCALLS</td> </tr> <tr> <td>HOLDABNTIME</td> <td>O_CONNECTCALLS</td> </tr> <tr> <td>INTERFLOWTIME</td> <td>O_DISCCALLS</td> </tr> <tr> <td>LOOKFLOWTIME</td> <td>O_TRANSFERRED</td> </tr> <tr> <td>O_ABNQUECALLS</td> <td></td> </tr> </tbody> </table>	ABNRINGTIME	O_ABNRINGCALLS	ADJROUTETIME	O_ABNVECCALLS	BH_OBUSYCALLS	O_BACKUPCALLS	BH_ODISCCALLS	O_BUSYCALLS	HOLDABNTIME	O_CONNECTCALLS	INTERFLOWTIME	O_DISCCALLS	LOOKFLOWTIME	O_TRANSFERRED	O_ABNQUECALLS	
ABNRINGTIME	O_ABNRINGCALLS																
ADJROUTETIME	O_ABNVECCALLS																
BH_OBUSYCALLS	O_BACKUPCALLS																
BH_ODISCCALLS	O_BUSYCALLS																
HOLDABNTIME	O_CONNECTCALLS																
INTERFLOWTIME	O_DISCCALLS																
LOOKFLOWTIME	O_TRANSFERRED																
O_ABNQUECALLS																	

R2-to-R3V5 Migration Log Messages

Table 9-8 describes the messages that result from an R2-to-R3V5 migration. The messages appear in the `/cms/migrate/migrate.log` file.

The table presents messages in alphabetical order. Each message is in a constant width font, with variables as necessary. Variables in a message are italicized in the table. For example, in this sample message:

```
The stop date/time for all tables is: date
date is a variable. In an actual message, a date appears rather than the word date.
```

Each message is presented with its cause and a resolution.

Table 9-8: R2-to-R3V5 Migration Log Messages

Message:	*** INTERNAL ERROR: contact services (<i>errornum</i> , <i>timestamp</i>) ***
Cause:	While processing data in the table listed above this message, an internal CMS R3V5 error occurred.
Resolution:	Contact services immediately. Do not remove the migration log file. Services needs the <i>errornum</i> and <i>time stamp</i> to find more information in their error log.
Message:	< <i>calculation name</i> > contains items not found in R3 database.
Cause:	The calculation <i>calculation name</i> 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:	< <i>calculation name</i> > not found in the R3 database.
Cause:	One of the following conditions may cause this message to occur: <ol style="list-style-type: none"> 1. The formula for <i>calculation name</i> 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:	<ol style="list-style-type: none"> 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.

Table 9-8: R2-to-R3V5 Migration Log Messages (Contd)

Message:	<i><group name></i> 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 it isn't, delete the contents of the group and add the appropriate login IDs.
Message:	<i><login ID></i> has no default printer. Assign default printer via User Data.
Cause:	No default printer was assigned to <i>login ID</i> in the User Data window.
Resolution:	Use the User Data window and assign a default printer to <i>login ID</i> .
Message:	<i><synonym name></i> begins with non-alpha character. Change name after migration. Look for synonym in <i>synonym group</i>
Cause:	Synonym names must begin with a letter in CMS R3V5. The synonym <i>synonym name</i> does not begin with a letter and was migrated to CMS R3V5.
Resolution:	List the synonym in the R3V5 Dictionary subsystem, and modify <i>synonym name</i> to begin with a letter.
Message:	Calculation <i><calculation name, calculation equation></i> : already in R3 dictionary.
Cause:	The calculation <i>calculation name</i> already existed in the R3V5 Dictionary database when this migration was done.
Resolution:	Determine whether the R3V5 calculation is appropriate for your reports, and modify it if necessary. You may replace the standard calculation with the new one. If this is a standard 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 administration data more than once, this message appears for all the calculations that were migrated the first time.
Message:	calculation truncated: <i>calculation name</i> <i>calculation equation</i>
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.

Table 9-8: R2-to-R3V5 Migration Log Messages (Contd)

Message:	Call profile permissions exist for split <i>split number</i> R2 service level = <i>service level</i> R2 increment = <i>interval size</i>
Cause:	The call profile parameters for split <i>split number</i> 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: <i>Custom report name</i> compiler errors at bottom of file: <i>/cms/migrate/r2customnn</i>
Cause:	The R2 custom report <i>custom report name</i> 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 <i>/cms/migrate/r2customnn</i> .
Message:	Cannot find database item in dictionary: <i><item name></i>
Cause:	The database item <i>item name</i> 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 <i><item name></i> to R3 dictionary item.
Cause:	The R2 item <i>item name</i> did not have a map to an R3V5 Dictionary item. Either no mapping exists or the item is misspelled.
Resolution:	<ol style="list-style-type: none"> 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 <i>TMPn</i> . 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 <i>TMPn</i> .
Resolution:	If you want to change the name of the <i>TMPn</i> report, use the R3V5 Custom Reports: Screen Painter for custom reports. First, add a report with a new name. Then, copy the <i>TMPn</i> report to the new name. Finally, delete the <i>TMPn</i> report.

Table 9-8: R2-to-R3V5 Migration Log Messages (Contd)

Message:	Constant <i><constant name, constant value></i> : already exists as an R3 constant.								
Cause:	The constant <i>constant name</i> 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: <i>report name</i> 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 <i>report name</i> entered on the line just above this error message.								
Message:	Custom report field refers to <i><database item></i> which you must resolve to <i><set of R3 database items></i>								
Cause:	The following R2 database items map to more than one R3V5 database items: <table border="0" style="margin-left: 40px;"> <thead> <tr> <th style="text-align: left;">R2 Item</th> <th style="text-align: left;">R3 Equivalent</th> </tr> </thead> <tbody> <tr> <td>ASSOCIATION</td> <td>SPLIT, LOGID</td> </tr> <tr> <td>CALLPROFCHG</td> <td>SVCLEVELCHG, PERIODCHG</td> </tr> <tr> <td>EVENT</td> <td>MALICIOUS, ASSIST</td> </tr> </tbody> </table>	R2 Item	R3 Equivalent	ASSOCIATION	SPLIT, LOGID	CALLPROFCHG	SVCLEVELCHG, PERIODCHG	EVENT	MALICIOUS, ASSIST
R2 Item	R3 Equivalent								
ASSOCIATION	SPLIT, LOGID								
CALLPROFCHG	SVCLEVELCHG, PERIODCHG								
EVENT	MALICIOUS, 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 <i>slvl_chg</i> (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= <i><row></i> col= <i><col></i> width= <i><width></i>								
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.								

Table 9-8: R2-to-R3V5 Migration Log Messages (Contd)

Message:	Error adding acd permissions for <i>user login</i>
Cause:	When migrating R2 CMS user logins, the migration program could not add the ACD permissions for <i>user login</i> .
Resolution:	Use the R3 User Permissions: ACD Permissions window and check the permissions for <i>user login</i> . Modify the permissions if necessary.
Message:	Error in adding directory.
Cause:	The migration program could not add the home directory to the <i>UNIX</i> system.
Resolution:	Use the FACE program to add the login to the <i>UNIX</i> system.
Message:	Error in adding <i>login ID</i> to UNIX.
Cause:	The migration program could not add <i>login ID</i> to the password file.
Resolution:	Use the FACE program to add the login to the <i>UNIX</i> system.
Message:	Error in adding < <i>synonym name</i> > to table.
Cause:	The migration program could not add the synonym <i>synonym name</i> 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 <i>user login</i>
Cause:	When migrating R2 CMS user logins, the migration program could not add the feature permissions for <i>user login</i> .
Resolution:	Use the CMS R3V5 User Data: Feature Access window and check the permissions for <i>user login</i> . Modify the permissions if necessary.
Message:	Error in adding input variable: <i>report variable</i>
Cause:	During the migration of an R2 custom report, the program could not add the variable <i>report variable</i> 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 < <i>mbrnum</i> > to group < <i>grpname</i> >.
Cause:	The migration program could not add group member <i>mbrnum</i> to group <i>grpname</i> .
Resolution:	Display the contents of the group in the R3V5 Dictionary subsystem, and add the member if necessary.

Table 9-8: R2-to-R3V5 Migration Log Messages (Contd)

Message:	Error in adding <i>userlog</i>
Cause:	When migrating R2 CMS user logins, the migration program could not add <i>userlog</i> .
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: <i>row search number</i>
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: <i>row search number</i>
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: <i><source file></i>
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= <i><row></i> col= <i><col></i> width= <i><width></i> R3 expression: <i><expression></i>
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= <i><row number></i> ,col= <i><column number></i>) exceeds maximum length and has been truncated: <i><expression></i>
Cause:	During migration, the expression <i>expression</i> 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 <i>expression</i> . Edit the report and substitute the custom calculation for the expression in the Select field of the Field window.

Table 9-8: R2-to-R3V5 Migration Log Messages (Contd)

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 (<i>file, line</i>)
Cause:	R2 CMS custom report <i>custom report name</i> had compiler errors in the R2 system, so it was not migrated to CMS R3V5.
Resolution:	Services may further investigate the problem given the <i>file, line</i> 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:	Getting user input...
Explanation:	Informational R2 CMS migration processing message.
Message:	Initializing temporary database tables...
Explanation:	Informational R2 CMS migration processing message.
Message:	Insufficient number of free blocks (<i>number-of-blocks</i>) 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 <i><logname></i> . Permissions not migrated.
Cause:	Informational. The CMS R3V5 system found permission information for a deleted user, so did not migrate the permissions.
Message:	Logid in conflict with R3 CMS: <i>user (user login)</i>
Cause:	When migrating the R2 CMS user logins, the program found that <i>user login</i> already existed in CMS R3V5.
Resolution:	All R2 permissions for <i>user login</i> 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.

Table 9-8: R2-to-R3V5 Migration Log Messages (Contd)

Message:	Login ID <i><login ID name></i> already exists.
Cause:	A login ID <i>login ID name</i> 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 <i><member number></i> is already in group <i><group name></i> .
Cause:	The group member <i>member number</i> of the group <i>group name</i> 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:	Migrating Historical Custom Report <i><report name></i>
Explanation:	Informational message printed for each historical custom report migrated.
Message:	Migrating realtime Custom Report <i>report name</i>
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.
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 (<i>id</i>) not migrated to R3 CMS, ''cms'' will be owner of this report.
Cause:	The R2 user <i>id</i> was not migrated to the R3V5 system. This user owned the custom report that was being migrated at the time of the message, but 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 <i>user ID</i> 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.

Table 9-8: R2-to-R3V5 Migration Log Messages (Contd)

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 <i>INFORMIX</i> * table was not removed when the migration ended.
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 <i>INFORMIX</i> 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 <i>INFORMIX</i> 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: <ol style="list-style-type: none"> 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.

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Table 9-8: R2-to-R3V5 Migration Log Messages (Contd)

Message:	R2 calculation <i><calculation name></i> contains <i><database items></i> which you must resolve to <i><set of R3V5 database items></i> .
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 (<i><LOGID></i>) converted to (<i><logid></i>) due to upper case characters.
Cause:	The migrated login ID contained uppercase characters.
Resolution:	None. The login ID is automatically converted to all lowercase characters.
Message:	R2 standard calculation <i><calculation name></i> 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.

Table 9-8: R2-to-R3V5 Migration Log Messages (Contd)

Message:	Row Search Id <i>row search number</i> 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 (<i>number of nonaggregate</i>). 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, <i>INFORMIX-SQL</i> , 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 <i>row search number</i> : where clause contains too many characters, <i>length</i> , maximum is 468.
Cause:	When the criteria for row search ID <i>row search number</i> 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 <i>select rows where</i> field, such as table name, or change the variable to allow a range and decrease the number of “and” clauses or “or” clauses, or both.
Message:	STARTTIME column too small: <i>number of columns row=row number, col=column number</i>
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:	Successfully built temporary database tables.
Explanation:	Standard informational R2 CMS migration processing message.
Message:	Synonym < <i>synonym name</i> > already exists.
Cause:	The synonym <i>synonym name</i> 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.

Table 9-8: R2-to-R3V5 Migration Log Messages (Contd)

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 <i>user login</i> was migrated to CMS R3V5 but does not exist as a login on the <i>UNIX</i> system.
Resolution:	Users will be unable to log into <i>CentreVu</i> CMS R3V5 until they are added to the <i>UNIX</i> system. To add the user login, access User Permissions: User Data window. Press Ctrl Z simultaneously to clear all fields. Type <i>user login</i> in the first field, select "Find one," and then select "Add." This procedure adds <i>user login</i> to the <i>UNIX</i> system and allows the user to log into <i>CentreVu</i> CMS R3V5. Follow the same steps for every user login that was not administered on the <i>UNIX</i> 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:	The stop date/time for all tables is: <i>date</i>
Explanation:	Standard informational message that gives the stop date/time input on the R2 CMS Migration window.

Table 9-8: R2-to-R3V5 Migration Log Messages (Contd)

Message:	This report goes beyond the maximum number of rows (25).
Cause:	This is a quad report, which R3V5 does not allow. Only the first quadrant is migrated.
Resolution:	To regain the other quadrants, you must create an R3V5 custom report for each quadrant.
Message:	Too many date display fields, now adding: <i>date prompt</i> .
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 < <i>user name</i> >: access permissions already existed for table name.
Cause:	A specific CMS user login <i>user name</i> already had access permissions for a certain <i>table name</i> (splits/skills, VDNs, vectors, or trunk groups).
Resolution:	Check that the access permissions for <i>user login</i> are correct. If not, manually change them using the R3V5 User Data windows.

Table 9-8: R2-to-R3V5 Migration Log Messages (Contd)

Message:	VDN Synonym <VDN synonym name, VDN number> already exists as R3 synonym.
Cause:	A VDN synonym <i>VDN synonym name</i> 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.

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Overview

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

- 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.

Displaying Switch Information

1. Log into the system as `root`.
2. Type `cmssvc` and press **Enter**:

```
# cmssvc
```

The system responds by displaying the CMS Services menu:

```
Lucent Technologies CentreVu(TM) Call Management System Services
Menu
Select a command from the list below.
 1) auth_display Display feature authorizations
 2) auth_set     Authorize capabilities/capacities
 3) run_cms     Turn CentreVu CMS on or off
 4) setup       Set up the initial configuration
 5) swinfo     Display switch information
 6) swsetup    Change switch information
 7) upd_install Install update from disk files
 8) upd_remove Back out the currently installed update
 9) upd_save   Save update on disk for later installation

Enter choice (1-9) or q to quit
```

3. Enter the number for `swinfo`.

The system asks you to identify the ACD you want information on:

```
Select an ACD
 1)acd_number_1
 2)acd_number_2
Enter choice (1-2) or q to quit:
```

4. Type in the the number corresponding to the ACD you want information on, and press **Enter**.

The system responds by listing the switch administration data for the selected ACD. For example:

```
Switch administration for acd 1:
  Switch name: acd_number_1
  Switch model: Definity-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 **Enter**:

```
# cmssvc
```

The system responds by displaying the CMS Services menu:

```
Lucent Technologies CentreVu(TM) Call Management System Services
Menu
Select a command from the list below.
 1) auth_display Display feature authorizations
 2) auth_set     Authorize capabilities/capacities
 3) run_cms      Turn CentreVu CMS on or off
 4) setup        Set up the initial configuration
 5) swinfo       Display switch information
 6) swsetup      Change switch information
 7) upd_install  Install update from disk files
 8) upd_remove   Back out the currently installed update
 9) upd_save     Save update on disk for later installation

Enter choice (1-9) or q to quit
```

3. Enter the number for `auth_display`.

The system responds by listing the authorizations for your system. For example:

```
Version purchased: 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
```

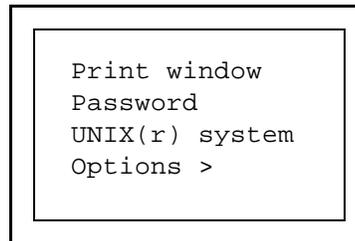
Printing a CMS Window

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 **F3**.

The Commands menu displays:



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

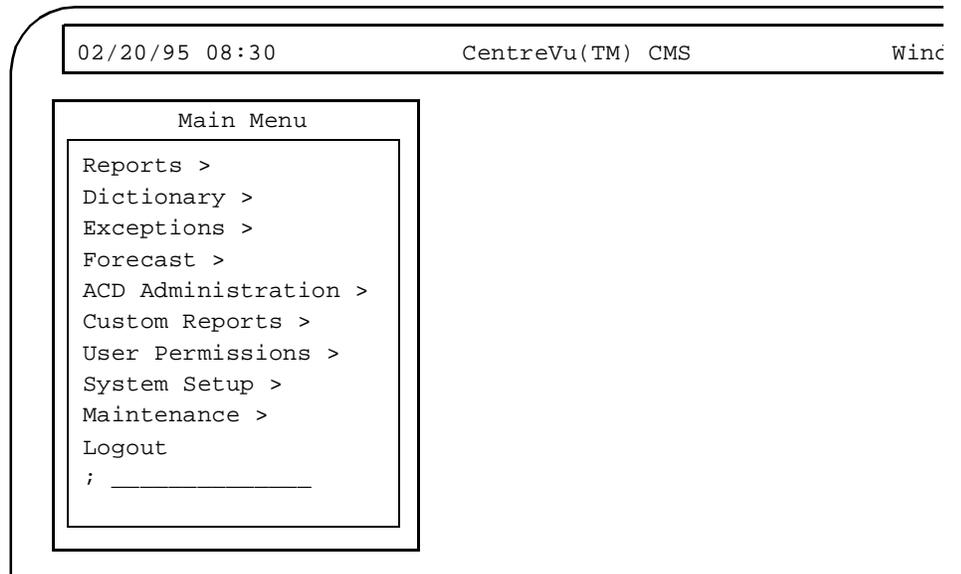
2. Select **Print Window**.
3. Press **Enter**.

When you go to the trouble to print out a window, especially during an upgrade or migration, it is generally because you are going to need the information later. Usually there is a good chance that the information will have been destroyed by the time you need it. Keep all CMS window printouts in a safe place until you are sure they are no longer useful.

If this procedure should fail, check the `User Permissions - User Data` option to make sure you have a valid default printer.

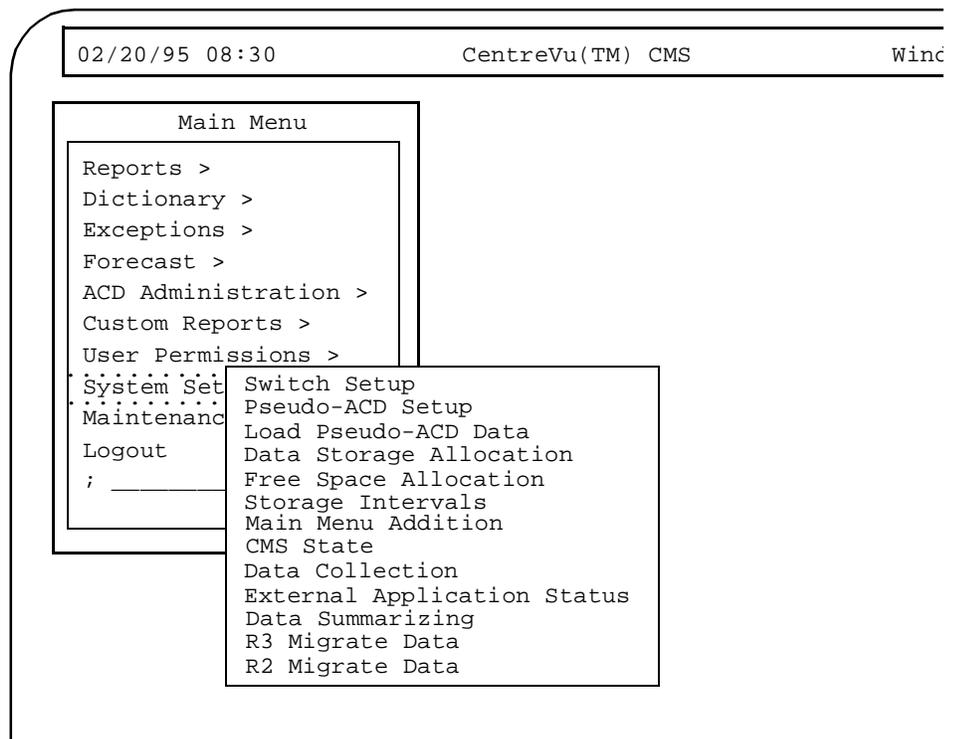
Checking the Free Space Allocation

1. Log in to CMS . The system responds by displaying the CMS main menu. For example:



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

The System Setup menu displays:



3. Select Free Space Allocation and press **Enter**.

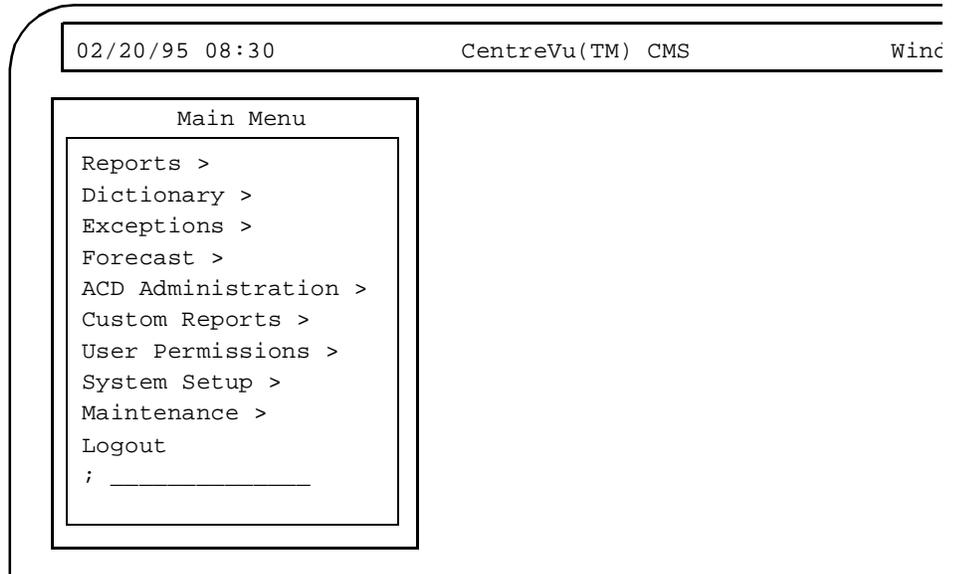
The system displays the free space allocation screen for your system setup. For example:

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.

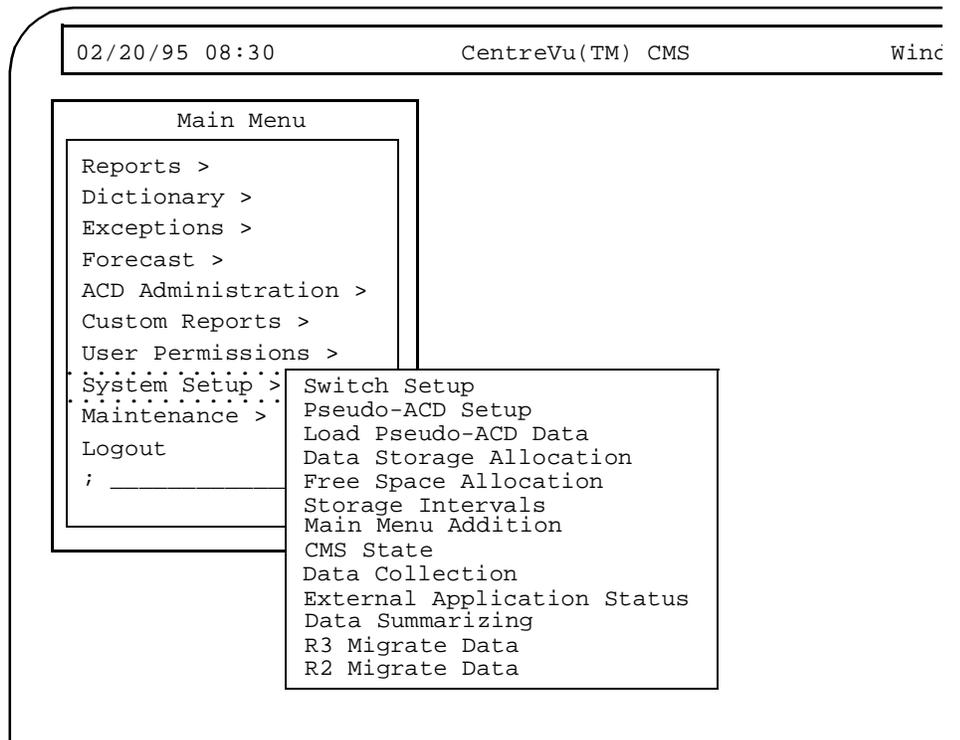
Checking Data Storage Allocation Parameters

1. Log in to CMS. The system responds by displaying the CMS main menu. For example:



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

The System Setup menu displays:



3. Select Data Storage Allocation and press **Enter**.

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

g3v4_acd1

System Setup: Data Storage Allocation

Warning: Print a copy of this window prior to modifying Modify

Data Item:	# of Items	Days of Intrahour	Days of Daily	Weeks of Weekly	Months of Monthly
Splits/Skills (0-255)	<u>30</u>	<u>31</u>	<u>387</u>	<u>0</u>	<u>0</u>
Agents		<u>31</u>	<u>387</u>	<u>0</u>	<u>0</u>
Trunk Groups (0-656)	<u>20</u>	<u>31</u>	<u>387</u>	<u>53</u>	<u>13</u>
Trunks (0-3650)	<u>2000</u>	<u>31</u>	<u>387</u>	<u>53</u>	<u>13</u>
Call work codes (1-1969)	<u>20</u>	<u>31</u>	<u>387</u>	<u>53</u>	<u>13</u>
Vectors (0-512)	<u>512</u>	<u>52</u>	<u>387</u>	<u>53</u>	<u>13</u>
VDNs (0-2000)	<u>1000</u>	<u>62</u>	<u>547</u>	<u>53</u>	<u>13</u>

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

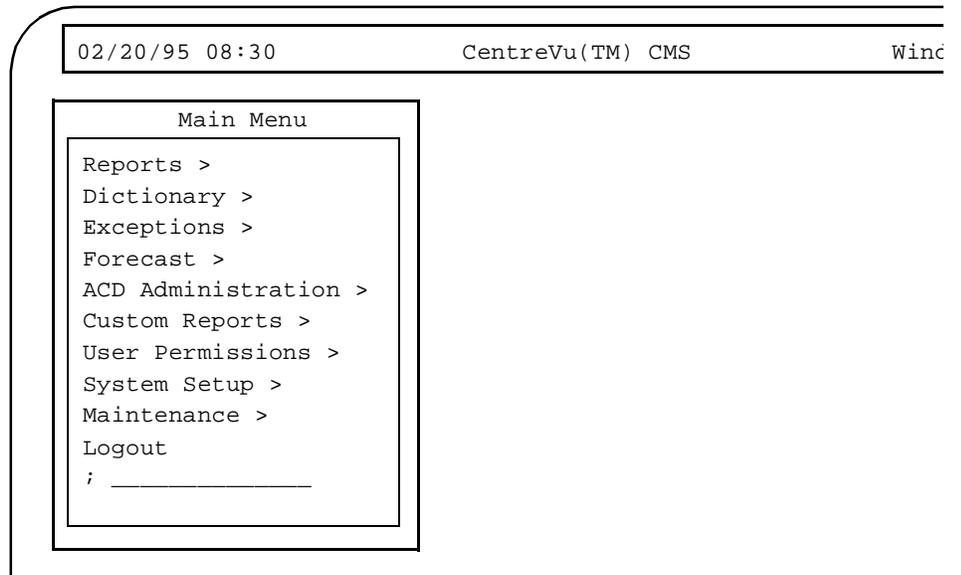
Number of unmeasured trunk facilities: 300

Number of exception records (0-2000): 500

Number of call records (0-5000): 0

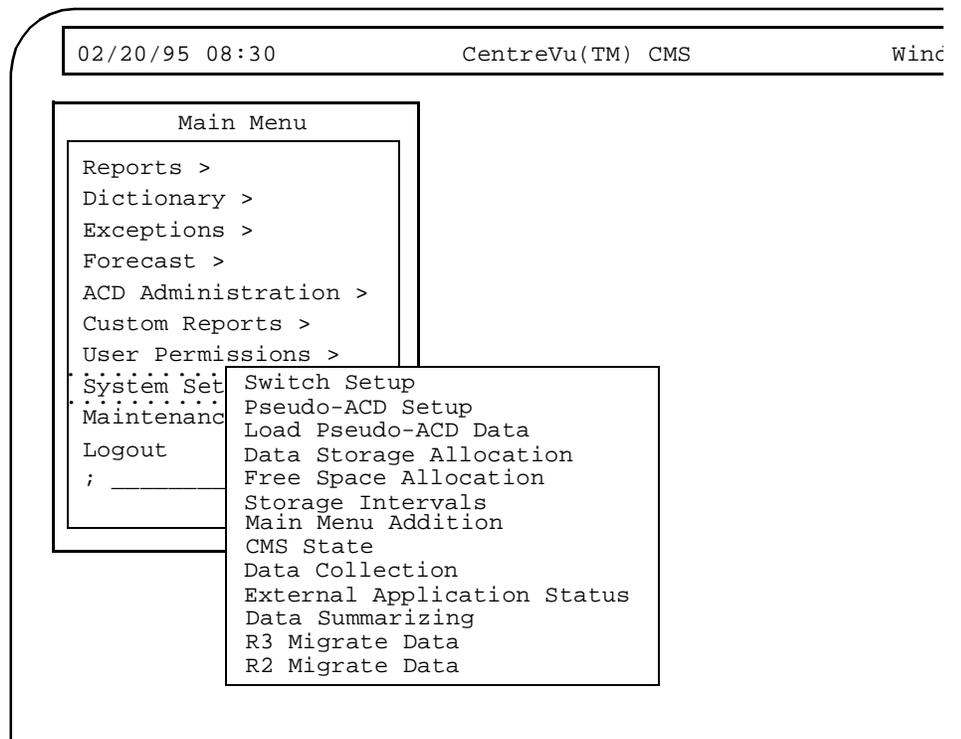
Checking the Storage Interval Size

1. Display the CMS main menu. For example:



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

The System Setup menu displays:



3. Select Storage Intervals and press **Enter**.

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: <u>12:35 AM</u>		
Switch time zone offset (-23 to +23): <u>0</u>		
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: <u>12:00 AM</u>		
Daily stop time: <u>11:59 PM</u>		

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 ACD
- 3) backup Filesystem backup
- 4) diskmap Estimate disk requirements
- 5) memory Estimate memory requirements
- 6) realtime Estimate real-time report refresh rate
- 7) pkg_install Install a feature package
- 8) pkg_remove Remove a feature package
- 9) run_cms Turn CentreVu CMS on or off

```
Enter choice (1-9) or q to quit:
```

2. Enter 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***
```

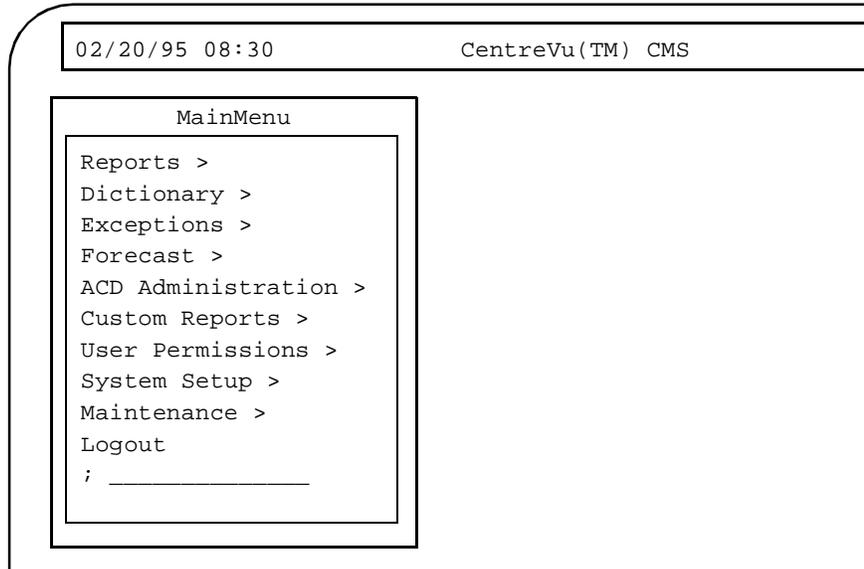
```
#
```

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

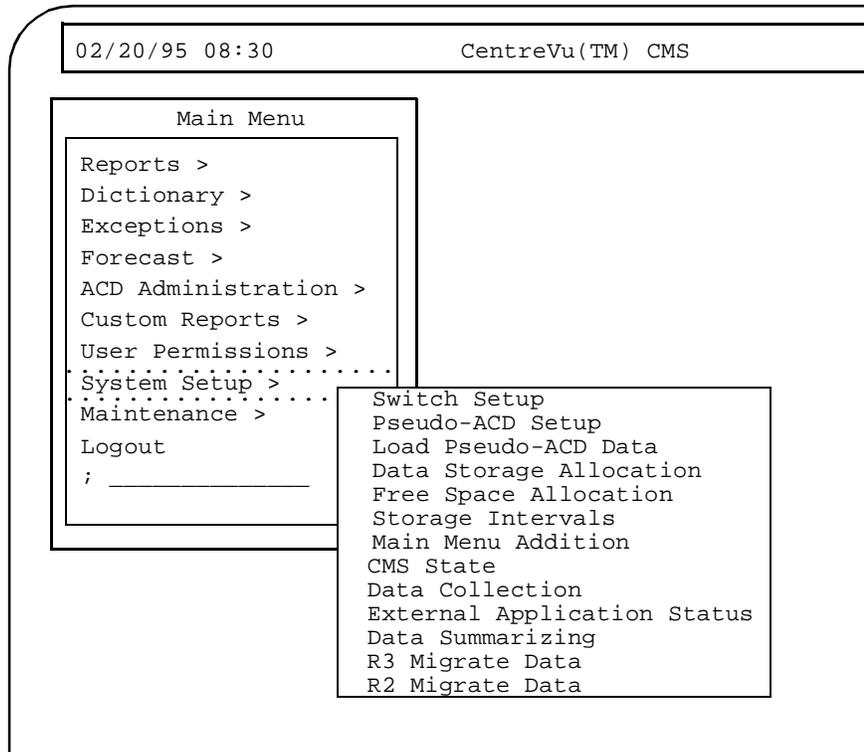
Turning Data Collection On or Off

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

1. Log in to CMS. The CMS main menu displays:



2. Select the System Setup option and press **Enter**. The System Setup menu appears:



3. Select Data Collection and press **Enter**. 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: _____

Data Collection (Select one):
    <x> On
    <_> Off

Find One
List All
Modify
Next
Previous
```

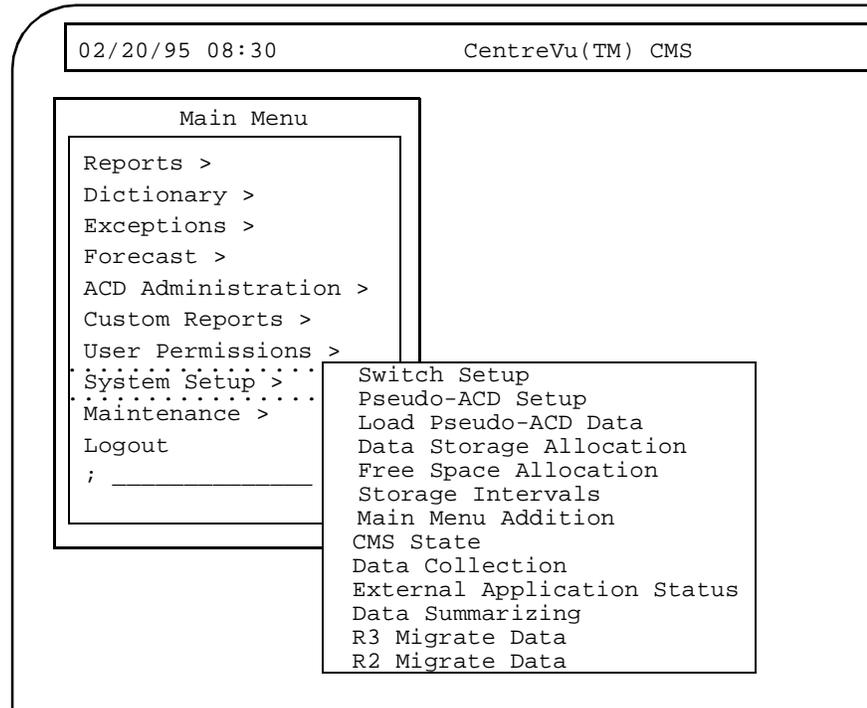
4. Type the name or number of the ACD for which you want to turn data collection on or off.

As an alternative, you can press **Enter** to access the Action List, and select **Find One** or **List All** to help you select an ACD. **Find One** selects the first available ACD in the list; **List All** lists the name and data collection status of each ACD.
5. Use the arrow keys to move to the **On** or **Off** field, and press the **X** key to select the field.
6. Press **Enter**.
7. Select **Modify** and press **Enter**. You are prompted to confirm your choice.

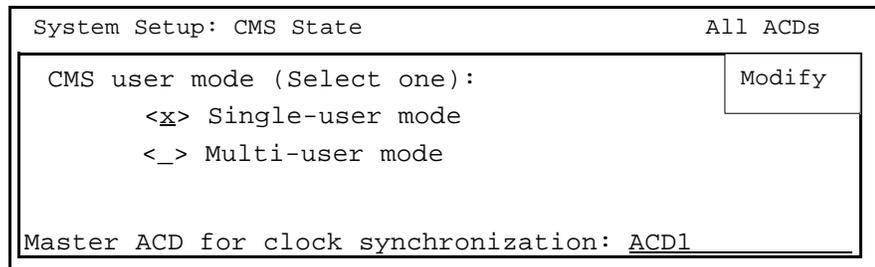
Changing the CMS User Mode

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 **Enter**. The System Setup menu appears:



2. Select *CMS State* and press **Enter**. The System Setup: CMS State window displays:



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 **Enter** twice to execute the modifications.

Selecting an ACD Within CMS

Many of the CMS data windows show information for only one ACD at a time. Such windows display data for the “current” ACD—the ACD that is selected at the moment. To select a given ACD as the current one, do this:

1. Press **F3**. The Commands menu displays:

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

2. Select `Options>` and press **Enter**. 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 **Enter**. A “Current ACD” window displays.

```
Current ACD                                g3v4_acd1
-----
User ID cms
Current ACD: _____
Find one
List all
Modify
Next
Previous
```

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

The cursor moves to the Action List.

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

6. Select `Modify` and press `Enter`.
7. Press `F8` to display the main menu.

The next data window that displays will use the ACD you selected.

CMSADM File System Backups

Before you do any upgrade or data migration, you need to do a CMSADM backup of the file systems. The CMSADM backup is, at the very least, a precaution against an upgrade or data migration gone wrong. In some cases, the CMSADM backup tapes are used in the upgrade procedure.

If you are doing a data migration, full and incremental CMS maintenance backups are also required, to supply the data for the migration. Maintenance backups are done from the CMS Backup Data window (see “Back Up Data Window” on page A-24).

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 much data *CentreVu* CMS contains.

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
```

^{*}*UNIX* is a registered trademark of Novell, Inc. in the United States and other countries, licensed exclusively through X/Open Corporation.

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 .

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 **Enter**. 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 **Enter**.

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 **Enter**.

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 step 1, 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 0 S
```

3. Make certain the CD-ROM drive is empty.

If you know there is a CD in the drive, or if you are not sure, enter the following command:

```
# eject cdrom
```

If there is a CD in the drive, the drive tray opens. Remove the CD and close the drive tray.

If the drive is already empty, the system responds with the message `Inappropriate ioctl for device`, and no further action is needed.

4. 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:
```

5. 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 Gbyte 8mm tape
  4) 5.0 Gbyte 8mm tape
  5) 2.5 Gbyte cartridge tape
Enter choice (1-5):
```

6. 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:
```

7. To begin the backup, insert the tape and press **Enter**.

If *CentreVu* CMS is turned on, the system responds:

```
The backup is about to begin, CMS is currently on. CMS  
will be turned off automatically during that portion of  
the backup which needs CMS off. Press ENTER to proceed or  
BREAK to quit.
```

8. Press **Enter** to continue the backup.

The system begins copying your file system to the tape. Dots display on the screen as the system is backed up. If one tape fills up, the system prompts for another:

```
Backing up files .....
.....
.....
Please remove the current tape, number it, insert tape
number X, and press ENTER.
```

⇒ NOTE:

When you insert another tape, you must allow the tape to rewind and reposition before you press **Enter**.

The system continues writing to tapes until it exhausts the file system files. Then it begins verifying the tapes:

```
Tape Verification
Insert the first tape

Press return to proceed: (there is a delay as tape is
verified)

Please insert tape number X and press return: (there is a
delay as tape is verified)

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

The system continues verifying tapes until it exhausts the tapes. Again, when you insert each tape, allow the tape to rewind and reposition before you press **Enter**.

9. Label the CMSADM backup tapes with the date and *CentreVu* CMS version.
10. Retrieve the printout you acquired in step 1 and bundle it with the backup tapes. Set aside the tapes and printout in a safe place.

Back Up Data Window

You must complete the Back Up Data window to do a maintenance backup of CMS data. Make sure you have read all the information in this section before you fill out the window. See Table A-1 for descriptions of the fields on the Maintenance: Back Up Data window.

Table A-1: Back Up Data Field Descriptions

Field	Description
Backups completed today: (Display only)	Displays the number of backups which have been completed for the current day.
Status: (Display only)	Displays the status of the current or most recent backup and what is currently being backed up.
Errors: (Display only)	Displays any errors found in the backup.
Device name:	Enter the device name. This field may default to the device specified during the installation process. If this is the case, you can accept the default device name. To list tape devices, return to the main menu, select Maintenance ⇒ Backup/Restore Devices, and select the List All action.

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

Field	Description
Verify volume can be read after backup? (y,n):	Enter y for yes to request that the data be reread to ensure that the data has been stored properly. While the data are being reread, the message <i>Verifying</i> 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 <i>CentreVu</i> CMS system <i>except</i> pseudo-ACDs. Current ACD — Complete a data backup for the current ACD.
Data to back up (Select any you wish):	System administration data Enter an x if you want system administration data backed up. System administration data includes user permissions and feature access permissions, MainMenu additional data, timetable and shortcut, printer administration, default values and color values, and custom report definitions (not the data associated with custom reports).
	ACD-specific administration data Enter an x if you want ACD administration data backed up. ACD-specific administration data includes the following: forecast data (if the feature is active), call work code administration data, VDN and vector administration data, data storage allocation data, exception administration data, agent trace data (historical list of agents traced), agent login/logout data, and ACD-specific Dictionary names.
	Historical data, Select one: Enter an x next to Full or Incremental to select the type of backup. <i>CentreVu</i> CMS tracks the last Full Backup and Incremental Backups.
	Full A Full Backup includes data for all of the time periods in the historical database. A Full Backup must be done prior to the first Incremental Backup. It is recommended that you periodically (for example, once a week) do a Full Backup of your system.

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

Field	Description
Data to back up (Select any you wish): (continued)	<p>Incremental An Incremental Backup includes the <i>CentreVu</i> 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.</p>
	<p>Non-CMS data Enter an x if you want non-CMS data backed up. Non-CMS data includes all data from <i>INFORMIX</i>* tables with names that start with "c_." The table definitions for non-CMS <i>INFORMIX</i> tables are not backed up. A <i>UNIX</i> system/<i>Solaris</i> system backup should be used instead.</p>
	<p>Specific tables When this field is selected, choose the <i>Select tables</i> action. An additional window displays in which you can specify which selected tables should be backed up. If you select <i>Specific Tables</i> to back up, you cannot make any other selection (for example, <i>System data</i>) in the <i>Data to backup up</i> field. See the "Specific Tables" section later in this chapter.</p>
Tables to back up (Select any you wish):	Enter an x to select any of the listed <i>INFORMIX</i> tables whose data you want to back up.
Table name	The field displays the designated name of the <i>INFORMIX</i> table.
Description	This field displays the type of data included in the <i>INFORMIX</i> table.

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

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 occurs only 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 .

The program responds:

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

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

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

7. Enter *y* if the customer purchased Graphics; otherwise, press .
- 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 `Enter`. 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 `Enter`. 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 `Enter`. 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 `Enter`. 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:

Switch Agent Size Range Purchased	Provisioning for ACD Members (split/skill pairs)			
	Non-EAS		EAS	
	<i>INTEL / Sun without Solstice DiskSuite</i>	<i>Sun with Solstice DiskSuite</i>	<i>INTEL / Sun without Solstice DiskSuite</i>	<i>Sun with Solstice DiskSuite</i>
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 same 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>
```

Creating ACDs

The `acd_create` option on the *CentreVu* CMS Administration menu allows you to define a new ACD.

⇒ NOTE:

The ACD must be authorized, and therefore purchased, before it can be added to the *CentreVu* CMS. See “Setting Authorizations” on page A-27 for details.

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

```
# cmsadm
```

The *CentreVu* CMS Administration menu appears.

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

⇒ NOTE:

Before you define a new ACD, you must turn off *CentreVu* CMS.

2. To turn off *CentreVu* CMS, do the following:
 - a. Enter 9 to select `run_cms` on the *CentreVu* CMS Administration menu.

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.sk*) 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.

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 steps there.

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 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 `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 use an editor to browse 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 the *CentreVu CMS R3V5 Sun® SPARCserver™ Computers Installation and Maintenance* (585-215-827) document; 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 xxxxxxxx (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.)

Repeat this step for each administered ACD in your system.

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 use an editor to browse this file for additional information on packages which were installed or authorized.

R3 Migrate Data Window

Use the window in Figure A-1 to migrate Release 3.0 (R3.0), Release 3 Version 2 (R3V2), or Release 3 Version 4 CMS data on an *INTEL* or *Sun* machine to Automatic Call Distribution (ACDs) on the *CentreVu* CMS 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
Device name: default
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:

Cancel
List device
Run
  
```

Figure A-1: R3 Migrate Data Window

Field Descriptions

Device name:

Enter the device name from which the data being migrated will be read.

Valid input is the name of a device that has been defined in the Maintenance: Backup/Restore Devices window (normally default). The field is 20 characters long.

Data type:

Choose the type of data you are migrating: system administration data, ACD administration data, or historical data. (Appendix B, "Data Migration Tables," lists the data items and their associated types.) You can select only one data type at a time.

 NOTE:

Keep the following items in mind when choosing the data type:

- **System administration and ACD administration data** should each be migrated only one time. Migrating administration data more than once could cause catastrophic errors.
- **To migrate system administration data** CMS must be in the single-user mode .
- **To migrate ACD administration data** CMS must have data collection turned off.
- **To migrate historical data** CMS may be in the single-user or multi-user mode .

Stop date:

Enter the date through which you wish to record data for migration to the CMS. The migration process does not migrate data collected after the stop date you specify.

Valid input is a date in mm/dd/yy or in relative format. This field is 8 characters long. If you leave the this field blank, the program migrates data up to the date written on the tape by the CMS Maintenance Backup procedure.

Stop time:

Enter the time through which you wish to record data for migration to the CMS. The migration process does not migrate data collected after the stop date and time you specify.

Valid input is a time in hh:mmXM or in HH:mm (24-hour) format. This field is 8 characters long.

Specify ACD to migrate:

Select All ACDs or Single ACD.

If you select All ACDs, data is migrated from the backup tape to your hard disk ACD-by-ACD (that is, ACD1 on tape to ACD1 on disk, ACD2 to ACD2, and so on).

If you select Single ACD, you must specify the From and To ACDs, and may migrate the data in any ACD-combination you find necessary. Valid input is a number 1 through 4.

Action List Entries

Cancel

Results in an acknowledgment window that asks if you want to cancel the migration. If you answer `y` to terminate the migration, the migration is stopped and "Canceled" is displayed on the status line.

List device

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

Run

Starts the migration.

If you elect to migrate system administration data, the `Run` entry verifies that CMS is in the single-user mode.

If you elect to migrate ACD administration data, the `Run` entry verifies that data collection is off.

If you elect to migrate historical data, the migration may proceed regardless of the CMS state, and data collection may be turned on.

The status field reports the progress.

Additional Considerations

- You cannot execute this window to migrate data for a nonsupported migration path.
- You cannot run this window on a timetable.
- In CMS 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 (Dict/Database Items/ Custom Items).

- Phased migrations don't work. If you migrate some agents at one time, and others at a later time, you will have to decide which set of data you want. The two sets of data cannot be merged.

Operational Cases

The following cases may occur during the execution of the R3 Migrate Data window. Each case describes the input conditions, the application action, and what to do for each condition.

User Permission

Input Condition You do not have write permission to the System Setup subsystem.

Application Action The `Run` Action Item is not displayed.

What to Do If you cannot run this window, change permissions so you have the appropriate write permission. See the *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 **Enter** to get back to the main window and enter a valid device, or administer the device in the Maintenance: Backup/Restore Devices window.

Invalid ACD

Input Condition You entered an invalid ACD number in the ACD field.

Application Action The following message window is displayed:

```
Enter the ACD you are migrating data to.  
Numeric inputs must be between 1 and 4. Decimal points are not  
allowed.  
Multiple values are not allowed.
```

What to Do Enter a valid ACD number to clear the message window.

Run Conditions — Single-User

Input Condition You selected System Administration data and CMS is in the multi-user mode.

Application Action The following acknowledge window is displayed:

```
ERROR: CMS must be in Single User state to  
migrate System Administration data.  
  
Press return to continue:
```

What to Do Press **Enter** to clear the acknowledge window and use the System Setup: CMS State window to change CMS to the single-user state.

Run Conditions — Data Collection Off

Input Condition You selected ACD Administration data, and data collection for at least one of the existing ACDs is turned on.

Application Action The following Acknowledge window is displayed:

```
ERROR: Data Collection must be off for all ACDs  
to migrate ACD Administration data.  
  
Press return to continue:
```

What to Do Press **Enter** to clear the acknowledge window, and use the System Setup: Data Collection window to turn off data collection for all ACDs.

Tape Not Mounted

Input Condition Tape is not mounted in the designated tape drive.

Application Action The following acknowledge window is displayed:

```
ERROR: Cannot read the volume. Please check
the volume and/or the device drive.
```

```
Press return to continue:
```

What to Do

Press to clear the acknowledge window. Another acknowledge window displays to prompt for the volume.

Volume Read Error

Input Condition There is an error with the volume read.

Application Action The following acknowledge window is displayed:

```
ERROR: Migration errors have occurred with the current volume.
Enter yes to skip this volume or no to cancel the migration.
```

```
Enter 'y' for yes or 'n' for no:
```

An error message indicating the read problem is written to the Services error log. The status line displays "Failed," and the main window is locked.

What to Do

If you enter `n`, the migration stops. "Canceled" is displayed on the status line, and the window is unlocked. The following error message is written to Customer and Services logs: Migration canceled by the user.

If you enter `y`, the status line is cleared, and the Volume Prompt (subsequent volume) window is displayed. In either case, if a table is involved, its migration is not completed, but the table's migrated data is accessible.

Non-CMS Volume

Input Condition The mounted volume is not a CMS backup volume.
Application Action The following acknowledge window is displayed:

```
ERROR: Mounted volume is not a CMS backup volume.  
  
Press return to continue:
```

What to Do Press **Enter** to clear. Another acknowledge window displays to prompt for the correct volume.

Data Write Error

Input Condition There is an error with data write.
Application Action The following acknowledge window is displayed:

```
ERROR: Migration errors have occurred with table=ttttt.  
Enter yes to skip the table or no to cancel the migration.  
Enter 'y' for yes or 'n' for no:
```

An error message indicating that the reload problem is written to the Customer and Services error logs. The status line displays “Failed,” and the main window is locked.

What to Do Entering *y* clears the acknowledge window. The status line displays “Working,” and the migration continues with the next table on the volume.

Entering *n* stops the migration. The status line displays “Canceled,” and the window is unlocked. The following error message is written to Customer and Services logs: Migration canceled by the user.

In either case, depending on the error, the table may or may not be accessible. Manual correction may have to be performed. If you encounter this message, call the TSC.

Process Is Running	Input Condition	Process is reloading data to disk.
	Application Action	The main window's status line displays "Working," and then the status field reports the migration status.
	What to Do	You can exit the window and bring it up later without affecting the actual migration process running in the background. In addition to using the migration log file, you can use the window to display feedback from the migration process.

**Volume Prompt —
First Volume**

Input Condition	The migration is started, and the first volume is needed.
Application Action	The following acknowledge window is displayed:

```
To start the migration, load the first CMS Maintenance Backup
volume into the device drive.
Enter yes when ready or no to cancel.

Enter 'y' for yes or 'n' for no:
```

	The main window is locked.
What to Do	<p>If you load a backup volume and enter <code>y</code>, the acknowledge window clears. The migration checks for these conditions before starting the reload:</p> <ul style="list-style-type: none"> • CMS Maintenance Backup volume • Database compatibility • Volume order • Supported migration path. <p>If you enter <code>n</code>, the migration stops. The status line displays "Canceled," and the window is unlocked. The following error message is written to Customer and Services logs: <code>Migration canceled by the user.</code></p>

**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:
```

What to Do The main window is locked. The volume label should be the next volume in sequence. Unload the current volume, and load the requested volume. If you load the volume and enter `y`, the acknowledge window clears, and the migration checks to make sure that it has the right volume before starting the reload. If you enter `n`, the migration stops. The status line displays “Canceled,” and the window is unlocked. The following error message is written to Customer and Services logs: Migration canceled by the user.

Volume Order

Input Condition The mounted volume is not the volume in sequence for reload.

Application Action The following acknowledge window is displayed:

```
ERROR: Mounted volume is not the requested volume.

Press return to continue:
```

What to Do Press **Enter** to clear. Unload current volume and load requested volume.

Partial Migration and Restart

Input Condition The migration has been running, is stopped or aborted, and then restarted.

Application Action The following acknowledge window displays:

```
Migration has been run before, but did not complete.  
Enter yes to continue the migration where it left  
or no to rerun the migration from the beginning.
```

```
NOTE: For sysadmin data, rerun of migration from the beginning  
could create duplicate data
```

```
Enter y for yes or n for no:__
```

What to Do

If you enter `y`, the migration starts from where it stopped. That is, the program skips over the data that already has been migrated.

Entering `y` saves time, especially if you are migrating historical data. (If you are migrating administration data, entering `y` prevents an excessive amount of messages from being entered into the migration log.)

If you enter `n`, the program starts the migration from the beginning of the data. If you restart the system administration migration, numerous `already exists` messages will appear in the migration log due to the data already migrated. Data collisions will result in the user IDs and user permissions being deleted.

⇒ NOTE:

Only enter `n` for special instances. For example, you would want to start the migration from the beginning if you cleaned up the database.

Completed Migration and Restart

Input Condition You have completed the migration and then restarted it using the same tape.

Application Action The following acknowledge window displays:

```
Migration has been run before.  
Do you want to run it again?  
  
NOTE: For sysadmin data, rerun of migration could create  
duplicate data.  
  
Enter y for yes or n for no:__
```

What to Do If you enter `n`, the program returns you to the action list in the R3 Migrate Data window.

If you enter `y`, the program starts the migration from the beginning of the data. (If you are migrating administration data, numerous “already exists” messages will appear in the migration log due to the data already migrated.)

⇒ NOTE:

Only enter `y` for special instances. For example, you would want to start the migration from the beginning if you cleaned up the database.

Tape Changed

Input Condition You run a migration, change the tape, then restart the migration. The migration can be either incomplete or complete.

Application Action The following acknowledge window displays:

```
Migration for this data type has been partially run or  
successfully completed before, but the tape containing  
the migration data was not the same as the one currently  
in the tape drive. Do you want to run the migration  
using the tape in the tape drive?  
  
Note: For system administration data, rerun of migration will  
not override any previously migrated data.  
  
Enter y for yes or n for no:__
```

What to Do If you enter `y`, the program starts the migration from the beginning of the data.

 **NOTE:**

Enter `y` only for special instances. For example, you would want to start the migration from the beginning if you cleaned up the database.

If you enter `n`, the program returns you to the action list in the R3 Migrate Data window.

Viewing the CMS_README File

CentreVu CMS provides a CMS_README file to explain the differences between the *CentreVu* CMS software loads. You can view or print this file before you upgrade the CMS.

From the Sun Platform:

The CMS_README file is on the CD-ROM that contains the *CentreVu* CMS software. Follow these steps to view or print the file:

1. Insert the CMS CD-ROM into the CD-ROM drive. (You must use the CD-ROM caddy if you have an external CD-ROM drive.)
2. Log in as *root*.
3. Enter one of these commands:
 - `pg /cdrom/cdrom0/CMS_README` to view the file, or
 - `lp -d <printer> /cdrom/cdrom0/CMS_README` to print the file, where `<printer>` is the system printer name.

From the INTEL Platform:

The CMS_README file is on the cartridge tape that contains the *CentreVu* CMS software. Follow these steps to view or print the file:

1. Log in as *root*.
2. Enter the `installpkg` command.
3. When prompted, select the cartridge tape option.
4. The program requests that the tape be inserted into the tape drive. Insert the CMS software cartridge tape into the tape drive, wait for the tape drive to reposition, and then press **Enter**.
5. When prompted, press **Enter** 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 **Enter** to continue.
7. Select "README for *CentreVu* CMS," and press **Enter**.
8. Press **Esc** to indicate that the selection has been made. Press **Enter**. Press **Enter** again in response to the REMINDER! message. The program indicates that it is installing the README file into `/usr/lib/CMS_README`.
9. Enter one of these commands:
 - `pg /usr/lib/CMS_README` to view the file, or
 - `lp -d <destination> /usr/lib/CMS_README` to print the file where `<printer>` is the *UNIX* printer name.

Appendix B

Data Migration Tables

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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			
cmstbbs	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
dtgrp&	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_dspllit&	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
wvvn	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	

Table B-2: R2-to-R3V5 — Custom Report References to Database Items (Contd)

R2 Item	R3 Equivalent	Note
STATE_DATE	–	Report reference
STROKE1-9	EVENT1-9	TIMEMARK was time of day; AGTIME is duration in state
SVCLVL	SERVICELEVEL	
TIMEMARK	AGTIME	
TRK_NDX	EQLOC	Report reference
TRKGRP	TKGRP	
TRKSINUSE	NUMINUSE	
TRUNKASSOC	–	Report reference
TRAFFIC	ACCEPTABLE	Report reference
TSTATE	TKSTATE	
VECCALL	–	
VECSTARTDATE	–	Report reference
VECSTARTTIME	–	Report reference
VECTIME	INTIME	R2 item was constant; R3 item may have different value for each period
VECTOR	VECTOR	
WINDOW	PERIOD1-9	

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	
STAFETIME	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_ACWTIME + I_ACWTIME – I_ACWINTTIME – I_ACWOUTTIME) / ACDCALLS
AVG_WORK_TIME_SUM	No R3 calculation	maps to sum(I_ACWTIME + 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_LEVEL	PERCENT_SERV_LVL_SPL	
PERCENT_STAFF_IN	No R3 calculation	maps to $100 * (I_ACD_TIME + I_ACW_TIME - I_ACW_INTIME - I_ACW_OUTTIME) / I_STAFF_TIME$
PERCENT_STAFF_OUT	No R3 calculation	maps to $100 * (I_ACW_OUTTIME + I_AUX_OUTTIME) / I_STAFF_TIME$
SEC_STAFF_TIME	No R3 calculation	maps to I_STAFF_TIME
TRKBUSY	No R3 calculation	maps to INTIME + OUTTIME
V_AVG_ANS_SPEED_SUM	AVG_ANSWER_SPEED_SUM	

Appendix C

Fixing Migrated R2 Custom Reports

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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. R2 Daily reports, for instance, have two input fields—FIRST_INTERVAL and LAST_INTERVAL—to display the start time and the end time of data in a report. To fix these reports, replace the two input fields with a single input field “Times.” Define “Times” as a range (Range/List=y), and select “Time (point in time)” in the `Type` field. Instead of entering the first and last interval to run the report, you enter a range of time (for example, 7:30AM-5:00PM).

You can use the same method to fix input fields of migrated R2 weekly and monthly reports. Replace the input fields START_DAY and NUMBER_OF_DAYS with one input field “Dates.” Define “Dates” as a range, and select “Date” in the `Type` field.

When replacing two input fields with one, you must also change the row search criteria that reference the input fields. That is, if you delete an input field, you must also delete the “where” clauses that use that input field’s variable. If you change an input field to accept a range, you must ensure that the “where” clauses that use that input field’s variable use only an equals sign (=).

3. Fix input values displayed on a report.

When an R2 custom report is migrated to 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
0xxxxxxxxxxxxxxxxxxxxx	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
1xxxxxxxxxxxxxxxxxxxxx	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.

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