

Lucent Technologies
Bell Labs Innovations



CentreVu[®] **Call Management System**
Release 3 Version 6
Sun Enterprise[™] 3000 System
Hardware Installation

585-215-867
Comcode 108145319
Issue 1
May 1998

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CentreVu® Call Management System Sun® Enterprise™ 3000 System Hardware Installation

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Preface

Overview

The *CentreVu*[®] Call Management System Release 3 Version 6 Sun[®] Enterprise[™] 3000 Computer Hardware Installation, Issue 1 (585-215-867) document, is written for technicians and Lucent Technologies call center customers who install and maintain the *CentreVu* Call Management System (CMS). This document addresses Sun^{*} Enterprise[†] systems using the Solaris[‡] 2.5.1 operating system.

Organization

This document is organized as follows:

- **Chapter 1 — Introduction**

Provides an overview of the supported *CentreVu* CMS, supported hardware platforms, required software, and supported switch releases. It also includes the purpose of the *Sun Enterprise* system, roles and responsibilities, and helpline information.

- **Chapter 2 — Installing the *Sun Enterprise* 3000 System**

Describes how to set up the *Sun Enterprise* 3000 system at the customer's location.

- **Chapter 3 — Installing Terminals, Printers, and Modems**

Describes how to install terminals, printers, and modems for the *CentreVu* CMS application.

- **Chapter 4 — Connecting the *Sun Enterprise* 3000 System to the Switch**

Describes how to connect the *Sun Enterprise* 3000 system to Lucent Technologies switches. In addition, it discusses multi-ACD connectivity.

- **Appendix A — Generic 3i Administration**

Describes how to administer the *CentreVu* CMS application for Generic 3i switches.

- **Appendix B — Generic 2 Administration**

Describes how to administer the *CentreVu* CMS application for Generic 2 switches.

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†Enterprise is a trademark of Sun Microsystems, Inc.

‡Solaris is a registered trademark of Sun Microsystems, Inc.

- **Appendix C — Generic 3r Administration**

Describes how to administer the *CentreVu* CMS application for Generic 3r switches.

- **Appendix D — *Sun Enterprise 3000 System* Factory Hardware Installation Procedures**

Outlines the factory hardware installation procedures for the *Sun Enterprise 3000* system. A technician would also use these procedures at a customer site if problems occurred.

- **Glossary**

Lists and defines technical terms used in this, and related documents. Also lists and expands abbreviations and acronyms used in this and related documents.

- **Index**

Provides a subject keyed page reference for material covered in this document.

CentreVu CMS Documents

The following documents are available for the *CentreVu* CMS R3V6 product:

- *CentreVu[®] Call Management System Release 3 Version 5 Custom Reports, Issue 1* (585-215-822)
- *CentreVu[®] Call Management System Release 3 Version 5 Forecast* (585-215-825)
- *CentreVu[®] Call Management System Release 3 Version 6 Administration, Issue 1* (585-215-850)
- *CentreVu[®] Call Management System Release 3 Version 6 Open Database Connectivity, Issue 1* (585-215-852)
- *Lucent Call Center Change Description* — request the most current issue (585-215-853)
- *CentreVu[®] Call Management System Release 3 Version 6 External Call History Interface, Issue 1* (585-215-854)
- *CentreVu[®] Advocate User Guide, Issue 1*, (585-215-855)
- *CentreVu[®] Call Management System Release 3 Version 6 Upgrades and Migration, Issue 1* (585-215-856)
- *CentreVu[®] Call Management System Release 3 Version 6 Sun[®] SPARCserver[™] Computers, Hardware Installation, Issue 1* (585-215-857)
- *CentreVu[®] Call Management System Release 3 Version 6 Sun[®] SPARCserver[™] Computers, Connectivity Diagram, Issue 1* (585-215-858)
- *CentreVu[®] Call Management System Release 3 Version 6, Maintenance and Troubleshooting, Issue 1* (585-215-861)
- *CentreVu[®] Call Management System Release 3 Version 6 Sun[®] Enterprise[™] 3000 System Connectivity Diagram, Issue 1* (585-215-865)
- *CentreVu[®] Call Management System Release 3 Version 6, Software Installation and Maintenance, Issue 1* (585-215-866)
- *CentreVu[®] Call Management System Release 3 Version 6, Planning, Configuration, and Implementation, Issue 1* (585-215-879)
- *Lucent Call Center Documentation CD-ROM, Issue 1* (585-215-892).

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

Other *CentreVu*[®] Documents

The following documents are available for the *CentreVu* Supervisor product:

- *CentreVu*[®] *Explorer Installation and Getting Started*, (585-215-835)
- *CentreVu*[®] *Explorer User Guide*, (585-215-840)
- *CentreVu*[®] *Supervisor Version 6 Reports, Issue 1* (585-215-851)
- *CentreVu*[®] *Report Designer Version 6, User Guide* (585-215-859)
- *CentreVu*[®] *Supervisor Version 6 Installation and Getting Started, Issue 1* (585-215-860).

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

Introduction

Overview

The *CentreVu*[®] Call Management System Release 3 Version 6 (CMS R3V6) is a software application offered in association with the Automatic Call Distribution (ACD) feature of Lucent Technologies switches. The *CentreVu* CMS application provides monitoring and recording of ACD calls, agents handling these calls, and the use of Vector Directory Numbers (VDNs) for these calls to measure system and agent performance.

Supported Features

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

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

Supported Hardware Platforms

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

- *Sun*^{*} *Enterprise*[†] 3000 system
- *Sun SPARCserver*[‡] 20
- *Sun SPARCserver* 10
- *Sun SPARCserver* 5.

This manual addresses only the *Sun Enterprise* 3000 system.

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[†]*Enterprise* is a trademark of Sun Microsystems, Inc. in the United States and other countries.

[‡]*SPARCserver* is a trademark of SPARC International Inc. in the United States and other countries.

Required Software

To operate properly, *CentreVu* CMS R3V6 requires the following software packages on the *Sun Enterprise 3000* system:

- *Solaris*^{*} 2.5.1 (11/97)
- Common Desktop Environment (CDE) 1.0.2
- HSI/S 2.0v1.6 (for systems having multiple ACDs)
- *INFORMIX*[†] 7.22
- *INFORMIX ILS* 9.13
- R10.0-R4.2 Network Terminal Server
- *SunLink*[‡] X.25 Network Interface Software, Version 9.1 or later.
- *Solstice DiskSuite*[§] 4.1
- *Solstice PPP* 3.0.1 (required for TCP/IP over PPP connections).

Supported Switch Releases

The *CentreVu* CMS R3V6 is certified to run with the following Lucent Technologies switches:

- *DEFINITY* Communications System Generic 2.1 Release 3.3 (QPPCN 629DR) and later.
- *DEFINITY* Communications System Generic 2.2 Release 3.0 (QPPCN 696DR) and later
- *DEFINITY* Communications System Generic 3i Release 13.3 (QPPCN 576) and later
- *DEFINITY* Communications System Generic 3r Release 8.5 and later
- *DEFINITY* Communications System Generic 3s Release 14.2 and later
- *DEFINITY* Communications System Generic 3 Version 1
- *DEFINITY* Communications System Generic 3 Version 2 Load 82 and later
- *DEFINITY* Communications System Generic 3 Version 3
- *DEFINITY* Communications System Generic 3 Version 4

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

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

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

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

- *DEFINITY* Enterprise Communications Server Release 5
- *DEFINITY* Enterprise Communications Server Release 6.

Purpose of the *Sun Enterprise 3000* System

The *Sun Enterprise 3000* system provides a hardware/software platform that enhances and supports the current *CentreVu* Call Management System R3V6 software application and is designed to do the following:

- Improve performance, input/output capacity, and reliability
- Provide multiprocessor capabilities for performance (Lucent supports as many as two CPUs, 250-MHz clock)
- Improve reliability [redundant power supplies, redundant cooling fans, enhanced Automatic Recovery System (ARS)]
- Improve storage capacity (up to 42 GB of internal disk storage)
- Allow for cost-effective future upgrades (Ultra *SPARC* processors, disks, tape drives, SBus cards, and network interface cards)
- Provide on-line help via *AnswerBook** software package.

Roles and Responsibilities

This document was written for Lucent Technologies Technical Service Center (TSC) technicians, and *CentreVu* CMS administrators who want to install, set up, and maintain *CentreVu* CMS on a *Sun Enterprise 3000* system.

The installation of the prerequisite hardware/software should have been completed by the factory before the computer was shipped to the customer.

NOTE:

The factory hardware installation procedures can be found in Appendix D, *Sun Enterprise 3000* System Factory Hardware Installation Procedures.

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

Task Responsibilities

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

Chapter	Task	Tech	TSC	Customer
2	Installing the <i>Sun Enterprise</i> 3000 System	X		
3	Installing terminals, printers, and modems	X		
4	Connecting <i>Sun Enterprise</i> 3000 System to the switch	X		
4	Multiple ACD connectivity (adding an ACD)	X	X	X

CentreVu 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

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

The customer will be prompted to identify the type of problem (ACD, hardware, or *CentreVu* CMS 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 Enterprise* 3000 system, the phone number of the dial-in port, and a description of the problem.

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

International Support

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

Installing the *Sun Enterprise 3000 System*

Overview

This chapter describes how to install the *Sun^{*} Enterprise[†] 3000 System* and related peripheral equipment, including the following:

- Installing the Sun Enterprise 3000 System
- SBus I/O Board and Components
- External I/O Components and Interfaces
 - *SunLink[‡]* HSI/S (High-Speed Serial Interface/SBus) patch panel
 - Set the Black Box DTE/DCE DIP Shunts
 - Connect the Network Hub Unit
 - Connect the Network Terminal Servers (NTSs) to the Network Hub Unit and Connect the NTS Patch Panel(s) to the 64-Port NTS
- Other Devices and Connections
 - Connect the Uninterruptible Power Supply (UPS) (optional)
 - Connect the Remote Console Modem
 - Connect to Another Network.

The table below gives the *Sun Enterprise 3000 System*'s physical specifications.

Height	65 cm (25.5 in)
Width	43 cm (17.0 in)
Depth	60 cm (23.5 in)
Weight (Main Cabinet)	72.5 kg (160 lbs) approximate
Power Cord	1.83 m (6.0 ft)

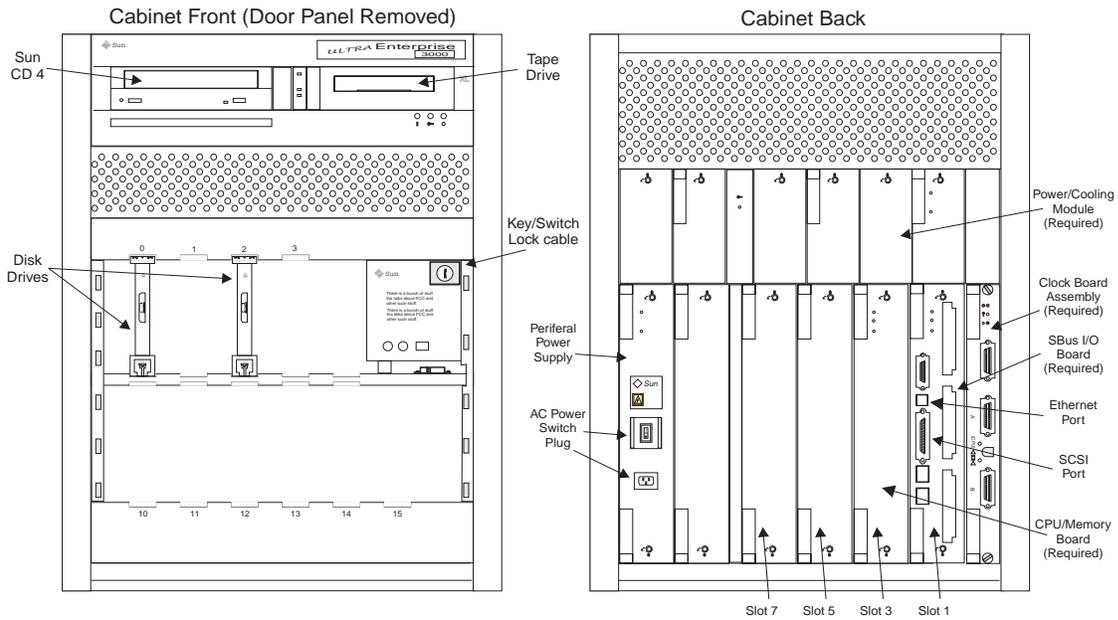
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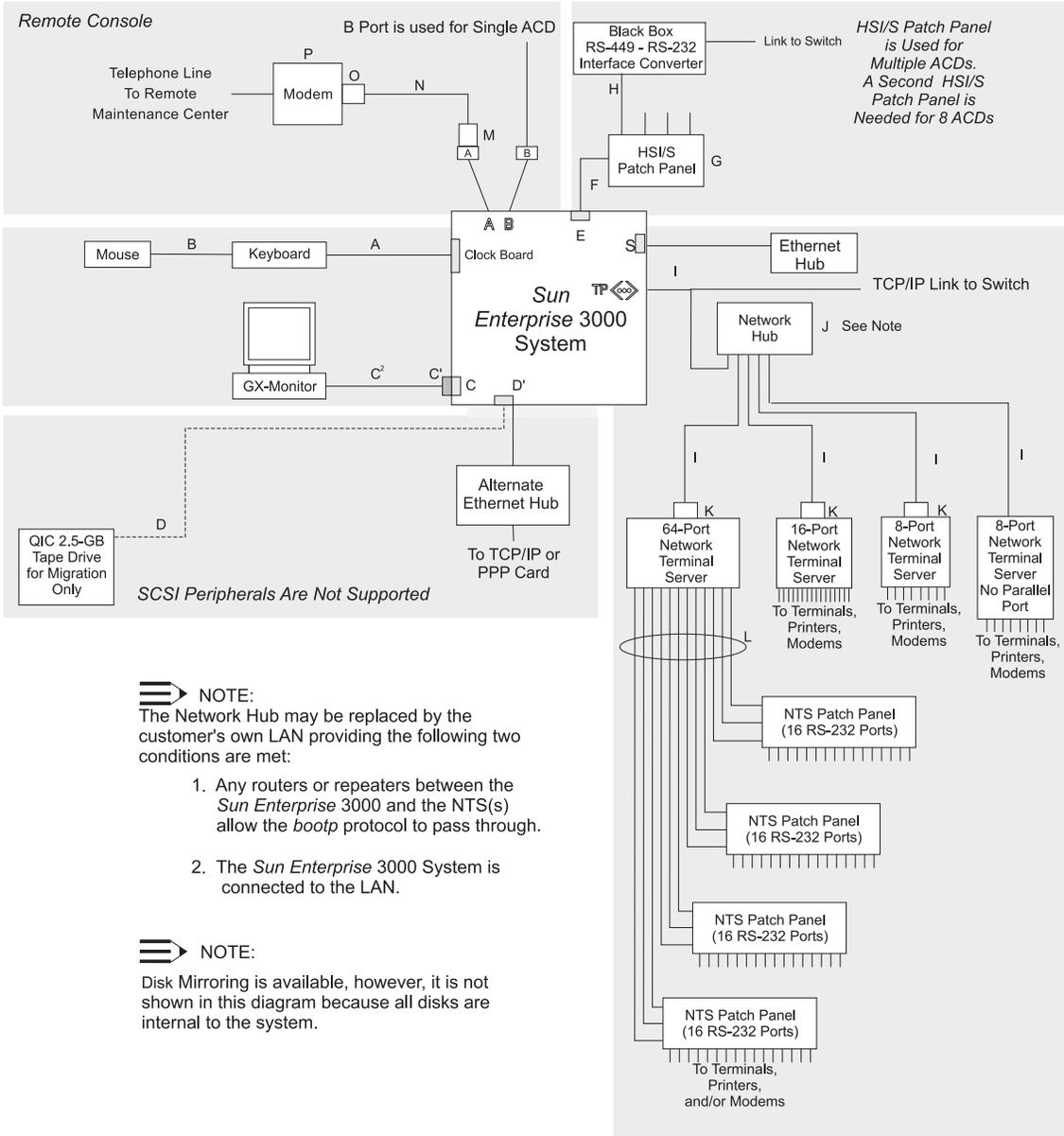
Front and Rear Panels

This figure shows the front and rear panels of the *Sun Enterprise 3000* System and the locations of peripheral connections.



Connectivity

The *Sun Enterprise 3000 System - Peripheral Connectivity* figure shows how the peripheral equipment is connected to the *Sun Enterprise 3000 System*. Note the example of terminal, printer, and modem connectivity. This example shows the hardware that you can use to connect peripherals.



Parts List

The following table lists the parts required to connect peripherals to the Sun Enterprise 3000 System.

Peripheral Connectivity Figure Call Out	Part of Comcode	Vendor Part Number	Description
A	407361815	F530-2154-01	Keyboard Cable - 15' keyboard cable
B		370-1398-02	Mouse with Cable
C	407761063	595-3865-01	Turbo GX Card (must be installed in SBus slot 0)
C'	407780442	F130-3034-01	13W3-pin connector adapter (required for entry level high resolution color monitor)
C ²	407361807	F530-2020-01	Monitor Cable - 4-meter monitor cable
D		F530-2115-02	SCSI Cable, 50-to-68 pin (for migration only)
D'	407068337	X1053A?	FSBE/S Card (installed in SBus slot 2)
E			HSI/S Card
F	407066794	530-1685-02 Rev 52	HSI/S Cable - 10'
G		540-2191	HSI/S Patch Panel
H	407086818	EDN37K-MM	RS-449 Cable - 10'
I	407338334	180-1529-01 Rev A	Unshielded Twisted Pair (UTP) Cable - 4 meters
	407086826	ANIXTER Part # - 143987	Category 5 UTP Cable - 10'
	407086842	ANIXTER Part # - 143992	Category 5 UTP Cable - 25'
	407086834	ANIXTER Part # - A111714-C	Category 5 UTP Cable - 50'
J	407086735	Allied Part # - AT-MR820T-15	Allied Telesis <i>CentreCOM</i> * Network Hub Unit
K	407086859	<i>CentreCOM</i> 210TS	10Base-T Transceiver
L	407068329	460-093-900 Rev 2	PBX Champ Cable for 64-Port NTS - 1 meter

Peripheral Connectivity Figure Call Out	Part of Comcode	Vendor Part Number	Description
M	846362754	ED3P00170G-1306	ACU Modem Adapter
N	846983039		10-Wire Shielded Modular Cable - 10'
O	846362770	ED3P00170G-1308	Remote Console Adapter
P	407633999	<i>Sportster</i> [†] 33.6 Faxmodem	Remote Console Modem
Q	407122068		DB-25 M/M Direct-Connect Link Adapter
	406783613		DB-25 M/M Gender Converter
R			Standard RS-232 Cable
S			Sunswift Card
See Note	407144229	4261-1002-0600	StarLAN 10 Network Fiber Hub
	407144203	LDI-10FL	10Base-FL Transceiver

*CentreCOM is a registered trademark of Allied Telesis.

†Sportster is a registered trademark of U.S. Robotics Access Corp.

⇒ NOTE:

These parts are for the optional fiber-optic network configurations.

Installing the *Sun Enterprise 3000* System

Unpacking and Inventorying the Equipment

Unpack the *Sun Enterprise 3000* System and associated peripheral equipment. Verify the equipment delivered using the shipping papers.

 **NOTE:**

Inspect all shipping cartons for evidence of physical damage. If a shipping carton is damaged, request that the carrier's representative be present before the carton is opened.

 **NOTE:**

Always wear an electrostatic discharge (ESD) strap when handling internal components.

Contact the Technical Service Center (TSC) for any *Sun Enterprise 3000* System parts that are missing or defective on arrival (DOA). For international support, contact your Lucent Technologies representative or distributor for more information.

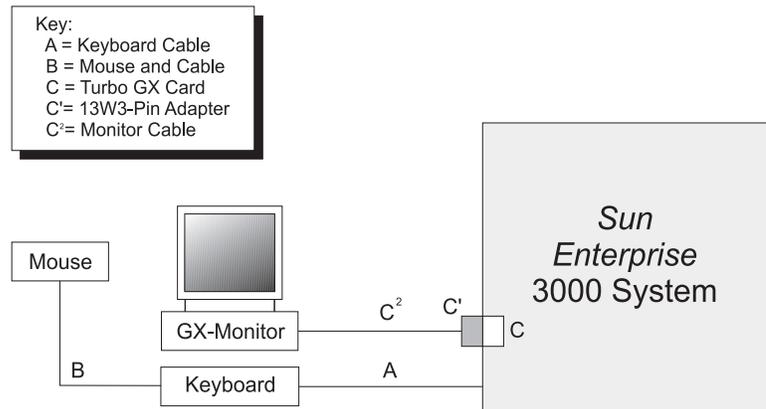
As you unpack the system, find the HSI/S loop back plug (for multiple ACDs only). It is normally in the box with the HSI/S controller card. You may need the plug for future troubleshooting. For use of the loop back plug, see the *CentreVu CMS R3V6 Hardware Maintenance and Troubleshooting* manual.

 **WARNING:**

Never move the system when power is on. Excessive movement can cause catastrophic disk drive failure. Always power the system OFF before moving cabinets.

Sun Enterprise 3000 System and System Console Connectivity

This figure shows how the system console peripherals connects to the *Sun Enterprise 3000 System*.



Assembling the Sun Enterprise 3000 System and System Console

To assemble the *Sun Enterprise 3000 System* and system console, do the following:

1. Place the system in the location selected by the customer. Make sure the power switch is set to *Off*.
2. Connect the following components (see the *Sun Enterprise 3000 System and System Console Connectivity* figure):
 - Keyboard
 - Mouse
 - Monitor
 - Power cord (to a wall outlet or to a UPS, if equipped).

This basic configuration represents the system console terminal. This may also be referred to as the *CentreVu CMS* console terminal.

Additional References

For additional information, refer to the following documentation:

Sun Enterprise 3000 System, Installation Guide

Sun Enterprise 3000 System, System Manual.

SBus I/O Board and Components

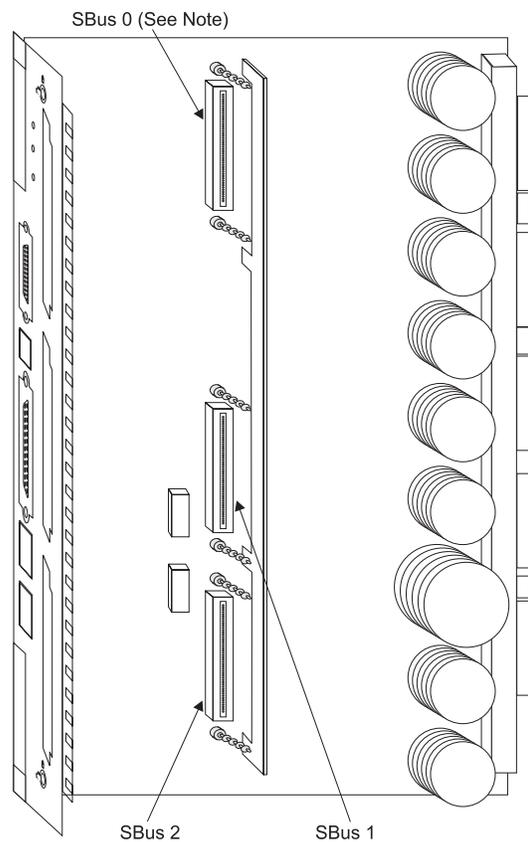
There must be at least one SBus I/O board installed in the system and an SBus I/O board must be installed in Slot 3 (see the Front and Rear Views of the *Sun Enterprise 3000* System figure in the Front and Rear Panels section).

Identifying Installed SBus Cards

This section describes how to identify SBus cards and their locations within the *Sun Enterprise 3000* System.

SBus I/O Board SBus Card Locations

The SBus I/O board provides three locations for SBus cards. The SBus I/O Board card locations are shown in the figure below.



⇒ NOTE:

The SBus 0 card slot for the SBus I/O board in slot 1 must contain a Turbo GX video card. You need to install this card (see “Installing or Changing SBus Cards” in this chapter).

Instructions for Identifying SBus Cards

The Hardware Inventory form received with your system contains a list of the SBus cards installed in your system. Use this form to reassemble your hardware. If the Hardware Inventory form has been misplaced, use the procedures described below to determine which SBus cards are installed in your system.

The system provides a specific name for each SBus card used in the *Sun Enterprise 3000* System. These names are as follows:

- cgsix (Turbo GX video card)
- HSI (HSI/S card)
- lebuffer le dma esp (FSBE/S card in *Sun Enterprise 3000* System)
- tr (Token Ring Interface card)

To identify SBus cards in the *Sun Enterprise 3000* System, do the following:

1. Assemble your system (keyboard, mouse, monitor, and power cord).
2. Enter the OpenBoot environment by doing one of the following:

<i>If You Have Already Booted the Sun Enterprise 3000 System...</i>	<i>If You Have Not Yet Powered Up the Sun Enterprise 3000 System...</i>
<p><i>then</i> stop the operating system by executing the shutdown command:</p> <pre data-bbox="604 1612 1029 1640">/usr/sbin/shutdown -y -i0 -g0.</pre>	<p>power it on, and <i>then</i> press the Stop and A keys simultaneously on the keyboard after the display console banner appears but before the system starts booting the operating system.</p>

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

```
ok>
```

3. Enter the `show-devs` command at the `ok` prompt.

The following is an example of what you would see after entering the `show-devs` command.

```
{e} ok show-devs
/counter-timer@7,3000
•
/sbus@3,0/cgsix@0,0
•
•
/sbus@2,0/HSI@1,20000
•
/sbus@2,0/lbuffer@2,40000/lw@2,60000
•
•
```

In the above example:

- `/sbus@3,0/cgsix@0,0` shows the Turbo GX video card
- `/sbus@2,0/HSI@1,200000` shows an HSI card
- `/sbus@2,0/lbuffer@2,40000/lw@2,60000` shows a FSBE/S card.

The display you will see depends on the equipment and configuration of your system.

Installing or Changing SBus Cards

Initially, the SBus I/O board must have a Turbo GX video card installed in SBus card slot 0 and an FSBE/S card installed in card slot 2 (see the I/O Board SBus Card Locations figure in the Identifying Installed SBus Cards section). Other cards may need to be installed or changed depending on the configuration required by the customer.

Follow the steps below to install an SBus card:

1. Remove the SBus I/O Board from slot 1 (see the Front and Rear Views on the *Sun Enterprise 3000 System* figure in the Front and Rear Panels section, and Appendix D, Sun Enterprise 3000 System Factory Hardware Installation Procedures, “General Procedures”).

⚠ CAUTION:

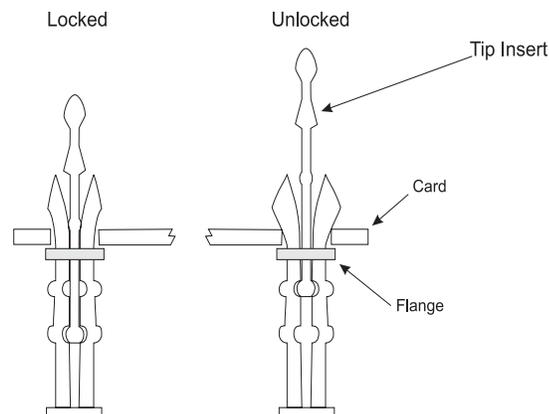
Always wear an ESD wrist strap and use an anti-static pad whenever working with electronic components.

2. If there is an SBus card that is being replaced, remove it from the SBus I/O board (see the *Sun Enterprise 3000 System, System Manual*).
3. Unpack the new SBus card and prepare it for installation.

⇒ NOTE:

Depending on the card and packaging, some card preparation other than care in unpacking may be required. See the *Sun Enterprise 3000 System, System Manual*, for further information.

4. If the plastic standoffs for the desired SBus card slot are locked (in the down position), gently lift up on the tip inserts until they move to the unlocked position (see the following figure).



5. Holding the SBus card by the edges, place the SBus card face plate under the springfinger and against the rear face of the SBus I/O board front panel.

The I/O connectors of the SBus card should be visible through the opening in the SBus I/O board front panel.

6. Align the mounting holes in the rear of the SBus card with the unlocked plastic standoffs.
7. Press down on the rear corners of the SBus card until it seats onto the flange of the plastic standoffs.
8. Press down on the tip insert of each plastic standoff until it locks into position (see the Plastic Standoffs for SBus Cards figure in the Installing or Changing SBus Cards section).
9. Replace the face plate screws through the front of the SBus I/O board to secure the SBus card to the SBus I/O board front panel.
10. Replace the SBus I/O board in the slot from which you removed it in step 1 (see the *Sun Enterprise 3000 System, System Manual*).

 **NOTE:**

After an I/O board has been removed and replaced, the system may experience a clock synchronization problem. The clock on the I/O board will become unsynchronized with the clock on the Clock Board. For the procedures to re-synchronize these clocks, see the *CentreVu Call Management System, Release 3 Version 6, Hardware Maintenance and Troubleshooting* (585-215-861) document.

Other SBus Cards

Other SBus cards that may need to be installed include the HSI card, and the Token Ring card.

Some SBus cards require additional steps or preparation. For information on specific card requirements see the *Sun Enterprise 3000 System, System Manual*.

 **NOTE:**

Sometimes when installing or moving an HSI card the system will fail to recognize the new or moved card. In this case, show-devs does not show the HSI card and /var/adm/messages fails to recognize the card upon bootup. In this case, see *CentreVu CMS R3V6 Maintenance and Troubleshooting manual*.

Additional References

For additional information on installing SBus cards see the *Sun Enterprise 3000 System, System Manual*.

External I/O Components and Interfaces

Overview

A variety of external I/O components and interfaces may be required depending on the configuration chosen by the customer. This section describes some of the most likely configurations.

Refer to the following subsections as appropriate for your installation:

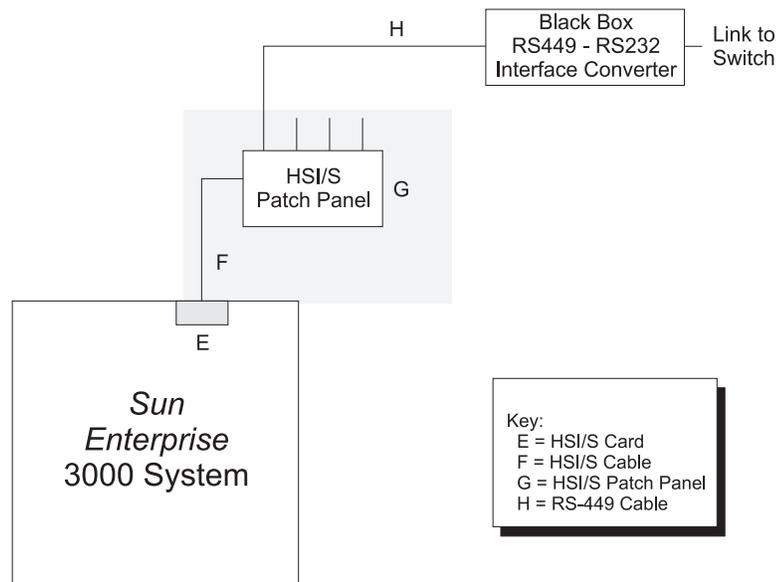
- Connect the SunLink HSI/S Patch Panel (for Multiple ACDs only)
- Set the Black Box DTE/DCE DIP Shunts
- Connect the Network Hub Unit
- Other Devices and Connections.

Connect the SunLink HSI/S Patch Panel

This section describes how to connect the HSI/S patch panel to the HSI/S controller card (installed in the *Sun Enterprise 3000 System*) using a 37-pin cable.

SunLink HSI/S Patch Panel Connectivity

The following figure shows *SunLink* patch panel connectivity.



Procedure

To connect the HSI/S patch panel to the HSI/S controller card, do the following:

1. Connect one end of the 37-pin cable to the 37-pin connector on the HSI/S patch panel.
2. Connect the other end of the 37-pin cable to the 37-pin connector on the HSI/S controller card.
3. Make sure the locking mechanisms on each end of the 37-pin cable click closed.

Additional Reference

For additional information, refer to the *SunLink HSI/S 2.0, Installation and Administration Guide*.

Set the Black Box DTE/DCE DIP Shunts

This section describes how to set the Dual In-Line Package (DIP) shunts inside the interface converter to assign the RS-422/RS-449 input port for the Data Communication Equipment (DCE) operation and the RS-232 output port for the Data Terminal Equipment (DTE) operation.

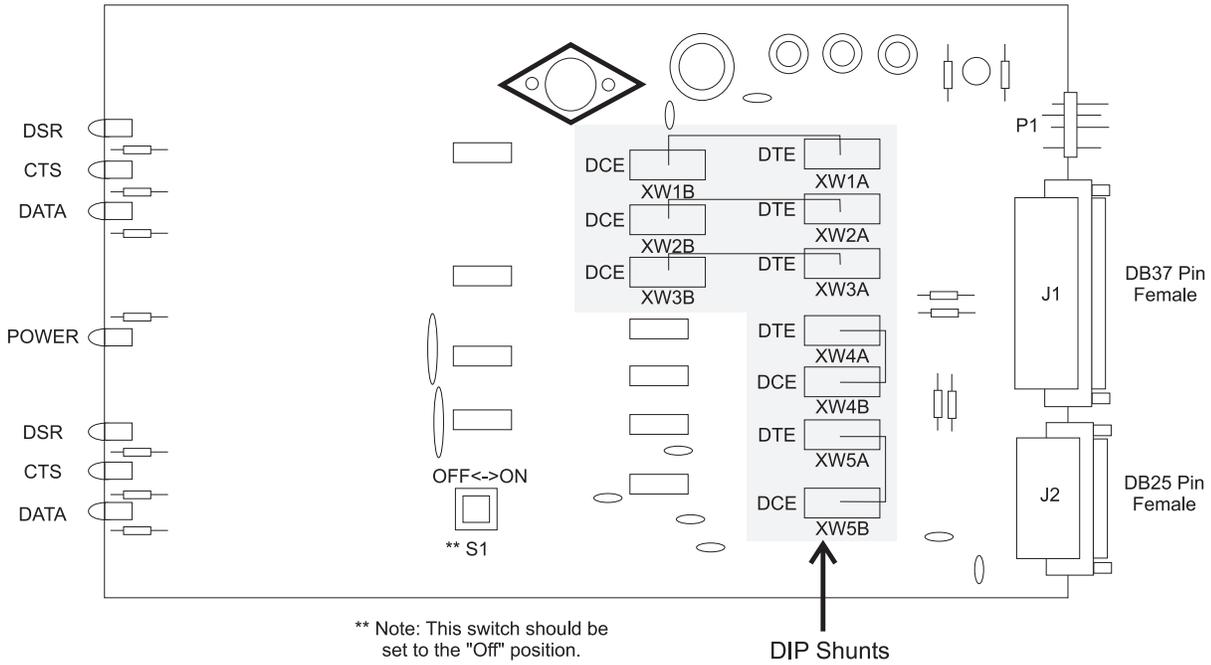
DTE/DCE DIP - Shunt Settings

This table shows the DTE/DCE DIP - Shunt Settings.

Move DIP shunts	
From	To
XW1A	XW1B
XW2A	XW2B
XW3A	XW3B
XW4B	XW4A
XW5B	XW5A

Black Box Component Layout — DTE/DCE DIP- Shunt Locations

This figure shows the black box component layout and the DTE/DCE DIP-Shunt locations.



Procedure

To reassign these ports, do the following:

1. Disconnect all power and cables from the black box converter.
2. Open the interface converter.
3. Move the DIP shunts to the appropriate DIP-shunt sockets by doing the following:

 **CAUTION:**

Always use an ESD strap when handling internal components. Be careful when moving the DIP shunts. The DIP-shunt pins are fragile and can easily be bent or broken.

- a. Carefully slide the tip of a common screwdriver between the DIP-shunt jumper and the DIP-shunt socket.
- b. Gently pry/wiggle the DIP-shunt jumper free from the socket.
- c. Move the DIP-shunt jumper to the appropriate socket (see the above table).
- d. Carefully align the pins, and gently press the DIP-shunt jumper into place.

Additional Reference

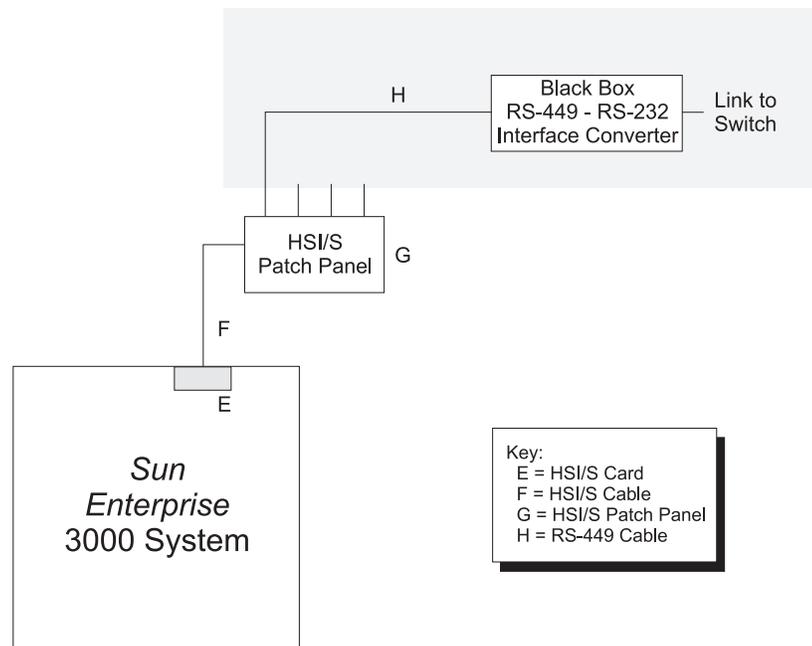
For additional information, refer to the RS-232 <-> RS-422 Interface Converter Installation and Operation Manual.

Connect the HSI/S Patch Panel to the Interface Converter

This section describes how to connect multiple ACDs using RS-449 ports on the HSI/S patch panel to the RS-422/RS-449 DCE port on the black box interface converter.

Black Box Interface Converter Connectivity

The highlighted section of this figure shows the black box interface converter connectivity.



Procedure

To connect the RS-449 port on the HSI/S patch panel to the DCE input port on the black box interface converter, do the following:

1. Connect the EDN37K-MM (RS-449) cable to the 37-pin port on the rear panel of the interface converter.
2. Connect the other end of the EDN37K-MM (RS-449) cable to the RS-449 port on the HSI/S patch panel.

⇒ NOTE:

When connecting more than one switch to the system, connect the switches in the following order:

First switch to HSI/S Port 0

Second switch to HSI/S Port 1

Third switch to HSI/S Port 2

Fourth switch to HSI/S Port 3.

For a system supporting more than four ACDs a second HSI/S patch panel is required. Connections are made to the second patch panel in the same way as to the first.

Additional References

For additional information, refer to the following documentation:

Sun Enterprise 3000 Installation Guide

Sun Enterprise 3000 System Description.

Connect the Network Hub Unit

This section describes how to connect the network hub unit(s) to the *Sun Enterprise 3000* System using UTP cables in a Twisted-Pair Ethernet (TPE) configuration.

 **NOTE:**

Do **not** use telephone extension cables in 10Base-T networks. The telephone extension cable wire pairs are not twisted and do not meet the requirements for use in a 10Base-T network.

Different types of network hub units can be used:

- Allied Telesis *CentreCOM** - MR820TR network hub unit (see Network Hub Units - Back Panel figure in the Install the Allied Telesis *CentreCOM* Network Hub Unit section). This unit uses standard UTP network cables.
- StarLAN fiber-optic hub unit (see the StarLAN 10 Network Fiber-Optic Hub Unit figure in the Install the StarLAN 10 Network Fiber-Optic Hub Unit section). This unit uses fiber-optic network cables.

The standard *CentreVu* CMS configuration uses the Allied Telesis *CentreCOM* - MR820TR network hub unit. The StarLAN fiber-optic hub can be used when you need more distance between the network hub and the NTS(s).

Maximum Network Cable Distance

This table shows the maximum distances associated with each type of network cable.

Type of Cable	Maximum Cable Distance
UTP (Category 3 or 5)	100 meters / 328 feet
15-pin AUI (Asynchronous Unit Interface)	100 meters / 328 feet
Fiber-optic cable (62.5 mm dual strand cable)	3000 feet

If you need more distance between the network hub unit and the NTS(s), a fiber-optic configuration can be used. See "Optional Fiber-Optic Network Configurations" for details.

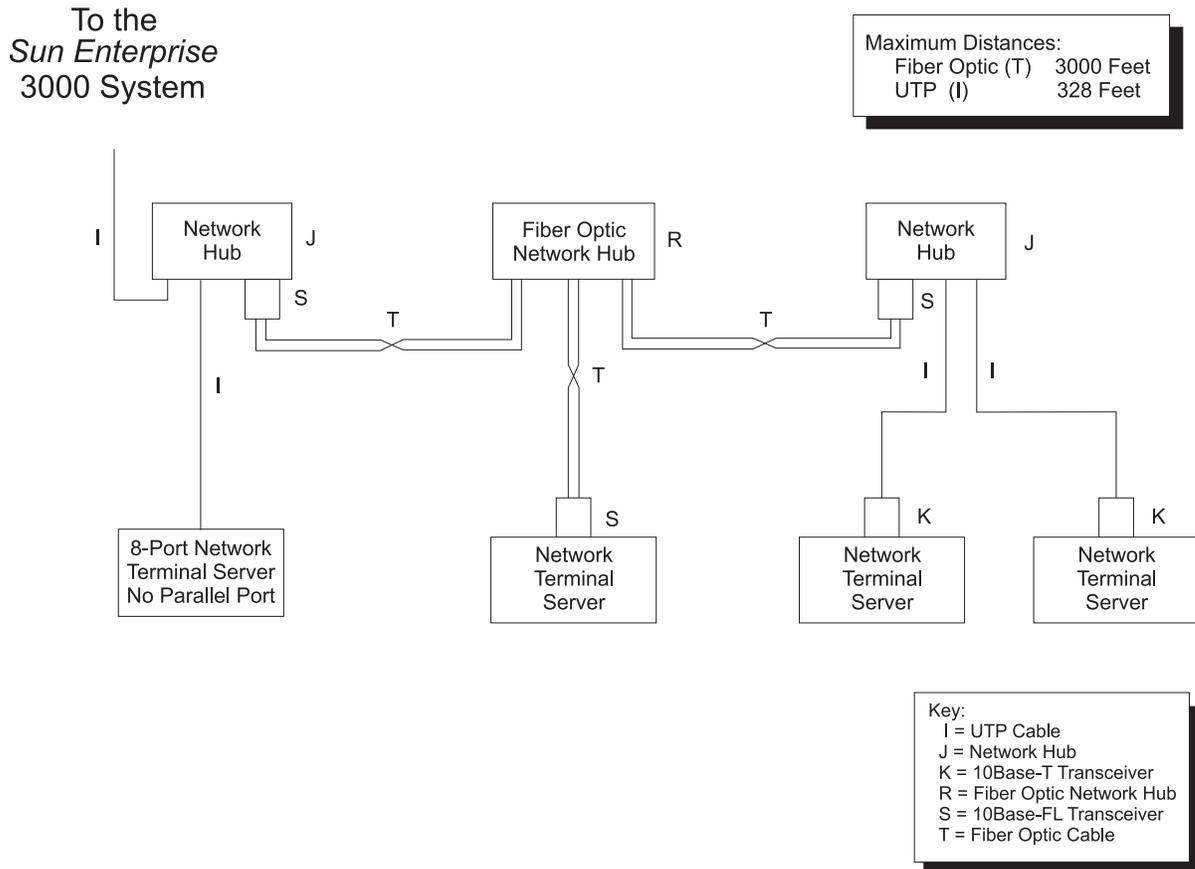
**CentreCOM* is a registered trademark of Allied Telesis.

Optional Fiber-Optic Network Configurations

This section briefly describes optional network configurations which can be used to increase the distance between the network hub unit and the NTS(s). These configurations use fiber-optic cables and/or fiber-optic hubs.

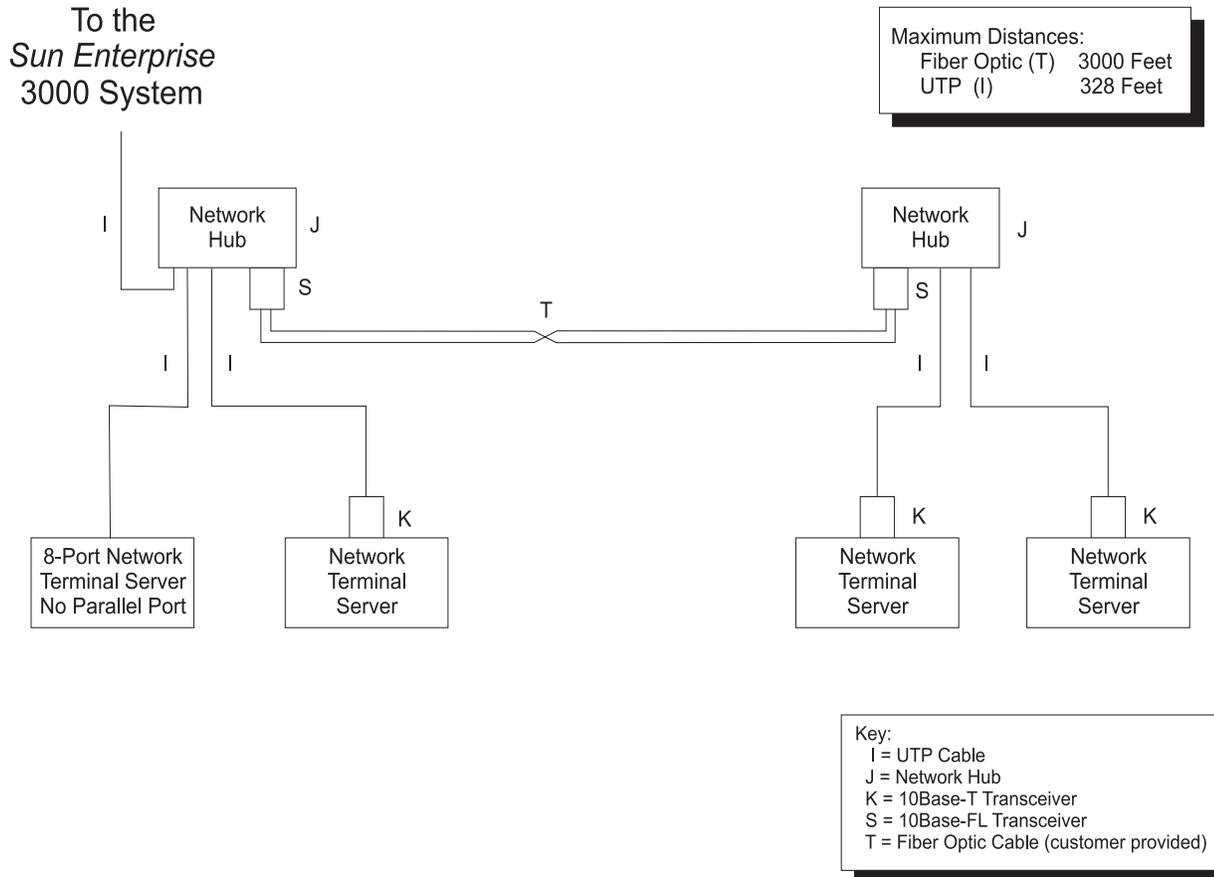
Optional/Sample Fiber-Optic Network Configurations - Version 1

This figure shows a configuration that uses two network hubs connected through a fiber-optic network hub. This configuration allows the network to be spread across multiple buildings. For example, this would be useful in a situation where the *Sun Enterprise 3000 System*, network hub, and one NTS are located in one building, the fiber-optic hub and another NTS are located in a separate building, and another network hub with two additional NTSs are located in yet another separate building.



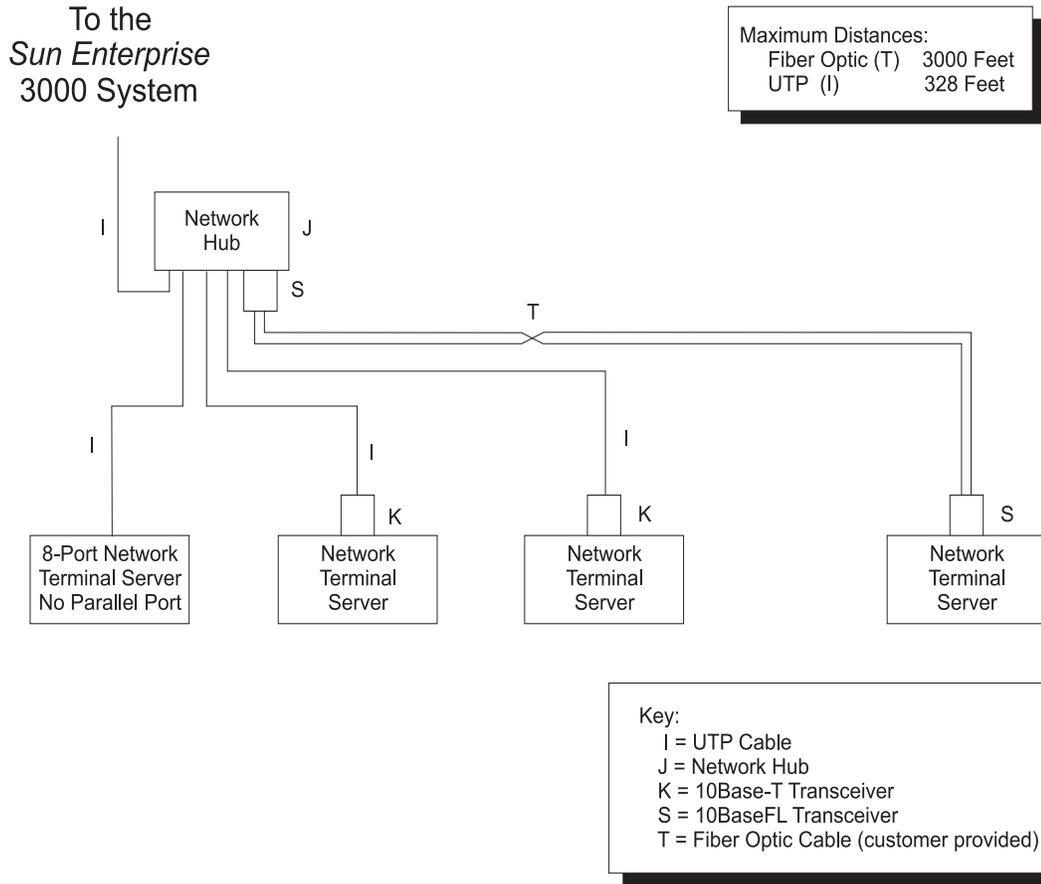
**Optional/Sample
Fiber-Optic
Configuration -
Version 2**

This figure shows two network hubs connected with a fiber-optic cable. This configuration allows the network to be spread across two separate buildings. This would be useful in a situation where the *Sun Enterprise 3000* System, network hub, and two NTSs are located in one building, while the other network hub and remaining two NTSs are located in another building.



**Optional/Sample
Fiber-Optic
Configuration -
Version 3**

The following figure shows a network hub connected to four NTSs. This would be useful in a situation where the *Sun Enterprise 3000 System*, network hub, and three NTSs are located in one building, while another NTS is located in a separate building.



Install the Allied Telesis *CentreCOM* Network Hub Unit

This section describes how to connect the Allied Telesis *CentreCOM* network hub unit to the *Sun Enterprise* 3000 System. This network hub unit may be used in conjunction with other network hub units.

To connect the network hub unit to the *Sun Enterprise* 3000 System, do the following (see the following figure):

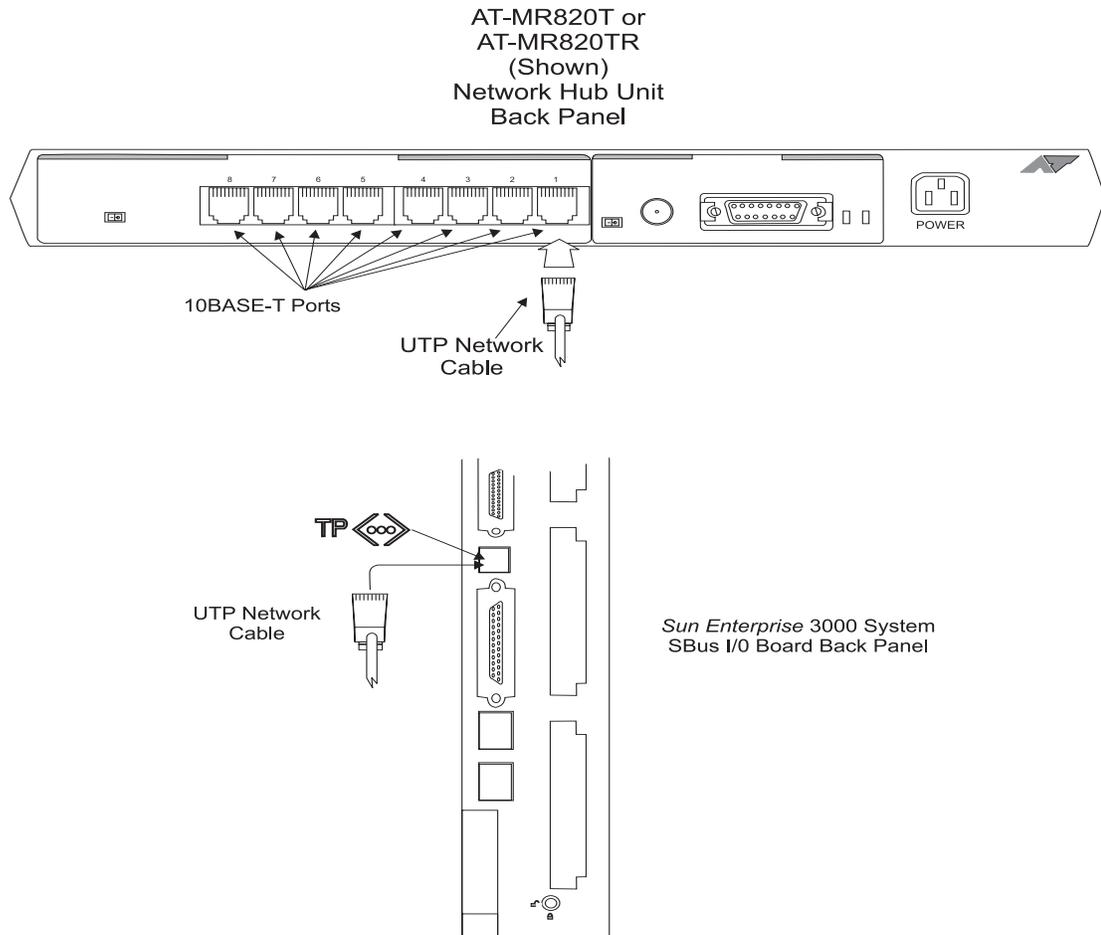
1. Position the network hub unit in the location selected by the customer. Make sure the power switch is set to *OFF*.
2. Plug the power cord into a wall outlet or to a UPS (if equipped).
3. Plug one end of the UTP cable into the twisted-pair connector on the back of the *Sun Enterprise* 3000 System.

Use the UTP cable that came with your *Sun Enterprise* 3000 System (part number 180-1529-01).

4. Plug the other end of the UTP cable into Port 1 of the 10Base-T ports on the network hub unit as shown in the following figure.

Network Hub Units - Back Panel

This figure shows a network hub unit and the *Sun Enterprise 3000* System back panel.



Additional Reference

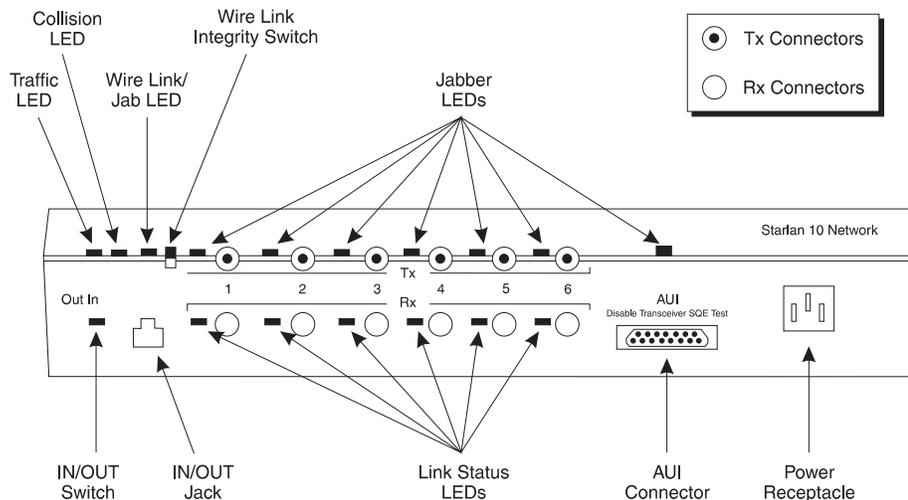
For additional information, refer to the Allied Telesis *CentreCOM* AT-820TR Multiport 10BASE-T Micro Repeaters Installation Manual.

Install the StarLAN 10 Network Fiber-Optic Hub Unit

This section describes how to connect the StarLAN 10 network fiber-optic hub unit to the *Sun Enterprise 3000* System. This hub unit may be used in conjunction with other network hub units.

To connect the StarLAN 10 network fiber-optic hub unit to the network, do the following (see the following figure):

1. Position the network fiber-optic hub unit in the location selected by the customer. Make sure the power switch is set to *OFF*.
2. Plug the power cord into a wall outlet or to a UPS (if equipped).
3. Plug one end of the fiber-optic cable (see Note) into a set of transmit (Tx) and receive (Rx) connectors on the front of the network fiber-optic hub unit (see the following figure).



NOTE:

The fiber-optic cable has two plugs on each end. Generally, the two plugs are color-coded or identified in some other way. Make a note of which plug is attached to the Tx and Rx ports on the network hub unit.

4. Plug the other end of the fiber-optic cable into the 10Base-FL transceiver connected to either the network hub unit or NTS.

Connect the plugs in the opposite manner at the other end (that is, the plug that was connected to the Tx port at the other end should be attached to the Rx port at this end, and the plug that was attached to the Rx port at the other end should be attached to the Tx port at this end).

Additional Reference

For additional information, refer to the *StarLAN 10 Network Fiber-Optic Hub Installation Guide* (999-100-458).

Connect the Network Terminal Servers (NTSs) to the Network Hub Unit

This section describes how to connect an 8-, 16-, and 64-port NTS to the network hub unit, and the four 16-port NTS patch panels to the 64-port NTS.

NOTE:

Do **not** use telephone extension cables in 10Base-T networks. The telephone extension cable wire pairs are not twisted and do not meet the requirements for use in a 10Base-T network.

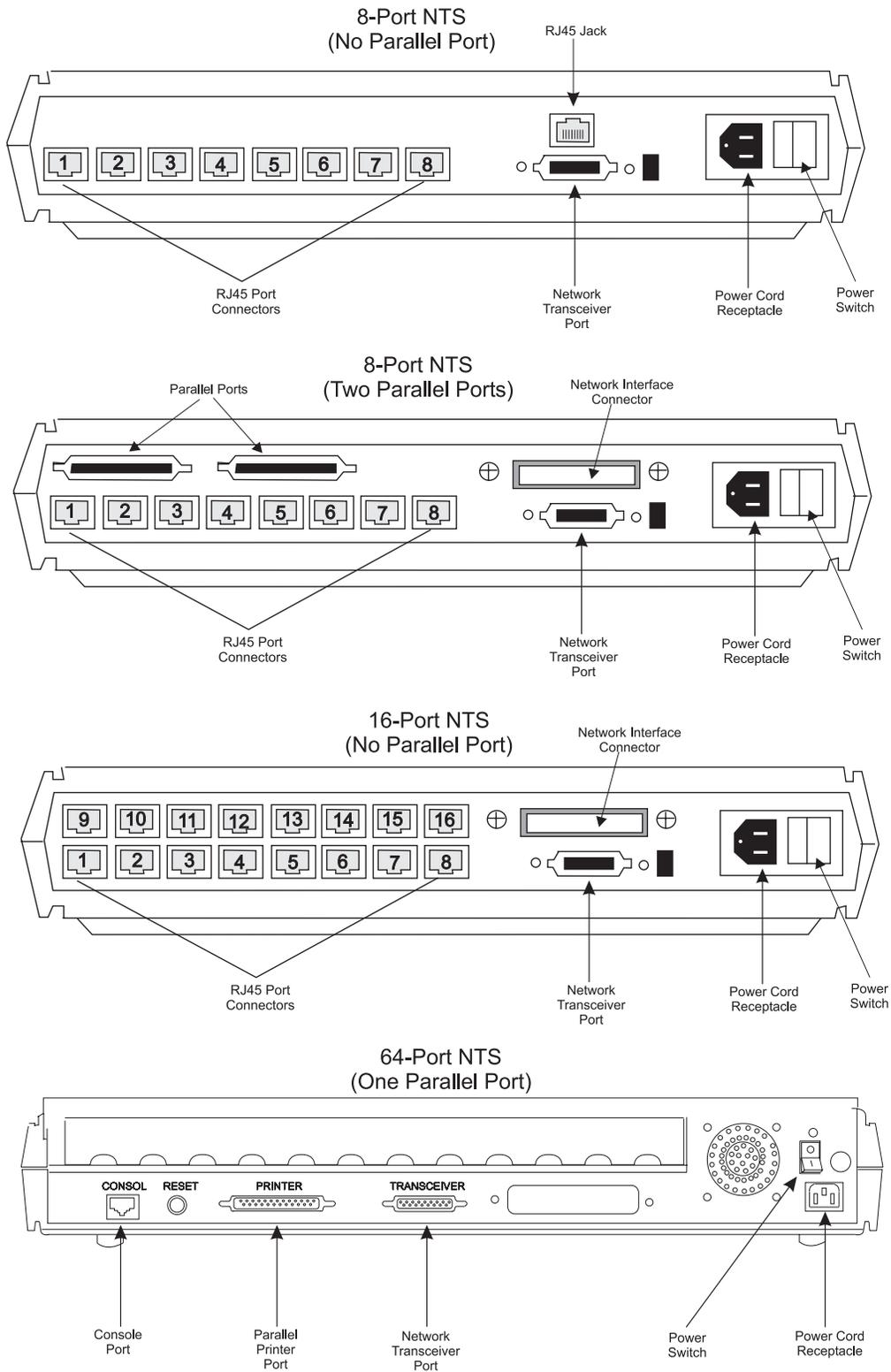
The 64-port NTS provides twelve 50-pin PBX-champ connectors used to attach 64 serial devices using the patch panel cables and patch panels. These serial devices are accessed via the local ethernet network.

NOTE:

If the NTS needs to be administered (for example, the NTS has not been administered or if you are adding an NTS to your system), follow the procedure outlined in *CentreVu Call Management System, Release 3 Version 6, Software Installation and Maintenance (585-215-866)* document.

8-, 16-, and 64-Port NTSs — Back Panels

This figure shows the back panels of the 8-, 16-, and 64-ports NTSs.



Network Hub Port Connectivity

If you are connecting more than one NTS to the network hub unit, use the following table to as a guideline for connecting the UTP cable between the network hub unit and the NTS.

NTS	NTS Name	Network Hub Port
First	cmsterm1	2
Second	cmsterm 2	3
Third	cmsterm3	4
Fourth	cmsterm4	5
Fifth	cmsterm5	6
Sixth	cmsterm6	7
Seventh	cmsterm7	8

Procedure

To connect the NTS(s) to the network hub unit, do the following:

1. Position the NTS(s) in the location selected by the customer. Make sure each power switch is set to OFF.
2. Plug each power cord into a wall outlet or to a UPS (if equipped).
3. Plug one end of the UTP cable into the next available port on the 10Base-T ports on the network hub unit.
4. Use the following table to determine what to do next:

IF you are connecting. . .	THEN. . .
an 8-port NTS without a parallel port	do step 5 and skip steps 6 and 7
an 8-port NTS with two parallel ports [*] , a 16-port NTS without a parallel port, or a 64-port NTS with one parallel port	skip step 5 and do steps 6 and 7

^{*}The 8-port NTS with two parallel ports cannot be ordered; however, if the customer has one it can be used.

5. Plug the other end of the UTP cable into the RJ45 jack located on the back of the NTS.

6. Connect the 10Base-T transceiver to the transceiver port on the back of the NTS. Verify that the 10Base-T transceiver switch setting is set to SQE = OFF.

 **NOTE:**

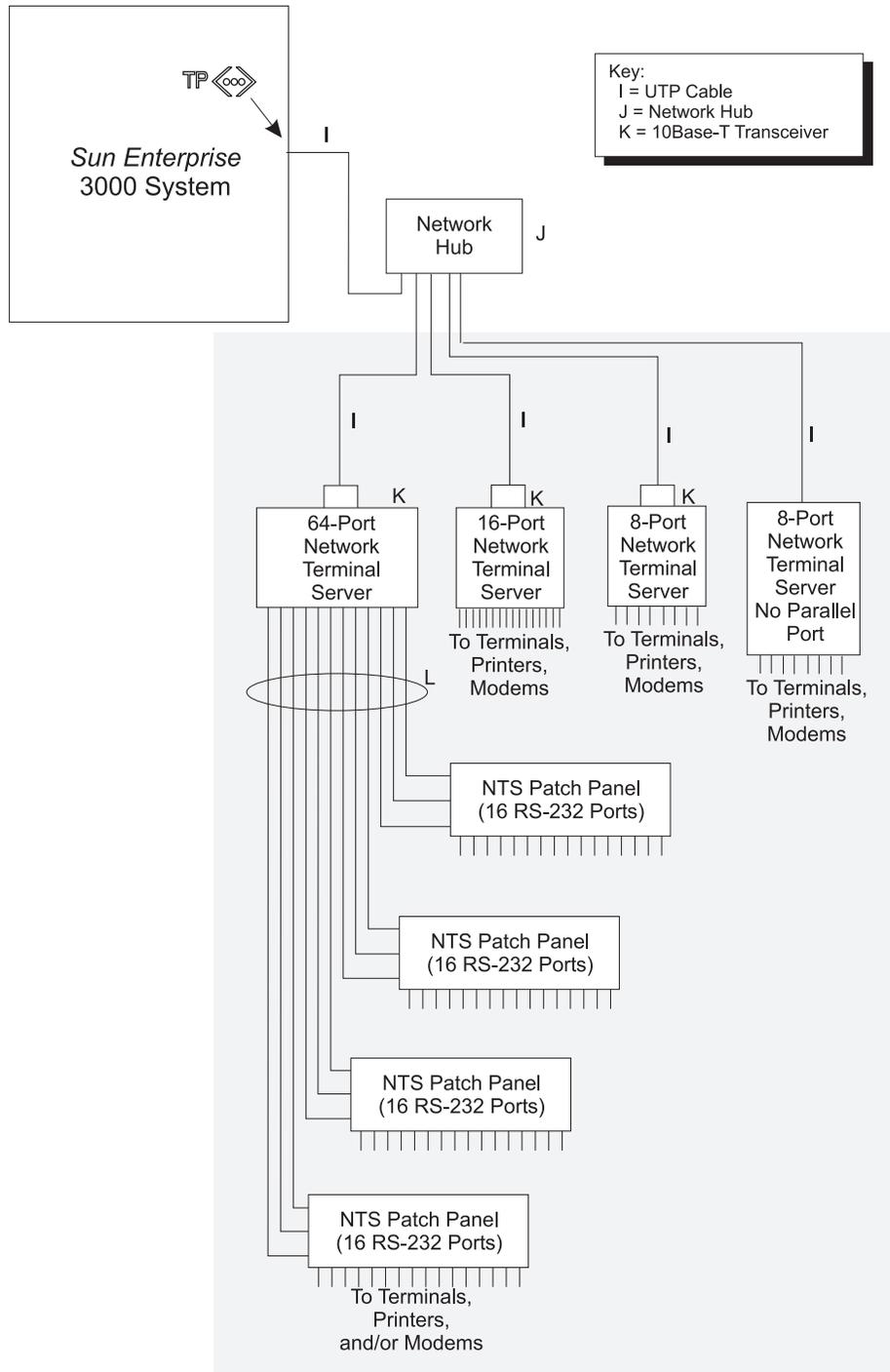
You may have an older version of a 10Base-T transceiver which allows you to change three switch settings: SQE, Link, and LRT. If you do, make sure that the switch settings are as follows:

- SQE = OFF
 - Link = ON
 - LRT = OFF.
7. Plug the other end of the UTP cable into the transceiver previously connected to the back of the NTS.

Refer to the following figure to see how the NTSs are connected to the network hub unit.

Sun Enterprise 3000 System NTS Connectivity

This figure shows how to connect the 8-, 16-, or 64-port NTS to the network hub unit.

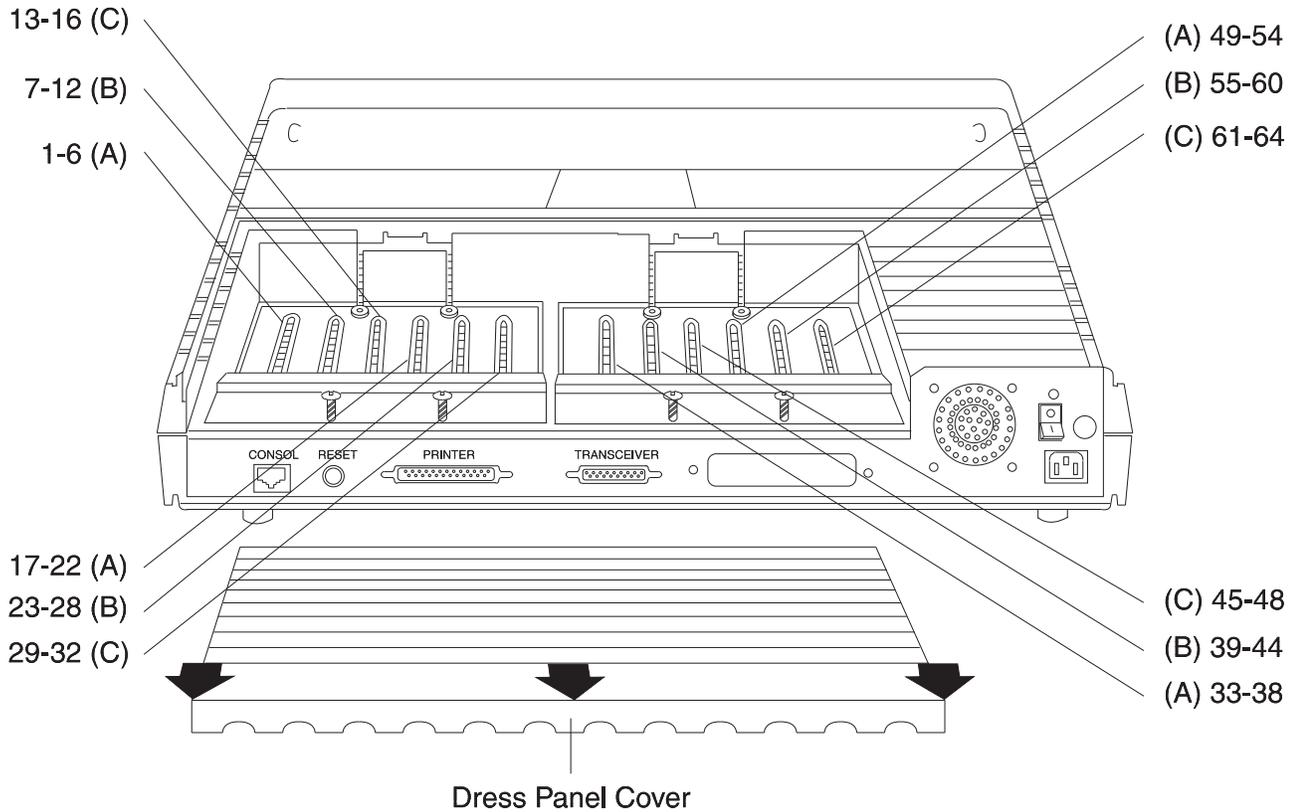


Connect the NTS Patch Panel(s) to the 64-Port NTS

This section describes how to connect the 16-port patch panel(s) to the 64-port NTS.

64-Port Network Terminal Server — PBX-Champ Connectors and Port Definitions

This figure shows the 64-port network terminal server — PBX-champ Connectors and port definitions

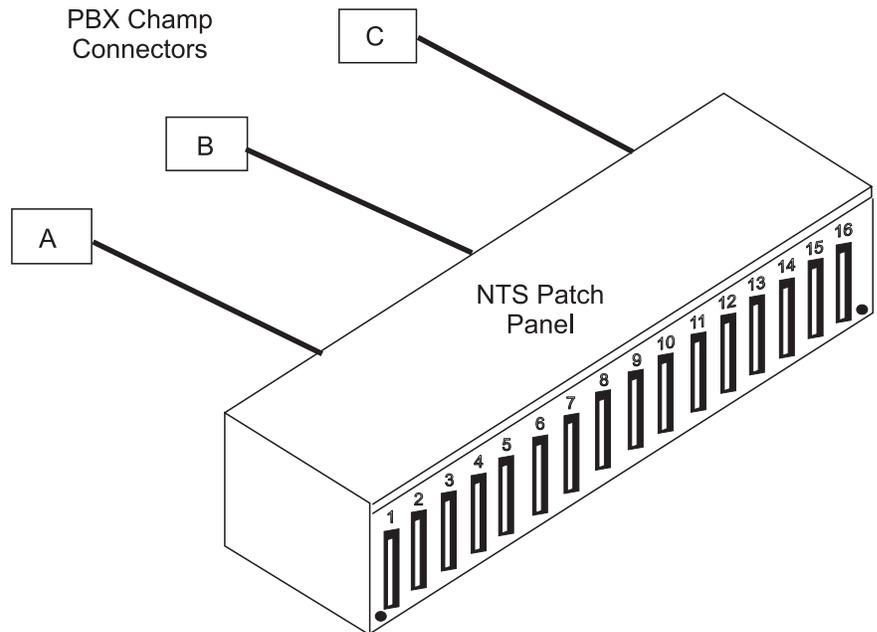


Procedure

To connect a 16-port NTS patch panel (see the NTS Patch Panel figure in this section) to the 64-Port NTS [the 64-Port Network Terminal Server — PBX-Champ Connectors and Port Definitions figure in the Connect the NTS Patch Panel(s) to the 64-Port NT section] do the following:

1. Remove the back panel of the NTS by sliding it toward the back of the NTS. (This cover is located on the top back corner of the NTS.)
2. Slide the cable retainer back to allow room for the cable(s).
3. Position the 16-port patch panel in the location selected by the customer.
4. Connect the PBX ends of the patch panel cable to the PBX-champ connector.

Each 16-port patch panel has three connectors (see the following figure) which connect to the PBX-champ connectors located inside the NTS (see the 64-Port Network Terminal Server — PBX-Champ Connectors and Port Definitions figure in this section). The PBX-champ connectors are also labeled A, B, and C, respectively.



5. Tighten the screw on the PBX end of the cable.
6. Slide the cable retainer forward. Make sure that the lip of the retainer secures the connector.

Repeat steps 3 through 6 for each NTS patch panel being installed.

7. Replace the back panel of the 64-Port NTS (to its original position) by sliding it toward the front of the NTS.

Additional References

For additional information, refer to the following documentation:

Xylogics Micro Annex^{*} Communications Server Hardware Installation Guide.

^{*}*Micro Annex* is a registered trademark of Xylogics, Inc.

Other Devices and Connections

Overview

A variety of other connections may be required depending on what the customer desires. The following are some of the more likely connections that will be encountered:

- Connect the Uninterruptible Power Supply (UPS)
- Connect the Remote Console Modem
- Power Up the System and Verify POST
- Set the Remote Console Modem Options
- Connect to Another Network
- Connect to Another Network (Via Dumb Terminal).

Connect the Uninterruptible Power Supply (UPS)

The UPS provides a temporary electrical supply to the *Sun Enterprise 3000* System for about 7 minutes. If the system is without power for longer than 7 minutes, the system may shut down and you could lose data. Use the procedures in this section to connect the UPS to the *Sun Enterprise 3000* System.

⇒ NOTE:

These procedures apply to a Lucent Technologies UPS. If another UPS is used, see the documentation for that UPS.

Required Parts

Obtain the following parts:

- UPS (see the following table)
- Appropriate power supply and outlet strip(s).

UPS(s) and Part Numbers

The table below gives the UPS model, PEC and Comcode numbers.

UPS Model	PEC	Comcode
8KVA	2403-208	406929638
10KVA	2403-220	406974089
12KVA	2403-222	406974097

Procedure

To connect the UPS, do the following:

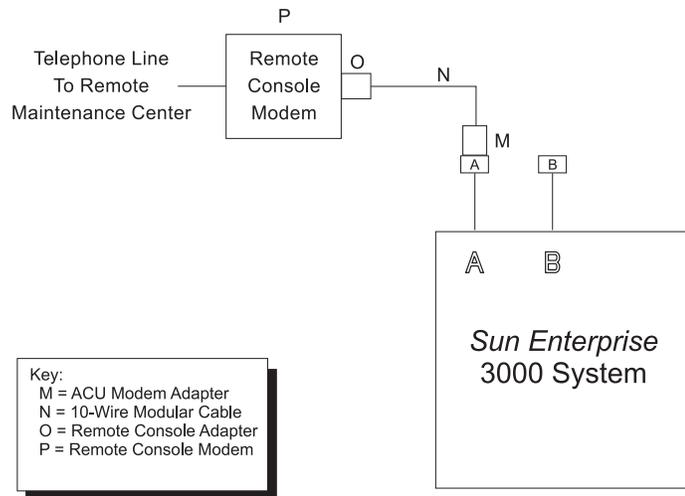
1. Plug the power cord of the UPS into a 120 V AC outlet.
2. Turn on the power to the UPS.

Connect the Remote Console Modem

This section describes how to connect the remote console modem to the *Sun Enterprise 3000* System which allows the TSC to dial in and do remote maintenance.

Remote Console Connectivity

This figure shows remote console connectivity.



Procedure

To connect the Remote Console modem to the *Sun Enterprise 3000* System, do the following:

1. Connect the male end of the serial interface (A) cable to the serial connector on the back panel of the *Sun Enterprise 3000* CPU.
2. Connect the ACU Modem adapter to the A serial port interface.
3. Connect one end of the 10-conductor cable to the ACU Modem adapter installed in the previous step.
4. Connect the other end of the 10-conductor cable to the Remote Console adapter.
5. Connect the Remote Console adapter to the RS-232C port on the modem.
6. Connect the telephone line to the jack labeled "LINE" on the modem.
7. Make the necessary power connections to the modem.

Power Up the System and Verify POST

Once you have assembled the system, including the peripheral devices shipped with your system, power up the system, and verify POST (Power On Self Test).

1. Do the following in sequential order:
 - a. Turn on the devices attached to the *Sun Enterprise 3000*.
 - b. Turn on the *Sun Enterprise 3000 System* (see the *Sun Enterprise 3000 System Installation Guide* for further instructions).
 - c. Turn on the system monitor.

 **NOTE:**

The power-on diagnostics will occur each time you turn on the system. The power-on diagnostics program tests the basic system components.

2. While the system is booting up, press the **Stop** and **A** keys simultaneously to put the system in the monitor mode. The system should respond with the following prompt:

```
ok
```

3. At the prompt, enter the following command:

 **CAUTION:**

Using the `probe-scsi-all` command at the boot prom level may cause the system to hang. See the Respond to a SCSI Probe “Hang” warning in the *CentreVu Call Management System, Release 3 Version 6, Hardware Maintenance and Troubleshooting* (585-215-861) document before executing this command.

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

The program responds as follows:

```

/iommu@f,e0000000/sbus@f.e0001000/esp@3,200000
Target 6
  Unit 0 Disk Removable Read Only Device SONY CD-ROM CDU-8012

/iommu@f,e0000000/sbus@f.e0001000/esp@3,200000
Target 1
  Unit 0 Disk SEAGATE ST14801 SUN04246266 Copyright (C) 1991
Target 3
  Unit 0 Disk SEAGATE ST14801 SUN04246266 Copyright (C) 1991

. . . . .
. . . . .
. . . . .
Target 6
  Unit 0 Disk Removable Read Only Device SONY CD-ROM CDU-8012

ok

```

⇒ NOTE:

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

4. Reboot the system by entering the following command:

```
ok boot
```

The system reboots.

⇒ NOTE:

If the system stops at the `ok` prompt, see the *CentreVu Call Management System, Release 3 Version 6, Hardware Maintenance and Troubleshooting* (585-215-861) document.

Additional References

For additional information, refer to the following documentation:

Sun Enterprise 3000 System Installation Guide

Sun Enterprise 3000 System Manual.

Set the Remote Console Modem Options

The *Sun Enterprise 3000* System supports the *U.S. Robotics* Sportster†* 33.6 Faxmodem.

Complete the following steps:

1. Set DIP switches 1, 3, 7, and 8 on the back panel of the *Sportster* to the down (ON) position, and switches 2, 4, 5, and 6 to the up (OFF) position. See Chapter 3 for more information.
2. Turn on the Remote Console modem.
3. At the system console, log in as root.
4. Enter the following command:

```
# cu -s 9600 -l cua/a
```

The message `Connected` should appear.

5. At the system console, enter the options.

⇒ NOTE:

Use numerical ones and zeros when entering the options. The figure below shows the options for the *U.S. Robotics Sportster* modem.

```
AT&F1      (loads factory default configuration options
           into active memory)
AT&W0      [writes the current configuration to NVRAM 0
           template (Y0)]
```

6. After you have entered the options, you can disconnect from the modem by entering a tilde and a period.

```
~.
```

7. Set all the DIP switches on the back panel of the *Sportster* except switches 4 and 8, to the up (OFF) position. Switches 4 and 8, are set to the down (ON) position.
8. If needed, reset the modem using the power switch.

Additional Reference

For additional information, see the *U.S. Robotics Sportster Modems User's Guide*.

**U.S. Robotics* is a registered trademark of U.S. Robotics, Inc.

†*Sportster* is a registered trademark of U.S. Robotics, Inc.

Connect to Another Network

This section describes how to change the Internet Protocol (IP) addresses on the *Sun Enterprise 3000 System* and the NTS(s) remotely. This should be done only if you are connecting your system to another network.

⇒ NOTE:

Connecting to another network represents a nonstandard configuration. Support for nonstandard configurations is handled on a time-and-materials basis. Contact the *CentreVu CMS Helpline* for more information.

To connect to another network, the IP address on the *Sun Enterprise 3000 System* and on each NTS needs to be changed so it can be recognized by the new network.

Prerequisite Information

Answer the following questions before connecting to another network:

- What is the internet address assigned to the CMS?
- What is the internet address assigned to each network terminal server?

⇒ NOTE:

You may have more than one network terminal server. Each network terminal server must have its own internet address for communication with the CMS.

- What is the name and IP address of the router (if any) on the CMS segment?
- What subnet mask is used on this network?

Procedure

To change the TCP/IP address of the *Sun Enterprise 3000 System* or the NTS, do the following:

1. Make sure you are in root.
2. At the system prompt, enter the `na` command to access the NTS administration software.

```
# na
```

3. The following appears (this is an example; the response may differ depending on what type of NTS you have):

```
# Annex network administrator R(current release number and date);  
command:
```

To determine which NTS(s) has been provisioned, look at the `etc/hosts` and ping each NTS.

Follow steps 4-12 for each NTS that has been provisioned.

4. Enter the following command (where `x` equals the number of the network terminal server):

```
command: annex cmstern(x)
```

The system responds (this is an example; the response may differ depending on what type of NTS you have):

```
cmstern(x): Annex-3UXR7, 64 ports
```

```
command:
```

5. At the `command:` prompt, enter the following:

```
command: write cmstern(x) /etc/local.admin/nts(x)info  
.  
.  
.  
writing.....
```

The system returns to the `command:` prompt.

6. At the `command: prompt`, enter the following:

```
command: set annex inet_addr <NTS_IP_addr>
```

The system responds as follows:

```
Change will take effect at next annex boot.
```

The system returns to the `command: prompt`.

7. At the `command: prompt`, enter the following:

```
command: set annex subnet_mask 255.255.255.0 (or other netmask as appropriate)
```

The system returns to the `command: prompt`.

8. At the `command: prompt`, enter the following:

```
command: set annex pref_load_addr <SUN_IP_addr>
```

The system returns to the `command: prompt`.

9. At the `command: prompt`, enter the following:

```
command: set annex pref_dump_addr <SUN_IP_addr>
```

The system returns to the `command: prompt`.

10. At the `command:` prompt, enter the following:

```
command: set port=1-64 dedicated_address <SUN_IP_addr>
```

Change will take effect at next annex boot or reset.

⇒ NOTE:

The `set port=1-64 dedicated_address <SUN_IP_addr>` line that you entered in step 10 may differ depending on what type of NTS you have. For example, if you have an 8-port NTS, you would enter the following at the `command:` prompt:

```
set port=1-8 dedicated_address <SUN_IP_addr>
```

The system returns to the `command:` prompt.

11. At the `command:` prompt, enter the `boot` command.

```
command: boot
```

12. The system responds. Enter return (default) for all four questions.

```
time (return for 'now'):  
annex list (return for default):  
filename (return for default):  
warning (return for default):
```

```
booting annex cmsterm(x)
```

The annex is performing self diagnostics, and will not respond to administration operations for a short period.

```
command:
```

13. At the `command:` prompt, enter `q` to exit.

⇒ NOTE:

You will not be able to communicate with the network terminal server again until the IP address that was changed for each NTS is changed for the *Sun Enterprise 3000* (steps 14-25).

14. Edit the `/etc/hosts` file by entering the following:

```
# vi /etc/hosts
```

 **WARNING:**

If you change the IP address of the *Sun Enterprise 3000 System* you must reboot the system within 12 hours. If you do not reboot the system within 12 hours, x.25 will stop.

15. Add the new address(es) for the NTS(s) and the *Sun Enterprise 3000 System* in the `etc/hosts` file that corresponds to the new addresses.
16. Add the router IP and name in the `etc/hosts` file.
17. Remove or comment out old entries in the `etc/hosts` file.
18. Write and quit the file.
19. Create the `/etc/defaultrouter` file by entering the following:

```
# vi /etc/defaultrouter
```

20. Add the router node name given in the `etc/hosts` file.
21. Write and quit the file.
22. Edit the `/etc/netmasks` file by entering the following:

```
# vi /etc/netmasks
```

23. Modify the subnet mask if it is different from the default for the IP address that you are using (an example is provided in the file).
24. Write and quit the file.
25. Reboot the system by entering the following:

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

26. Edit the following programs with the new IP address just assigned to the CMS (the programs are located in the `/etc/local.admin` file):

```
-rwxr-xr-x 1 root other 2291 May 16 18:11 12outmodem
-rwxr-xr-x 1 root other 2266 May 16 18:11 12print
-rwxr-xr-x 1 root other 2273 May 16 18:11 12term
-rwxr-xr-x 1 root other 2293 May 16 18:11 192outmodem
-rwxr-xr-x 1 root other 2268 May 16 18:11 192print
-rwxr-xr-x 1 root other 2275 May 16 18:11 192term
-rwxr-xr-x 1 root other 2291 May 16 18:11 24outmodem
-rwxr-xr-x 1 root other 2266 May 16 18:11 24print
-rwxr-xr-x 1 root other 2273 May 16 18:11 24term
-rwxr-xr-x 1 root other 2291 May 16 18:11 48outmodem
-rwxr-xr-x 1 root other 2266 May 16 18:12 48print
-rwxr-xr-x 1 root other 2273 May 16 18:12 48term
-rwxr-xr-x 1 root other 2291 May 16 18:12 96outmodem
-rwxr-xr-x 1 root other 2266 May 16 18:12 96print
-rwxr-xr-x 1 root other 2273 May 16 18:12 96term
-rwxr-xr-x 1 root other 2294 May 16 18:12 inmodem
```

⇒ NOTE:

Each one of these programs has a line located at the bottom that reads `set port dedicated_address 129.200.9.1.` The `129.200.9.1` address needs to be changed to the new IP address. This is the CMS E3000 address, not the network terminal server address.

Connect to Another Network (Via Dumb Terminal)

This section describes how to change the Internet Protocol (IP) addresses on the *Sun Enterprise 3000 System* and the NTS(s) when you cannot talk to the network terminal server remotely. This should be done only if you are connecting your system to another network.

⇒ NOTE:

Connecting to another network represents a nonstandard configuration. Support for nonstandard configurations is handled on a Time-and-Materials basis. Contact the *CentreVu CMS Helpline* for more information.

To connect to another network, the IP address on the *Sun Enterprise 3000 System* and on each NTS needs to be changed so it can be recognized by the new network.

⇒ NOTE:

The administration process needs to be completed on each NTS being installed. If you administer more than one NTS for this system, the IP addresses must be unique.

To connect to another network and change the IP addresses for your system, do the following:

1. Obtain the following information from the network administrator of the network you are connecting to:
 - *Sun Enterprise 3000 System* IP address (use the following table to record this information)
 - NTS IP address for each NTS (use the following table to record this information).

Device	Network Name	IP Address
<i>Enterprise 3000 System</i>		
First NTS		
Second NTS		
Third NTS		
Fourth NTS		

Device	Network Name	IP Address
Fifth NTS		
Sixth NTS		
Seventh NTS		

2. Edit the `/etc/hosts` file by entering the following:

```
# vi /etc/hosts
```

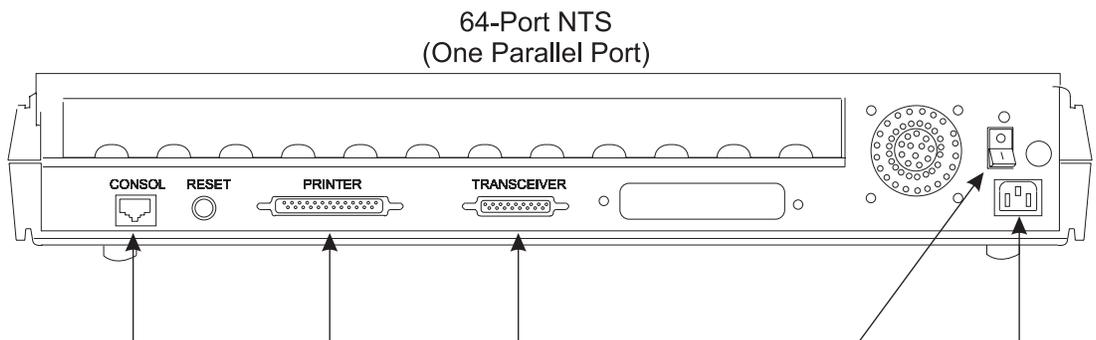
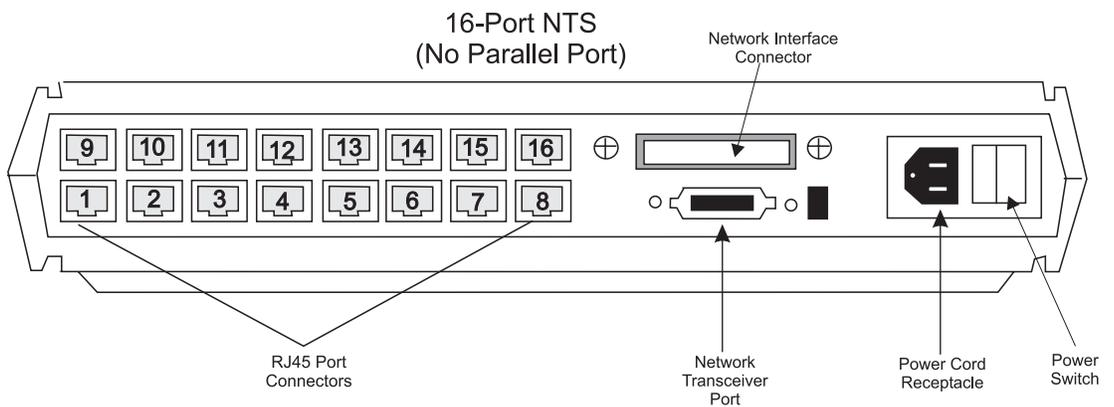
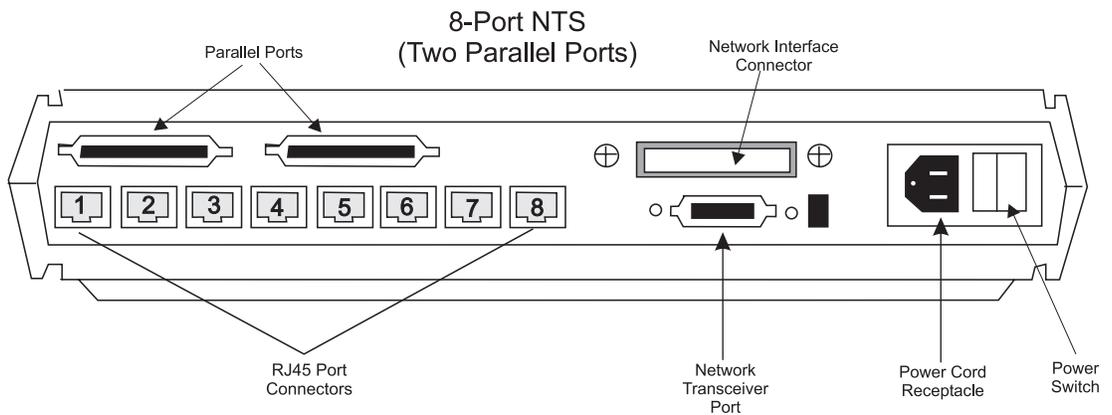
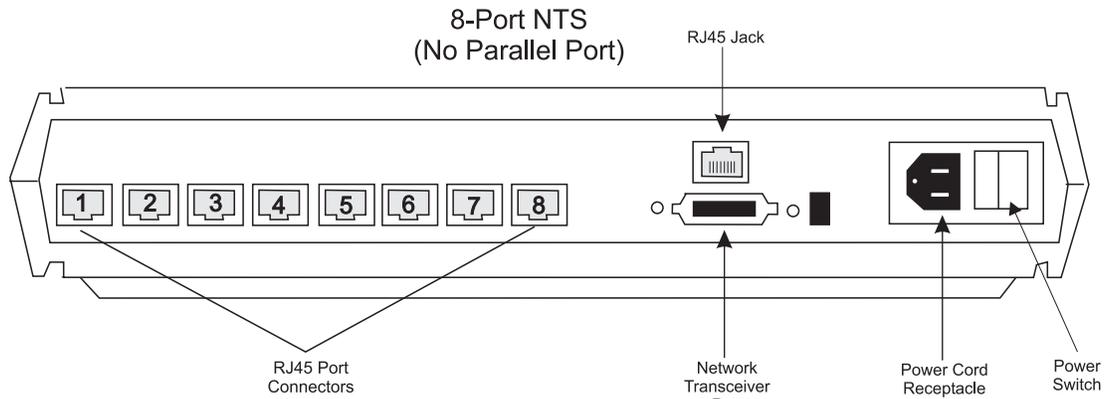
3. Locate the lines (in the `/etc/hosts` file) that contain the IP addresses for the *Sun Enterprise 3000 System* and the NTS(s).
4. Change the existing IP addresses (in the file) to the new addresses recorded in the above table.
5. Write and quit the file.
6. Check with the network administrator for additional routing functions in the `/etc/netmasks` and `/etc/networks` files.
7. Connect a dumb terminal to the **CONSOLE** port on the rear of the NTS using the console cable that came with the NTS. On the 8- and 16-port NTSs, the **CONSOLE** port is port **#1** (see the following figure).

You will need the following for the 8- and 16-port NTS(s):

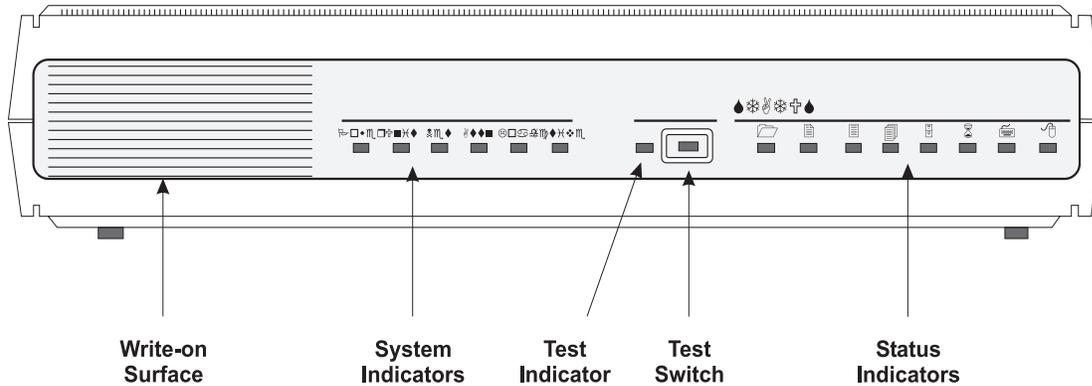
- Console cable
- Adapter - comcode 407361823
- Null Modem - comcode 407122043.

You will need the following for the 64-port NTS(s):

- Console cable
- Adapter - part number 06-988-260-20.



- Turn the NTS off and on again. Within 15 seconds, push the **TEST** button on the front of the NTS (see the following figure).



- The NTS goes through its hardware diagnostics, and the following prompt should appear:

```
Monitor:
```

- Enter the following command at the `Monitor` prompt:

```
Monitor:: erase
```

⇒ NOTE:

The following two types of information can be erased:

- EEPROM (configuration information)
- FLASH (self-boot image)

If only one type of information is present, the program begins to erase it. If there are two types of information, the program prompts you to select what you want to erase. Erase both the EEPROM and the FLASH information.

The program responds as follows:

```
Erase
  1) EEPROM (i.e., Configuration Information)
  2) FLASH (i.e., Self Boot Image)
Enter 1 or 2::
```

11. Enter 1 to erase EEPROM. The program responds as follows:

```
Erase all non-volatile EEPROM memory? (y/n) [n]::
```

12. Enter Y. The program responds as follows:

```
Erasing xxxx bytes of non-volatile memory. Please wait....
.....
Erased xxxx bytes of non-volatile memory complete.
```

13. The program returns to the `monitor::` prompt. Repeat steps 11-14 to erase the FLASH information.

14. After you have completed the `erase` command, enter the following command at the monitor prompt:

```
Monitor:: addr
```

15. The program responds as follows:

```
Enter Internet address [<uninitialized>]::
```

16. Enter the IP address for this NTS.

The program responds as follows:

```
Internet address : XXX.XXX.XXX.XXX  
Enter Subnet mask [255.255.255.0]::
```

17. Press **Return** to accept the default subnet mask. The program responds as follows:

```
Subnet mask: 255.255.255.0  
Enter preferred load host Internet address [<any host>]::
```

18. Enter the IP address of the *Sun Enterprise 3000 System*.

The program responds as follows:

```
Preferred load host address XXX.XXX.XXX.XXX  
Enter Broadcast address [0.0.0.0]::
```

19. Press **Return** to accept the default broadcast message address. The program responds as follows:

```
Enter Preferred dump address [0.0.0.0]::)
```

20. Enter the IP address of the *Sun Enterprise 3000 System*. The program responds as follows:

```
Preferred dump address: xxx.xx.x.x  
Select type of IP packet encapsulation (ieee802/ethernet)  
[<ethernet>] ::
```

21. Press **Return** to accept the default IP packet encapsulation. The program responds with the following question if you have an 8- or 16-port NTS. The program returns to the `monitor::` prompt if you have a 64-port NTS.

```
Type of IP packet encapsulation: <ethernet>
Load Broadcast Y/N [Y]::
```

22. Enter N. The program returns to the `monitor::` prompt.
23. Enter the following command at the monitor prompt to reinitialize the NTS with the new parameters:

```
monitor:: boot
```

The program responds as follows:

```
Enter boot file name [oper.42.enet]::
```

⇒ NOTE:

The boot file name differs depending on the type of NTS. For the 8- and 16-port NTS, the boot file name is

```
[ (ip) "oper.52.enet", (mop) "OPER_52_ENET.SYS" ]::.
```

For the 64- port NTS, the boot file name is `oper.42.enet`.

24. Press **Return** to accept the default boot file name. The program responds as follows:

```
Requesting boot file "oper.42.enet".
Unanswered requests shown as '?',
                               transmission errors as '*'.

Booting file: oper.42.enet from 129.200.9.1

Loading image from 129.200.9.1
.....
```

The periods (dots) continue to appear as the NTS is initialized and set up.

⇒ NOTE:

If the program displays “SELF” instead of the IP address 129.200.9.1, it means that you did not erase EEPROM. Go back to step 11 to erase EEPROM.

When the initialization finishes, the following appears:

```
annex::
```

25. Disconnect the dumb terminal from the NTS.

The NTS has been administered.

Additional Reference

For additional information, see the *Network Terminal Server Guide*, *Quick Installation Guide* for the *Sun Network Terminal Server Leaflet*.

Installing Terminals, Printers, and Modems

Overview

This chapter describes how to connect terminals, printers, and modems to a *Sun Enterprise* 3000 System.

Refer to Chapter 2, “Installing the Sun Enterprise 3000 System” before connecting to terminals, printers, and modems.

You can use a Network Terminal Server (NTS) to connect to the terminals, printers, and modems.

You can use the parallel ports on the back of the NTS to connect parallel printers. See Parallel Printers Connected to the NTS in this chapter for details on how to use cables and adapters for these connections.

The following sections in this chapter provide general information on connecting terminals, printers, and modems:

- Supported Terminals, Printers and Modems
- Connecting Terminals, Printers, and Modems.

The following sections in this chapter describe how to administer approved terminals, printers, and modems:

- Administering Terminals
- Administering Printers
- Administering Modems.

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Connection Options

Overview

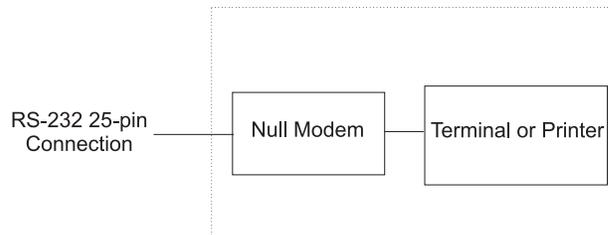
Three options are available for connecting supported terminals and printers. They are as follows:

Null Modem Option

A null modem is a connector device that presents a DTE interface on one side and a DCE interface on the other side, with no signal processing in between.

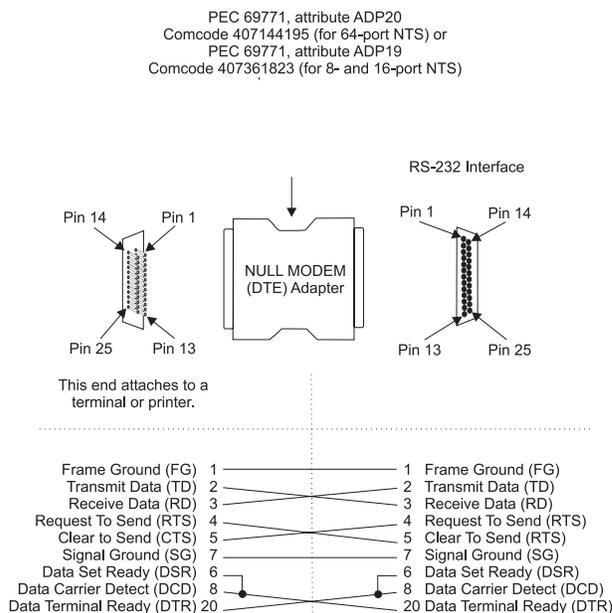
Sample Null Modem Connection

The Null Modem connection shown in the following figure is the first option.



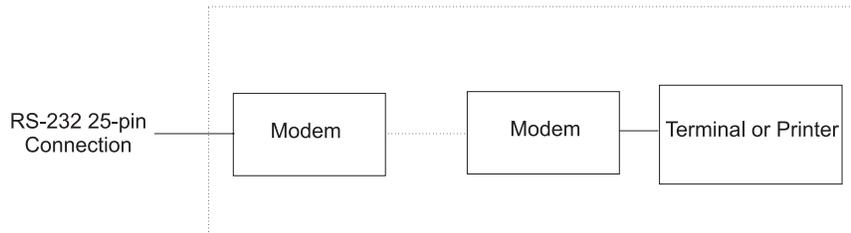
Null Modem

This figure shows a null modem.



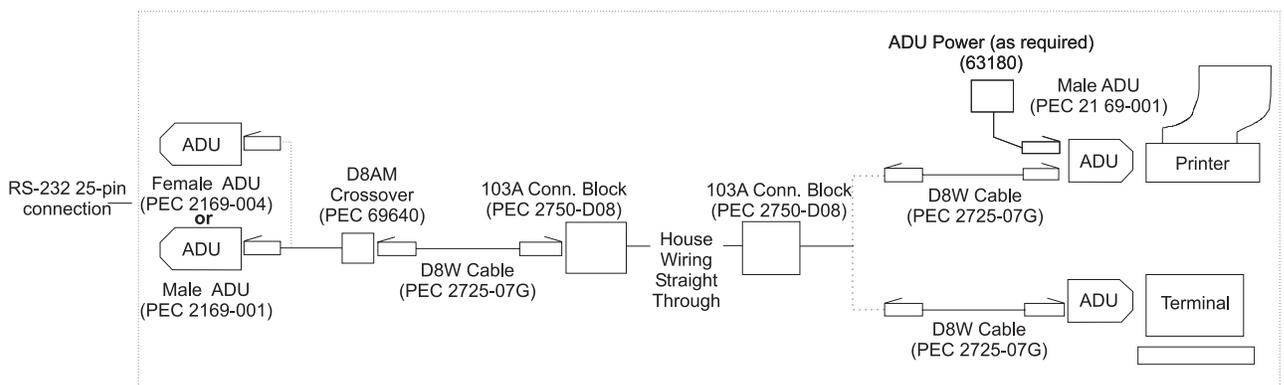
Two-Modem Option

The Two-Modem connection shown in the following figure is the second available option.



Two-Asynchronous Data Units (ADUs) Option

The Two-Asynchronous Data Units (ADUs) connection shown in the following figure is the third available option.



When using ADUs with the 64-port NTS, one male ADU plugs directly into the NTS and one male ADU plugs into the terminal or printer. Optionally, an 8- or 10-wire cable with two NTS serial port adapters [Price Element Code (PEC) 69771, attribute ADP20 for 64-port or attribute ADP19 for 8- and 16-port] may be connected between the NTS and a female ADU rather than plugging the male ADU directly into the NTS. For the 64-port NTS, you can connect terminals and printers directly without using NTS serial ports adaptors if it is convenient.

Supported Terminals, Printers and Modems

Supported Terminals

This following table describes terminals that can be connected to the *Sun Enterprise 3000 System* for use with the *CentreVu* Call Management System (CMS) R3V6 software application.

Model	Description	Offered	Discontinued	PEC
2900/260lfc	Small Footprint Color Terminal	X		69779 (Monitor) 69780 (Controller) 69781 (Keyboard)
605 MT	Multi-Tasking Terminal		X	NA
615 CMT	Color Multi-Tasking Terminal (color controller, color monitor, 6000 series 98-key keyboard)		X	NA
620 MTG	Multi-Tasking Graphics Terminal		X	NA
705 MT	Multi-Tasking Terminal (controller, monitor, and keyboard)		X	NA
715 BCT	Business Communications Terminal (controller, monitor, and keyboard)		X	NA
2900/AWTC	Color Terminal		X	NA
4000/AWTC	Color Terminal		X	NA

Supported Printers

The following table describes printers that can be connected to the *Sun Enterprise 3000* System for use with the *CentreVu CMS R3V6* software application.

Type of Printer	Offered	Discontinued	PEC
321 <i>Okidata</i> * 120-Column Dot Matrix Printer		X	NA
475 Dot Matrix Printer		X	NA
476 Dot Matrix Printer		X	NA
477 Dot Matrix Printer		X	NA
495 Laser Printer		X	NA
570 Parallel Dot Matrix Printer		X	NA
571 Parallel Dot Matrix Printer		X	NA
572 Serial Dot Matrix (Narrow Platen) Printer		X	NA
573 Serial Dot Matrix (Wide Platen) Printer		X	NA
580 Parallel Dot Matrix		X	NA
583 Dot Matrix Printer		X	NA
593 Laser Printer		X	NA
595 Laser Printer		X	NA
6417 GIS Parallel Dot Matrix Printer		X	NA
OL810e <i>Okidata</i> LED Page Printer		X	NA
OL830 Plus <i>Okidata</i> LED Page Printer		X	NA
<i>Okidata</i> ML321T Serial/Parallel Dot Matrix Printer	X		69646
<i>Okidata</i> OP16N Printer (120V)	X		12137

**Okidata* is a registered trademark of Oki Electronic Industry Co., Ltd.

NOTE:

After the printer has been connected to the system, the printer port must be administered so that the system can recognize the new printer.

Supported Modem

The following table describes the modem that can be connected to the *Sun Enterprise 3000* System for use with the *CentreVu CMS R3V6* software application.

Type of Modem	Offered	PECs
<i>U.S. Robotics</i> * <i>Sportster</i> † 33.6 Faxmodem, External Version	X	2569-839

**U.S. Robotics* is a registered trademark of U.S. Robotics, Inc.

†*Sportster* is a registered trademark of U.S. Robotics, Inc.

NOTE:

After the modem is connected to the system, the modem port must be administered so that the system can recognize the new modem.

Connecting Terminals, Printers, and Modems

This section describes how to connect terminals, printers, and modems to the *CentreVu* CMS using NTS(s).

You can connect terminals and printers directly to the serial ports (up to a recommended distance of 300 feet using NTS). You can use new or existing 8- or 10-wire straight-through modular cables, house wiring, or ADUs and house wiring to extend the distance between the serial ports and the terminal, printer, or modem.

NOTE:

If the system is being upgraded and connected to an existing printer/terminal configuration, you must replace the old adapters with the new adapters. See Upgrade Installation Procedures for more information.

New Installation Procedures

Connect a terminal, printer, modem, or ADU to an NTS patch panel (16-port RS-232), or an 8- or 16-port NTS using new 8- or 10-wire straight-through cabling. You can extend up to 50 feet using 10-wire straight-through cabling or up to 25 feet using 8-wire straight-through cabling.

NOTE:

To extend cabling beyond the 25 or 50 feet described in the Installation and Cabling Scenarios for a 64-Port NTS figure or the Installation and Cabling Scenario for an 8- or 16- Port NTS figure, you can use house wiring that will extend up to 300 feet. See the Sample Connection Between the ADU and the Terminal or Printer figure in the Two Asynchronous Data Units (ADUs) Option section for an additional option. You must use either ADUs, modems, or a null modem [see the Sample Connection Using Modems figure in the Null Modem Option section or the Sample Connection Between the ADU and the Terminal or Printer figure in the Two Asynchronous Data Units (ADUs) Option section].

To connect terminals or printers to serial ports on the NTS(s) you need **one** of the following:

- A Lucent Technologies provided or approved null-modem adapter
- A Pair of modems
- A Pair of ADUs.

Connect Communications Equipment, Terminals, and Printers to a 64-Port NTS

Each 64-port Network Terminal Server requires four NTS patch panels (16-port RS-232) to reach a total of 64 serial ports. The NTS patch panel (16-port RS-232) is a serial asynchronous connector that is used to convert Private Branch Exchange (PBX) Champ-pin/signal allocations to RS-232 data signal specifications. Each NTS patch panel (16-port RS-232) has 16 DB-25 connector ports. The first port must be set aside for service personnel.

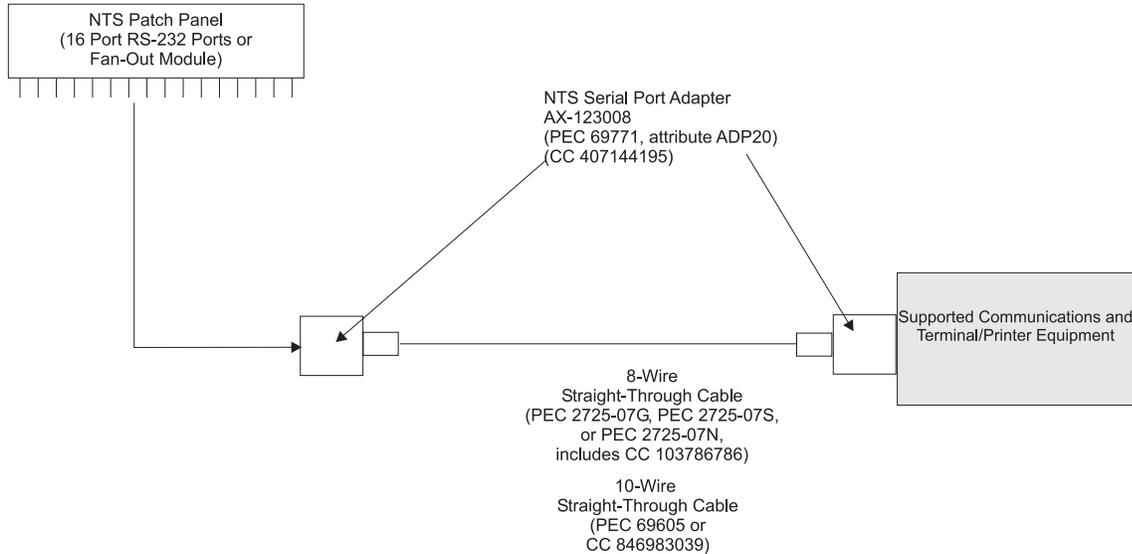
⇒ NOTE:

Each 64-port NTS has one parallel port. This port can be used to connect parallel printers. See Parallel Printers Connected to the NTS for more information.

The 64-port NTS has four NTS patch panels which provide sixteen 25-pin RS-232 connections each.

New NTS Installation and Cabling Scenario - Terminals and Printers

This figure shows a new NTS installation and cabling scenario for terminals and printers.



Note: For 10-wire straight-through upgrade scenarios, you can substitute an ACU/Modem adapter for an NTS serial port adapter.

Note: Do not forget to connect your null modem, two modems, or two ADUs depending on which scenario you are using.

⇒ NOTE:

For 10-wire straight-through upgrade scenarios, you can substitute an ACU/Modem adapter for an NTS serial port adapter.

Do not forget to connect your null modem, two modems, or two ADUs depending on which scenario you are using.

**Using 8- or 10-Wire
Straight-Through
Cabling for 64-Port
NTS**

You can connect supported, terminal, and printer equipment to a *CentreVu* CMS R3V6 using 8- or 10-wire modular straight-through cables. In this case, you will need the following parts for each terminal or printer connected to the NTS patch panel (16-port RS-232):

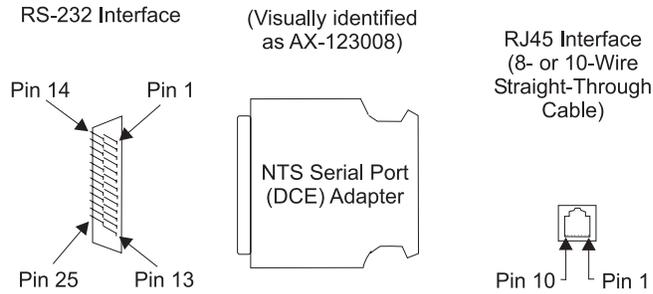
- Two NTS serial port adapters
- One 8- or 10-wire cable.

Refer to the Installation and Cabling Scenarios for a 64-Port NTS figure and do the following steps to connect a terminal, printer, or modem to an NTS patch panel (16-port RS-232):

1. Connect the NTS serial port adapter to either end of an 8- or 10-wire modular straight-through cable.
2. Connect the other end of the 8- or 10-wire modular straight-through cable to the second NTS serial port adapter.
3. Connect one NTS serial port adapter to the NTS patch panel, the other to a modem, ADU, or null-modem adapter.

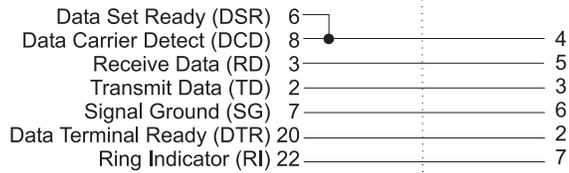
NTS Serial Port Adapter (64-Port NTS)

This figure shows a 64-Port NTS serial port adapter.



This male end connects either to the female end of the Null Modem OR to a port on a peripheral device (For example: terminal or printer).

An 8- or 10-wire straight-through cable plugs into this jack.



Connect Terminals, and Printers to an 8- and 16-port NTS

Neither an 8- nor a 16-port NTS have NTS patch panels. Terminals and printers connect directly to the NTS.

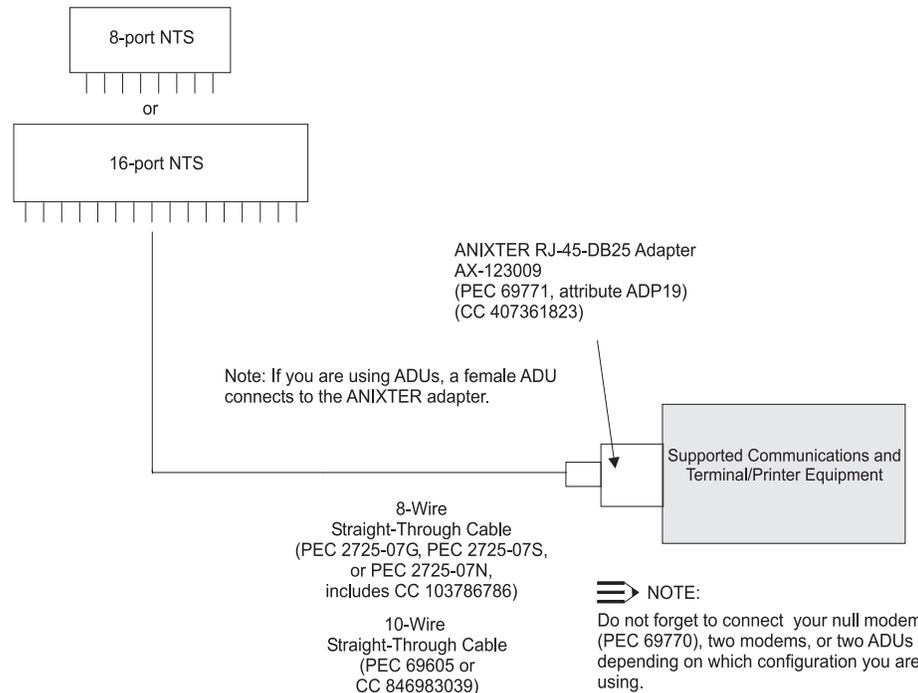
⇒ NOTE:

The 8-port NTS with two parallel ports can no longer be ordered; however, if the customer has one it can be used. These ports can be used to connect parallel printers. See Parallel Printers Connected to the NTS in this chapter for more information.

Both the 8- and 16-port NTS provide RJ45 jacks and need an adapter (*ANIXTER* *RJ45-DB25) to convert to a 25-pin RS-232 connection [see the *ANIXTER* RJ45-DB25 Adapter (8- and 16-Port NTS) figure].

New *ANIXTER* Installation and Cabling Scenarios - Terminals and Printers

The following figure shows a new *ANIXTER* installation and cabling scenario for terminals and printers.



**ANIXTER* is a registered trademark of ANIXTER Bros., Inc.

 **NOTE:**

If you are using ADUs, a female ADU will connect to the *ANIXTER* adapter.

Do not forget to connect your Lucent Technologies provided or approved null modem, two modems, or two ADUs depending on which option you are using.

**Using 8- or 10-Wire
Straight-Through
Cabling for an 8- or
16-Port NTS**

You can connect the supported communications, terminal, and printer equipment to a *CentreVu* CMS R3V6 using 8- or 10-wire modular straight-through cables. In this case, you will need the following required parts for each terminal or printer connected to the NTS:

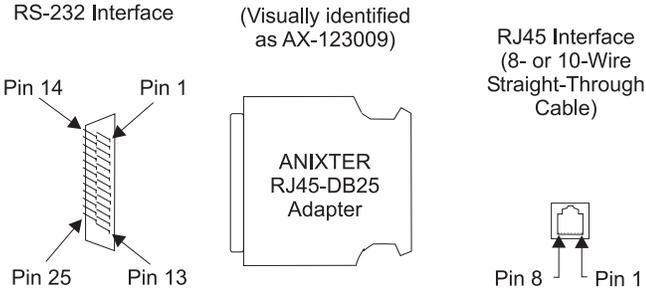
- *ANIXTER* RJ45-DB25 adapter shown in the following figure)
- One 8- or 10-wire cable.

Refer to the Installation and Cabling Scenarios for an 8- and 16- Port NTS figure and do the following steps to connect a terminal, printer, or modem to an 8- or 16-port NTS:

1. Plug 8- or 10-wire cable into the NTS.
2. Connect the *ANIXTER* adapter to the other end of cable.
3. Connect the *ANIXTER* adapter to the modem, ADU, or null-modem adapter.
4. The null-modem adapter can be connected directly to the terminal or printer.

**ANIXTER
RJ45-DB25 Adapter
(8- and 16-Port NTS)**

This figure shows an ANIXTER RJ45-DB25 adapter.



This male end connects either to the female end of the Null Modem OR to a port on a peripheral device (For example: terminal or printer).

An 8- or 10-wire straight-through cable plugs into this jack.

Ready to Send (RTS)	4	—————	1
Data Terminal Ready (DTR)	20	—————	2
Transmit Data (DT)	2	—————	3
Data Carrier Detect (DCD)	8	—————	4
Receive Data (RD)	3	—————	5
Signal Ground (SG)	7	—————	6
Data Set Ready (DSR)	6	—————	7
Clear to Send (CTS)	5	—————	8

Upgrade Installation Procedures

To upgrade the connection of a terminal, printer, modem, or ADU to an NTS, use new 8- or 10-wire straight-through cabling and new adapters.

Using Existing Cabling

The network terminal servers offer serial connectivity cabling. You can have three possible connectivity upgrade scenarios to the NTS for the existing *CentreVu* CMS platforms.

Cabling Upgrade Scenarios

The following table lists various cabling scenarios for a new *Sun Enterprise 3000* System.

Platform	Serial Card	Cabling	Color of Cable
3B2	EPORTS	8-wire Flipped	black
<i>INTEL</i> [*]	IPC-1600	10-wire Straight-Through	gray
3332	<i>EQUINOX</i> [†]	8-wire Flipped	black

^{*}INTEL is a registered trademark of Intel Corp.

[†]EQUINOX is a registered trademark of Equinox Systems, Inc.

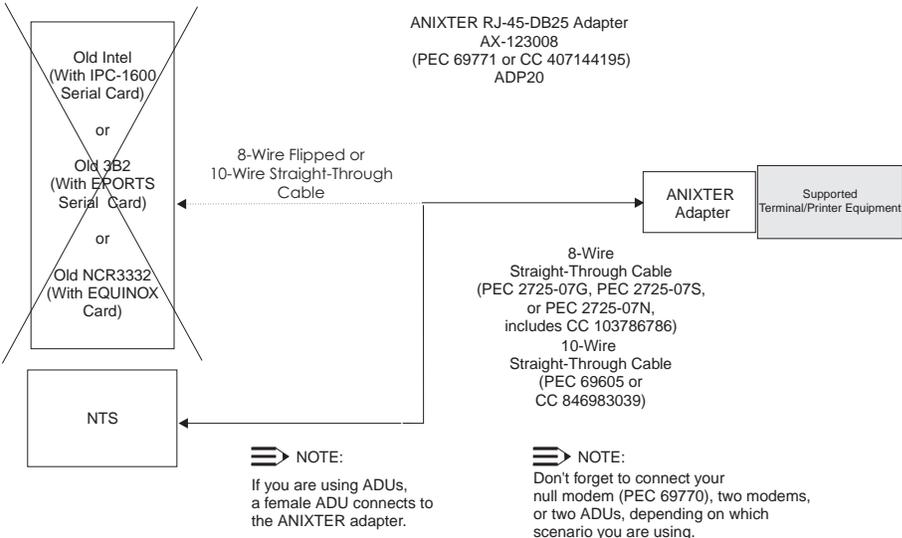
NOTE:

The 8-wire cabling used with the earlier platforms is flipped (for example, pin 1 RS-232 signals at one end of the cable are present at pin 8 of the other end). With the NTS, both the 8- and 10-wire cables must have straight-through RS-232 signals.

If you are upgrading the cabling for a 3B2 or a 3332, you must replace the cables and adapters with new cables and adapters. See the Upgrade Existing Cabling figure for upgrade examples with a 64-port NTS and the Upgrade Existing Cabling to 8- and 16-Port NTSs figure for upgrade scenarios with an 8- or 16-port NTS.

Upgrade Existing Cabling to a 64-Port NTS

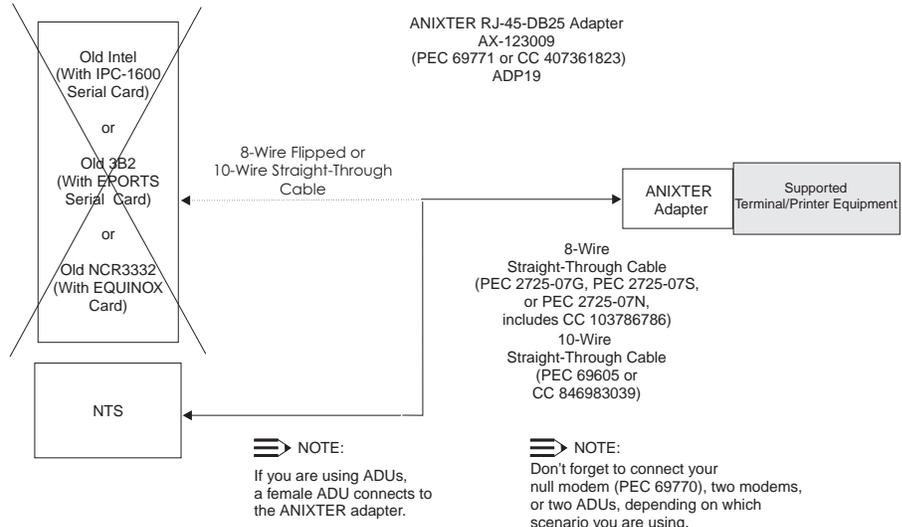
This figure describes upgrading the existing cabling to a 64-port NTS.



See Using 8- or 10-Wire Straight-Through Cabling for 64-Port NTS in this chapter for more details.

Upgrade Existing Cabling to 8- and 16-Port NTSS

This figure describes upgrading the existing cabling to 8- and 16-port NTSSs.



Administering Terminals

This section describes how to set port parameters for terminals connected using an NTS.

Administer Terminals on NTS

After the terminals are connected, you must complete the `na` administration for the *Sun Enterprise 3000* System to recognize the new terminal(s).

⇒ NOTE:

For terminals that have different configurations and parameters, see the *Network Terminal Server Administration Guide* for details.

Procedure

To address and configure the NTS ports for terminals, complete the following steps:

1. Log in as root.
2. At the system prompt, enter the `na` command to access the NTS administration software.

```
# na
```

The system responds as follows:

```
Annex network administrator R(most current release number &
date)
command:
```

3. To associate all subsequent administration with a specific network terminal server, enter `annex cmsterm1` at the command prompt.

```
command: annex cmsterm1
```

⇒ NOTE:

When you enter `annex cmsterm1` (or `annex 129.200.9.11`), `cmsterm1` becomes the default NTS until another NTS is selected using the `annex` command. The default setting for the NTS ports is 9600 bps, 8 bits, no parity, and 1 stop bit.

The following table lists the recommended NTS names and addresses found in the `/etc/hosts` file.

Device	IP Address	Terminal	File Name
<i>Sun Enterprise 3000 System</i>	129.200.9.1	host_computer	NA
NTS (#1)	129.200.9.11	cmsterm1	nts1info
NTS (#2)	129.200.9.12	cmsterm2	nts2info
NTS (#3)	129.200.9.13	cmsterm3	nts3info
NTS (#4)	129.200.9.14	cmsterm4	nts4info
NTS (#5)	129.200.9.15	cmsterm5	nts5info
NTS (#6)	129.200.9.16	cmsterm6	nts6info
NTS (#7)	129.200.9.17	cmsterm7	nts7info

The system responds as follows:

```
cmsterm1: Annex-3-UXR7, 64 ports
```

```
command:
```

- For terminals, enter the `set port` command string (include all the parameters you want to change).

```
command: set port=x-y mode dedicated type hardwired
dedicated_address <SUNaddress> control_lines modem_control
location "<a location>" user_name "<a user>" speed <9600>
```

⇒ NOTE:

The `set port` command string sets the parameters for the serial line ports. The `x-y` values you enter are the port numbers on the NTS. You can specify a range of ports in the above command string, but the `location` and `user_name` attributes should be port-specific.

Set `location` and `user-name`, and keep them populated to facilitate troubleshooting.

For more details about using the `set port` command string, use the following table. You do not have to set any parameters if the default parameters are correct.

Port Generic Parameter	Default Parameter	Recommended Setting	Comments
<code>mode</code>	<code>cli</code>	<code>dedicated</code>	NA
<code>type</code>	<code>hard-wired</code>	<code>hard-wired</code>	NA
<code>dedicated_address</code>	<code>0.0.0.0</code>	Set to <code>129.200.9.1</code> (<i>Sun Enterprise 3000 System address</i>)	Set to your <i>Sun Enterprise 3000 System</i> internet address.
<code>control_lines</code>	<code>none</code>	<code>modem_control</code>	NA
<code>location</code>	<code>" "</code>	<code>"a location"</code>	It is important to set this parameter so port problems can be traced.
<code>user_name</code>	<code>" "</code>	<code>"a user"</code>	It is important to set this parameter so port problems can be traced.
<code>speed</code>	<code>9600</code>	Match the baud rate of your terminal (for example, <code>9600</code>).	Speed may be changed to your baud rate.
<code>data_bits</code>	<code>8</code>	<code>8</code>	Can be set to match the terminal settings.
<code>parity</code>	<code>none</code>	<code>none</code>	Can be set to match the terminal settings.
<code>stop_bits</code>	<code>1</code>	<code>1</code>	Can be set to match the terminal settings.

 **NOTE:**

You can use the `show port` command to review your changes.

5. To initialize the port with the new options, use the following command to reset the terminal ports:

```
command: reset <port number>
```

 **NOTE:**

The options will not take effect until the port is reset.

The system responds as follows:

```
resetting serial port <port number> of <annex cmsterm1>
```

 **CAUTION:**

You can also use the `reset all@cmsterm1` command to terminate all active sessions on the NTS. Use the `reset all@cmsterm1` command only if no one is logged in.

6. To store the configuration information to a file (for example, `nts1info`), enter the following command:

```
command: write cmsterm1 /etc/local.admin/nts1info
```

The system responds as follows:

```
cmsterml: Annex-3-UX R10.0, 64 ports
        writing...
command:
```

You can store configuration information on multiple files to use as a backup in the event that your NTS loses translation. Use a corresponding file name for each NTS.

⇒ NOTE:

You can use these files (for example, */etc/local.admin/ nts1info*) to readminister the NTS in case of failure, or these files can be used with the text editor to search for and diagnose port problems. For example, you can search by name to find the port location. See the *CentreVu Call Management System, Release 3 Version 6, Hardware Maintenance and Troubleshooting (585-215-861)* document.

7. To quit, enter the following command.

```
command: quit
```

The system responds as follows:

```
#
```

8. If this is the initial installation, reboot the *Sun Enterprise 3000* System.

⇒ NOTE:

You can wait to reboot your system after you complete all the terminal, printer, and modem administration, if desired.

Terminal Options

After you connect the terminal to the system, you need to set the options for the terminal. This section contains the following samples of option settings for some of the *CentreVu* CMS supported terminals:

- 715 Business Communications Terminal (BCT)
- 705 Multi-Tasking (MT) Terminal
- 615 Color Multi-Tasking (CMT) Terminal
- 605 Business Communications Terminal (BCT)
- 620 Multi-Tasking Graphics (MTG) Terminal
- 2900/AWTC Display Terminal
- 4000/AWTC Display Terminal
- 2900/260f Small Footprint Terminal.

 **NOTE:**

Although the 605 BCT, 615 CMT, 615 MT, 620 MTG, 2900/AWTC, and 4000/AWTC terminals are *CentreVu* CMS approved, they have been discontinued.

715 Business Communications Terminal (BCT)

The 715 BCT replaces or emulates the 705 MT Terminal. To properly set up the terminal, you may need to change some of the options on the Terminal Setup screen. Also, port 2 is used as the main port. Therefore, connect the communications cable to port 2 and when logging into *CentreVu* CMS, identify the terminal type as a 705.

The default options are correct with the exception of the Emulation Mode option. This should be set to 705 so that it will emulate the 705 MT terminal. Refer to the *715 Business Communications Terminal User's Guide* (999-300-733) for instructions on how to change the options.

After making the change, you should set the 715 BCT options to the values shown in the following figures.

User Preferences Window

The following figure shows the recommended user preference option.

```
                                USER PREFERENCES

Language                         English
Lines                            24
Columns                          80
Reverse Video                    no
Screen Saver                     30 min.
Scrolling                        jump
Scroll Speed                     medium
Labels                           on
Key Click                        off
Warning Bell                     on
Font Size                        normal
$
```

Communications Options Window

The following figure shows the recommended communications options.

COMMUNICATIONS OPTIONS		
MAIN		AUX
port 1	Port Mapping	port 2
host	Port Service	printer
9600	Speed	9600
1 bit	Stop Bits	1 bit
8 bits	Data Bits	8 bits
none	Send Parity	space
no	Check Parity	no
off	Local Echo	-
off	Encoding	-
XON/XOFF	Generate Flow	XON/XOFF
XON/XOFF	Receive Flow	XON/XOFF
240	XOFF at	240
no	Transmit Limit	-
no	Answerback on Connect	-
Main	Clear Communication Port	Aux

General Options Window

The following figure shows the recommended general options.

GENERAL OPTIONS		
PRIMARY/WINDOW 1		WINDOW 2
715	Emulation	705
715	Terminal ID	705
no	Newline on LF	no
8 bits	Transmit Controls	8 bits
normal	Backspace Mode	normal
unlocked	User Features	locked
no	Conceal Answerback	no
(blank)	Answerback	(blank)

Display Options Window

The following figure shows the recommended display options.

DISPLAY OPTIONS		
PRIMARY/WINDOW 1		WINDOW 2
off	Monitor Mode	off
block	Cursor Type	block
off	Cursor Blink	off
yes	Display Cursor	yes
bottom	Status Line Position	bottom
host	Status Line Type	host
multnatl	Character Mode	multnatl
ISO Latn	International Font	ISO Latn
on	Autowrap	on

Keyboard Options Window

The following figure shows the recommended keyboard options.

KEYBOARD OPTIONS		
PRIMARY/WINDOW 1		WINDOW 2
Caps Lck	Caps/Shift Lock Key	Caps Lck
CR	<--	CR
<--	Enter Key	<--
yes	Autorepeat	yes
yes	Margin Bell	yes
enabled	Compose Key	enabled
enabled	Break Key	enabled
US	Keyboard Language	US
numeric	Numeric Pad	numeric
normal	Cursor Keys	normal
no	Swap Delete	no
none	Control Key Swapping	none
-	Legends	-
-	User Defined Keys	-
BS	Backspace Keys	BS

Printer Options Window

The following figure shows the recommended printer options.

PRINTER OPTIONS		
PRIMARY/WINDOW 1		WINDOW 2
page	Select Print Region	page
normal	Print Mode	normal
none	Printer Terminator	none
National	Printer Font Restriction	National
no	Printer Alarm	no
yes	Printer to Host	yes

705 Multi-Tasking (MT) Terminal

The 705 MT Terminal replaces or emulates the 605 BCT Terminal. To properly set up the terminal, you may need to change some of the options on the Terminal Setup screen.

The default options are correct with the exception of the Port Mapping option. This should be set so that it will read port 2 for Main and port 1 for AUX. Refer to the *705 Multi-Tasking Terminal User's Guide* (999-300-733) for instructions on how to change the options.

After making the change, you should set the 705 MT options to the values shown below.

User Preferences Window

The following figure shows the recommended user preference options.

USER PREFERENCES	
Language	English
Lines	24
Columns	80
Reverse Video	no
Screen Saver	30 min.
Scrolling	jump
Scroll Speed	medium
Labels	on
Key Click	off
Warning Bell	on
Font Size	normal

Communications Options Window

The following figure shows the recommended communications options.

COMMUNICATIONS OPTIONS		
MAIN		AUX
port 2	Port Mapping	port 1
host	Port Service	printer
9600	Speed	9600
1 bit	Stop Bits	1 bit
8 bits	Data Bits	8 bits
none	Send Parity	space
no	Check Parity	no
off	Local Echo	-
off	Encoding	-
XON/XOFF	Generate Flow	XON/XOFF
XON/XOFF	Receive Flow	XON/XOFF
240	XOFF at	240
no	Transmit Limit	-
no	Answerback on Connect	-
Main	Clear Communication Port	Aux

General Options Window

The following figure shows the recommended general options.

GENERAL OPTIONS		
PRIMARY/WINDOW 1		WINDOW 2
705	Emulation	705
705	Terminal ID	705
no	Newline on LF	no
8 bits	Transmit Controls	8 bits
normal	Backspace Mode	normal
unlocked	User Features	locked
no	Conceal Answerback	no
(blank)	Answerback	(blank)

Display Options Window

The following figure shows the recommended display options.

DISPLAY OPTIONS		
PRIMARY/WINDOW 1		WINDOW 2
off	Monitor Mode	off
block	Cursor Type	block
off	Cursor Blank	off
yes	Display Cursor	yes
bottom	Status Line Position	bottom
host	Status Line Type	host
multnatl	Character Mode	multnatl
ISO Latn	International Font	ISO Latn
on	Autowrap	on

Keyboard Options Window

The following figure shows the recommended keyboard options.

KEYBOARD OPTIONS		
PRIMARY/WINDOW 1		WINDOW 2
Caps Lck	Caps/Shft Lock Key	caps Lck
CR	<--	CR
<--	Enter Key	<--
yes	Autorepeat	yes
yes	Margin Bell	yes
enabled	Compose Key	enabled
enabled	Break Key	enabled
US	Keyboard Language	US
numeric	Numeric Pad	numeric
normal	Cursor Keys	normal
no	Swap Delete	no
none	Control Key Swapping	none
-	Legends	-
-	User Defined Keys	-
BS	Backspace Keys	BS

Printer Options Window

The following figure shows the recommended printer options.

PRINTER OPTIONS		
PRIMARY/WINDOW 1		WINDOW 2
page	Select Print Region	page
normal	Print Mode	normal
none	Printer Terminator	none
National	Printer Font Restriction	National
no	Printer Alarm	no
yes	Printer to Host	yes

615 Color Multi-Tasking (CMT) Terminal

The following figure shows the recommended 615 CMT Terminal options.

OPTIONS SETUP			
COMMUNICATIONS		USER PREFERENCES	
Speed	_9600_	Columns	_80_
Send Parity	_none_	Reverse Video	_no_
Check Parity	_no_	Volume	_4_
Local Echo	_off_	Key Click	_off_
Encoding	_off_	Scrolling	_jump_
Flow Control	DC1/DC3	Scroll Speed	medium
Generate Flow	_on_	Alternate Keypad	_off_
Receive Flow	_off_	Swap Delete/Del	_no_
Pass Flow	_yes_		
Monitor Mode	_off_	Cursor Type	_block_
Autowrap	_on_	Cursor Blink	_no_
Newline on LF	_no_	Labels	_off_
Return Key	_CR_	Foreground	
Enter Key		Background	
DONE615MT 1.1			
<input type="checkbox"/>	<input type="checkbox"/>	CHANGE OPTION	DEFAULT VALUES
<input type="checkbox"/>	<input type="checkbox"/>	SAVED VALUES	SAVE
<input type="checkbox"/>	<input type="checkbox"/>	NEXT SETUP	CLEAR TO END

If any of the 615 CMT options are incorrect, refer to the *615 Color Multi-Tasking Terminal User's Guide* (999-300-570) for instructions on how to change the options.

➤ NOTE:

When you are prompted to enter the terminal type, you need to enter 615c to get the colors to appear. The "c" part of the terminal type enables the colors to be seen.

615 Multi-Tasking (MT) Terminal

The following figure shows the recommended 615 MT Terminal options.

OPTIONS SETUP

COMMUNICATIONS		USER PREFERENCES	
I/O Card	idle	Cartridge	idle
Speed	9600	Columns	_80_
Send Parity	spac	Reverse Video	_no_
Check Parity	__no__	Volume	_1_
Local Echo	__off__	Key Click	_off_
Encoding	__off__	Scrolling	_jump_
Generate Flow	__off__	Scroll Speed	med_
Receive Flow	__off__		
Pass Flow	__off__	Cursor Type	_blck_
Monitor Mode	__off__	Cursor Blink	_no_
Autowrap	__on__	Labels	__off__
Newline on LF	__no__		
Return Key	__CR__		
Enter Key	<--		

DONE 615MT 1.1

If any of the 615 MT options are incorrect, refer to the *615 Multi-Tasking Terminal User's Guide* (999-300-302 IS) for instructions on how to change the options.

605 Business Communications Terminal (BCT)

The following figure shows the recommended 605 BCT Terminal options.

OPTIONS SETUP			
Communications		User Preferences	
Speed	9600	Columns	<u> 80 </u>
Send Parity	spac	Reverse Video	<u> no </u>
Check Parity	<u> no </u>	Bell	<u> on </u>
Local Echo	<u> off </u>	Key Click	<u> off </u>
Monitor Mode	<u> off </u>	Scrolling	<u> jump </u>
Auto Wrap	<u> on </u>	Scroll Speed	<u> med </u>
Newline on LF	<u> no </u>	Cursor Type	<u> blk </u>
Return Key	<u> CR </u>	Cursor Blink	<u> no </u>
Enter Key	<u> <-- </u>	Labels	<u> on </u>
Terminal Mode	<u> norm </u>	Swap Delete/Del	<u> no </u>

DONE 605 BMT - 1.0

		CHANGE OPTION	DEFAULT VALUES	SAVED VALUES	SAVE	NEXT SETUP	CLEAR TO END
--	--	------------------	-------------------	-----------------	------	---------------	-----------------

If any of the 605 BCT options are incorrect, refer to the *605 Business Communications Terminal User's Guide* (999-300-299 IS) for instructions on how to change the options.

620 Multi-Tasking Graphics (MTG) Terminal

The following figure shows the recommended 620 MTG Terminal options.

OPTIONS SETUP

Communications		User Preferences	
Speed	9600	Reverse Video	<u>no</u>
Send Parity	spac	Volume	<u>jump</u>
Check Parity	<u>no</u>	Key Click	<u>no</u>
Local Echo	<u>off</u>	Mouse Movement	<u>1:1</u>
Generate Flow	<u>off</u>	Mouse Button 3	<u>right</u>
Receive Flow	<u>on</u>	Printer Type	5320
Pass Flow	<u>off</u>	Printer Alarm	<u>no</u>
Monitor Mode	<u>no</u>	Printer Speed	1200
Auto Wrap	<u>on</u>	Printer Parity	none
Newline on LF	<u>no</u>	Cursor Type	<u>blck</u>
Return Key	<u>CR</u>	Cursor Blink	<u>no</u>
Enter Key	<u><--</u>	Labels	<u>on</u>

DONE 620/Basic - 1.1

CHANGE
OPTION

DEFAULT
VALUES

SAVED
VALUES

SAVE

NEXT
SETUP

CLEAR
TO END

If any of the 620 MTG terminal options are incorrect, refer to the *620 Multi-Tasking Graphics Terminal User's Guide* (999-300-211 IS) for instructions on how to change the options.

2900/AWTC Display Terminal

The AWTC terminals may be labeled either NCR 2900 or ADDS 4000. For both you need to enter 615c for the terminal type in the term info file. To properly set up the terminal, you may need to change some of the options on the Setup menu.

User Preferences Window

The following figure shows the recommended user preference options.

USER PREFERENCES

Screen Lines	27
Screen Columns	80
Reverse Video	no
Relative Reverse Video	yes
Screen Saver	30 min
Scrolling	jump
Scroll Speed	
Labels	on
Key Click	off
Warning Bell	on
Font Size	large
Keyboard language	US
Mouse Hand	right
Parallel Port	printer
Enhanced Function Keys	off
Status Line Position	bottom
Control Graphics	ASCII
Background Pattern	default

SETUP
MENU

PREVIOUS
SCREEN

NEXT
SCREEN

CHANGE
OPTION

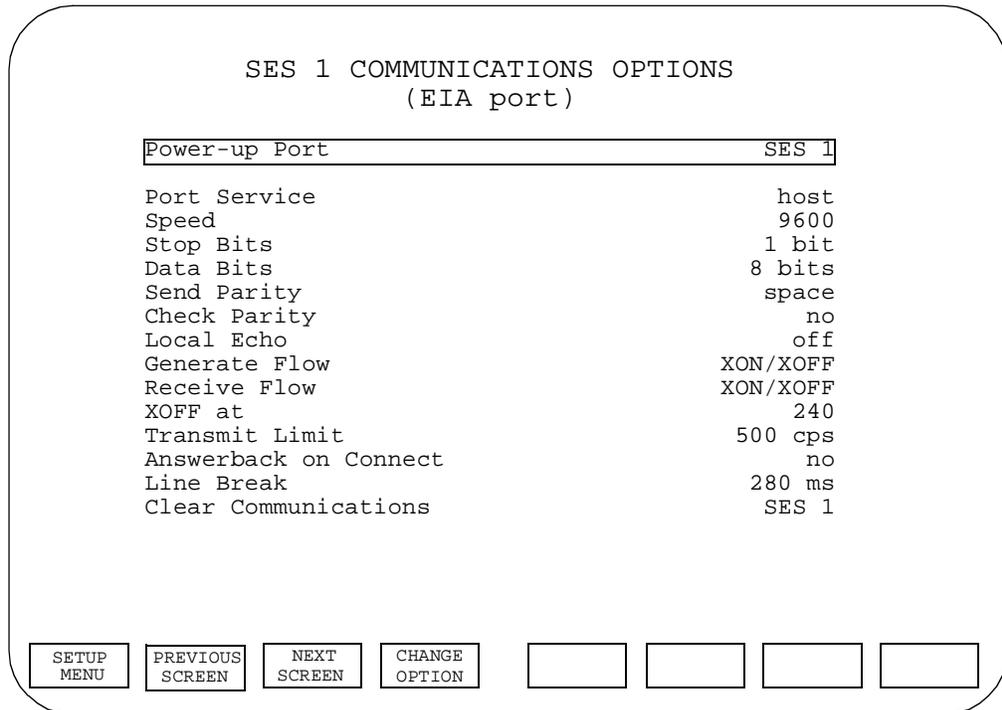
Communications Options Windows

There are two communications options submenus, one for each port.

SES 1 Communications Options

The default options are correct with the exception of the Data Bits option. This should be set so that it will read 8 bits.

The following figure shows the recommended SES 1 communications options.



SES 2 Communications Options

The default options are correct with the exception of the Speed option (should read 9600) and the Data Bits option (should read 8 bits).

The following figure shows the recommended SES 2 communications options.

SES 2 COMMUNICATIONS OPTIONS
(AUX port)

Power-up Port	SES 1
Port Service	mouse
Speed	9600
Stop Bits	1 bit
Data Bits	8 bits
Send Parity	none
Check Parity	no
Local Echo	
Generate Flow	
Receive Flow	
XOFF at	
Transmit Limit	
Answerback on Connect	
Line Break	
Clear Communications	SES 2

SETUP
MENU

PREVIOUS
SCREEN

NEXT
SCREEN

CHANGE
OPTION

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General Options Window

The following figure shows the recommended general options.

The screenshot shows a terminal window titled "GENERAL OPTIONS" with a subtitle "WINDOW TITLE (VT #)". The main content is a list of settings:

Emulation	705
Terminal ID	track
Newline on LF	no
Newline on CR	no
Transmit Controls	8 bits
Backspace Mode	normal
User Features	unlocked
Conceal Answerback	no
Answerback

At the bottom of the window, there are several buttons: "SETUP MENU", "PREVIOUS SCREEN", "NEXT SCREEN", "CHANGE OPTION", three empty boxes, and "CLEAR TO END".

Display Options Window

The following figure shows the recommended display options.

DISPLAY OPTIONS

WINDOW TITLE (VT #)

Monitor Mode	off
Cursor Type	block
Cursor Blink	off
Display Cursor	yes
Status Line Type	host
Character Mode	multnati
International Font	ISO Latn
Autowrap	on
Destructive Scroll	yes

SETUP MENU PREVIOUS SCREEN NEXT SCREEN CHANGE OPTION

Keyboard Options Window

The following figure shows the recommended keyboard options.

KEYBOARD OPTIONS

WINDOW TITLE (VT #)

Caps/Shift Lock Key	caps lck
<--	CR
Enter Key	<--
Autorepeat	yes
Margin Bell	no
Compose Key	enabled
Break Key	enabled
Numeric Pad	numeric
Cursor Keys	normal
Swap Delete	no
Control Key Swapping	none
Legends	
User Defined Keys	
Backspace key	BS
ESC Key	ESC

SETUP MENU PREVIOUS SCREEN NEXT SCREEN CHANGE OPTION CLEAR TO END

Printer Options Window

The following figure shows the recommended printer options.

PRINTER OPTIONS

WINDOW TITLE (VT #)

Select Print Region	page
Print mode	normal
Print Terminator	none
Printer Type/Driver	Propmtr
Printer Alarm	no
Printer To host	no

SETUP
MENU

PREVIOUS
SCREEN

NEXT
SCREEN

CHANGE
OPTION

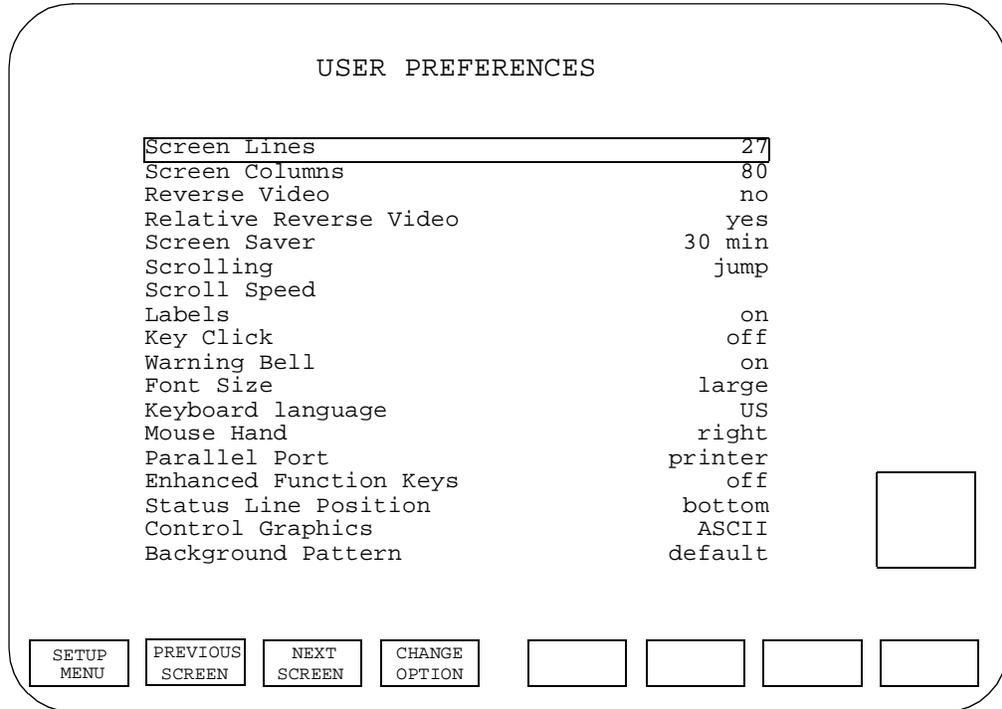
If any of the 2900/AWTC terminal options are incorrect, refer to the *2900/AWT Color Guide to Operations* for instructions on how to change the terminal options.

4000/AWTC Display Terminal

To properly set up the terminal, you may need to change some of the options on the Setup menu.

User Preferences Window

The following figure shows the recommended user preference options.



Communications Options Windows

There are two communications options submenus, one for each port.

SES 1 Communications Options

The default options are correct with the exception of the Data Bits option. This should be set to 8 bits.

The following figure shows the recommended SES 1 communications options.

SES 1 COMMUNICATIONS OPTIONS
(EIA port)

Power-up Port	SES 1
Port Service	host
Speed	9600
Stop Bits	1 bit
Data Bits	8 bits
Send Parity	space
Check Parity	no
Local Echo	off
Generate Flow	XON/XOFF
Receive Flow	XON/XOFF
XOFF at	240
Transmit Limit	500 cps
Answerback on Connect	no
Line Break	280 ms
Clear Communications	SES 1

SETUP
MENU

PREVIOUS
SCREEN

NEXT
SCREEN

CHANGE
OPTION

**SES 2
Communications
Options**

The default options are correct with the exception of the Speed option (should read 9600) and the Data Bits option (should read 8 bits).

The following figure shows the recommended SES 2 communications options.

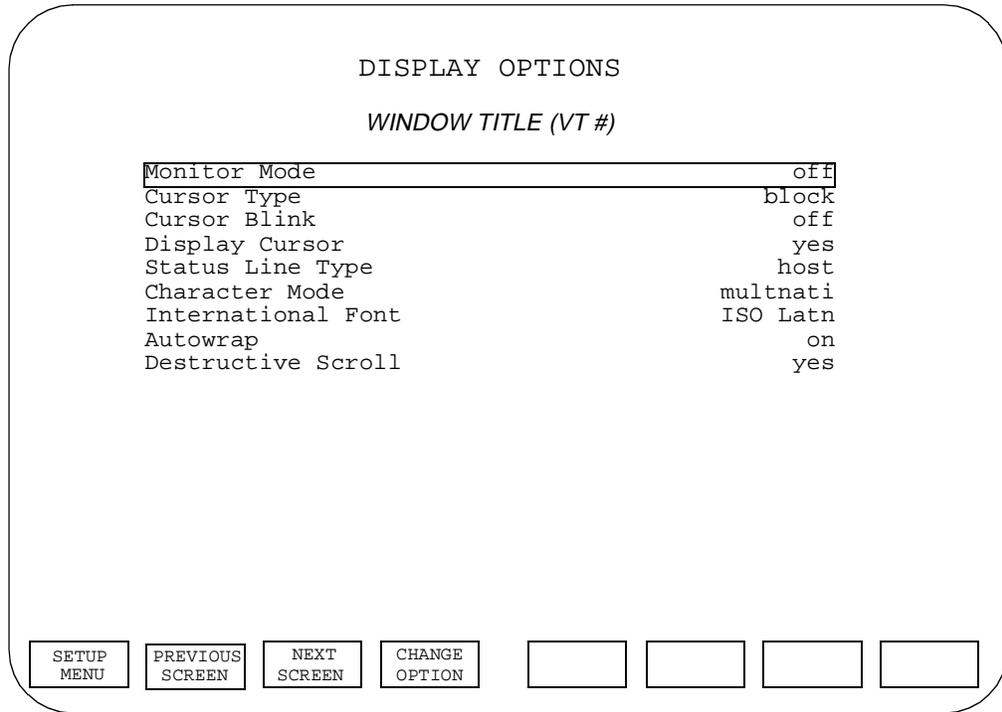
SES 2 COMMUNICATIONS OPTIONS
(AUX port)

Power-up Port	SES 1
Port Service	mouse
Speed	9600
Stop Bits	1 bit
Data Bits	8 bits
Send Parity	none
Check Parity	no
Local Echo	
Generate Flow	
Receive Flow	
XOFF at	
Transmit Limit	
Answerback on Connect	
Line Break	
Clear Communications	SES 2

SETUP
MENUPREVIOUS
SCREENNEXT
SCREENCHANGE
OPTION

Display Options Window

The following figure shows the recommended display options.



Keyboard Options Window

The following figure shows the recommended keyboard options.

KEYBOARD OPTIONS

WINDOW TITLE (VT #)

Caps/Shift Lock Key	caps lck
<--	CR
Enter Key	<--
Autorepeat	yes
Margin Bell	no
Compose Key	enabled
Break Key	enabled
Numeric Pad	numeric
Cursor Keys	normal
Swap Delete	no
Control Key Swapping	none
Legends	
User Defined Keys	
Backspace key	BS
ESC Key	ESC

SETUP
MENU

PREVIOUS
SCREEN

NEXT
SCREEN

CHANGE
OPTION

CLEAR
TO END

Printer Options Window

The following figure shows the recommended printer options.

The screenshot shows a terminal window titled "PRINTER OPTIONS" with a subtitle "WINDOW TITLE (VT #)". The main content is a list of printer settings:

Select Print Region	page
Print mode	normal
Print Terminator	none
Printer Type/Driver	Propmtr
Printer Alarm	no
Printer To host	no

At the bottom of the window, there are several navigation buttons: "SETUP MENU", "PREVIOUS SCREEN", "NEXT SCREEN", "CHANGE OPTION", and four empty rectangular boxes.

If any of the 4000/AWTC Terminal Options are incorrect, refer to the *4000/AWT Color Guide to Operations* for instructions on how to change the terminal options.

2900/260lf Small Footprint Terminal

The recommended 2900/260lf Terminal values are shown on the following 13 figures. The first 12 menus are accessed by the function keys F1 through F12. Menu 13 is accessed by the Print Screen key and provides terminal operations which may be executed.

To enter the terminal Setup mode, simultaneously press **Ctrl** **Scroll Lock**. To exit Setup, press **Pause** and then press y or n.

F1 Quick Window

The following figure shows the F1 Quick Values.

F1 Quick	F2 Genrl	F3 Displ	F4 Kybd	F5 Keys	F6 Ports	F7 Host	F8 Print	F9 Emul	F10 Tabs	F11 Ansbk	F12 Prog	PrtSc Exec
Emulation=VT-300-7 Comm Mode=Full Duplex Enhanced=On Host/Printer=EIA/None				Parameters EIA Baud Rate=9600 Aux Baud Rate=9600 Lanuguage=U.S.				EIA Data Format=8/1/N Aux Data Format=8/1/N Sessions=One				
Choices												
ADDS-VP		Wyse-60		Wyse-325		Wyse-50+		Wyse-350		PC-Term		TVI-925
VT-300-7		VT-300-8		Intecolor		VT-200-7		VT-200-8		VT-100		
SCO Console		AT386										
↑ → ↓ ← : Parameter				Select				Enter/S-Enter: Next/Prev Choice				
								Exit : PauseKey				

You must change the EIA Data Format parameter manually in Window F1 because the default is 7/1/N.

F2 General (Genrl) The following figure shows the F2 General Window values.
Window

F1 Quick	F2 Genrl	F3 Displ	F4 Kybd	F5 Keys	F6 Ports	F7 Host	F8 Print	F9 Emul	F10 Tabs	F11 Ansbk	F12 Prog	PrtSc Exec
Emulation=VT-300-7 Auto Font Load=On Monitor Mode=Off Warning Bell=On Sessions=One				Parameters Enhanced=On Auto Page=Off Screen Saver=5-min Bell Length=350 ms Color Mode=Direct				Auto Wrap=Off Auto Scroll=On Bell Volume=06 Host Printer=EIA/Para				
Choices ADDS-VP Wyse-60 Wyse-325 Wyse-50+ Wyse-350 PC-Term TVI-925 VT-300-7 VT-300-8 Intecolor VT-200-7 VT-200-8 VT-100 SCO Console AT386												
↑ → ↓ ← : Parameter				Select Enter/S-Enter: Next/Prev Choice				Exit : PauseKey				

F3 Display (Displ) Window

The following figure shows the F3 Display Window values.

F1 Quick	F2 Genrl	F3 Displ	F4 Kybd	F5 Keys	F6 Ports	F7 Host	F8 Print	F9 Emul	F10 Tabs	F11 Ansbk	F12 Prog	PrtSc Exec
Page Length=25 Display Cursor=On Columns=80 Scroll=Jump				<div style="border: 1px solid black; padding: 2px;">Parameters</div> Screen Length=26 Lines Cursor=Blink Block Erase Color=Black				Screen Video=Normal Auto Adjust Cursor=On Speed=Fast				
<div style="border: 1px solid black; padding: 2px;">Choices</div> 24 25 42 43 48 50 84 86 96 100 168 172 192 200 *24 *25 *42 *43												
↑ → ↓ ← : Parameter				<div style="border: 1px solid black; padding: 2px;">Select</div> Enter/S-Enter: Next/Prev Choice				Exit : PauseKey				

F4 Keyboard (Kybd) Window

The following figure shows the F4 Keyboard Window values.

F1 Quick	F2 Genrl	F3 Displ	F4 Kybd	F5 Keys	F6 Ports	F7 Host	F8 Print	F9 Emul	F10 Tabs	F11 Ansbk	F12 Prog	PrtSc Exec
Language=U.S. Keyclick=Off Margin Bell=Off Num Lock=Toggle				Parameters Char Set Mode=ANSI Key Repeat=On Key Lock=Caps				Key Mode=ASCII Key Rate=20 cps Caps Lock=Toggle				
Choices U.S. U.K. Danish Finnish French German Norwegian Portuguese Spanish Swedish Dutch Belgian-Flemsh Fr-Canadian Italian Latin-American Swiss-German Swiss-French												
↑ → ↓ ← : Parameter				Select Enter/S-Enter: Next/Prev Choice				Exit : PauseKey				

F5 Keys Window

The following figure shows the F5 Keys Window values.

F1 Quick	F2 Genrl	F3 Displ	F4 Kybd	F5 Keys	F6 Ports	F7 Host	F8 Print	F9 Emul	F10 Tabs	F11 Ansbk	F12 Prog	PrtSc Exec
Enter Key=<CR> Alt Key=Compose Pound Key=U.S.				Parameters Return Key=<CR> Disconnect=Pause Return Key Repeat=Off				Backspace=<BS>/ Desk Acc=Ctrl+ UDKs=Emul Dependent				
Choices												
<CR> <CR><LF> <TAB>												
↑→↓←				Select								
: Parameter				Enter/S-Enter: Next/Prev Choice				Exit : PauseKey				

F6 Ports Window

The following figure shows the F6 Ports Window values.

F1 Quick	F2 Genrl	F3 Displ	F4 Kybd	F5 Keys	F6 Ports	F7 Host	F8 Print	F9 Emul	F10 Tabs	F11 Ansbk	F12 Prog	PrtSc Exec			
EIA Baud Rate=9600 AUX Baud Rate=9600 EIA Xmt=No Protocol AUX Xmt=No Protocol EIA Break=250 ms AUX Break=250 ms				Parameters				EIA Data Format=8/1/N AUX Data Format=8/1/N EIA Recv=Xany-Xoff(XPC) AUX Recv=Xany-Xoff(XPC) EIA Modem Control=Off AUX Modem Control=Off				EIA Parity Check=Off AUX Parity Check=Off EIA Xmt Pace=Baud AUX Xmt Pace=Baud EIA Disconnect=2 sec AUX Disconnect=2 sec			
Choices															
110	150	300	600	1200	2000	2400	4800	9600							
19200	38400	57600	76800	115200											
Select															
↑ → ↓ ← : Parameter				Enter/S-Enter: Next/Prev Choice				Exit : PauseKey							

You must change the EIA Data Format parameter manually in Window F6 because the default is 7/1/N.

F7 Host Window

The following figure shows the F7 Host Window values.

F1 Quick	F2 Genrl	F3 Displ	F4 Kybd	F5 Keys	F6 Ports	F7 Host	F8 Print	F9 Emul	F10 Tabs	F11 Ansbk	F12 Prog	PrtSc Exec
Comm Mode=Full Duplex Recv =Ignore Send Region=Screen Alt Input Data=On				<div style="border: 1px solid black; padding: 2px; text-align: center;">Parameters</div> Local=Off Send ACK=On Send End=Region				Recv <CR>=<CR> Send Block Term=None Null Supress=Off				
<div style="border: 1px solid black; padding: 2px; text-align: center;">Choices</div> Full Duplex Half Duplex Full Block Half Block												
↑ > ↓ < : Parameter				<div style="border: 1px solid black; padding: 2px; text-align: center;">Select</div> Enter/S-Enter: Next/Prev Choice				Exit : PauseKey				

F8 Print Window

The following figure shows the F8 Print Window values.

F1 Quick	F2 Genrl	F3 Displ	F4 Kybd	F5 Keys	F6 Ports	F7 Host	F8 Print	F9 Emul	F10 Tabs	F11 Ansbk	F12 Prog	PrtSc Exec
Prnt Mode=Normal Secondary Recv=On				<input type="text" value="Parameters"/> Prnt Region=Screen				Prnt Block Term=None				
<input type="text" value="Choices"/> Normal Auto Controller												
<input type="text" value="↑ > ↓ <"/> : Parameter				<input type="text" value="Select"/> Enter/S-Enter: Next/Prev Choice				Exit : PauseKey				

F9 Emulation (Emul) Window

The following figure shows the F9 Emulation Window values.

F1 Quick	F2 Genrl	F3 Displ	F4 Kybd	F5 Keys	F6 Ports	F7 Host	F8 Print	F9 Emul	F10 Tabs	F11 Ansbk	F12 Prog	PrtSc Exec			
Numeric Kpd=Numeric Print=National UPSS=ANSI-Supplemental				<div style="border: 1px solid black; padding: 2px; text-align: center;">Parameters</div> Cursor Kpd=Cursor ANSI-ID=VT320 Feature Lock=Off				Send Data=All Function Key Lock=Off Status Line=Off							
<div style="border: 1px solid black; padding: 2px; display: inline-block;">Choices</div>															
Numeric Application															
<div style="border: 1px solid black; padding: 2px; display: inline-block;">Select</div>				↑→↓← : Parameter				Enter/S-Enter: Next/Prev Choice				Exit : PauseKey			

F10 Tabs Window The following figure shows the F10 Tabs Window values.

F1 Quick	F2 Genrl	F3 Displ	F4 Kybd	F5 Keys	F6 Ports	F7 Host	F8 Print	F9 Emul	F10 Tabs	F11 Ansbk	F12 Prog	PrtSc Exec
Parameters												
Auto Init Tabs=Off				Default Tabs								
..... 10 20 30 40 50 60 T T T T T T T												
..... 70 80 90 100 110 120 130..... T T T T T T T												
Choices												
Off On												
Select												
↑⇒↓⇐ : Parameter				Enter/S-Enter: Next/Prev Choice				Exit : PauseKey				

F11 Answer Back (AnsBk) Window

The following figure shows the F11 Answer Back Window values.

F1 Quick	F2 Genrl	F3 Displ	F4 Kybd	F5 Keys	F6 Ports	F7 Host	F8 Print	F9 Emul	F10 Tabs	F11 Ansbk	F12 Prog	PrtSc Exec
Parameters												
Answerback Mode=Off				Answerback Conceal								
Answerback Message: <input type="text"/>												
Bytes Remaining:												
Choices												
Off On												
Select												
↑ ⇒ ↓ <				: Parameter				Enter/S-Enter: Next/Prev Choice			Exit : PauseKey	

F12 Program (Prog) Window

The following figure shows the F12 Program Window values.

F1 Quick	F2 Genrl	F3 Displ	F4 Kybd	F5 Keys	F6 Ports	F7 Host	F8 Print	F9 Emul	F10 Tabs	F11 Ansbk	F12 Prog	PrtSc Exec
Parameters												
Key=F1				Program=F/Key				Key Dir=Comm Dependent				
Text: <input style="width: 400px; height: 20px;" type="text"/>												
Label: <input style="width: 50px; height: 15px;" type="text"/> Bytes Remaining:												
Choices												
F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	
↑ > ↓ <				Select				Exit : PauseKey				
: Parameter				Enter/S-Enter: Next/Prev Choice								

**Print Screen
Execute (PrtSc
Exec) Window**

The following figure shows the Print Screen Execute Window values.

F1 Quick	F2 Genrl	F3 Displ	F4 Kybd	F5 Keys	F6 Ports	F7 Host	F8 Print	F9 Emul	F10 Tabs	F11 Ansbk	F12 Prog	PrtSc Exec
Save Terminal				Parameters				Default Terminal				
Save Session				Recall Terminal				Default Session				
Reset Terminal				Recall Session				Reset Ports				
Clear Screen				Reset Session				Default Session UDKs				
Use Enter Key to Execute Action												
Choices												
Select												
↑ ⇒ ↓ ⇐ : Parameter				Enter/S-Enter: Next/Prev Choice				Exit : PauseKey				

Administering Printers

Overview

This section describes how to configure port parameters for printers used in the following options:

- Serial Printers on the NTS
- Parallel Printers Connected to the NTS.

 **NOTE:**

The *Sun Enterprise 3000* system does not have a parallel printer port. Therefore, it is not possible to connect a parallel printer directly to the system.

 **CAUTION:**

If a power outage occurs while you are printing, you may need to resubmit your job.

Serial Printers on the NTS

Set up the serial printers by connecting a serial printer to one of the NTS serial ports. After the serial printers are connected, you must complete the `na`, `rtelnet`, and `lpadmin` administration for the *Sun Enterprise 3000* System to recognize the new serial printer(s).

 **NOTE:**

For printers that have different configurations and parameters, see the *Network Terminal Server Administration Guide* for details.

Procedure

To address and configure the NTS ports for serial printers, complete the following steps:

1. Log in as root.
2. At the system prompt, enter the `na` command to access the NTS administration software.

```
# na
```

The following appears:

```
Annex network administrator R(most current release number &
date)
command:
```

3. To associate all subsequent administration with a specific network terminal server, enter `annex cmsterm1` at the command prompt.

```
command: annex cmsterm1
```

⇒ NOTE:

When you enter `annex cmsterm1` (or `annex 129.200.9.11`), `cmsterm1` becomes the default NTS until another NTS is selected using the `annex` command. The default setting for the NTS ports is 9600 bps, 8 data bits, no parity, and 1 stop bit.

You can specify one NTS or multiple NTSs. Use the recommended NTS names and addresses in the `/etc/hosts` file.

The system responds as follows:

```
cmsterm1: Annex-3-UXR7, 64 ports
command:
```

4. For serial printers, enter the following `set port` command string to administer the printer:

```
command: set port=x-y mode slave type hardwired
control_lines both input_flow_control start/stop
output_flow_control start/stop location "<name>" speed <9600
or whatever printer speed is>
```

⇒ NOTE:

Be sure to set `location` and `user-name`, and keep them populated, to facilitate troubleshooting.

See the following table for more details about using the `set port` command string. You do not have to set any parameters if the default parameters are correct.

Port Generic Parameter	Default Parameter	Recommended Setting	Comment
<code>mode</code>	<code>cli</code>	<code>slave</code>	NA
<code>type</code>	<code>hardwired</code>	<code>hardwired</code>	NA
<code>dedicated_address</code>	<code>0.0.0.0</code>	Set to 129.200.9.1 (<i>Sun Enterprise 3000 System</i>).	Set to your <i>Sun Enterprise 3000 System</i> internet address.
<code>control_lines</code>	<code>none</code>	Set to both.	NA
<code>input_flow_control</code>	<code>bell</code>	Set to start/stop.	NA
<code>output_flow_control</code>	<code>none</code>	Set to start/stop.	NA
<code>location</code>	<code>" "</code>	"a location"	It is important to set this parameter so port problems can be traced.
<code>user_name</code>	<code>" "</code>	"a user"	It is important to set this parameter so port problems can be traced.
<code>speed</code>	<code>9600</code>	Set to match the speed of the printer. Do not use <code>autobaud</code> .	Speed can be changed to match your printer's baud rate.
<code>data_bits</code>	<code>8</code>	Set to match the requirements of the printer.	Can be set to match the printer settings.
<code>parity</code>	<code>none</code>	Set to none.	Can be set to match the printer settings.
<code>stop_bits</code>	<code>1</code>	Set to match the requirements of the printer.	Can be set to match the printer settings.

 **NOTE:**

You can use the `show port` command to review your changes.
The system responds as follows:

```
Changes will take effect at next annex boot or port reset.  
command:
```

5. Use the following command to reset the printer ports:

```
command: reset <port number>
```

The system responds as follows:

```
# resetting serial port <port number> of annex <cmsterm1>
```

 **CAUTION:**

You can also use the `reset all@cmsterm1` command to terminate all active sessions on the NTS. Use the `reset all@cmsterm1` command **only** if no one else is logged in.

6. To store the new port configurations to a file (for example, `ntslinfo`), enter the following:

```
command: write cmsterm1 /etc/local.admin/ntslinfo
```

 **NOTE:**

At the end of provisioning, the `write` command downloads the port(s) and settings you selected to a flat file for use at a later date (for example, when you want to do a search or use the editor).

The system responds as follows:

```
cmsterm1: Annex-3-UX R(most current release number & date)
      writing...
command:
```

7. To check the new port configurations, enter the following command:

```
command: show port=<number(s)>
```

8. To quit, enter the following command:

```
command: quit
```

The system responds as follows:

```
#
```

RTELNET Administration

Serial printers require some additional administration:

- You must place the command in a file (as specified below).
- You must run the command by either entering the command as described below or by rebooting the *Sun Enterprise 3000* System.

To place the command for serial printers in a file, continue with the following:

9. Place the `Speripherals` file into the `/etc/rc2.d` directory:
 - a. To change from the root directory, at the system prompt, enter the following command:

```
# cd /etc/rc2.d
```

- b. Access the `Speripherals` file using an editor (for example, `vi`).

```
# vi Speripherals
```

- c. Enter the name(s) of the character special device(s) into the file. For example:

```
rtelnet -brao cmsterm1 16 /dev/s_pdev116  
rtelnet -brao cmsterm1 15 /dev/s_pdev115  
rtelnet -brao cmsterm1 17 /dev/s_pdev117
```

- d. To exit the file and return to the system prompt, hold down the **Shift** key and press the **Z** key twice.

- e. To return to the root directory, enter the following command:

```
# cd /
```

10. At the *Sun Enterprise 3000* System console, enter the following system command (one line per each serial printer):

```
# rtelnet -brao cmsterm1 16 /dev/s_pdev116
```

⇒ NOTE:

116, in the device name, indicates the first NTS and port 16 (as does the parameter 16). You can choose your own names, but it is recommended that the device name reflect the terminal server and port names (for example, `rtelnet -brao cmsterm2 64 /dev/s_pdev264`).

LPADMIN Administration

To run the command to administer serial printers, continue with the following steps:

1. For serial printers connected to the NTS, enter the following command at the system prompt:

```
# lpadmin -p <printername> -D "comment about printer location"
-i /usr/spool/lp/modelstandard -o <no>banner -v/dev/s_pdev116
-A mail -T <type> -o "stty=<baud rate>"
```

2. For serial printers **not** connected to the NTS, enter the following command at the system prompt:

```
# lpadmin -p <printername> -D "comment about printer location"
-o <no>banner -v/dev/term/xxx -A mail -T <type> -o "stty=<baud
rate>"
```

⇒ NOTE:

Where the printer name is your choice, use the `banner` or `nobanner` command according to your preference. If the *Sun Enterprise 3000* System is replacing an existing *INTEL* based product, check the *CentreVu CMS: Maintenance: Printer Administration* window to match settings. Use the device name from the `rtelnet` command (see step 10). If the speed is **not** 9600, use `-o "stty=<baud rate>"`.

See the following table to identify the correct `lpadmin` type .

Printer	"lpadmin" Type	Emulation Mode	Product Status
475 Dot Matrix	475	—	Discontinued
476 Dot Matrix	476	—	Discontinued
477 Dot Matrix	477	—	Discontinued
495 Laser	495hp	<i>HP</i> *	Discontinued
570 Parallel Dot Matrix	570ibm	<i>IBM</i> †	Discontinued
571 Parallel Dot Matrix	571libm	<i>IBM</i>	Discontinued
572 Serial Dot Matrix (Narrow Platen)	572	—	Discontinued
573 Serial Dot Matrix (Wide Platen)	573	—	Discontinued
580 Parallel Dot Matrix	580ibm	<i>IBM</i>	Discontinued
581	581ibm	<i>IBM</i>	—
583 Dot Matrix	583ibm	<i>IBM</i>	Discontinued
593 Laser	593hp	<i>HP</i>	Discontinued
595 Laser	hplaserjet	<i>HP</i>	Discontinued
5310 Dot Matrix	5310	—	Discontinued
5320 Dot Matrix	5320	—	Discontinued
6417 GIS Parallel Dot Matrix	ibmproprinter	<i>IBM</i>	Discontinued
<i>Okidata</i> 183	ibmproprinter	<i>IBM</i>	Discontinued
<i>Okidata</i> 320	ibmproprinter	<i>IBM</i>	Discontinued
<i>Okidata</i> 321	ibmproprinter	<i>IBM</i>	Discontinued
<i>Okidata</i> OL810e	hplaserjet	<i>HP</i>	Discontinued
<i>Okidata</i> OL830 Plus	hplaserjet	<i>HP</i>	Discontinued
<i>Okidata</i> ML321T	ibmproprinter	<i>IBM</i>	—
<i>Okidata</i> OP16N (120V)	hplaserjet	<i>HP</i>	—

**HP* is a registered trademark of Hewlett-Packard Co.

†*IBM* is a registered trademark of International Business Machines, Corp.

3. To make a printer the default destination, enter the following command at the system prompt

```
# lpadmin -d <printername>
```

4. To enable the printer, enter the following command:

```
# enable <printername>
```

The system responds:

```
<printername> enabled
```

5. To complete the printer default destination and put the printer into service, enter the following command:

```
# accept <printername>
```

The system responds:

```
<printername> accepted
```

6. If this is the initial installation, reboot the *Sun Enterprise 3000* System.

⇒ NOTE:

You can wait to reboot your system until after you complete all the terminal, printer, and modem administration, if desired.

Parallel Printers Connected to the NTS

Set up the printers by connecting the printer to the NTS parallel port. The port used to connect parallel printers is found on the back panel of the network terminal server. This NTS parallel port supports either a Centronics- or *Dataproducts**-compatible printer.

⇒ NOTE:

The *Sun Enterprise 3000* System does not have a parallel printer port. Therefore, a parallel printer can be connected to a *CentreVu* CMS system on the *Sun Enterprise 3000* System, only through an NTS parallel port.

After the parallel printers are connected, you must complete the `na` and `lpadmin` administration for the *Sun Enterprise 3000* System to recognize the new parallel printer(s).

Cable Connections

There are two types of cables that can be used to connect the parallel printer to the NTS. These cables are Centronics and *IBM*-type (also called *Dataproducts*). One or the other is needed depending on what type of printer is being used. All supported printers use Centronics.

Parallel Printer Connections

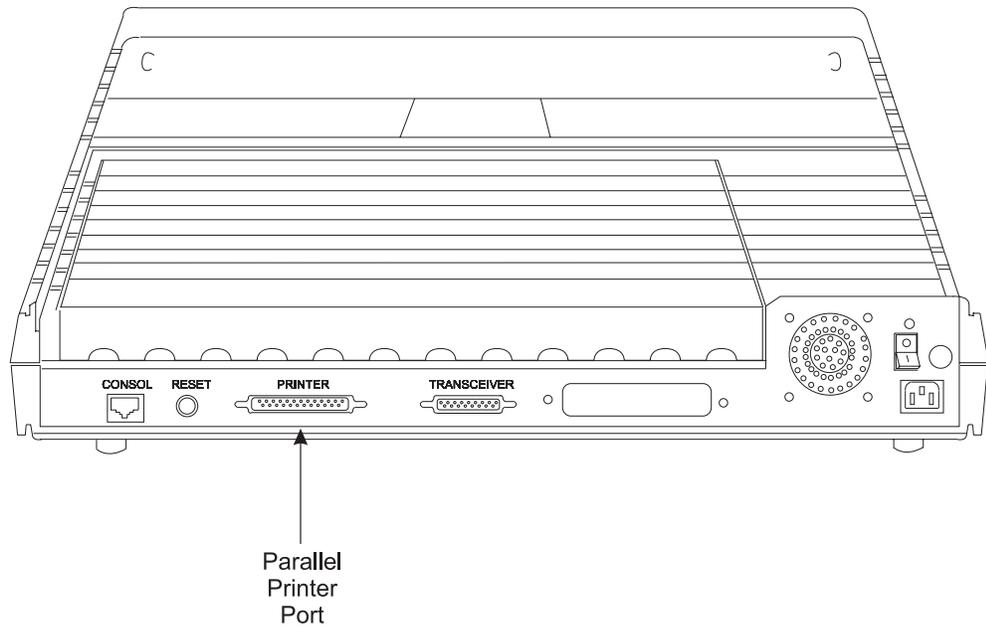
The following table lists the correct cable to use in connecting the printer to the NTS.

Connector type	PEC	Comcode
Centronics	12105	407361856
<i>IBM</i> -type (<i>Dataproducts</i>)	12106	407361831

**Dataproducts* is a registered trademark of Dataproducts Corp.

64-Port NTS Parallel Printer Port Connections

This figure shows how to connect the printer to the 64-port NTS.



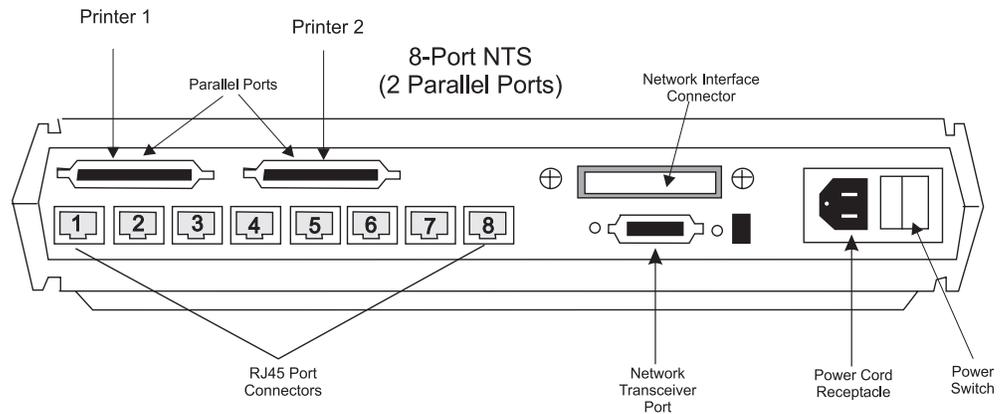
➤ NOTE:

If your parallel printer has a Centronics interface, no administration is required. If your parallel printer has a *Dataproducts* interface, you must continue with the following administration procedure. Check your printer manual to determine if your printer has a Centronics or *Dataproducts* interface.

The following figure shows the connections for the 8-Port NTS. This NTS cannot be ordered, however, if the customer has one it can be used.

8-Port Parallel Printer Port Connection

This figure shows how to connect the printer to an 8-port NTS.



Procedure

Complete the `na` administration to set the NTS parallel printer up as *Dataproducts*. Do the following:

1. Log in as root.
2. At the system prompt, enter the `na` command to access the NTS administration software.

```
# na
```

The system responds:

```
Annex network administrator R(most current release number &
date)
command:
```

3. To associate all subsequent administration with a specific network terminal server, enter `annex cmsterm1` at the command prompt.

```
command: annex cmsterm1
```

NOTE:

When you enter `annex cmsterm1` (or `annex 129.200.9.11`), `cmsterm1` becomes the default NTS until another NTS is selected using the `annex` command. The default setting for the NTS ports is 9600 bps, 8 data bits, no parity, and 1 stop bit.

You can specify one NTS or multiple NTSs. Use the recommended NTS names and addresses in the `/etc/hosts` file.

The system responds:

```
cmsterm1: Annex-3-UXR7, 64 ports
command:
```

4. Depending on your terminal type, you must do the following:
 - a. For a Centronics interface, use the default value.
 - b. For a *Dataproducts* interface, use the following command:

```
command: set printer type dataproducts
```

⇒ NOTE:

The `set printer` command sets parameters for the parallel printer port that you attach to a printer. Use the `set printer` command to configure the following parallel printer port parameters:

`hardware_tabs`, `map_to_upper`, `printer_width`, `type`, and `printer_speed`.

For a Centronics interface, set the `type` parameter to the supplied default, `centronics`. For a *Dataproducts* interface, set the `type` to `dataproducts`.

You can use the `show printer` command to review your changes.

5. To reset the parallel printer when you are done, enter the following command:

```
command: reset printer
```

 **NOTE:**

To reset printer 1, enter `reset printer 1`, and to reset printer 2, enter `reset printer 2`.

The system responds as follows:

```
resetting printer 1
```

 **CAUTION:**

You can also use the `reset all@cmstern1` command to terminate all active sessions on the NTS. Use the `reset all@cmstern1` command **only** if no one else is logged in.

6. To quit, enter the following command:

```
command: quit
```

The system responds:

```
#
```

LPADMIN Administration

Continue with the following for parallel printers:

1. For a parallel printer on the first NTS, issue the following command on the *Sun Enterprise 3000* System console at the system prompt:

```
# lpadmin -p <printername> -D "comment about printer location"  
-v /dev/lpnull -A mail -i /usr/spool/lp/cmstermlpr -T <type>
```

⇒ NOTE:

The first parallel printer ports on the three other NTSs will use `cmsterm2pr`, `cmsterm3pr`, and `cmsterm4pr` instead of `cmstermlpr`. If the speed is not 9600, add the `-o stty=<baud>` to the command string. The second parallel printer ports will use `cmstermlpr2` on the first NTS, `cmsterm2pr2` on the second, `cmsterm3pr2` on the third, and `cmsterm4pr2` on the fourth.

⇒ NOTE:

Also, if your NTS has a different name (for example, `newnts`), use the following steps (from the system prompt) to create a printer interface program for your NTS: file.

- a. Copy the `/usr/spool/lp/cmstermlpr` file to the `/usr/spool/lp/newntspr` file.
- b. Edit the `/usr/spool/lp/newntspr` file and replace the `ANNEX=cmsterm1` line with `ANNEX=newnts`.

2. To make a printer the default destination, enter the following command from the *Sun Enterprise 3000* System console:

```
# lpadmin -d <printername>
```

3. To enable the printer, enter the following command:

```
# enable <printername>
```

The system responds as follows:

```
<printername> enabled
```

4. To complete the printer default destination, enter the following command:

```
# accept <printername>
```

The system responds as follows:

```
<printername> accepted
```

5. If this is the initial installation, reboot the *Sun Enterprise 3000* System.

⇒ NOTE:

You can wait to reboot your system until after you complete all the terminal, printer, and modem administration, if desired.

Administering Modems

This section describes how to configure port parameters for modems and devices that behave like modems (for example, serial line switches).

Modems Connected to the NTS

A modem connected to an NTS can be configured in one of two ways:

- Outbound — initiates only outgoing calls.

⇒ NOTE:

After the outbound modems are connected, you must complete the `na` and `rtelnet` administration for the *Sun Enterprise 3000* System to recognize the new outbound modem(s).

- Inbound — accepts only incoming calls.

⇒ NOTE:

After the inbound modems are connected, you must complete the `na` administration for the *Sun Enterprise 3000* System to recognize the new inbound modem(s).

You can complete `na` administration for modems using the following method:

- Complete NA Administration — provides in-depth, step-by-step procedures for completing modem administration.

⇒ NOTE:

For modems that have different configurations and parameters, see the *Network Terminal Server Administration Guide* for details.

Outbound Modems

This section provides examples for configuring and administering port parameters for outbound modems.

Complete NA Administration Method

The Complete NA Administration Method provides in-depth, step-by-step procedures for administering outbound modems.

To address and configure the NTS ports for outbound modems, complete the following steps:

1. Log in as root.
2. At the system prompt, enter the `na` command to access the NTS administration software.

```
# na
```

The system responds as follows:

```
Annex network administrator R(most current release number &
date)
command:
```

3. To associate all subsequent administration with a specific network terminal server, enter `annex cmsterm1` at the command prompt.

```
command: annex cmsterm1
```

⇒ NOTE:

When you enter `annex cmsterm1` (or `annex 129.200.9.11`), `cmsterm1` becomes the default NTS until another NTS is selected using the `annex` command. The default setting for the NTS ports is 9600 bps, 8 data bits, no parity, and 1 stop bit.

You can specify one NTS or multiple NTSs. Use the recommended NTS names and addresses in the `/etc/hosts` file.

The system responds:

```
cmsterm1: Annex-3-UXR7, 64 ports
command:
```

- For outbound modems, you can use one of the following `set port` command strings depending on which modem you have. You must include all the parameters you want to change.

For the **U.S. Robotics Sportster Faxmodem**, use this string:

```
command: set port=x-y mode slave type dial_in
dedicated_address <Sunaddress> control_lines flow_control
input_flow_control eia output_flow_control eia
location "<a location>" user_name "<a user>" speed <9600>
```

⇒ NOTE:

The `set port` command string sets the parameters for the serial line ports. The `x-y` values you enter are the port numbers on the NTS. You can specify a range of ports in the above command string, but the `location` and `user_name` attributes should be port-specific. Set the `location` and `user_name` so that any user-reported problems can be traced to the correct port.

See the following table for more details about entering the `set port` command string. You do not have to set any parameters if the default parameters are correct.

Port Generic Parameter	Default Parameters	Recommended Setting	Comments
mode	cli	slave	NA
type	hardwired	dial_in	NA
dedicated_address	0.0.0.0	Set to 129.200.9.1 (Sun Enterprise 3000 System).	Set to your <i>Sun Enterprise 3000</i> System internet address.
control_lines	none	flow_control	When using a Model 3715 as an outgoing modem, the NTS port must be administered for hardware flow control with both input flow control and output flow control set to eia.
input_flow_control	bell	eia	
output_flow_control	start/stop	eia	
location	" "	"a location"	It is important to set this parameter so port problems can be traced.

Port Generic Parameter	Default Parameters	Recommended Setting	Comments
user_name	" "	"a user"	It is important to set this parameter so port problems can be traced.
speed	9600	Match the baud rate of your outbound modem (for example, 9600).	The speed may be changed to your modem's baud rate. It is important to set this parameter so port problems can be traced.
data_bits	8	8	Can be set to match the modem settings.
parity	none	none	Can be set to match the modem settings.
stop_bit	1	1	Can be set to match the modem settings.

5. When you are done, use the following command to reset the modem ports:

```
command: reset <port number>
```

The system responds:

```
resetting serial port <number>
```

⚠ CAUTION:

You can also use the `reset all@cmstern1` command to terminate all active sessions on the NTS. Use the `reset all@cmstern1` command only if no one is logged in.

6. To quit, enter the following command:

```
command: quit
```

RTELNET Administration

Outbound modems require the following administration:

- You must place the command in a file (as specified below).
- You must run the command — enter the command as described below, or reboot the *Sun Enterprise 3000* System.

To place the command for outbound modems in a file, continue with the following:

1. Place the `Speripherals` file into the `/etc/rc2.d` directory by doing the following:
 - a. To change from the root directory, at the system prompt, enter the following command:

```
# cd /etc/rc2.d
```

- b. Access the `Speripherals` file using an editor (for example, `vi`).

```
# vi Speripherals
```

- c. Enter the name(s) of the character special device(s) into the file. For example:

```
rtelnet -fmrt cmstern2 20 /dev/s_pdev220
```

- d. To exit the file and return to the system prompt, hold down the **Shift** key and press the **Z** key twice.
- e. To return to the root directory, enter the following command:

```
# cd /
```

2. At the *Sun Enterprise 3000* System console, enter the following system command (one line for each outbound modem):

```
# rtelnet -fmrt cmsterm2 20 /dev/s_pdev220
```

⇒ NOTE:

220, in the device name, indicates the second NTS and port 20 (as does the parameter 20). You can choose your own names, but it is recommended that the device name reflect the terminal server and port names (for example, `rtelnet -fmrt cmsterm2 20 /dev/s_pdev220`).

3. If this is the initial installation, you must reboot the *Sun Enterprise 3000* System.

⇒ NOTE:

You can wait to reboot your system after you complete all the terminal, printer, and modem administration, if desired.

Inbound Modems

This section provides examples for configuring and administering port parameters for inbound modems connected to the NTS.

Complete NA Administration Method

The Complete NA Administration Method provides in-depth, step-by-step procedures for administering inbound modems.

To address and configure the NTS ports for inbound modems, complete the following steps:

1. Log in as root.
2. At the system prompt, enter the `na` command to access the NTS administration software.

```
# na
```

The system responds:

```
Annex network administrator R(most current release number &
date)
command:
```

3. To associate all subsequent administration with a specific network terminal server, enter `annex cmsterm1` at the command prompt.

```
command: annex cmsterm1
```

⇒ NOTE:

When you enter `annex cmsterm1` (or `annex 129.200.9.11`), `cmsterm1` becomes the default NTS until another NTS is selected using the `annex` command. The default setting for the NTS ports is 9600 bps, 8 data bits, no parity, and 1 stop bit.

You can specify one NTS or multiple NTSs. Use the recommended NTS names and addresses in the `/etc/hosts` file.

The system responds:

```
cmsterm1: Annex-3-UXR7, 64 ports
command:
```

4. You must include all the parameters you want to change. For inbound modems, use the following `set port` command string:

```
command: set port=x-y mode dedicated type dial_in
dedicated_address <SUNaddress> control_lines modem_control
location "<a location>" user_name "<a user>" speed autobaud
```

⇒ NOTE:

The `set port` command string sets the parameters for the serial line ports. The `x-y` values you enter are the port numbers on the NTS. You can specify a range of ports in the above command string, but the `location` and `user_name` attributes should be port-specific. Set the `location` and `user_name` so that any user-reported problems can be traced to the correct port.

See the following table for more details about entering the `set port` command string.

Port Generic Parameter	Default Parameter	Recommended Setting	Comments
mode	cli	dedicated	NA
type	hardwired	dial_in	NA
dedicated_address	0.0.0.0	Set to 129.200.9.1 (Sun Enterprise 3000 System)	Set to your <i>Sun Enterprise 3000</i> System's internet address.
control_lines	none	modem_control	NA
location	" "	"a location"	It is important to set this parameter so port problems can be traced.
user_name	" "	"a user"	It is important to set this parameter so port problems can be traced.
speed	9600	Set the speed to autobaud.	Do not use a specific speed.
data_bits	8	8	Can be set to match the modem settings.
parity	none	none	Can be set to match the modem settings.
stop_bits	1	1	Can be set to match the modem settings.

- When you are done, use the following command to reset the modem ports:

```
command: reset <port number>
```

The following appears:

```
resetting serial port <number>
```

⚠ CAUTION:

You can also use the `reset all@cmstern1` command to terminate all active sessions on the NTS.

Use the `reset all@cmstern1` command only if no one is logged in.

6. To quit, enter the following command:

```
command: quit
```

The system responds:

```
#
```

7. If this is the initial installation, reboot the *Sun Enterprise 3000* System.

⇒ NOTE:

You can wait to reboot your system after you complete all the terminal, printer, and modem administration, if desired.

Modem Options

After you connect the modem to the system, you need to set the options for the terminal and modem. This section describes how to set the modem options. The modem port must be administered so that the system can recognize the new modem.

The sections that follow describe how to set options for the modem.

U.S. Robotics Sportster 33.6 Faxmodem

The *U.S. Robotics Sportster* has eight DIP switches in the middle of the back panel. You need to reset these DIP switches from their factory defaults; once so the modem can accept the soft options and again so the modem will work with CMS (see the following figure).

Complete these steps to option the *U.S. Robotics Sportster* modem for CMS:

1. Connect a dumb terminal to the 25-pin connector at the back of the modem. For information on connecting the terminal to the modem, refer to the modem's user documentation.

 **NOTE:**

- The terminal speed must be set to 9600 baud before connecting the modem to the terminal.
 - You can also set the options via port A on the *Sun Enterprise 3000 System* as described in Chapter 2, *Installing the Sun Enterprise 3000 System*, *Set the Remote Console Modem Options*.
2. Make the necessary power connections to the modem and to the terminal.
 3. Set DIP switches 1, 3, 7, and 8 to the down (ON) position and DIP switches 2, 4, 5, and 6 to the up (OFF) position.
 4. Turn on the modem and the terminal.
 5. At the terminal, enter the following soft options (use numerical ones and zeros in the commands):

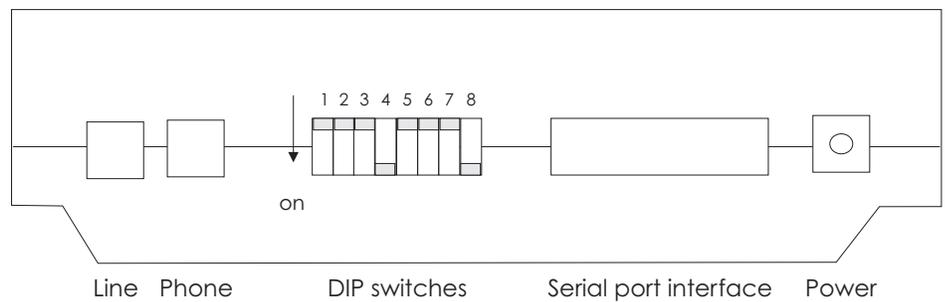
```

AT&F1      (loads factory default configuration options
           into active memory)
AT&W0      [writes the current configuration to NVRAM 0
           template (Y0)]
    
```

6. Next, set all DIP switches to the up (OFF) position except switches 4 and 8, which are set to the down (ON) position. The following figure shows the final DIP switch settings for CMS.
7. Finally, reset the modem using the power switch.

**U.S. Robotics
Sportster Back
Panel**

This figure shows the back panel of a *U.S. Robotics* modem.



**U.S. Robotics
Sportster Switch
Settings for CMS**

The following table lists the *U.S. Robotics Sportster* switch settings for CMS.

Switch	CMS Setting	CMS Function
1	OFF (up)	OFF=normal DTR operation
2	OFF (up)	OFF=verbal (word) result codes
3	OFF (up)	OFF=disable result codes
4	ON (down)	ON=suppress echo of keyboard commands
5	OFF (up)	OFF=enable auto answer
6	OFF (up)	OFF=send CD signal on connect, drop on disconnect
7	OFF (up)	OFF=load stored software options on power up
8	ON (down)	ON=enable AT command set recognition

Additional Reference

For additional information, see the *U.S. Robotics Sportster* Modems, User's Guide.

Connecting the *Sun Enterprise 3000* System to the Switch

Overview

Lucent Technologies technicians connect the *Sun^{*} Enterprise[†] 3000* System to a Lucent Technologies switch. This connection allows the *CentreVu* Call Management System (CMS) software on the *Sun Enterprise 3000* System to receive, store, and format the Automatic Call Distribution (ACD) information it receives from the switch.

This chapter explains how to connect the *CentreVu* CMS to specific Lucent Technologies switches. Turn to the appropriate section for information on how to connect the *CentreVu* CMS to the switch:

- Connect the CentreVu CMS to the Generic 3r
- Connect the CentreVu CMS to the Generic 2
- Connect the CentreVu CMS to the Generic 3i.

NOTE:

The configurations described in this chapter are for maintenance purposes only. Much of the equipment described for the Generic 3i and the Generic 2 configurations can no longer be ordered.

A switch technician should be on site to make the final connection from the *CentreVu* CMS to the switch and, if necessary, to administer the switch for the ACD feature and *CentreVu* CMS.

The *CenterVu* CMS software will not communicate with the switch if the ACD feature and *CentreVu* CMS or the PGATE/DCIU/PI hardware on the switch is not properly administered.

An experienced switch technician can refer to the following appendixes to administer the switch:

- **Appendix A** — contains reference material about the link administration for Generic 3i switches.
- **Appendix B** — contains reference material about the Data Communications Interface Unit (DCIU) link administration for the Generic 2 switch.
- **Appendix C** — contains reference material about the link administration for the Generic 3r switch.

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

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

 **NOTE:**

When using a Generic 3r, set the Number of Outstanding Frames (w): field to 7.

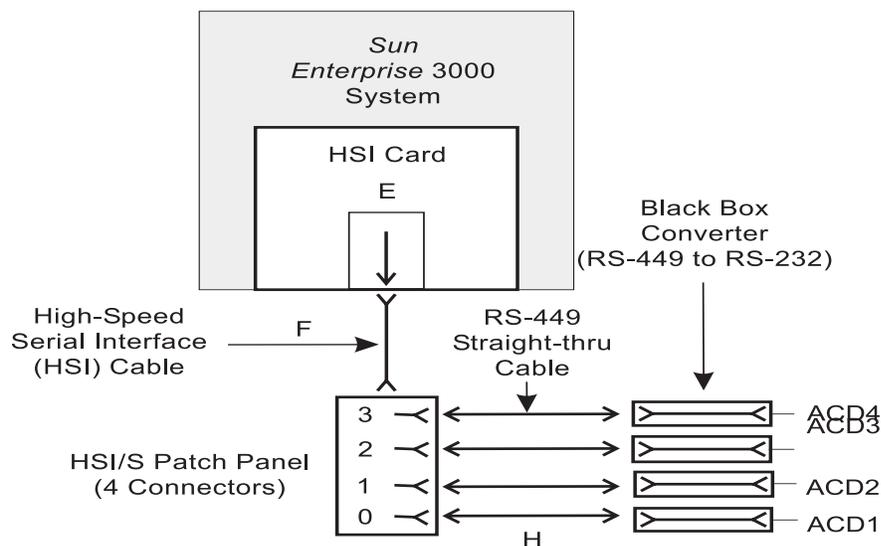
There are two different methods for connecting a switch to the *Sun Enterprise 3000* System. These methods are:

- Sun Enterprise 3000 HSI/S Patch Panel, used for multiple ACD connections.
- Serial Port B, used for connection to a single ACD.

General Connection Options

Sun Enterprise 3000 HSI/S Patch Panel

On the *Sun Enterprise 3000 System*, the *SunLink HSI/S Patch Panel* is used for multiple-ACD systems as shown in the following figure.



NOTE:

The above figure shows connections for up to four ACDs. If more than four ACDs are to be connected, a second HSI/S card and second HSI/S Patch Panel is needed.

WARNING:

For multiple ACDs, the black box converter must be used when connecting the system to the switch.

Bypassing the black box and connecting the HSI/S patch panel port directly to the switch will cause electrical damage to the *Sun Enterprise 3000 System* or switch components.

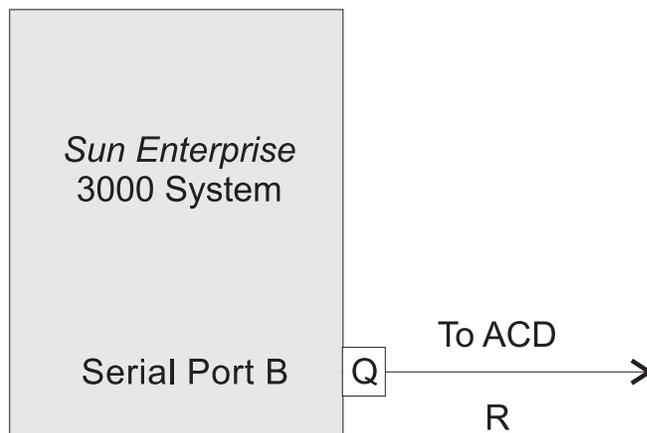
Verify that the *Sun Enterprise 3000 System*, HSI/S patch panel, and black box converter are connected properly (see the *SunLink HSI/S Patch Panel for Multiple ACD Systems* section).

The black box converter is connected to the *Sun Enterprise 3000 System* via the HSI/S controller card and patch panel.

These connections should be made when the HSI/S controller card is installed in the *Sun Enterprise 3000 System*. If the connections have not been made, see Chapter 2, *Installing the Sun Enterprise 3000 System*, “Connect the SunLink HSI/S Patch Panel.”

Serial Port B

Serial port B on the *Sun Enterprise 3000 System* is used for single ACD systems as shown in the following figure. A standard RS-232 cable is used for this connection. At the *Sun Enterprise 3000 System* end, an adapter, either a DB-25 M/M Gender Changer or a DB-25 Direct-Connect link adapter, is required depending upon the switch interface device to be used.



Connect the *CentreVu* CMS to the Generic 3r

Overview

To connect the *CentreVu* CMS to the Generic 3r, you will need to connect the Data Terminal Equipment (DTE) RS-232 port on the *Sun Enterprise* 3000 System to the Packet Gateway board (TN577) on the Generic 3r. This connection uses the RS-232C protocol.

Connection Options

You can connect the *CentreVu* CMS to the Generic 3r using one of the following methods:

- Isolating Data Interface (IDI)

With this method, the maximum distance between the DTE (RS-232) output port of the *Sun Enterprise* 3000 System and the Generic 3r is 200 feet.

- 7400D Data Module

With this method, the maximum distance between the DTE (RS-232) output port of the *Sun Enterprise* 3000 System and the 7400D is 50 feet. The maximum distance between the 7400D and the Generic 3r is 5000 feet with 24-gauge wire and 4000 feet with 26-gauge wire.

- Private Line.

This method uses two *Dataphone*^{*} II modems in addition to the 7400D and is required when the customer's configuration exceeds the 7400D distance limitations.

^{*}*Dataphone* is a registered trademark of AT&T.

Isolating Data Interface (IDI)

This section describes how to connect the DTE (RS-232) port on the *Sun Enterprise 3000* System to the Packet Gateway board on the Generic 3r via an IDI (see the following figure). This interface can be used with either a single ACD configuration or a multiple ACD configuration. With this method, the maximum allowable distance between the DTE (RS-232) output port of the *Sun Enterprise 3000* System and the Generic 3r switch is 200 feet.

Required Parts

Obtain the following parts:

- DB25 M/M Direct Connect Link adapter
- IDI unit
- H600-347, Group 1 (RS-232C) cable
- H600-210, Group 1 (RS-232C to RS-449) cable
- H600-210, Group 1, 2, 3, 4, or 5 (RS-232C to RS-449) cable.

NOTE:

The Group number determines the length of the cable as shown below:

- Group 1 - 10 feet
- Group 2 - 25 feet
- Group 3 - 50 feet
- Group 4 - 100 feet
- Group 5 - 200 feet.

2. Connect the female end of the H600-210, Group 1 cable to the direct-connect link adapter.
3. Connect the male end of the H600-210, Group 1 cable to the **Out** connector on the IDI unit.
4. Connect the male end of the H600-210, Group 1, 2, 3, 4, or 5 cable to the **In** connector on the IDI unit.
5. Connect the female end of the H600-210, Group 1 cable to the male end of the H600-347, Group 1 cable.
6. In this step, the switch technician should connect the male end of the H600-347, Group 1 cable to the Packet Gateway board on the switch.
7. Verify with the switch technician that the ACD feature and *CentreVu* CMS are administered on the switch.

7400D Data Module

This section describes how to connect the *Sun Enterprise* 3000 System to the Generic 3r using 7400D Data Modules (see the following figure). This interface can be use for either a single ACD configuration or a multiple ACD configuration.

With this method, the maximum allowable distance between the output port of the *Sun Enterprise* 3000 System and the 7400D is 50 feet. The maximum allowable distance between the 7400D and the Generic 3r is 5000 feet with 24-gauge wire and 4000 feet with 26-gauge wire.

Required Parts

Obtain the following parts:

- DB25 M/M Gender Changer
- Two 7400Ds with a stand-alone housing
- Two 7-foot D8W-87 modular plug telephone cords (included with the stand-alone housing)
- One H600-347, Group 1 (RS-232C) cable
- Two M25A (RS-232C) cables

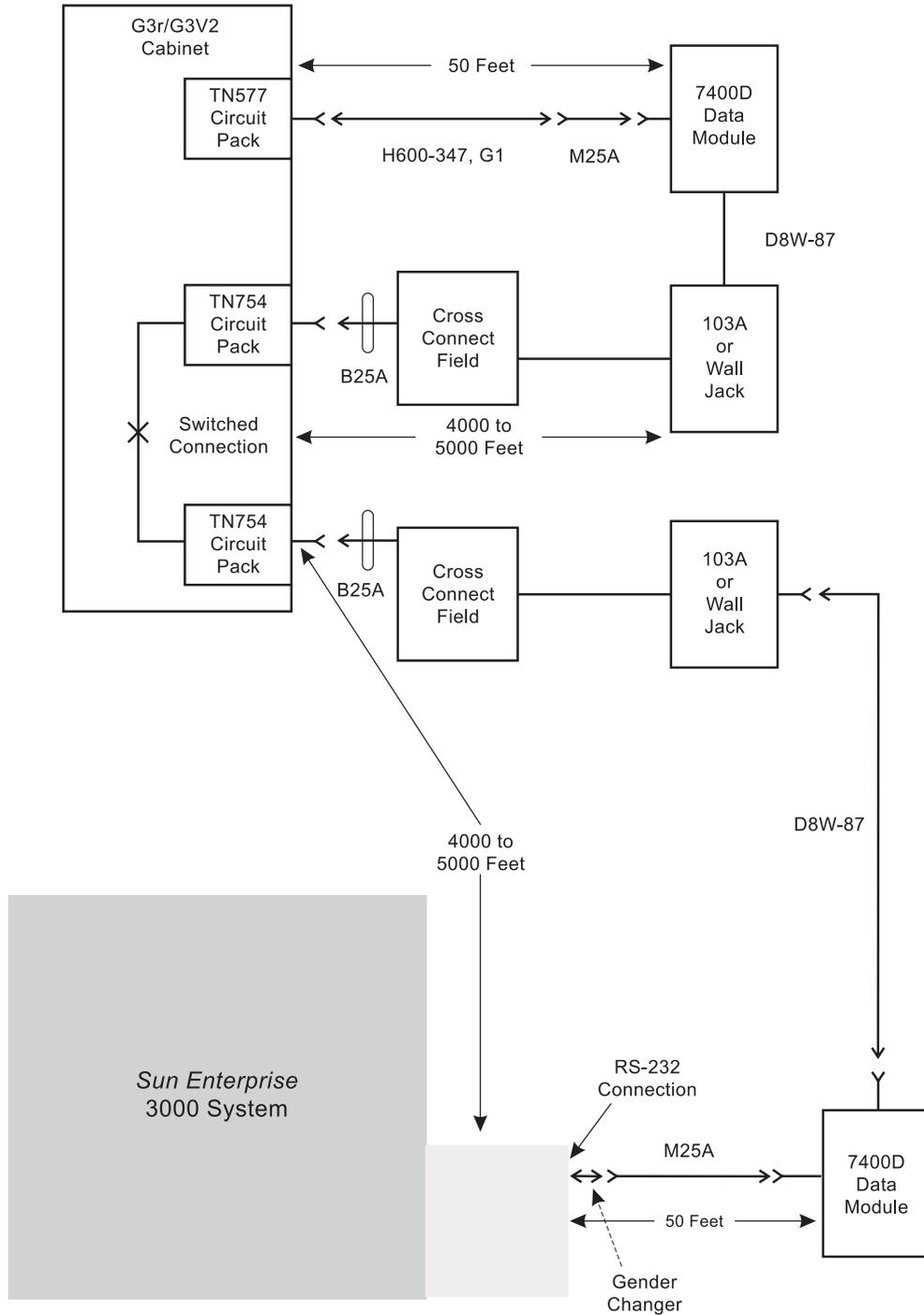
 **NOTE:**

If the M25A cable is not long enough to reach the 7400D, obtain an ED-1E434-11, Group 309 (RS-232C) cable to make the connection between the gender changer and the 7400D.

- Two B25A (RS-232C) cables
- Two locally engineered cables with modular plugs at both ends (see steps 7 and 8).

Sun Enterprise 3000 System to Generic 3r Cabling with a 7400D

This figure shows the cabling from the *Sun Enterprise 3000 System* to Generic 3r with a 7400D.



Procedure

Do these steps to connect the *Sun Enterprise 3000* System to a Packet Gateway board on the Generic 3r switch (see the *Sun Enterprise 3000 System to Generic 3r Cabling with a 7400D* figure):

1. Connect the male end of the H600-347, Group 1 cable to the Packet Gateway. (Record the connector number on the cable for later use.)
2. Connect the other male end of the H600-347, Group 1 cable to the female end of the M25A cable.
3. Connect the male end of the M25A cable to the connector labeled "PORT 1" on the 7400D.
4. Connect the AC Power Converter to the 7400D and to an AC power outlet.
 - a. Plug the power supply cord plug into the connector labeled "POWER" on the 7400D.
 - b. Plug the power supply cord into an AC power outlet.

 **NOTE:**

When connecting the *CentreVu* CMS to a G3r, set the speed of the 7400Ds to 19200. The remaining default options are acceptable for *CentreVu* CMS. See the *7400D Data Module User's Guide* (555-020-712) for information on options and setting options.

5. Connect one end of a D8W-87 modular plug telephone cord into the LINE jack on the 7400D.
6. Connect the other end of the D8W-87 cord to the Generic 3r cross-connect.

 **NOTE:**

If the D8W-87 cord is not long enough, you will have to locally engineer the cable between the 7400D and the cross-connect. This cable must have a modular plug on each end.

7. Run a locally engineered cable from the cross-connect to a TN754 circuit pack on the Generic 3r. This cable also requires a modular plug on each end.
8. Run another locally engineered cable from the cross-connect to a TN754 circuit pack on the Generic 3r. This cable also requires a modular plug on each end.
9. Connect one end of the D8W-87 cord to the Generic 3r cross-connect.

10. Connect the other end of a D8W-87 modular plug telephone cord into the LINE jack on the 7400D.
11. Connect the AC Power Converter to the 7400D and to an AC power outlet, as follows:
 - a. Plug the power supply cord plug into the connector labeled "POWER" on the 7400D.
 - b. Plug the power supply cord into an AC power outlet.
12. Connect the male end of the M25A cable to port 1 (RS-232) on the 7400D.
13. Connect the female end of the M25A cable to the gender changer.
14. If an HSI/S card is installed, connect the gender changer to the DTE (RS-232) output port on the black box converter (multiple ACD configuration). For a single ACD configuration, connect the gender changer to the serial port B.
15. Verify with the switch technician that the ACD feature and *CentreVu* CMS are administered on the switch.

Private Line

This section describes how to connect the Generic 3r to a private line that connects to the DTE (RS-232) port on the *Sun Enterprise 3000 System* (see the following figure).

Overview

This interface can be used with either a single ACD configuration or a multiple ACD configuration.

This method uses two *Dataphone II* modems in addition to the 7400D and is required when the customer's configuration exceeds the 7400D distance limitations.

Required Parts

Obtain these parts to connect the *Sun Enterprise 3000 System* to a private line:

- 110-type cross-connect hardware
- 829 Channel Interface unit (no longer available)

 **NOTE:**

If the channel interface unit can no longer be ordered. If it is not available on the customer's premises, order PEC 9200-030 which is a stand-alone replacement unit. You must order this unit through the Custom Systems organization via the Custom Systems Automation Program (CSAP).

- DB25 M/M Gender Changer
- M25A cable
- One 2096C *Dataphone II* modem (no longer available).

Also, obtain these parts to connect the Generic 3r to a private line:

- 110-type cross-connect hardware
- 829 Channel Interface unit (no longer available).

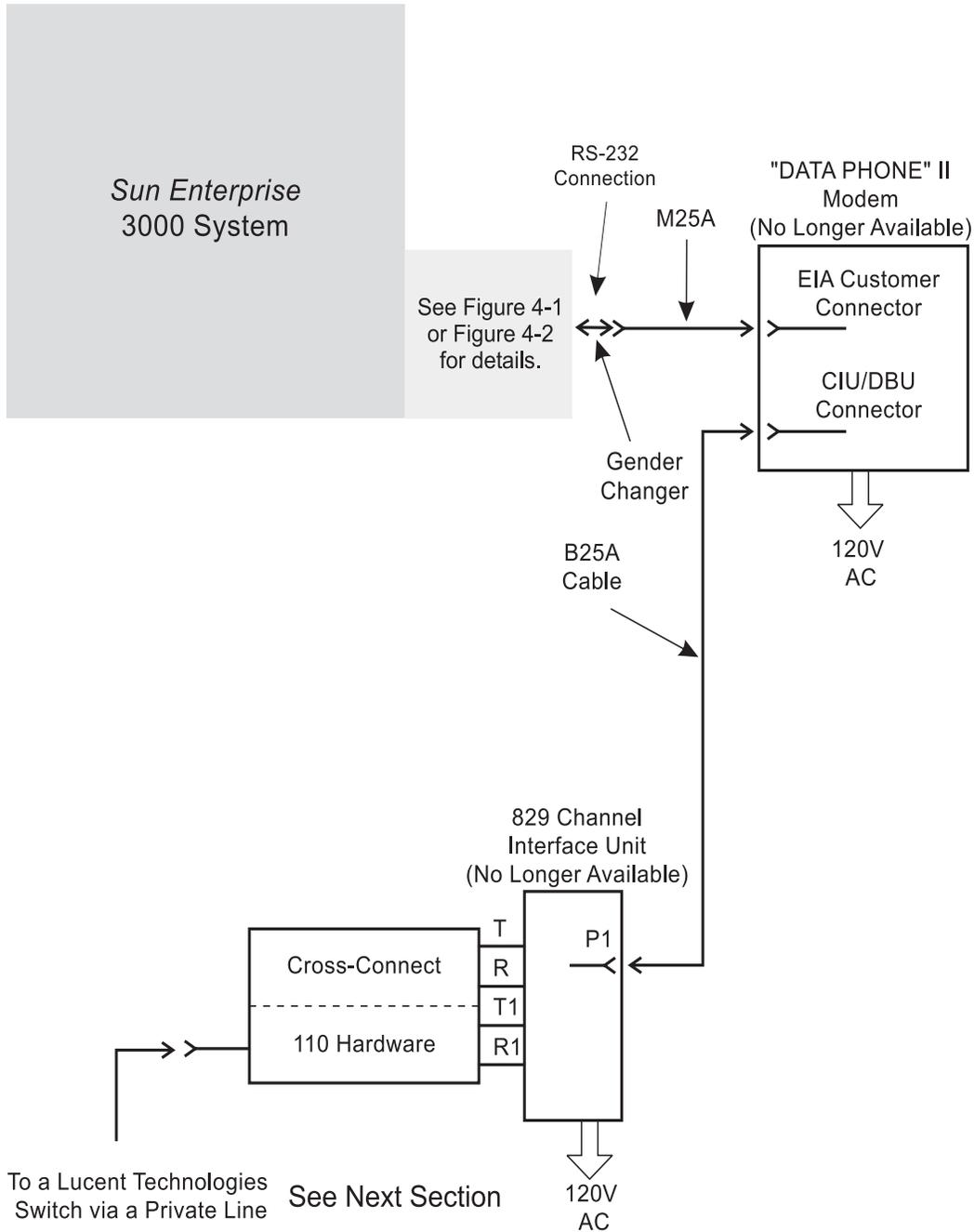
 **NOTE:**

Order a stand-alone replacement unit (PEC 9200-030) if you cannot order or get access to a channel interface unit. You must order this unit through the Custom Systems organization via the CSAP.

- M25A cable
- B25A cable
- H600-347 Group 1 cable
- One 2096C *Dataphone II* modem (no longer available).

Sun Enterprise 3000 System Cabling to a Private Line

This figure shows the cabling from the Sun Enterprise 3000 System to a private line. The cabling from a Generic 3r to a private line is shown in the next section.



Connect the *Sun Enterprise 3000* System to a Private Line

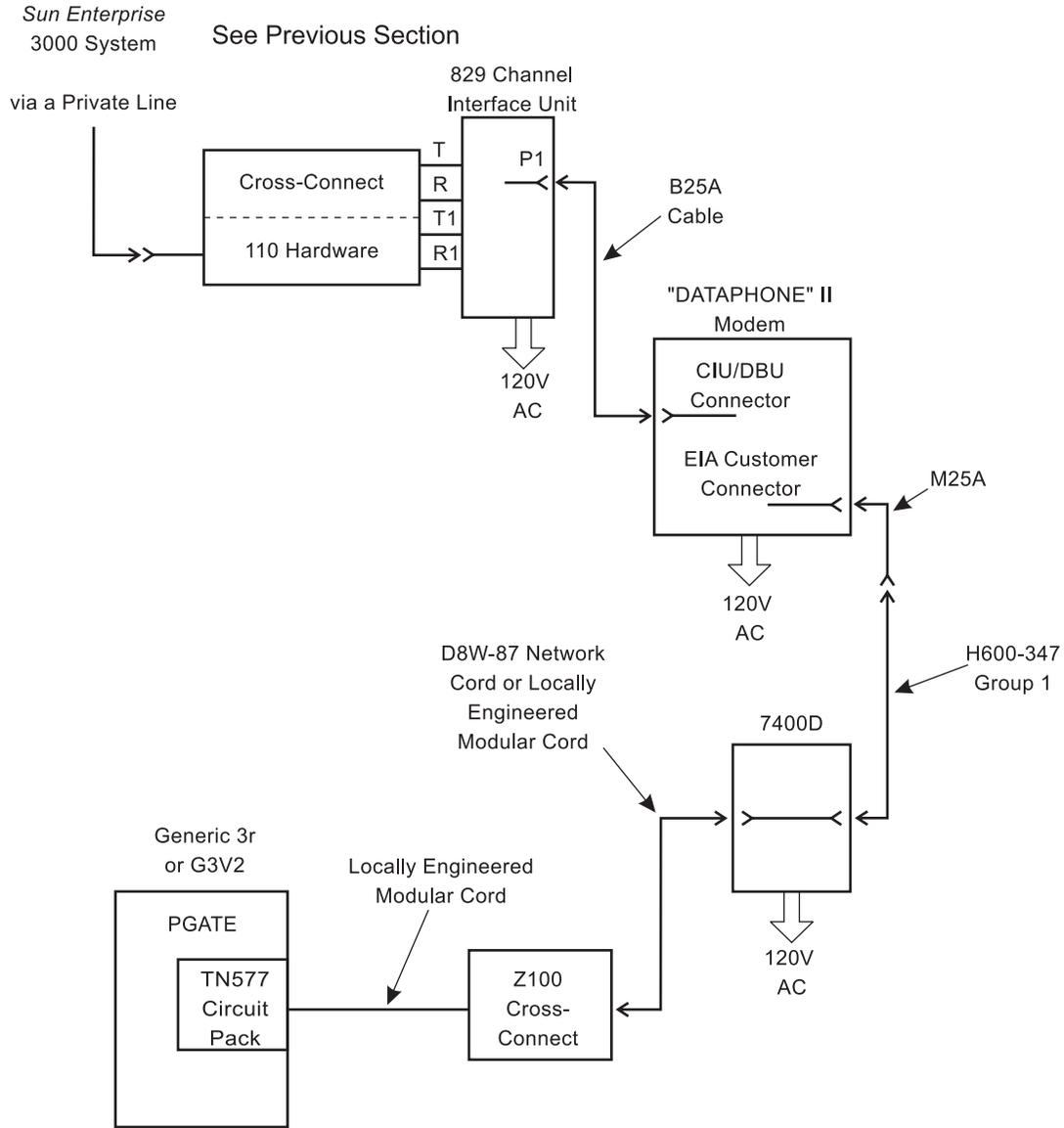
Do these steps to connect the *Sun Enterprise 3000* System to a private line (see the *Sun Enterprise 3000* System Cabling to a Private Line figure):

1. If an HSI/S card is installed (multiple ACD configuration), connect the gender changer to the DTE (RS-232) output port on the black box converter.

For a single ACD configuration (no HSI/S card), connect the gender changer to serial port B of the *Sun Enterprise 3000* System.
2. Connect the female end of the M25A cable to the gender changer.
3. Connect male end of the M25A cable to the EIA Customer Connector receptacle on the *Dataphone II* modem.
4. Connect male end of the B25A cable to the CIU/DBU Connector receptacle on the *Dataphone II* modem.
5. Connect the other end of the B25A cable to the P1 receptacle on the 829 Channel Interface unit.
6. Plug the *Dataphone II* modem into an AC power source.
7. Plug the 829 Channel Interface unit into an AC power source.
8. Connect the tip and ring from the 829 Channel Interface unit to the cross-connect hardware.

Generic 3r Cabling to a Private Line

This figure shows the cabling from a Generic 3r to a private line. The cabling from the *Sun Enterprise 3000* System to the private line is shown in the previous section.



Connect the Generic 3r to a Private Line

To connect the Generic 3r to a private line (see the Generic 3r Cabling to a Private Line figure) do the following steps:

1. Connect the tip and ring from the 829 Channel Interface unit to the cross-connect hardware.
2. Plug the 829 Channel Interface unit into an AC power source.
3. Connect one end of the B25A cable to the P1 receptacle on the 829 Channel Interface unit.
4. Connect the other end of the B25A cable to the CIU/DBU Connector receptacle on the *Dataphone II* modem.
5. Plug the *Dataphone II* modem into an AC power source.
6. Connect the male end of the M25A cable to the EIA Customer Connector receptacle on the *Dataphone II* modem.
7. Connect the female end of the M25A cable to the male end of the H600-347, Group 1 cable.
8. Connect the other male end of the H600-347, Group 1 cable to the 7400D data module.
9. Connect the D8W-87 Network Cord (or locally engineered modular cord) between the 7400D Data Module and the Z100 cross-connect.
10. Connect the locally engineered modular cord between the Z100 cross-connect and the TN577 circuit pack (Packet Gateway fanout cable).
11. Verify with the switch technician that the ACD feature and *CentreVu* CMS are administered on the switch.

Connect the *CentreVu* CMS to the Generic 2

Overview

To connect the *Sun Enterprise* 3000 System to a *DEFINITY* Communications System Generic 2, you will need to connect a DTE (RS-232C) port on the *Sun Enterprise* 3000 System to the Data Communications Interface Unit (DCIU) on the Generic 2. This connection uses the RS-232C protocol.

You can connect the *Sun Enterprise* 3000 System to the Generic 2 switch by using one of the following interfaces:

- Isolating Data Interface (IDI)

With this method, the maximum allowable distance between the DTE (RS-232) output port of the *Sun Enterprise* 3000 System and the Generic 2 is 400 feet.

- Local Data Service Units (LDSUs)

With this method, the maximum allowable distance between the DTE (RS-232) output port of the *Sun Enterprise* 3000 System and the Generic 2 is 100 feet.

- Remote Data Service Units (RDSUs).

Use this method when the distance between the DTE (RS-232C) output port of the *Sun Enterprise* 3000 System and the Generic 2 is over 100 feet.

NOTE:

For this method, 4-wire nonloaded metallic lines are required to interconnect the Data Service Unites (DSUs). When provided by the telephone company, these 4-wire nonloaded metallic lines are called Local Area Data Channels (LADCs).

- Analog Private Line.

Use this method when the distance of the DSUs has been exceeded.

Check the equipment and parts delivered to the customer's site to determine which method to use.

Additional References For additional information on connecting the CenterVu CMS to a Generic 2 switch see the following:

Appendix B, Generic 2 Administration

*DEFINITY Communications System Generic 2
Administration of Features and Hardware, (issue and version
appropriate to the specific switch being administered).*

Isolating Data Interface (IDI)

With this method, the maximum allowable distance between the DTE (RS-232) output port of the *Sun Enterprise 3000* System and Generic 2 switch is 400 feet (see the following figure). This interface can be used for either a single ACD configuration or a multiple ACD configuration.

Required Parts

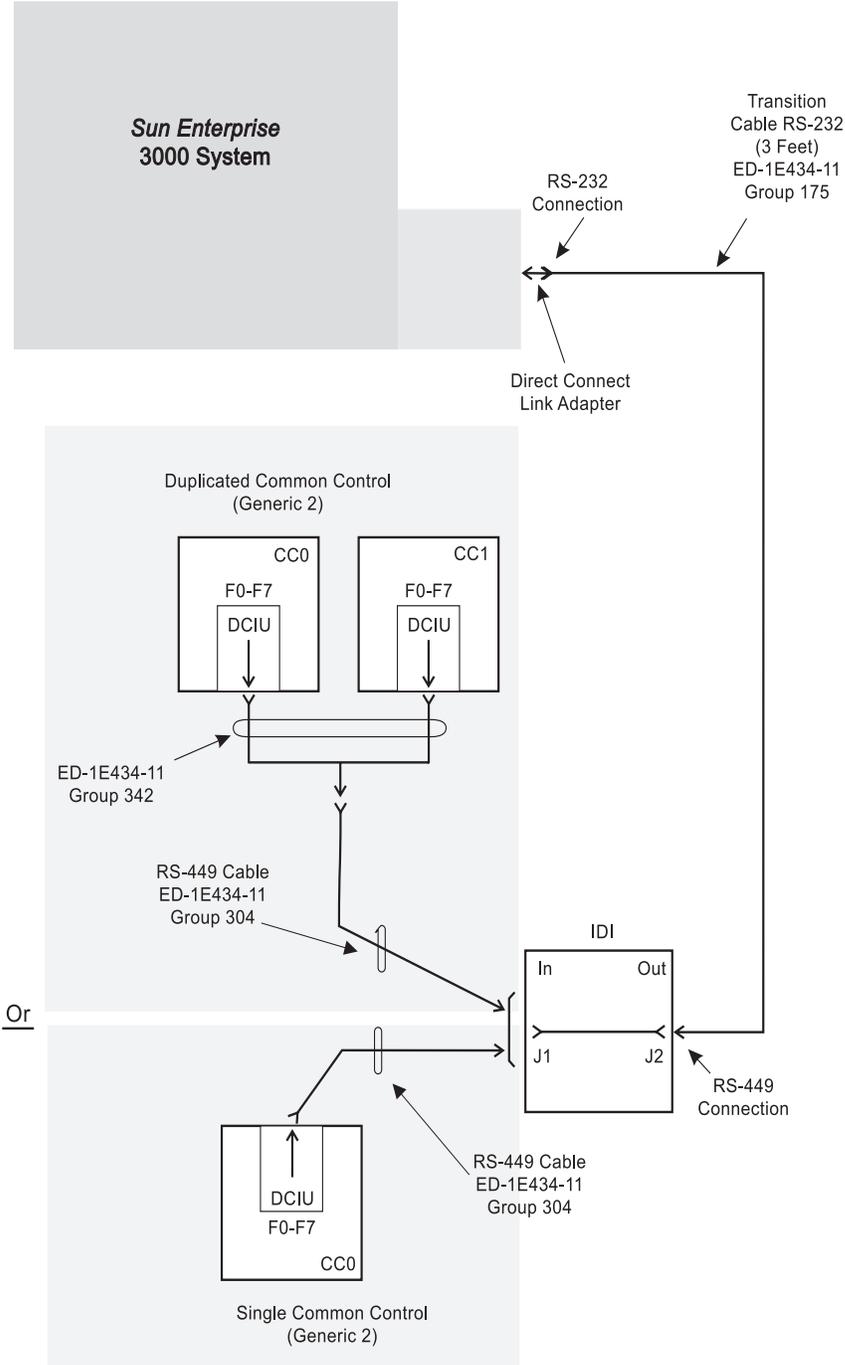
Obtain the following parts:

- DB25 M/M Direct-Connect Link adapter
- ED-1E434-11, Group 175 cable (RS-232C to RS-449 transition cable)
- IDI unit
- ED-1E434-11, Group 304 (RS-449) cable (up to 400 feet long).

If the switch is equipped with duplicated common controls, obtain an ED-1E434-11, Group 342 Y-cable.

Sun Enterprise 3000 System to Generic 2 Cabling via the IDI

This figure shows the cabling from the Sun Enterprise 3000 System to the Generic 2 via the IDI.



Procedure

Do these steps to connect the *Sun Enterprise 3000 System* to the DCIU on the Generic 2 via an IDI (see the *Sun Enterprise 3000 System to Generic 2 Cabling Via the IDI* figure):

1. If an HSI/S card is installed (multiple ACD configuration), connect the direct-connect link adapter to the DTE (RS-232) output port on the black box converter.

For a single ACD configuration (no HSI/S card) connect the direct-connect link adapter to serial port B on the *Sun Enterprise 3000 system*.

2. Connect the female end of the ED-1E434-11, Group 175 cable to the direct-connect link adapter.
3. Connect the other end of the ED-1E434-11, Group 175 cable to the **OUT** connector of the IDI.
4. Connect the plug end of the ED-1E434-11, Group 304 cable to the **IN** connector on the IDI.

NOTE:

In the next step, the switch technician should make the final connection to the DCIU port.

5. If the Generic 2 is equipped with a single common control, connect the receptacle end of the ED-1E434-11, Group 304 cable to the switch at ports F0 through F7. Record the port number that you use, because it will be needed during switch administration.
6. If the Generic 2 is equipped with duplicated common controls, connect the receptacle end of the ED-1E434-11, Group 304 cable to the plug end of the ED-1E434-11, Group 342 cable.
7. Next, connect the receptacle ends of the ED-1E434-11, Group 342 cable to the duplicated common controls at ports F0 through F7. You must select the same port on each of the common controls. Record the port number that you use, because it will be needed during switch administration.
8. Verify with the switch technician that the ACD feature and *CentreVu CMS* are administered on the switch.

Local Data Service Units (LDSUs)

This section describes how to connect the DTE (RS-232) port on the *Sun Enterprise 3000 System* to the DCIU on the Generic 2 using LDSUs (Local Data Service Units).

Overview

This interface can be used for either a multiple ACD configuration or a single ACD configuration. See the *Sun Enterprise 3000 System to Generic 2 Cabling with Local DSUs* figure for details.

With this method, the maximum allowable distance between the DTE (RS-232C) output port of the *Sun Enterprise 3000 System* and the Generic 2 switch is 100 feet.

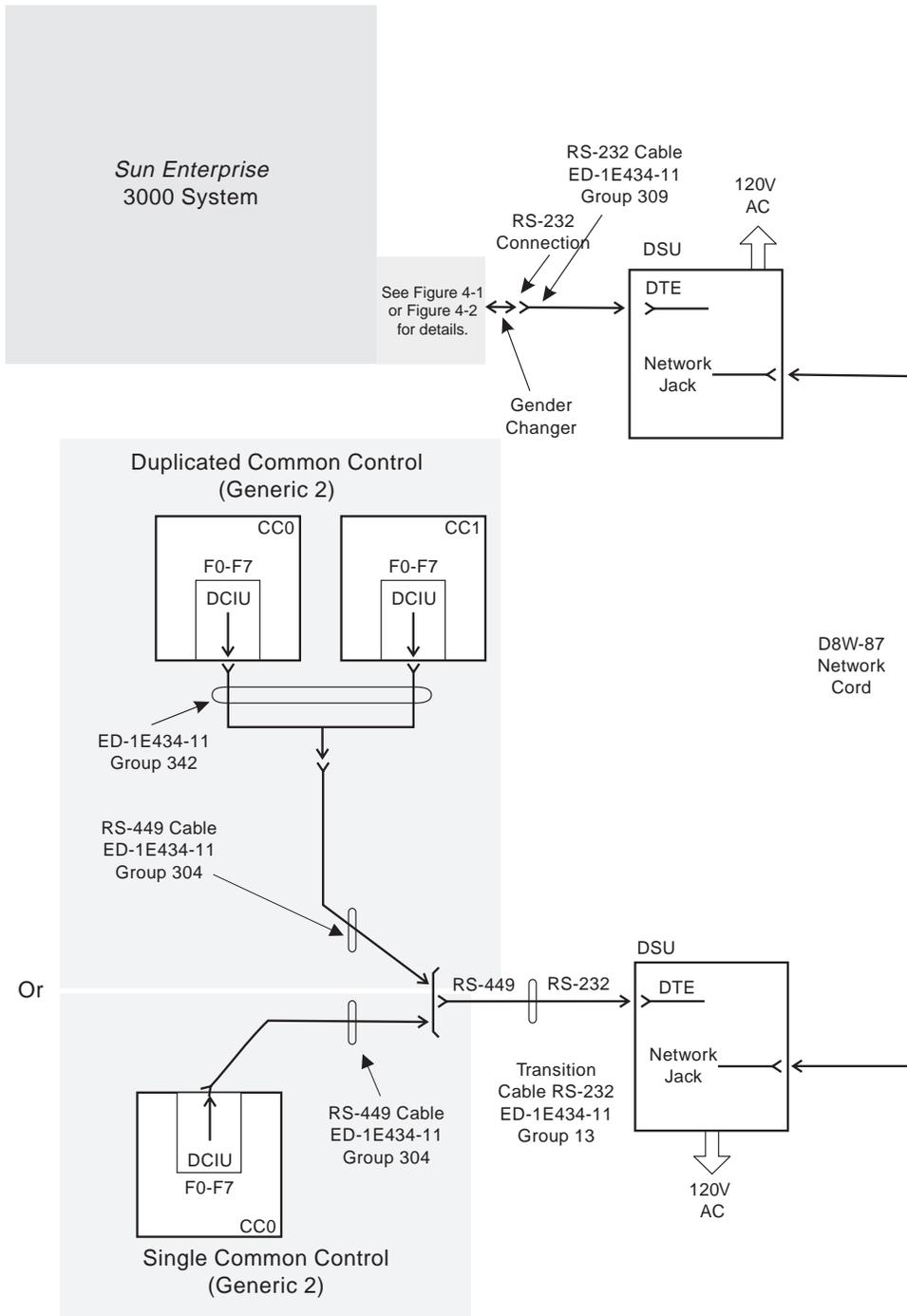
Required Parts

Obtain the following parts:

- DB25 M/M Gender Changer
- One ED-1E434-11, Group 309 (RS-232) cable
- Two DSUs (Data Service Units)
- One D8W-87 Network cord (25 feet) — one cord is provided with each DSU
- ED-1E434-11, Group 13 transition (RS-449 to RS-232C) cable (3 inches)
- ED-1E434-11, Group 304 cable (RS-449) — for single or duplicated common controls
- ED-1E434-11, Group 342 Y-cable (9 feet) — for duplicated common controls only.

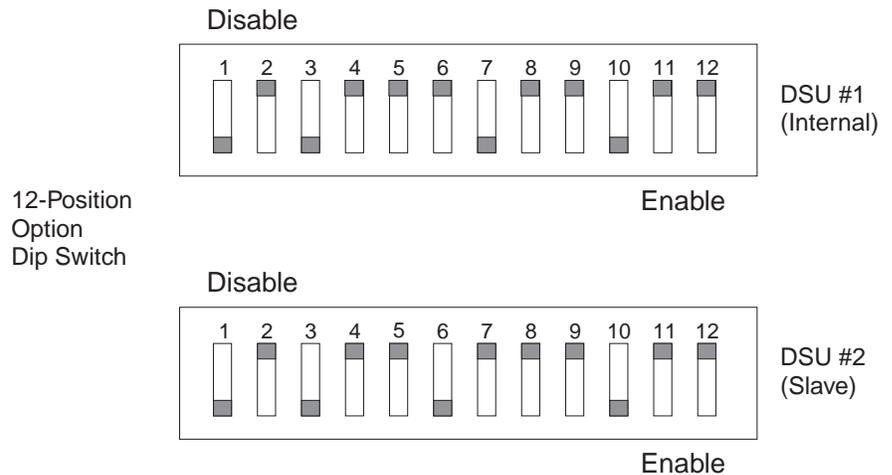
Sun Enterprise 3000 System to Generic 2 Cabling with Local DSUs

This figure shows the cabling from the *Sun Enterprise 3000 System* to the Generic 2 using local DSUs.



Set *Dataphone II* Timing Options

This figure shows a 12-Position Option Dip Switch. One DSU must be set for “internal” timing, and the other DSU must be set for “slave” timing. You do this by setting the 12-position option dip switch located on the circuit pack inside the DSU. Refer to the *Dataphone II 2500-Series Data Service Units User’s Manual* (999-100-188) to set the timing options and speed of operation (9.6 kbps) for the DSUs.



Procedure

Do these steps to connect the *Sun Enterprise 3000 System* to the DCIU on the Generic 2 using LDSUs (see the *Sun Enterprise 3000 System to Generic 2 Cabling with Local DSUs* figure):

1. If an HSI/S card is installed (multiple ACD configuration), connect the gender changer to the DTE (RS-232) output port on the black box converter.
For a single ACD configuration (no HSI/S card), connect the gender changer to serial port B.
2. Connect the female end of ED-1E434-11, Group 309 (RS-232) cable to the gender changer.
3. Connect the male end of the ED-1E434-11, Group 309 (RS-232) cable to the receptacle labeled DTE on the back of the DSU.
4. Connect the two DSUs together by using a 25-foot D8W-87 network cord and connecting each end of the cord to the network jacks on the DSUs.
5. Connect each DSU to an AC power source by using the DSU power packs.
6. Connect the plug end of the Group 13 transition cable to the receptacle labeled DTE on the back of the DSU that will be used to connect to the switch.

7. Then, connect the receptacle end of the Group 13 transition cable to the plug end of the ED-1E434-11, Group 304 cable.

 **NOTE:**

In the next step, the switch technician should make the final connection to the DCIU port.

8. If the Generic 2 is equipped with single common control, connect the receptacle end of the Group 304 cable to the single common control at ports F0 through F7. Record the port number that you use, because it will be needed during switch administration.
9. If the Generic 2 is equipped with duplicated common controls, connect the receptacle end of the Group 304 cable to the plug end of the ED-1E434-11, Group 342 Y-cable.
10. Connect the receptacle ends of the Y-cable to the duplicated common controls at ports F0 through F7. You must select the same ports on both common controls. Record the port number that you use, because it will be needed during switch administration.
11. Verify with the switch technician that the ACD feature and *CentreVu* CMS are administered on the switch.

Remote Data Service Units (RDSUs)

This section describes how to connect the DTE (RS-232) port on the *Sun Enterprise* 3000 System to the DCIU on the Generic 2 using RDSUs (Remote Data Service Units) (see the *Sun Enterprise* 3000 System to Generic 2 Cabling with Local DSUs figure).

Overview

This interface can be used with either a multiple ACD configuration or a single ACD configuration.

Use this method when the distance between the DTE (RS-232) output port of the *Sun Enterprise* 3000 System and the Generic 2 switch is over 100 feet.

Required Parts

Obtain the following parts:

- DB25 M/M Gender Changer
- One ED-1E434-11, Group 309 (RS-232) cable
- Two DSUs
- Two D8W-87 network cords (25 feet) — one cord is provided with each DSU

- Two Network Interface adapters — one adapter is provided with each DSU
- ED-1E434-11, Group 13 transition (RS-449 to RS-232C) cable (3 inches)
- ED-1E434-11, Group 304 cable (RS-449) — for single or duplicated common controls
- ED-1E434-11, Group 342 Y-cable (9 feet) — for duplicated common controls only
- 110- or 66-type cross-connect hardware
- 4-wire nonloaded metallic lines (LADC equivalent) — use lengths as needed.

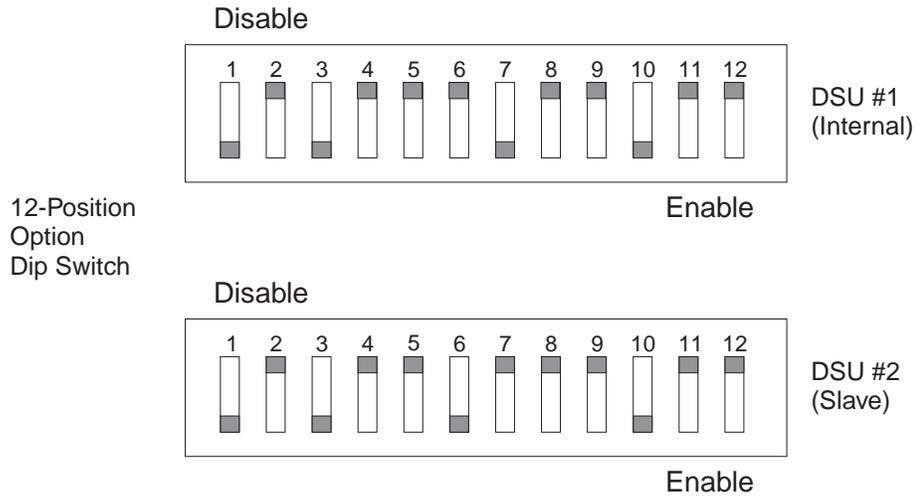
Maximum Allowable Distances

The following table shows the maximum allowable distances between the DSUs based on various wire sizes and a speed of 9.6 kbps.

Wire Gauge (AWG)	DSU Speed (kbps)	Miles
19	9.6	15.2
22	9.6	9.7
24	9.6	7.3
26	9.6	5.6

Set *Dataphone II* Timing Options

This figure shows a 12-Position Option Dip Switch. One DSU must be set for “internal” timing, and the other DSU must be set for “slave” timing. You do this by setting the 12-position option dip switch located on the circuit pack inside the DSU. Refer to the *Dataphone II 2500-Series Data Service Units User’s Manual* (999-100-188) to set the timing options and speed of operation (9.6 kbps) for the DSUs.



Connect the Sun Enterprise 3000 System

Do these steps to connect the *Sun Enterprise 3000 System* to the DCIU on the Generic 2 using RSDUs (see the *Sun Enterprise 3000 System to Generic 2 Cabling with Remote DSUs*):

1. If an HSI/S card is installed (multiple ACD configuration), connect the gender changer to the DTE (RS-232) output port on the black box converter.

For a single ACD configuration (no HSI/S card), connect the gender changer to the serial port B.
2. Connect the female end of ED-1E434-11, Group 309 (RS-232) cable to the gender changer.
3. Connect the male end of the ED-1E434-11, Group 309 (RS-232) cable to the receptacle labeled DTE on the back of the DSU.
4. Connect one end of a D8W-87 network cord to the network jack on the DSU.
5. Connect the other end of the D8W-87 network cord to the receptacle end of a network interface adapter.
6. Punch down the spade-tipped leads of the network Interface adapter to the *Sun Enterprise 3000 System*'s cross-connect hardware.
7. Use 4-wire nonloaded metallic lines (LADC equivalent) to interconnect the cross-connect hardware.

Connect to the Switch

1. Obtain another network interface adapter.
2. Punch down the spade-tipped leads of the network interface adapter to the switch's cross-connect hardware.
3. Connect the receptacle of the network interface adapter to one end of another D8W-87 network cord.
4. Connect the other end of a D8W-87 network cord to the network jack on the DSU that will be connected to the switch.
5. Connect each DSU to a 120-volt AC power source by using the DSU power packs.
6. Connect the plug end of the Group 13 transition cable to the receptacle labeled DTE or Port B on the DSU that will be connected to the switch.
7. Then connect the receptacle end of the Group 13 transition cable to the plug end of the ED-1E434-11, Group 304 cable. In the next step, the switch technician should make the final connection to the DCIU port.

8. If the Generic 2 is equipped with single common control, connect the receptacle end of the Group 304 cable to the single common control at ports F0 through F7. Record the port number you use: you will need it during switch administration.

If the Generic 2 is equipped with duplicated common controls, connect the receptacle end of the Group 304 cable to the plug end of the ED-1E434-11, Group 342 Y-cable. Connect the receptacle ends of the Y-cable to the duplicated common controls at ports F0 through F7. You must select the same ports on both common controls. Record the port number that you use, because it will be needed during switch administration.

Verify with the switch technician that the ACD feature and *CentreVu* CMS are administered on the switch.

Analog Private Line

This section describes how to connect the Generic 2 to the DTE (RS-232) port on the *Sun Enterprise 3000* System using an analog private line.

Overview

This method is used when the distance of the DSUs has been exceeded.

NOTE:

To connect the *Sun Enterprise 3000* System to an analog private line, refer to “Connect the Sun Enterprise 3000 System to a Private Line” on page 4-15.

Required Parts

Obtain the following parts to connect to an analog private line:

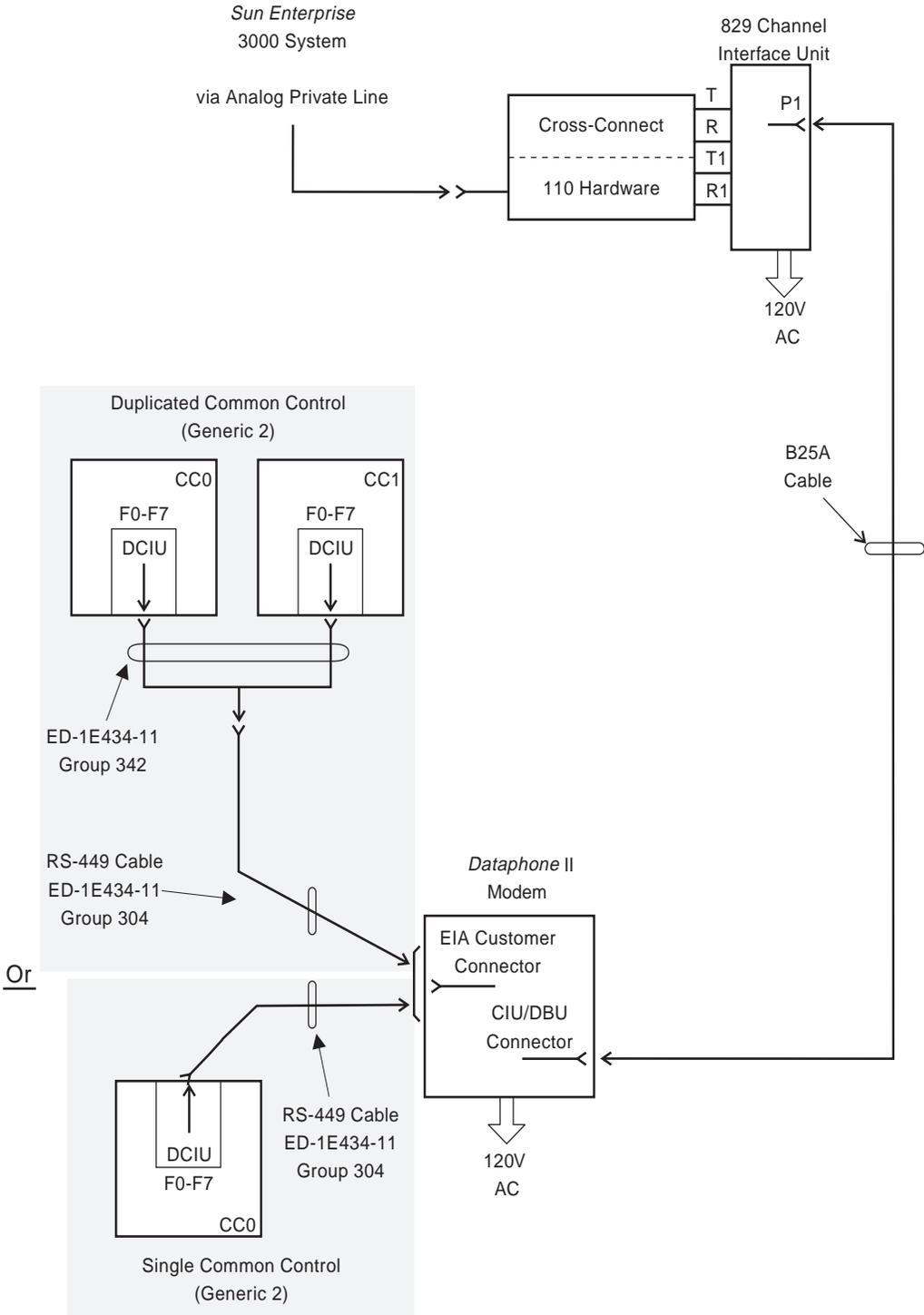
- One ED-1E434-11, Group 304 (RS-232C) cable (50 feet) — for single and duplicated common controls
- One ED-1E434-11, Group 342 Y-cable — for duplicated common controls only
- One 2096C *Dataphone II* modem (no longer available)
- B25A cable
- 829 Channel Interface unit (no longer available).

NOTE:

If the channel interface unit is not available on the customer's premises, order PEC 9200-030 which is a stand-alone replacement unit. You order this unit through the Custom Systems organization via the CSAP.

Generic 2 Cabling to an Analog Private Line

This figure shows the cabling from a Generic 2 to an analog private line.



Procedure

Do these steps to connect the Generic 2 to an analog private line (see the Generic 2 Cabling to an Analog Private Line figure):

1. Connect the tip and ring from the 829 Channel Interface unit to the cross-connect hardware.
2. Plug the 829 Channel Interface unit into a 120-volt AC power source.
3. Connect one end of the B25A cable to the CIU/DBU Connector receptacle on the *Dataphone* II modem. Connect the other end of the B25A cable to the P1 receptacle on the 829 Channel Interface unit.
4. Plug the *Dataphone* II modem into a 120-volt AC power source.
5. Connect the plug end of the ED-1E434-11, Group 304 cable to the EIA Customer Connector receptacle on the *Dataphone* II modem.

In the next step, the switch technician should make the final connection to the DCIU port.

6. If the Generic 2 is equipped with single common control, connect the receptacle end of the Group 304 cable to the single common control at ports F0 through F7. Record the port number that you use, because it will be needed during switch administration.

If the Generic 2 is equipped with duplicated common controls, connect the receptacle end of the Group 304 cable to the plug end of the ED-1E434-11, Group 342 Y-cable. Connect the receptacle ends of the Y-cable to the duplicated common controls at ports F0 through F7. You must select the same ports on both common controls. Record the port number that you use, because it will be needed during switch administration.

7. Verify with the switch technician that the ACD feature and *CentreVu* CMS are administered on the switch.

Connect the *CentreVu* CMS to the Generic 3i

Overview

To connect the *Sun Enterprise* 3000 System to the Generic 3i, you will need to connect the DTE (RS-232) port on the *Sun Enterprise* 3000 System to a digital port on the Generic 3i switch. This connection uses the RS-232C protocol.

You can connect the *Sun Enterprise* 3000 System to the Generic 3i switch by using one of the following methods:

- EIA Connector on the Processor Interface

With this method, the maximum allowable distance between the DTE (RS-232) output port of the *Sun Enterprise* 3000 System and the Generic 3i is 50 feet.

- 7400D Data Module

With this method, the maximum allowable distance between the DTE (RS-232) output port of the *Sun Enterprise* 3000 System and the 7400D is 50 feet. The maximum allowable distance between the 7400D and the Generic 3i is 5000 feet with 24-gauge wire and 4000 feet with 26-gauge wire.

- Analog Private Line.

This method uses two *Dataphone* II modems in addition to the 7400D and is required when the customer's configuration exceeds the 7400D distance limitations.

EIA Connector on the Processor Interface

This section describes how to connect the DTE (RS-232) port on the *Sun Enterprise* 3000 System to the EIA connector of a Processor Interface on the Generic 3i.

CAUTION:

If the Generic 3i has duplicated common controls, the EIA port on the Processor Interface cannot be used.

With this method, the maximum allowable distance between the DTE (RS-232) output port of the *Sun Enterprise* 3000 System and the Generic 3i switch is 50 feet.

 **NOTE:**

If the Generic 3i switch and the DTE (RS-232) output port of the *Sun Enterprise 3000* System are over 50 feet apart, refer to the section *Connecting the CentreVu CMS to the Generic 3i* for the proper cabling configuration.

Required Parts

Obtain the following parts:

- Isolating Data Interface (IDI) unit
- DB25 M/M Direct Connect Link adapter
- ED-1E434-11, Group 175 (RS-232C to RS-449) cable
- ED-1E434-11, Group 304 (RS-449) cable
- ED-H600-362, Group 1 (RS-232C to RS-449) cable.

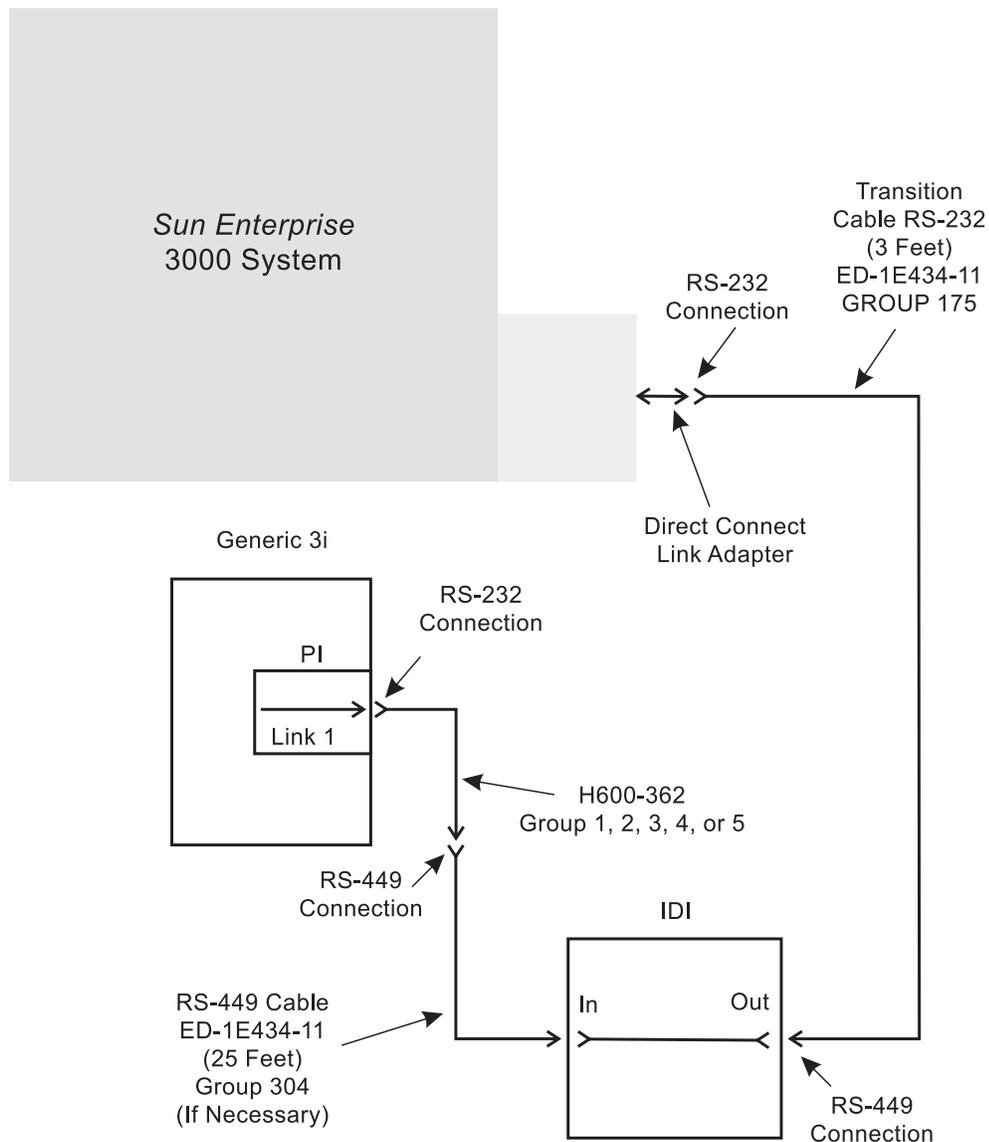
 **NOTE:**

The Group number determines the length of the cable, as follows:

- Group 1 - 10 feet
- Group 2 - 25 feet
- Group 3 - 50 feet
- Group 4 - 100 feet
- Group 5 - 200 feet.

Sun Enterprise 3000 System to Generic 3i Cabling via the IDI

This figure shows the cabling from the *Sun Enterprise 3000 System* to the Generic 3i via the IDI.



Procedure

Do these steps to connect the *Sun Enterprise 3000* System to the Processor Interface of a Generic 3i switch (see the *Sun Enterprise 3000* System to the Generic 3i Cabling via the IDI figure):

1. If an HSI/S card is installed (multiple ACD configuration), connect the direct-connect link adapter to the DTE (RS-232) output port on the black box converter.

For a single ACD configuration (no HSI/S card), connect the direct-connect link adapter to serial port B.

2. Connect the female end of the ED-1E434-11, Group 175 cable to the direct-connect link adapter.
3. Connect the male end of the ED-1E434-11, Group 175 cable to the **Out** connector on the Isolating Data Interface unit.
4. Connect the male end of the ED-1E434-11, Group 304 cable to the **In** connector on the Isolating Data Interface unit.
5. Connect the female end of the ED-1E434-11, Group 304 cable to the male end of the ED-H600-362 Group 1, 2, 3, 4 or 5 cable.

In the next step, the switch technician should make the final connection to Link 1 (EIA connector) of the Processor Interface.

6. Connect the female end of the ED-H600-362 cable to Link 1 (EIA connector) of the Processor Interface.
7. Ask the switch technician to verify that the ACD feature and *CentreVu* CMS are administered on the switch.

7400D Data Module

This section describes how to connect the DTE (RS-232) port on the *Sun Enterprise* 3000 System to the Packet Gateway board on the Generic 3i using 7400D Data Modules.

Overview

With this method, the maximum allowable distance between the *Sun Enterprise* 3000 System and the 7400D Data Module is 50 feet. The maximum allowable distance between the 7400D and the Generic 3i is 5000 feet with 24-gauge wire and 4000 feet with 26-gauge wire.

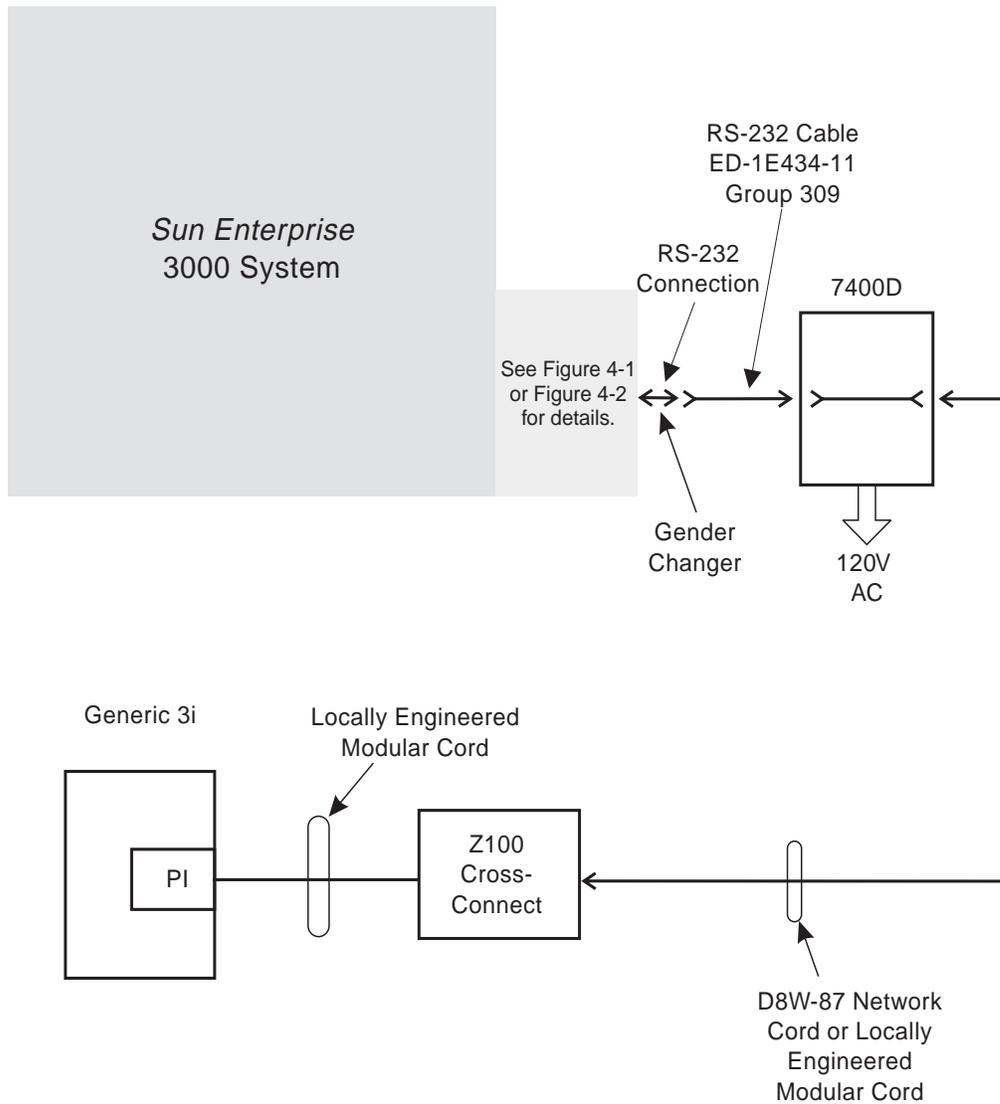
Required Parts

Obtain the following parts:

- DB25 M/M Gender Changer
- ED-1E434-11, Group 309 (RS-232C) cable
- 7400D with a stand-alone housing
- D8W-87 modular plug telephone cord (7 feet — included with the stand-alone housing).

Sun Enterprise 3000 System to Generic 3i Cabling with a 7400D

This figure shows the cabling from the *Sun Enterprise 3000 System* to the Generic 3i using a 7400D.



Procedure

Do these steps to connect the *Sun Enterprise 3000 System* to a digital port on the Generic 3i switch (see the *Sun Enterprise 3000 System to Generic 3i Cabling with a 7400D* figure):

1. If an HSI/S card is installed, connect the gender changer to the DTE (RS-232) output port on the black box converter.

For a single ACD configuration (no HSI/S card), connect the gender changer to serial port B.

2. Connect the female end of the ED-1E434-11, Group 309 (RS-232) cable to the gender changer.
3. Connect the AC Power Converter to the 7400D and to an AC power outlet.
 - a. Plug the power supply cord plug into the connector labeled "POWER" on the 7400D.
 - b. Plug the power supply cord into an AC power outlet.

NOTE:

You do not have to set options for the 7400D, since the default options for the 7400D are acceptable for *CentreVu CMS*. Refer to the *7400D Data Module User's Guide (555-020-712)* for information on options and setting options.

4. Connect one end of a D8W-87 modular plug telephone cord to the LINE jack of the 7400D.

Connect the other end of the D8W-87 cord to the Generic 3i cross-connect (Z100).

NOTE:

If the D8W-87 cord is not long enough, you will have to locally engineer the cable between the 7400D and the cross-connect (Z100). This cable must have a modular plug on each end.

5. Make the necessary power connections to the 7400D.

In the next step, the switch technician should make the final connection to the digital port.
6. Run a locally engineered cable from the Z100 cross-connect to the digital port on the Generic 3i. This cable also requires a modular plug on each end.
7. Ask the switch technician to verify that the ACD feature and *CentreVu CMS* are administered on the switch.

Analog Private Line

This section describes how to connect the Generic 3i to an analog private line that connects to a *Sun Enterprise 3000 System*.

Overview

This method uses two *Dataphone II* modems in addition to the 7400D Data Module and is required when the 7400D distance limitations have been exceeded.

Required Parts

Obtain the following parts to connect the *Sun Enterprise 3000 System* to an analog private line:

- DB25 M/M Gender Changer

 **NOTE:**

If the M25A cable is not long enough to reach the *Dataphone II* modem, obtain an ED-1E434-11, Group 309 (RS-232C) cable to make the connection.

- One 2096C *Dataphone II* modem (no longer available)
- B25A cable
- 829 Channel Interface unit (no longer available).

 **NOTE:**

The channel interface unit can no longer be ordered. If it is not available on the customer's premises, order PEC 9200-030 which is a stand-alone replacement unit. You order this unit through the Custom Systems organization via the CSAP (Custom Systems Automation Program).

Also, obtain the following parts to connect the Generic 3i to an analog private line:

- 110-type cross-connect hardware
- 829 Channel Interface unit (no longer available)

 **NOTE:**

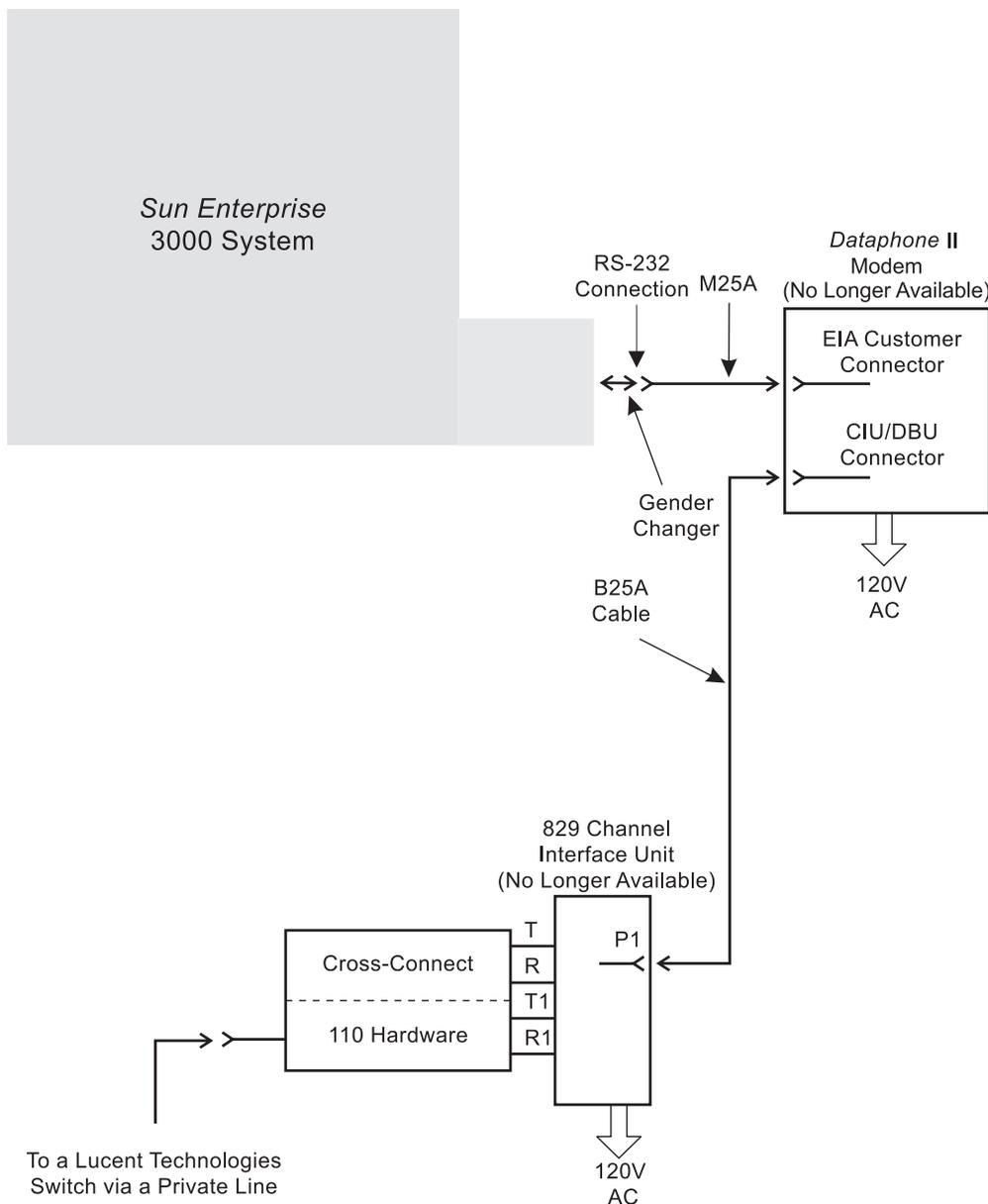
The channel interface unit can no longer be ordered. If it is not available on the customer's premises, order PEC 9200-030 which is a stand-alone replacement unit. You order this unit through the Custom Systems organization via the CSAP.

- B25A cable
- One 2096C *Dataphone II* modem (no longer available)

- RS-232C cable
- One 7400D Data Module
- D8W-87 cord.

Sun Enterprise 3000 System Cabling to an Analog Private Line

This figure shows the cabling from the *Sun Enterprise 3000 System* to an analog private line.



Connect the *Sun Enterprise 3000* System to an Analog Private Line

Do these steps to connect the *Sun Enterprise 3000* System to an analog private line (see the *Sun Enterprise 3000* System Cabling to an Analog Private Line figure):

1. If an HSI/S card is installed (multiple ACD configuration), connect the gender changer to the DTE (RS-232) output port on the black box converter.

For a single ACD configuration (no HSI/S card), connect the gender changer to serial port B.

2. Connect the female end of the M25A cable to the gender changer.
3. Connect the male end of the M25A cable to the EIA Customer Connector receptacle on the *Dataphone II* modem.

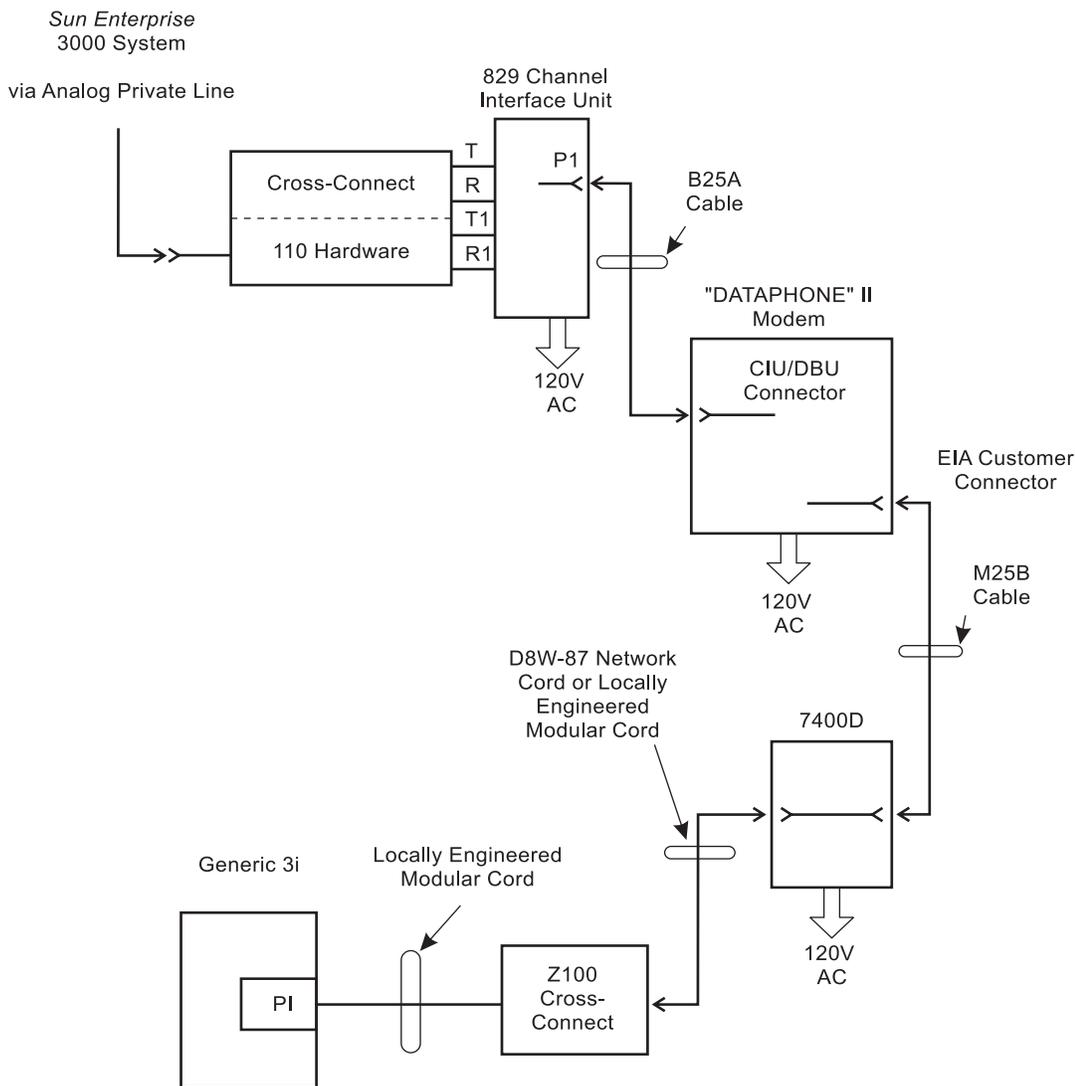
NOTE:

If the M25A cable is not long enough to reach the *Dataphone II* modem, obtain an ED-1E434-11, Group 309 cable to make the connection.

4. Plug the *Dataphone II* modem into a 120-volt AC power source.
5. Connect one end of the B25A cable to the CIU/DBU Connector receptacle on the *Dataphone II* modem. Connect the other end of the B25A cable to the P1 receptacle on the 829 Channel Interface unit.
6. Plug the 829 Channel Interface unit into a 120-volt AC power source.
7. Connect the tip and ring from the 829 Channel Interface unit to the cross-connect hardware.

Generic 3i Cabling to an Analog Private Line

This figure shows the cabling from a Generic 3i to an analog private line.



Connect the Generic 3i to an Analog Private Line

Do these steps to connect the Generic 3i to an analog private line (see the Generic 3i Cabling to an Analog Private Line figure):

1. Connect the tip and ring from the 829 Channel Interface unit to the cross-connect hardware.
2. Plug the 829 Channel Interface unit into a 120-volt AC power source.

3. Connect one end of the B25A cable to the CIU/DBU Connector receptacle on the *Dataphone* II modem. Connect the other end of the B25A cable to the P1 receptacle on the 829 Channel Interface unit.
4. Plug the *Dataphone* II modem into a 120-volt AC power source.
5. Connect the plug end of the M25B cable to the EIA Customer Connector receptacle on the *Dataphone* II modem.
6. Connect the other plug end of the M25B (RS-232C) cable to the receptacle on the 7400D.
7. Connect the AC Power Converter to the 7400D and to an AC power outlet.
 - a. Plug the power supply cord plug into the connector labeled "POWER" on the 7400D.
 - b. Plug the power supply cord into an AC power outlet.

 **NOTE:**

You do not have to set options for the 7400D, since the default options for the 7400D are acceptable for *CentreVu* CMS. Refer to the *7400D Data Module User's Guide* (555-020-712) for information on options and setting options.

8. Connect one end of the D8W-87 modular plug telephone cord into the LINE jack on the 7400D.
9. Connect the other end of the D8W-87 cord to the Generic 3i cross-connect (Z100).

 **NOTE:**

If the D8W-87 cord is not long enough, you will have to locally engineer the cable between the 7400D and the cross-connect (Z100). This cable must have a modular plug on each end.

10. Make the necessary power connections to the 7400D.

In the next step, the switch technician should make the final connection to the digital port.
11. Run a locally engineered cable from the Z100 cross-connect to the digital port on the Generic 3i. This cable also requires a modular plug on each end.
12. Ask the switch technician to verify that the ACD feature and *CentreVu* CMS are administered on the switch.

Multiple ACD Connectivity

Add an ACD

This section describes how to add an additional ACD to the *CentreVu* CMS R3V6. The *CentreVu* CMS R3V6 can support up to eight ACDs, however, a single HSI/S card and Patch Panel can support only four ACDs. This means that if more than four ACDs are to be connected, a second HSI/S card and Patch Panel must be installed.

NOTE:

Before you begin the procedures in this section, do a CMSADM file system backup. See the *CentreVu Call Management System, Release 3 Version 6, Software Installation and Maintenance* (585-215-866) document, “Performing a CMSADM File System Backup.”

In addition, confer with the customer’s *CentreVu* CMS administrator. The *CentreVu* CMS administrator may want the new ACD added to the system after regular working hours.

Overview

Adding an ACD to the *CentreVu* CMS R3V6 consists of these tasks:

- Prepare to Add the ACD.
- Turn Off CentreVu CMS.
- Execute the “acd_create” Option.
- Connect the Link.
- Turn On CentreVu CMS.

Prepare to Add the ACD

You need to furnish certain information about the switch and the *CentreVu* CMS.

1. Make a copy of the following table.

ACD Entities	ACD 1	ACD 2	ACD 3	ACD 4	ACD 5	ACD 6	ACD 7	ACD 8	Sum of ACD Entities	CentreVu CMS-Supported Maximum Values
Switch name									n/a	n/a
Switch release									n/a	n/a
Local port number									n/a	n/a
Remote port number									n/a	n/a
Link number									n/a	n/a
Number of splits/skills										1000
Total split/skill members, summed over all splits/skills										10,000
Number of shifts									n/a	4
1st shift start/stop times									n/a	n/a
2nd shift start/stop times									n/a	n/a
3rd shift start/stop times									n/a	n/a
4th shift start/stop times									n/a	n/a
Number of agents logged into all splits/skills during any shift										10,000
Number of trunk groups										666
Number of trunks										4000 (see note)
Number of unmeasured trunk facilities										400 minimum (4 X 100)
Number of vectors										4096
Number of VDNs										8000

⇒ NOTE:

For the previous table, the sum of the ACD1, ACD2, ACD3, and ACD4 entities (splits/skills, agents, trunk groups, trunks, vectors, and VDNs) cannot exceed the *CentreVu* CMS-supported maximum values.

A maximum of 100 unmeasured trunks is available to each ACD. If more than 100 unmeasured trunks is required, and the ACD is currently using the maximum number of trunks, then the measured trunks must be reduced accordingly.

Use the `swinfo` option on the *CentreVu* CMS Services menu to obtain information about existing ACDs.

2. Log in as root.
3. Access the *CentreVu* CMS Services menu by entering `cmssvc` at the # prompt. The *CentreVu* CMS Services menu appears:

```
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:
```

4. Enter 5 to select the `swinfo` option.

The following switch information is displayed:

- Switch name
- Switch model (release)
- Vectoring
- Expert Agent Selection
- Central Office disconnect supervision
- Local port

- Remote port
 - Device for the x.25 link.
5. Enter the above entities into the previous table.
 6. Log into *CentreVu* CMS and access the Data Storage Allocation window. See the *CentreVu Call Management System, Release 3 Version 6, Administration (585-215-850)* document.
 7. Use the **Commands** Screen Labeled Key (SLK) to print the Data Storage Allocation window.
 8. From the Data Storage Allocation printout, enter the values for the following entities into the previous table:
 - Number of splits/skills
 - Total split/skill members summed over all splits/skills
 - Number of shifts
 - Shift start and stop times
 - Number of agents logged into all splits/skills during all shifts
 - Number of trunk groups
 - Number of trunks
 - Number of unmeasured trunk facilities
 - Number of vectors
 - Number of VDNs.
 9. Repeat steps 3 through 8 for each existing ACD.
 10. Enter the values for the entities associated with the new ACD into the previous table.
 11. Sum the values for each appropriate entity (for example, ACD1 + ACD2 + ACD3 etc.), and enter that value into the Sum of ACD Entities column of the previous table.
 12. Make sure that the summed value does not exceed the *CentreVu* CMS-supported maximum value. If a summed value exceeds a maximum value, you will have to change the value of that entity for either the existing ACDs or the new ACD.

Preparation for adding the new ACD is complete.

Turn Off *CentreVu* CMS

Access the CMSADM menu and turn off *CentreVu* CMS by following the steps below.

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

Execute the “acd_create” Option

You execute the `acd_create` option on the CMSADM menu to add the new ACD to the *CentreVu* CMS R3V6.

⇒ NOTE:

The ACD must be authorized before it can be added to the *CentreVu* CMS. See the *CentreVu Call Management System, Release 3 Version 6, Software Installation and Maintenance (585-215-866)* document, “Setting Authorizations.”

1. Log in as root.
2. Access the *CentreVu* CMS Administration menu by entering `cmsadm` at the `#` prompt. The CMSADM 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 CMS on or off
Enter choice (1-9) or q to quit:
```

3. Enter 1 to choose the `acd_create` option.
4. At the prompts, enter the information for the new ACD from the previous table.

After you have entered all the required information, the message `Updating` appears, followed by `ACD created successfully`.

Connect the Link

Lucent Technologies field technicians connect the link from the switch where the new ACD resides to the *Sun Enterprise* 3000 System.

Each HSI/S supports four RS-449 ports, and therefore can connect up to four ACDs. If more than four ACDs are needed, a second HSI/S card and Patch Panel must be used.

Turn On *CentreVu* CMS

Access the CMSADM menu and turn on *CentreVu* CMS application by following the steps below.

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

Generic 3i Administration

Overview

The *CentreVu*[®] Call Management System Release 3 Version 6 (CMS R3V6) application can collect and process Automatic Call Distribution (ACD) data from the *DEFINITY*[®] Communications System Generic 3i switch. However, before *CentreVu* CMS can collect and process the ACD data, a special hardware interface on the switch must be properly administered. For the Generic 3i, the hardware interface is a processor interface. This hardware interface is sometimes called the *CentreVu* CMS interface.

⇒ NOTE:

For the screens to administer the EAS (Expert Agent Selection) feature, see the *CentreVu Call Management System, Release 3 Version 6, Administration* (585-215-850) document.

For your convenience, the next section contains step-by-step procedures that can be used to implement the *CentreVu* CMS interface. However, should you have any question about these procedures, refer to the appropriate switch documentation

⇒ NOTE:

Only a qualified switch technician or switch administrator should administer the *CentreVu* CMS interface and features on the switch.

Administering *CentreVu* CMS Interface on Generic 3i

Overview

This section contains the procedures required to establish a communications link between the *Sun*^{*} *Enterprise*[†] 3000 system and the Generic 3i switch.

The processor interface on the Generic 3i has eight interface links (01 to 08) available on a multi-carrier cabinet system and four interface links (01 to 04) available on a single-carrier cabinet system. One of these interface links can be assigned to the *Sun Enterprise* 3000 system.

You assign the *CentreVu* CMS interface by logging in on the System Access Terminal (SAT) as *craft* and filling out the following forms:

- Processor Interface Data Module form
- Data Module (MPDM/MTDM) form
- Processor Channel Assignment form
- Interface Links form.

 **NOTE:**

If the EIA port on the processor interface is used to make the connection to the *Sun Enterprise* 3000 system, you do not have to fill out the data module form.

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

[†]*Enterprise* 3000 is a trademark of SPARC International, Inc.

Assign the Processor Interface Data Module

The following procedures can be used to add the processor interface on the Generic 3i:

1. Verify that the System Access Terminal displays:

```
enter command:
```

2. Enter `add data-module 2005` where *2005* is the extension number assigned to the interface. The extension number you use will automatically appear in the `Data Extension` field of a data module form. Press the **Return** key.

The screen displays a data module form. (See the Processor Interface Data Module Form figure.)

3. In the `Name` field, Enter `R3V6 CMS`, and press the **Return** key.

The cursor is positioned on the `Type` field.

4. In the field labeled `Type`, enter `procr-infc` for Generic 3i. After entering the appropriate `Type`, press the **Return** key. The cursor is positioned on the `COS` field.

⇒ NOTE:

The `COS` and `COR` fields are defaulted to 1.

5. Do not make changes to the `COS` and `COR` fields; press the **Return** key.

The cursor is positioned on the `Physical Channel` field.

6. Enter the physical channel number (for example, 01). The physical channel number becomes the interface link number that is used on the Interface Links and Processor Channel Assignment forms. For example, physical channel number 01 is interface link 1.

⇒ NOTE:

If the EIA port on the processor interface is used to make the connection to the *Sun Enterprise 3000* system, physical channel number 01 must be used.

7. Press the **Enter** key.

Screen displays:

```
command successfully completed
enter command:
```

```

                                DATA MODULE

Data Extension: 2005           Name: R3 CMS
      Type: procr-infc        COS: 1      Maintenance Extension: _____
Physical Channel: 01          COR: 1_
                                ITC: restricted      TN: __

ABBREVIATED DIALING
List1:

SPECIAL DIALING OPTION:

ASSIGNED MEMBERS (Station with a data extension button for this data module)
      Ext      Name
1:

```

Assigning a Data Module to the Sun Enterprise 3000 System

After the processor interface has been assigned, the data module can be administered and connected to the *Sun Enterprise 3000* system or to a modem for a *CentreVu CMS* located at a remote location.

⇒ NOTE:

If the EIA port on the processor interface is used to make the connection to the *Sun Enterprise 3000* system, you do not have to fill out the data module form. If the *CentreVu CMS* is located at a remote location (with reference to the switch), a modem and MTDM will be used.

1. Verify that the System Access Terminal screen displays:

```
enter command:
```

2. Enter `add data-module 2009` where *2009* is the extension number assigned to the interface. The extension number you use will automatically appear in the `Data Extension` field of a data module form. Press the **Return** key.

The screen displays a data module form. (See the MPDM/MTDM Data Module Form figure.)

3. In the `Port` field, Enter 1A0101, and press the `Return` key.

The cursor is positioned on the `Type` field.

4. In the field labeled `Type`, enter `procr-infc` for Generic 3i. After entering the appropriate `Type`, press the `Return` key.

⇒ NOTE:

The cursor is positioned on the `COS` field. The `COS` and `COR` fields are defaulted to 1.

5. Do not make changes to the `COS` and `COR` fields; press the `Return` key.

The cursor is positioned on the `Physical Channel` field.

6. Enter the physical channel number (for example, 01). The physical channel number becomes the interface link number that is used on the Interface Links and Processor Channel Assignment forms. For example, physical channel number 01 is interface link 1.

⇒ NOTE:

If the EIA port on the processor interface is used to make the connection to the *Sun Enterprise 3000* system, physical channel number 01 must be used.

7. Press the `Enter` key.

Screen displays:

```
command successfully completed
```

```
enter command:
```

```

                                DATA MODULE

Data Extension: 2009          Port: 1A0101
  Type: pdm                  COS: 1      Maintenance Extension: _____
Physical Channel: _____ COR: 1_
                                ITC: restricted          TN: _____

ABBREVIATED DIALING
List1:

SPECIAL DIALING OPTION:

ASSIGNED MEMBERS (Station with a data extension button for this data module)
  Ext      Name
  1:

```

i

After the processor interface and the data module have been assigned, the processor channel and interface link can be established. The processor channel is assigned using the Processor Channel Assignment form, and the interface link is enabled using the Interface Links form.

Assigning the Processor Channel

The Processor Channel form is used to assign one of the 64 local processor channels from the processor link to one of the 64 interface channels assigned to one interface link (1 to 4). Only one interface link is assigned for the *Sun Enterprise 3000* system.

The following procedure can be used to assign processor channels on the Generic 3i:

1. Verify that the System Access Terminal displays:

```
enter command:
```

2. Enter change communications-interfaces processor-channels command, and press the **Return** key.

The screen displays the Processor Channel Assignment form. (See the Processor Channel Assignment Form figure.)

⇒ NOTE:

The sample screen shown in the Processor Channel Assignment Form figure illustrates a configuration which assigns the processor channel 1 to the `mis` application with a remote processor channel of 1.

3. Select an available processor channel by using the up/down arrow keys to place the cursor in the `Appl` field of an available channel.

⇒ NOTE:

The processor channel number should be the same number that was selected for the `local port` number when the *CentreVu CMS* software was installed. For more information on changing the port/link number, see the *CentreVu Call Management System, Release 3 Version 6, Software Installation and Maintenance (585-215-866)* document, "swsetup".

4. Enter `mis` in the `Appl` field, and press the `Return` key.
The cursor is positioned on the `Interface Link` field.
5. Enter `1` in the `Interface Link` field. (This is the interface link number assigned on the processor interface data module form.)
6. Press the `Return` key.
The cursor is positioned on the `Interface Chan` field.
7. Enter `1` in the `Interface Chan` field, and press the `Return` key.
The cursor is positioned on the `Priority` field.
8. Enter `h` in the `Priority` field, and press the `Return` key.
The cursor is positioned on the `Remote Proc Chan` field.
9. Enter `1` in the `Remote Proc Chan`, and press the `Return` key.
The cursor is positioned on the `MACHINE-ID` field.
10. Make no entry; press the `Enter` key.

Screen displays:

```
command successfully completed,
enter command:
```

```

PROCESSOR CHANNEL ASSIGNMENT

Proc
Chan  Appl.  Interface          Remote
      Link  Chan  Priority  Proc Chan  Machine-ID
-----
1:    mis    1  1      h      1
2:
3:
4:
5:
6:
7:
8:
9:
10:
11:
12:
13:
14:
15:
16:

```

⇒ NOTE:

The *CentreVu* CMS R3V6 software requires that the `Interface Chan` assignment be administered as 1. Priority on this channel must be set to `h` (high).

Enabling the Interface Link

The following steps are used to enable the *CentreVu* CMS interface link on the Generic 3i:

1. Verify that the System Access Terminal displays:

```
enter command:
```

2. Enter `change communications-interfaces links`, and press the `Return` key.

The screen displays an Interface Links form. (See the *CentreVu* CMS R3V6 Interface Form figure.)

3. The cursor is positioned on the `Enabled` field.
4. Enter `y` beside the interface link number assigned on the

Processor Channel form to enable the interface link. Press the **Return** key.

The cursor is positioned on the `Est Conn` field.

5. Enter **y** to establish a connection to the MPDM that connects to the *Sun Enterprise 3000* system, and press the **Return** key.

The cursor skips the `PI Ext` field. The extension number assigned on the processor interface data module form is automatically displayed in this field.

The cursor is positioned on the `Prot` field.

6. Enter `BX.25` in the `Prot` field.

The cursor is positioned on the `Destination Digits` field.

7. Enter the extension number for the MPDM that connects to the *Sun Enterprise 3000* system, and press the **Return** key.

The cursor is positioned on the `DTE/DCE` field.

8. Enter `DTE` for the *Sun Enterprise 3000* system, and press the **Return** key.

The cursor is positioned on the `Identification` field.

9. Enter a 15-character name for the link. This field may be left blank.
10. Press the **Enter** key.

The screen displays:

```
command successfully completed,
enter command:
```

INTERFACE LINKS							
Link	Enable	Est Conn	PI Ext	Prot	Destination Digits	DTE/ DCE	Identification
1:	y	y	2005	BX.25	2009	DTE	
2:	y						
3:	y						
4:	y						

Enabling the EIA Port on the Processor Interface

If the EIA port on the processor interface of a Generic 3i is used to make the connection to the *Sun Enterprise 3000* system, see the following figure.

INTERFACE LINKS						
Link	Enabled	Establish Connection	Interface Extension	Destination Number	DTE/DCE	Identification
1:	y	y	2005	eia	DTE	
2:	n	n	2006		DTE	
3:	n	n	2007		DTE	
4:	n	n	2008		DTE	

Link 1 [eia] - Connected to: DTE	Clocking: internal
----------------------------------	--------------------

⇒ NOTE:

For *CentreVu CMS R3V6*, the DTE/DCE field must be set to DTE.

Generic 2 Administration

Overview

The *CentreVu*® Call Management System Release 3 Version 6 (CMS R3V6) application can collect and process Automatic Call Distribution (ACD) data from the *DEFINITY*® Communications System Generic 2 switches. See Chapter 1, “Introduction,” to verify that the switch software release supports the *CentreVu* CMS R3V6 application.

Before the *CentreVu* CMS R3V6 can collect and process the ACD data, the *CentreVu* CMS feature, the Data Communications Interface Unit (DCIU), and the ACD feature on the switch must be properly administered.

Use this appendix to do the following:

- Administer the *CentreVu* CMS Feature on the *DEFINITY* Generic 2.1.
- Administer the *CentreVu* CMS Feature on the *DEFINITY* Generic 2.2.
- Administer the DSC Feature on the *DEFINITY* Generic 2.

⇒ NOTE:

Any changes to the switch translations should only be made by a skilled switch technician.

⇒ NOTE:

For the procedures to administer the EAS (Expert Agent Selection) feature, see the *CentreVu Call Management System, Release 3 Version 6, Administration (585-215-850)* document.

Administering the *CentreVu* CMS Feature on the *DEFINITY* Generic 2.1

On a Generic 2.1, use the Manager II to administer the *CentreVu* CMS feature.

275 Word 1 Activates the DCIU.

Field 17 Enter the DCIU assignment:
1 Enable.

275 Word 4 Enables or disables *CentreVu* CMS for the system.

Field 13 Enter the *CentreVu* CMS assignment:
1 Enable.

258 Word 2 Copies the DCIU machine-read memory values to the scratch-pad table. Use this procedure *before* making any DCIU changes.

Field 1 Enter a 1 to make a copy of DCIU tables.

 **NOTE:**

This procedure overwrites the contents of the scratch-pad table.

- 256 Word 1** Administers the major characteristics of the data link. Included are the link number, status, baud rate, DTE/DCE, type of link, protocol, destination machine type, and the destination machine number.
- Field 1 Enter the DCIU physical link number (1-8). This is the link number of the physical port on the DCIU that is connected to the *Sun* Enterprise†* 3000 system.
- Field 2 Enter the assigned status:
1 Assigned.
- Field 3 Enter the baud rate:
6 9600 Baud
7 19200 Baud.
- Field 4 Enter the local DTE/DCE assignments:
0 Local end of DCIU link is functioning as a DTE.
- Field 5 Enter the dial up capabilities:
0 Link is not a dial up link.
- Field 6 Enter a 1 to specify the BX.25 protocol.
- Field 7 Enter the type of machine interface:
8 3B2.
- Field 8 Enter the destination machine number:
1-7 For APs, the AP number
If this is the first AP, enter 1.

- 256 Word 2** Administers the BX.25 level-2 characteristics. Included are the link number, the retransmission timer, the idle timer, the maximum number of retransmissions, and the maximum number of unacknowledged frames allowed on the link.

- Field 1 Enter the DCIU physical link number (1-8).
- Field 2 Enter the time in seconds before retransmitting unacknowledged frames (1-255). For *CentreVu* CMS, the value is 1.
- Field 3 Enter the time in seconds before frames are exchanged on a link (1-255). For *CentreVu* CMS, the value is 10.
- Field 4 Enter the maximum number of retransmissions of an acknowledged frame (1-15). For *CentreVu* CMS, the value is 2.
- Field 5 Enter the maximum number of frames transmitted on a link without acknowledgment (1-7). For *CentreVu* CMS, the value is 7.

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

†*Enterprise* is a trademark of SPARC International, Inc.

256 Word 3 Administers the BX.25 level-3 characteristics. Included are the link number, the activity timer, the acknowledgment timer, the interrupt timer, the restart timer, and the maximum number of unacknowledged packets.

- Field 1 Enter the DCIU physical link number (1-8).
- Field 2 Enter the time, in seconds, before sending a window advancement packet to indicate the present condition of a logical channel (1-255). For *CentreVu* CMS, the value is 180.
- Field 3 Enter the time, in seconds, waited for acknowledgment of data packet before resetting a logical channel (1-255). For *CentreVu* CMS, the value is 20.
- Field 4 Enter the time, in seconds, waited for confirmation of an interrupt packet before resetting a logical channel (1-255). For *CentreVu* CMS, the value is 180.
- Field 5 Enter the time, in seconds, waited before retransmitting an unconfirmed reset request package (1-255). For *CentreVu* CMS, the value is 8.
- Field 6 Enter the time, in seconds, waited before retransmitting an unconfirmed restart request package (1-255). For *CentreVu* CMS, the value is 8.
- Field 10 Enter the maximum number of times an unacknowledged data packet can be transmitted (1-7). For *CentreVu* CMS, the value is 4.

Local/Remote Setup for *CentreVu* CMS:

257 Word 5 Reserves ports for *CentreVu* CMS usage including the port number, the application type, and the application instance number.

- Field 1 Enter 64 for the number of the local port.
- Field 2 Enter 11 to specify the application type as *CentreVu* CMS.
- Field 3 Enter 1 for the application instance number.

257 Word 2 Administers the port characteristics including the local port, the remote port/destination, the alternate routing destination routing code, and the alternate routing postage.

- Field 1 Enter 64 for the local port number.
- Field 2 Enter 1 for the remote port/destination.

CentreVu CMS Channel:

257 Word 1 Administers the network channel for *CentreVu* CMS applications. Included are the switch link, the logical channel on the local port, the hardware link, the logical channel, the priority, and the alternate routing flag.

- Field 1 Enter 0 for the local link number (Component A).
- Field 2 Enter 64 for the logical channel number on the local link/switch.
- Field 3 Enter the link number (Component B):
 - 1-8 Hardware links (connected to the link specified in Field 1).
- Field 4 Enter 1 for the logical channel number on the link.
- Field 5 Enter 1 for the priority level (high).
- Field 6 Enter 0 for the alternate routing flag status.

Local/Remote Setup for Maintenance Channel:

257 Word 5 Reserves ports for *CentreVu* CMS usage including the port number, the application type, and the application instance number.

- Field 1 Enter 6 for the number of the local port.
- Field 2 Enter 10 to specify the DCIU test (TEST).
- Field 3 Enter 1 for the application instance number.

257 Word 5 Reserves ports for *CentreVu* CMS usage including the port number, the application type, and the application instance number.

- Field 1 Enter 20 for the number of the local port.
- Field 2 Enter 10 to specify the DCIU test (TEST).
- Field 3 Enter 2 for the application instance number.

257 Word 2 Administers the port characteristics including the local port, the remote port/destination, the alternate routing destination routing code, and the alternate routing postage.

- Field 1 Enter 6 for the local port number.
- Field 2 Enter 20 for the remote port/destination.

257 Word 2 Administers the port characteristics including the local port, the remote port/destination, the alternate routing destination routing code, and the alternate routing postage.

Field 1 Enter 20 for the local port number.

Field 2 Enter 6 for the remote port/destination.

Maintenance Channel:

257 Word 1 Administers the network channel for *CentreVu* CMS applications. Included are the switch link, the logical channel on the local port, the hardware link, the logical channel, the priority, and the alternate routing flag.

Field 1 Enter 0 for the local link number (Component A).

Field 2 Enter 6 for the logical channel number on the local link/switch.

Field 3 Enter 0 for the link number (Component B).

Field 4 Enter 20 for the logical channel number on the link.

Field 5 Enter 0 for the priority level (low).

Field 6 Enter 0 for the alternate routing flag status.

Initialize the Changes:

258 Word 1 Swaps the changes made to the DCIU scratch-pad table with the machine-read memory. Use this procedure *after* making any DCIU changes.

Field 1 Enter a 1 to swap the tables and reboot DCIU.

028 Word 1 This procedure is used to busy out *CentreVu* CMS while translation changes are made. After making the translation changes, the *CentreVu* CMS busy out must be released.

Field 1 Enter the *CentreVu* CMS busy-out specifications:

1 Busied out.

- 115 Word 1** Administers the termination point of *CentreVu* CMS trunk groups to ACD splits, ACD priority, and *CentreVu* CMS measurement types.
- Field 1 Enter the trunk group number (18-999).
- Field 2 Enter the termination point:
- Trunk group does not terminate at a CAS or SS attendant.
- Field 3 Enter the split number (1-60) to which the trunk group terminates. Enter a - (dash) if the trunk group terminates to a VDN.
- Field 5 Enter *CentreVu* CMS measurement type (-, or 1 to 3). The applicable encodes are:
- Trunk group not measured by *CentreVu* CMS
 - 1 Trunk group measured for outgoing calls
 - 2 Trunk group measured for incoming calls
 - 3 Trunk group measured for outgoing and incoming calls.

 **NOTE:**

Only the trunk groups numbered from 18 to 255 can be measured.

 **CAUTION:**

Before using Procedure 028 Word 1, Procedure 350 Word 2 should be used to administer the login/logout codes. After the extension is assigned in Procedure 028 Word 1, the agent cannot use the “staffed” button.

- 028 Word 1** Administers an ACD split and whether the split is measured.
- Field 2 Enter the *CentreVu* CMS extension low (000-99999).
- Field 3 Enter the *CentreVu* CMS extension high (000-99999).

031 Word 1 Administers a vector directory number (VDN), a vector number, the ICI message, and the return call assignment. The machine number of the adjunct is displayed in Field 9.

- Field 1 Enter the VDN (000-99999).
- Field 2 Enter the vector number (-, 1-128).
- Field 3 Enter the *CentreVu* CMS measurement capabilities:
 - 0 VDN is not measured
 - 1 VDN is measured.
- Field 4 Enter the first console message character (-, 0-37).

0 = 0	A = 11	K = 21	U = 31
1 = 1	B = 12	L = 22	V = 32
2 = 2	C = 13	M = 23	W = 33
3 = 3	D = 14	N = 24	X = 34
4 = 4	E = 15	O = 25	Y = 35
5 = 5	F = 16	P = 26	Z = 36
6 = 6	G = 17	Q = 27	- = 37
7 = 7	H = 18	R = 28	blank = 10
8 = 8	I = 19	S = 29	
9 = 9	J = 20	T = 30	

- Field 5 Enter the second console message character (-, 0-37).
- Field 6 Enter the third console message character (-, 0-37).
- Field 7 Enter the fourth console message character (-, 0-37).
- Field 8 Enter the return call indicator:
 - , 0 Not a return call VDN
 - 1 MCS return call VDN
 - 2 AUDIX return call VDN.

028 Word 2 This procedure is used to busy out *CentreVu* CMS while translation changes are made. After making the translation changes, the *CentreVu* CMS busy out must be released.

- Field 1 Enter the *CentreVu* CMS busy out specifications:
 - 0 Not busied out.

Administering the *CentreVu* CMS Feature on the *DEFINITY* Generic 2.2

On a Generic 2.2, use the Manager II to administer the *CentreVu* CMS feature.

275 Word 1 Activates the DCIU.

Field 17 Enter the DCIU assignment:
1 Enable.

275 Word 4 Enables or disables *CentreVu* CMS for the system.

Field 13 Enter the *CentreVu* CMS assignment:
1 Enable.

258 Word 2 Copies the DCIU machine-read memory values to the scratch-pad table. Use this procedure *before* making any DCIU changes.

Field 1 Enter a 1 to make a copy of DCIU tables.

 **NOTE:**

This procedure overwrites the contents of the scratch-pad table.

256 Word 1 Administers the major characteristics of the data link. Included are the link number, status, baud rate, DTE/DCE, type of link, protocol, destination machine type, and the destination machine number.

- Field 1 Enter the DCIU physical link number (1-8). This is the link number of the physical port on the DCIU that is connected to the *Sun Enterprise 3000* system.
- Field 2 Enter the assigned status:
1 Assigned.
- Field 3 Enter the baud rate:
6 9600 Baud
7 19200 Baud.
- Field 4 Enter the local DTE/DCE assignments:
0 Local end of DCIU link is functioning as a DTE.
- Field 5 Enter the dial up capabilities:
0 Link is not a dial up link.
- Field 6 Enter a 1 to specify the BX.25 protocol.
- Field 7 Enter the type of machine interface:
8 3B2.
- Field 8 Enter the destination machine number:
1-7 For APs, the AP number
If this is the first AP, enter 1.

256 Word 2 Administers the BX.25 level-2 characteristics. Included are the link number, the retransmission timer, the idle timer, the maximum number of retransmissions, and the maximum number of unacknowledged frames allowed on the link.

- Field 1 Enter the DCIU physical link number (1-8).
- Field 2 Enter the time in seconds before retransmitting unacknowledged frames (1-255). For *CentreVu CMS*, the value is 1.
- Field 3 Enter the time in seconds before frames are exchanged on a link (1-255). For *CentreVu CMS*, the value is 10.
- Field 4 Enter the maximum number of retransmissions of an acknowledged frame (1-15). For *CentreVu CMS*, the value is 2.
- Field 5 Enter the maximum number of frames transmitted on a link without acknowledgment (1-7). For *CentreVu CMS*, the value is 7.

- 256 Word 3** Administers the BX.25 level-3 characteristics. Included are the link number, the activity timer, the acknowledgment timer, the interrupt timer, the restart timer, and the maximum number of unacknowledged packets.
- Field 1 Enter the DCIU physical link number (1-8).
 - Field 2 Enter the time, in seconds, before sending a window advancement packet to indicate the present condition of a logical channel (1-255). For *CentreVu* CMS, the value is 180.
 - Field 3 Enter the time, in seconds, waited for acknowledgment of data packet before resetting a logical channel (1-255). For *CentreVu* CMS, the value is 20.
 - Field 4 Enter the time, in seconds, waited for confirmation of an interrupt packet before resetting a logical channel (1-255). For *CentreVu* CMS, the value is 180.
 - Field 5 Enter the time, in seconds, waited before retransmitting an unconfirmed reset request package (1-255). For *CentreVu* CMS, the value is 8.
 - Field 6 Enter the time, in seconds, waited before retransmitting an unconfirmed restart request package (1-255). For *CentreVu* CMS, the value is 8.
 - Field 10 Enter the maximum number of times an unacknowledged data packet can be transmitted (1-7). For *CentreVu* CMS, the value is 4.

Local/Remote Setup for *CentreVu* CMS:

- 257 Word 5** Reserves ports for *CentreVu* CMS usage including the port number, the application type, and the application instance number.
- Field 1 Enter 64 for the number of the local port.
 - Field 2 Enter 11 to specify the application type as *CentreVu* CMS.
 - Field 3 Enter 1 for the application instance number.
- 257 Word 2** Administers the port characteristics including the local port, the remote port/destination, the alternate routing destination routing code, and the alternate routing postage.
- Field 1 Enter 64 for the local port number.
 - Field 2 Enter 1 for the remote port/destination.

CentreVu CMS Channel:

257 Word 1 Administers the network channel for *CentreVu* CMS applications. Included are the switch link, the logical channel on the local port, the hardware link, the logical channel, the priority, and the alternate routing flag.

- Field 1 Enter 0 for the local link number (Component A).
- Field 2 Enter 64 for the logical channel number on the local link/switch.
- Field 3 Enter the link number (Component B):
 - 1-8 Hardware links (connected to the link specified in Field 1).
- Field 4 Enter 1 for the logical channel number on the link.
- Field 5 Enter 1 for the priority level (high).
- Field 6 Enter 0 for the alternate routing flag status.

Local/Remote Setup for Maintenance Channel:

257 Word 5 Reserves ports for *CentreVu* CMS usage including the port number, the application type, and the application instance number.

- Field 1 Enter 6 for the number of the local port.
- Field 2 Enter 10 to specify the DCIU test (TEST).
- Field 3 Enter 1 for the application instance number.

257 Word 5 Reserves ports for *CentreVu* CMS usage including the port number, the application type, and the application instance number.

- Field 1 Enter 20 for the number of the local port.
- Field 2 Enter 10 to specify the DCIU test (TEST).
- Field 3 Enter 2 for the application instance number.

257 Word 2 Administers the port characteristics including the local port, the remote port/destination, the alternate routing destination routing code, and the alternate routing postage.

- Field 1 Enter 6 for the local port number.
- Field 2 Enter 20 for the remote port/destination.

257 Word 2 Administers the port characteristics including the local port, the remote port/destination, the alternate routing destination routing code, and the alternate routing postage.

Field 1 Enter 20 for the local port number.

Field 2 Enter 6 for the remote port/destination.

Maintenance Channel:

257 Word 1 Administers the network channel for *CentreVu* CMS applications. Included are the switch link, the logical channel on the local port, the hardware link, the logical channel, the priority, and the alternate routing flag.

Field 1 Enter 0 for the local link number (Component A).

Field 2 Enter 6 for the logical channel number on the local link/switch.

Field 3 Enter 0 for the link number (Component B).

Field 4 Enter 20 for the logical channel number on the link.

Field 5 Enter 0 for the priority level (low).

Field 6 Enter 0 for the alternate routing flag status.

Initialize the Changes:

258 Word 1 Swaps the changes made to the DCIU scratch-pad table with the machine-read memory. Use this procedure *after* making any DCIU changes.

Field 1 Enter a 1 to swap the tables and reboot DCIU.

028 Word 1 This procedure is used to busy out *CentreVu* CMS while translation changes are made. After making the translation changes, the *CentreVu* CMS busy out must be released.

Field 1 Enter the *CentreVu* CMS busy-out specifications:

1 Busied out.

115 Word 1 Administers the termination point of *CentreVu* CMS trunk groups to ACD splits, ACD priority, and *CentreVu* CMS measurement types.

Field 1 Enter the trunk group number (18-999).

Field 2 Enter the termination point:

- Trunk group does not terminate at a CAS or SS attendant.

Field 3 Enter the split number (1-60) to which the trunk group terminates. Enter a - (dash) if the trunk group terminates to a VDN.

Field 5 Enter *CentreVu* CMS measurement type (-, or 1 to 3). The applicable encodes are:

- Trunk group not measured by *CentreVu* CMS
- 1 Trunk group measured for outgoing calls
- 2 Trunk group measured for incoming calls
- 3 Trunk group measured for outgoing and incoming calls.

 **NOTE:**

Only the trunk groups numbered from 18 to 255 can be measured.

 **CAUTION:**

Before using Procedure 026 Word 2, Procedure 350 Word 2 should be used to administer the login/logout codes. After the extension is assigned in Procedure 028 Word 1, the agent cannot use the “staffed” button.

026 Word 2 Administers an ACD split and whether the split is measured.

Field 8 Enter the *CentreVu* CMS split measurement status. The applicable encodes are:

- 0 Split is not measured by *CentreVu* CMS
- 1 Split is measured by *CentreVu* CMS.

031 Word 1 Administers a vector directory number (VDN), a vector number, the ICI message, and the return call assignment. The machine number of the adjunct is displayed in Field 9.

Field 1 Enter the VDN (000-99999).

Field 2 Enter the vector number (-, 1-128).

Field 3 Enter the *CentreVu* CMS measurement capabilities:

0 VDN is not measured

1 VDN is measured.

Field 4 Enter the first console message character (-, 0-37).

0 = 0	A = 11	K = 21	U = 31
1 = 1	B = 12	L = 22	V = 32
2 = 2	C = 13	M = 23	W = 33
3 = 3	D = 14	N = 24	X = 34
4 = 4	E = 15	O = 25	Y = 35
5 = 5	F = 16	P = 26	Z = 36
6 = 6	G = 17	Q = 27	- = 37
7 = 7	H = 18	R = 28	blank = 10
8 = 8	I = 19	S = 29	
9 = 9	J = 20	T = 30	

Field 5 Enter the second console message character (-, 0-37).

Field 6 Enter the third console message character (-, 0-37).

Field 7 Enter the fourth console message character (-, 0-37).

Field 8 Enter the return call indicator:

-, 0 Not a return call VDN

1 MCS return call VDN

2 AUDIX return call VDN.

028 Word 2 This procedure is used to busy out *CentreVu* CMS while translation changes are made. After making the translation changes, the *CentreVu* CMS busy out must be released.

Field 1 Enter the *CentreVu* CMS busy out specifications:

0 Not busied out.

Generic 3r Administration

Overview

The *CentreVu*[®] Call Management System Release 3 Version 6 (CMS R3V6) application can collect and process Automatic Call Distribution (ACD) data from the *DEFINITY*[®] Communications System Generic 3r switch. However, before *CentreVu* CMS can collect and process the ACD data, a special hardware interface on the switch must be properly administered. For the Generic 3r switch, the hardware interface is a Packet Gateway (TN577) board. This hardware interface is sometimes called the *CentreVu* CMS interface.

 **NOTE:**

For the screens to administer the Expert Agent Selection (EAS) feature, see the *CentreVu Call Management System, Release 3 Version 6, Administration* (585-215-850) document.

For more information, see the following documentation:

- *Lucent Technologies DEFINITY Communications System Generic 3 Version 2 Implementation Manual* (555-230-653, Issue 1)
- *Lucent Technologies DEFINITY Communications System Generic 1 and Generic 3 Installation and Test* (555-230-104, Issue 4)
- *Lucent Technologies DEFINITY Communications System Generic 3r Maintenance* (555-230-105).

For your convenience, the next section contains step-by-step procedures that can be used to implement the *CentreVu* CMS interface. However, should you have any questions about these procedures, you should refer to the appropriate switch documentation.

 **NOTE:**

Only a qualified switch technician or switch administrator should administer the *CentreVu* CMS interface and features on the switch.

Administering *CentreVu* CMS Interface on Generic 3r

Overview

This section contains the procedures required to establish a communications link between the *Sun*^{*} *Enterprise*[†] 3000 system and the Generic 3r switch.

The Packet Gateway (TN577) board on the Generic 3r has four interface links (01 to 04). One of these interface links can be assigned to the *Sun Enterprise* 3000 system.

You assign the *CentreVu* CMS interface by logging in on System Access Terminal (SAT) as *craft* and filling out the following forms:

- Feature-Related System Parameters form
- Pgate (Packet Gateway) Board form
- Data Module (MPDM/MTDM) form
- Processor Channel Assignment form
- Interface Links form
- Administered Connection form.

 **NOTE:**

If the Isolating Data Interface (IDI) is used to make the connection to the *Sun Enterprise* 3000 system, you do not have to fill out the Data Module form and the Administered Connection form.

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

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

Change Feature-Related System Parameters

Use the following procedures to change the *CentreVu* CMS parameters on the Generic 3r:

1. Verify that the System Access Terminal displays:

```
enter command:
```

2. Enter `change system-parameters features`. Press the **Return** key.

The screen displays a Data Module form. (See the following two figures.)

3. In the field labeled `Expert Agent Selection (EAS) Enabled?`, the default is `yes`. Press the **Return** key.
4. In the `Message Waiting Lamp Indicates Status For` field, enter your login ID. The length of the agent login ID for the Generic 3r is 0-9 characters. Press the **Return** key.
5. Press `....` to go to Page 2.

6. In the field labeled Adjunct CMS Release, enter R3V6. Press the key.

Screen displays:

command successfully completed,
enter command:

```
CALL CENTER SYSTEM PARAMETERS
EAS
  Expert Agent Selection (EAS)Enabled? y_
  Minimum Agent-LoginID Password Length: _
  Direct Agent Announcement Extension: ___ Delay ___
  Message Waiting Lamp Indicates Status For: loginID
VECTORIZING
  Converse First Data Delay:___ Second Data Delay: ___
  Converse Signaling Tone (msec): _____ Pause (msec): ___
  Prompting Timeout (secs): ___
SERVICE OBSERVING
  Service Observing Warning Tone?___
ASAI
  Call Classification After Answer Supervision? _
```

```
CALL CENTER SYSTEM PARAMETERS
MOST IDLE AGENT
  MIA Across Splits or Skills? ___
  ACW Agents on MIA List? ___
REASON CODES
  Aux Work Reason Code Type: _____
  Logout Reason Code Type: _____
CALL MANAGEMENT SYSTEM
  Adjunct CMS Release: _R3V6_
  BCMS/VuStats Measurement Interval: _____
  BCMS/VuStats Abandon Call Timer (seconds): ___
  Validate BC|M|S/VuStats Login IDs? ___
  Clear VuStats Shift Data: _____
```

Assigning the Packet Gateway Board

Use the following procedures to assign the Packet Gateway board on the Generic 3r:

1. Verify that the System Access Terminal displays:

```
enter command:
```

2. Enter `add pgate 1c03` where `1c03` is the physical Packet Gateway (TN577) board location. Press the **Return** key.

The first character identifies the network (1-2, default is 1 if no entry), the second character identifies the carrier (A-E), the third and fourth characters identify the slot number in the carrier (01-20 for multi-carrier cabinets or 01-18 for single-carrier cabinets). The physical board location you use will automatically appear in the `Board Location` field of a `Pgate Board` form.

The screen displays a `Pgate Board` form. (See the following figure.)

3. In the `External Cable Type` field, enter `rs232` for Generic 3r. Press the **Enter** key.

Screen displays:

```
command successfully completed,  
enter command:
```

```
PGATE BOARD  
  
Board Location: 01C03           Name: PGATE Board  
Application: x.25  
External Cable Type: rs232  
Port Configuration: 1) RS232   2) RS232   3) RS232   4) RS232
```

Assigning the Packet Gateway Port

Use the following procedures to assign the Packet Gateway port on the Generic 3r:

1. Verify that the System Access Terminal displays:

```
enter command:
```

2. Enter `add data-module 2005` where *2005* is the extension number assigned to the interface. The extension number you use will automatically appear in the `Data Extension` field of a Data Module form. Press the **Return** key.

The screen displays a Data Module form. (See the following two figures.)

3. In the field labeled `Name`, enter `Pgate 1C0302` where *1C0302* is the physical equipment location of the Pgate board. Press the **Return** key.

The cursor is positioned on the `Type` field.

4. Enter `x.25`. Press the **Return** key.

The cursor is positioned on the `Port` field.

5. Enter the port number, for example `01C0302`. The port number identifies the physical equipment location of the circuit pack (packet gateway) being used. Press the **Return** key.

The cursor is positioned on the `Baud Rate` field.

6. Enter `9600` or `19200` in the `Baud Rate` field.

⇒ NOTE:

The baud rate must be the same for all components used in the link.

7. Press **Y** in the `Error Logging` field.

⇒ NOTE:

To maximize call capacity, the `Number of Outstanding Packets` field on page 2 of the Data Module form should be increased from the default values of 2 to 7.

It is also recommended that the `Baud Rate` field be set to `19200` whenever the physical connection can support it. For example, if the switch is connected to the *Sun Enterprise 3000* system via the Isolating Data Interface, the physical connection can support a baud rate of `19200`.

Screen displays:

command successfully completed,

enter command:

```

DATA MODULE

Data Extension:2005
Type: x.25
Port: 01C090
Baud Rate: 19.2
Endpoint Type: adjunct

Name: pgate 1C0302
Remote Loop-Around Test? n
COR: 1
TN: 1
DTE/DCE: dte Error Logging? n

Permanent Virtual Circuit? y
Switched Virtual Circuit? n

Highest PVC Logical Level: 64

```

```

DATA MODULE

LAYER 2 PARAMETERS

Number of Outstanding Frames (w) : _
Retry Attempt Counter (N2) : 2
Frame Size (N1) : 135
Retransmission (T1) Timer (1/10 seconds) : 10
Idle (T4) Timer (1/10 seconds) : 30

LAYER 3 PARAMETERS

Number of Outstanding Packets : 7
Restart (T20) Timer (seconds) : 8
Reset (T22) Timer (seconds) : 10

```

⇒ NOTE:

Both the Number of Outstanding Frames (w): and Number of outstanding packets: fields must be set to 7 for proper communication between the switch and the *Sun Enterprise 3000* system.

Assign a Data Module to the Switch

After assigning the interface on the Packet Gateway board, the data module can be administered and connected to the switch.

⇒ NOTE:

If the *CentreVu* CMS is located at a remote location (with reference to the switch), a modem and MTDM will be used.

1. Verify that the System Access Terminal screen displays:

`enter command:`

2. Enter `add data-module 2007` where *2007* is the extension number assigned to the data module. Press the **Return** key.

The extension number will automatically appear in the `Data Extension` field on the screen form. The extension number entered here is also used as the destination number on the Interface Links form.

The screen displays a Data Module form. (See the following figure.)

3. In the `Name` field, Enter `cms link pdm`, and press the **Return** key. The cursor is positioned on the `Type` field.
4. In the field labeled `Type`, enter `pdm` for Generic 3r. After entering the appropriate `Type`, press the **Return** key.

⇒ NOTE:

The cursor is positioned on the `COS` field. The `COS` and `COR` fields are defaulted to 1.

5. Do not make changes to the `COS` and `COR` fields; press the **Return** key.

The cursor is positioned on the `Physical Channel` field.

6. Enter the physical channel number (for example, 01). The physical channel number becomes the interface link number that is used on the Interface Links and Processor Channel Assignment forms. For example, physical channel number 01 is interface link 1.

⇒ NOTE:

If the EIA port on the processor interface is used to make the connection to the *Sun Enterprise* 3000 system, physical channel number 01 must be used.

7. Press the **Enter** key.

Screen displays:

```
command successfully completed
enter command:
```

```

                                DATA MODULE

Data Extension: 2009      Name: cms link pdm
      Type: pdm          COS: 1      Maintenance Extension: _____
Physical Channel: 1_    COR: 1_
                        ITC: restricted      TN: __

ABBREVIATED DIALING
List1:
SPECIAL DIALING OPTION:

ASSIGNED MEMBERS (Station with a data extension button for this data module)
      Ext      Name
1:

```

After the Pgate board and the data module have been assigned, the processor channel and interface link can be established. The processor channel is assigned using the Processor Channel Assignment form, and the interface link is enabled using the Interface Links form.

Assign a Data Module to the Sun Enterprise 3000 System

After assigning the interface on Packet Gateway board, the data module can be administered and connected to the *Sun Enterprise* 3000 system or to a modem for a *CentreVu* CMS located at a remote location.

➤ NOTE:

If the *CentreVu* CMS is located at a remote location (with reference to the switch), a modem and MTDM will be used.

1. Verify that the System Access Terminal screen displays:

```
enter command:
```

2. Enter `add data-module 2009` where *2009* is the extension number assigned to the data module. Press the **Return** key.

The extension number will automatically appear in the `Data Extension` field on the screen form. The extension number entered here is also used as the destination number on the Interface Links form.

The screen displays a Data Module form. (See the following figure.)

3. In the `Name` field, Enter `cms link pdm`, and press the **Return** key.

The cursor is positioned on the `Type` field.

4. In the field labeled `Type`, enter `pdm` for Generic 3r. After entering the appropriate `Type`, press the **Return** key.

⇒ NOTE:

The cursor is positioned on the `COS` field. The `COS` and `COR` fields are defaulted to 1.

5. Do not make changes to the `COS` and `COR` fields; press the **Return** key.

The cursor is positioned on the `Physical Channel` field.

6. Enter the physical channel number (for example, 01). The physical channel number becomes the interface link number that is used on the Interface Links and Processor Channel Assignment forms. For example, physical channel number 01 is interface link 1.

⇒ NOTE:

If the EIA port on the processor interface is used to make the connection to the *Sun Enterprise 3000* system, physical channel number 01 must be used.

7. Press the **Enter** key.

Screen displays:

```
command successfully completed
enter command
```

```

DATA MODULE

Data Extension: 2009      Name: cms link pdm
      Type: pdm          COS: 1      Maintenance Extension: _____
Physical Channel: 1      COR: 1
      ITC: restricted      TN: ___

```

ABBREVIATED DIALING

List1:

SPECIAL DIALING OPTION:

ASSIGNED MEMBERS (Station with a data extension button for this data module)

```

Ext      Name
1:

```

After the Pgate board and the data module have been assigned, the processor channel and interface link can then be established. The processor channel is assigned using the Processor Channel Assignment form, and the interface link is enabled using the Interface Links form.

Assigning the Processor Channel

Use the Processor Channel form to assign one of the 64 local processor channels from the processor link to one of the 64 interface channels assigned to one interface link (1 to 4). Only one interface link is assigned for the *Sun Enterprise 3000* system.

The interface link number used on this form is the same number assigned to the Physical Channel field on the Interface-3 Data Module form.

The following procedure can be used to assign processor channels on the Generic 3r:

1. Verify System Access Terminal displays:

```
enter command:
```

2. Enter `change communication-interface processor-channels` command, and press the **Return** key.

The screen displays the Processor Channel Assignment form.
(See the following figure.)

⇒ NOTE:

The sample screen shown in the following figure illustrates a configuration which assigns the Processor Channel 1 to the `mis` Application with a Local and Remote Port of 1.

3. Select an available processor channel by using the up/down arrow keys to place the cursor in the `App1` field of an available channel.

⇒ NOTE:

The Processor Channel number should be the same number that was selected for the `local port` number when the *CentreVu* CMS software was installed. For more information on changing the port/link number, refer to the “swsetup” section in the *CentreVu Call Management System, Release 3 Version 6, Software Installation and Maintenance (585-215-866)* document.

4. Enter `mis` in the `App1` field, and press the **Return** key.

The cursor is positioned on the `Interface Link` field.

5. Enter `1` in the `Interface Link` field. (This is the interface link number assigned on the Processor Interface Data Module form.)

6. Press the **Return** key.

The cursor is positioned on the `Interface Chan` field.

7. Enter `1` in the `Interface Chan` field, and press the **Return** key.

⇒ NOTE:

The *CentreVu* CMS R3V6 software requires that the `Interface Chan` assignment be administered as 1.

The cursor is positioned on the `Local Port` field.

8. Enter `1` in the `Local Port` field, and press the **Return** key.

The cursor is positioned on the `Remote Port` field.

9. Enter `1` in the `Remote Port` field, and press the **Return** key.

Cursor is positioned on the `MACHINE-ID` field.

10. Make no entry; press the **Enter** key.

Screen displays:

command successfully completed,
enter command:

```
PROCESSOR CHANNEL ASSIGNMENT
```

Proc		Interface		Local	Remote	Adjunct	
Chan	Appl.	Link	Chan	Port	Port	Name	Machine-ID
1:	mis	1	1	1	1		
2:							
3:							
4:							
5:							
6:							
7:							
8:							
9:							
10:							
11:							
12:							
13:							
14:							
15:							
16:							

Enable the Interface Link on the Generic 3r

Use the following steps to enable the *CentreVu* CMS interface link on the Generic 3r:

1. Verify that the System Access Terminal displays:

```
enter command:
```

2. Enter `change communications-interfaces links`, and press the **Return** key.

The screen displays an Interface Links form. (See the following figure.)

The cursor is positioned on the `Enabled` field.

3. Enter **y** beside the interface link number assigned on the Processor Channel form to enable the interface link. Press the **Return** key.

The cursor is positioned on the `X.25 Extension` field.

4. Enter the extension number assigned to establish a connection to the MPDM that connects to the *Sun Enterprise 3000* system, and press the **Return** key.

The cursor skips the `Destination Number` field. The extension number assigned on the Processor Interface Data Module form is automatically displayed in this field.

The cursor is positioned on the `Identification` field.

5. Enter a 15-character name for the link. This field may be left blank.
6. Press the **Enter** key.

Screen displays:

```
command successfully completed,
enter command:
```

INTERFACE LINKS						
Link	Enabled	X.25 Extension	Destination Number	Establish Connection	Connected Data Module	Identification
1:	y	2005	external			cms link
2:	n	n	2006			
3:	n	n	2007			
4:	n	n	2008			

Setting Up an Administered Connection

The following procedures can be used to set up an administered connection on the Generic 3r:

1. Verify that the System Access Terminal displays:

```
enter command:
```

2. Enter `add administered-connection 1`. Press the **Return** key.

The screen displays an Administered Connection form.
(See the following figure.)

3. In the field labeled `Originator`, enter the extension number assigned to the modem being connected to the pgate connection. Press the **Return** key.
4. In the field labeled `Destination`, enter the extension number assigned to the modem being connected to the *Sun Enterprise 3000* system. Press the **Enter** key.

Screen displays:

```
command successfully completed,
enter command:
```

```

                                ADMINISTERED CONNECTION
Connection Number: 1 Enable? y
  Originator: 2007
  Destination: 2009
      Name:

AUTHORIZED TIME OF DAY

      Continuous? y

MISCELLANEOUS PARAMETERS

      Alarm Type: warning           Alarm Threshold: 5
      Retry Interval: 2             Auto Restoration? y
      Priority: 5
```


Sun Enterprise 3000 System Factory Hardware Installation Procedures

Overview

This appendix outlines the hardware installation procedures performed by the factory for the *Sun^{*} Enterprise[†] 3000 Systems*. You can use these procedures to bring a *Sun Enterprise 3000 System* in the field up to factory standard.

The factory hardware installation procedures include the following:

- General Procedures
- Install and Remove Boards
- Install Single In Line Memory Modules (SIMMs)
- Install SBus Cards
- Install Additional CPU/Memory Boards
- Power/Cooling Module
- Install an Internal Tape Drive
- Install an Internal Hard Disk Drive.

 **WARNING:**

Before you begin the hardware installation, make sure the computer is plugged in, the power is off, and you are wearing an Electro-Static Discharge (ESD) ground strap.

**Sun* is a registered trademark of Sun Microsystems, Inc. in the United States and other countries.

†*Enterprise* is a trademark of Sun Microsystems, Inc. in the United States and other countries.

General Procedures

Overview

This section describes the general procedures used for factory installation of system hardware components.

 **CAUTION:**

You must wear an ESD wrist strap when installing or removing electronic components to prevent electrical discharge that may harm the system.

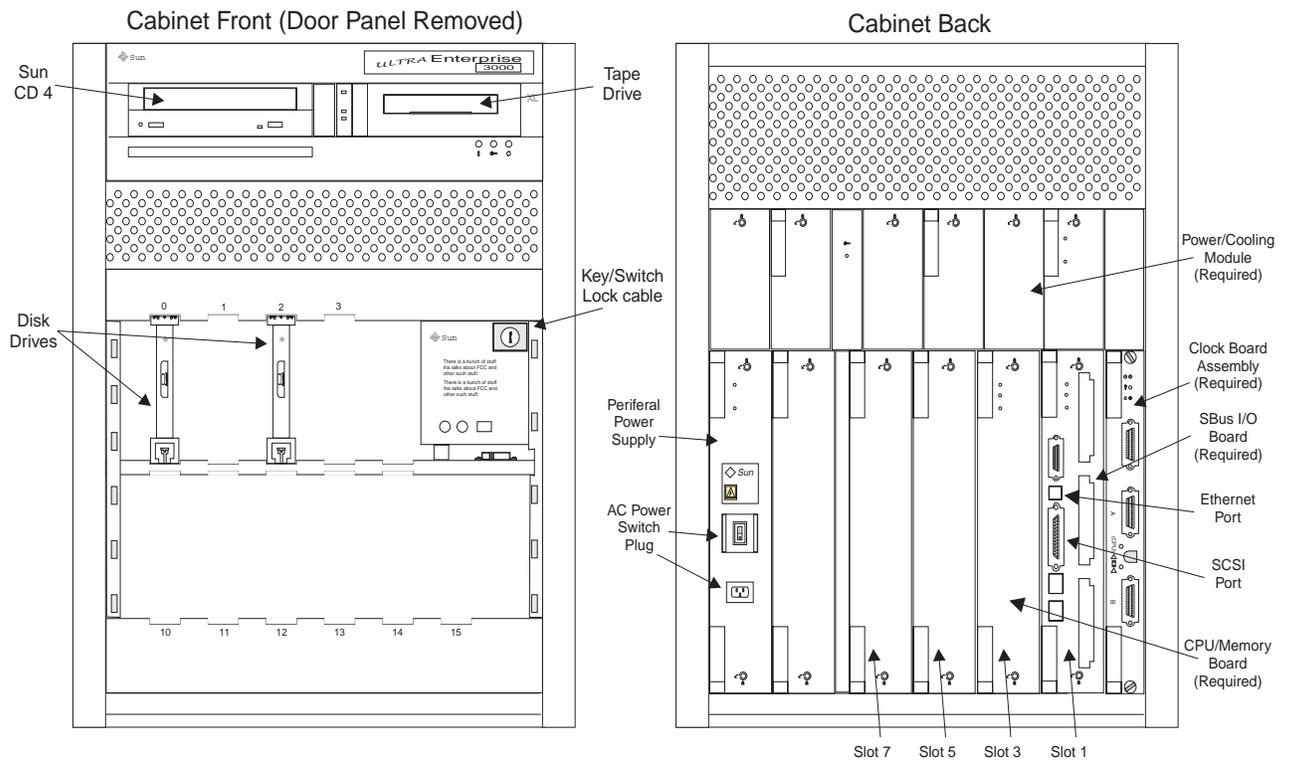
The following general procedures are included:

- Hardware Components
- Identify Free Board Slots
- Install and Remove Boards.

Hardware Components

This figure helps identify the following components in your *Sun Enterprise 3000 System*

- Internal CD-ROM and tape drives
- Internal Hard Disk Drives
- Free Board Slots
- Power Supply
- Memory boards/SIMM Receptacles.

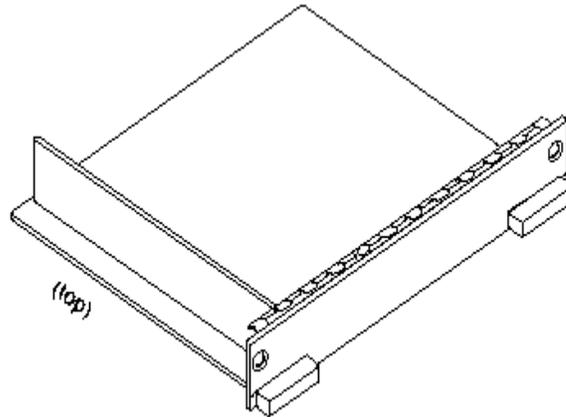


Identify Free Board Slots

Free board slots are easily recognized because they are covered by filler panels, which have rectangular plastic knobs instead of extraction levers

Filler Panel

This figure shows a filler panel.

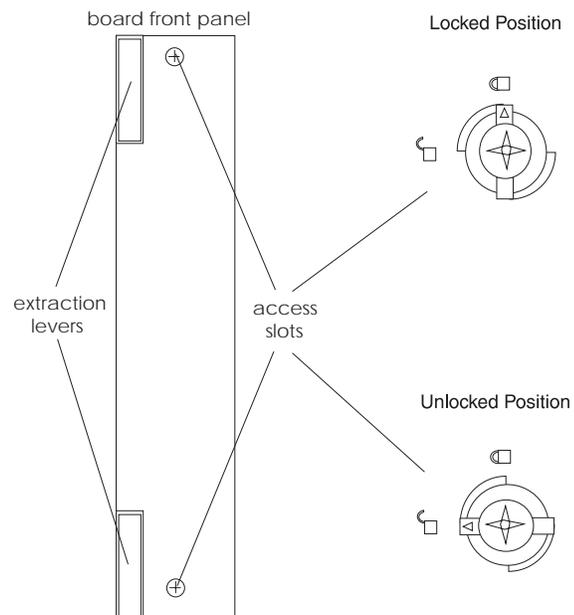


Install and Remove Boards

Boards are accessed from the rear of the system. Each board is locked into place by a combination of “extraction levers,” which help seat the board in the centerplane receptacles, “access slots.” These centerplane receptacles and access slots align and attach the board to the system’s card cage.

Board Locking Mechanisms

This figure shows the board locking mechanisms.



Install a Board

To install a board, grasp the extraction levers in the open position. Align the board with the centerplane receptacles and slide the board to the rear until it seats into the backplane receptacle. Then rotate the extraction levers into the locked position and, using a *Phillips*^{*} head screwdriver, rotate the board locks into the locked position (see the preceding figure).

NOTE:

Adding a board may require adding a Power/Cooling Module (PCM). There must be one PCM for every two boards installed in the system. The PCMs must be installed adjacent to populated board slots to ensure the fan in the PCM can cool the associated boards.

Remove a Board

CAUTION:

A board should be removed from a powered-on system only after the ARS software has disabled that board. Otherwise, the operating system must be halted and the system powered off prior to board removal.

To remove a board, you must unlock the access slots with a *Phillips* head screwdriver and then unseat the board by pulling the ends of both extraction levers simultaneously.

Additional Reference

For additional information and step-by-step instructions for installing or removing boards, see the *Sun Enterprise 3000 System Manual* distributed with your unit.

^{*}*Phillips* is a registered trademark of the Phillips Screw Company.

Installing Specific Components

Overview

This section describes procedures used for factory installation of specific components. The following procedures are included:

- Install Single In Line Memory Modules (SIMMs)
 - Install SBus Cards
 - Install Additional CPU/Memory Boards
 - Power/Cooling Module
 - Install an Internal Tape Drive
 - Install an Internal Hard Disk Drive.
-

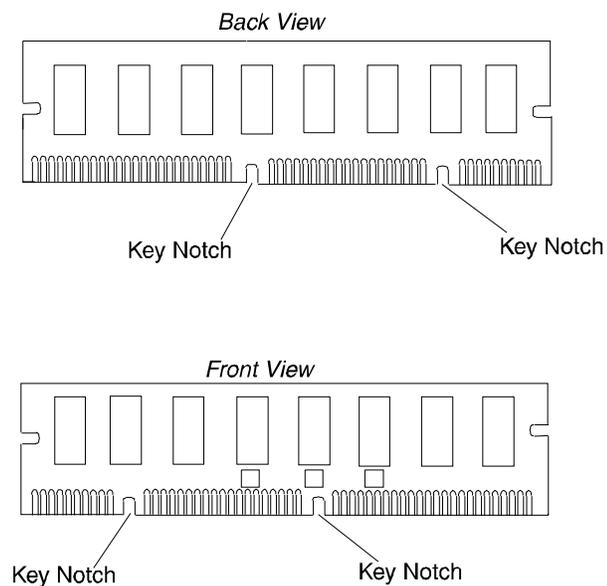
Install Single In Line Memory Modules (SIMMs)

The *Sun Enterprise 3000 System* comes equipped with one bank of SIMMs (256 MB) installed. If you need to install additional SIMMs, they must be installed in full banks (see the CPU/Memory Board and Layout figure).

To install a SIMM, you need to identify the front and back of the SIMM and align it in the connector on the CPU/Memory board.

SIMM Chip

This figure shows back and front views of a 32-MB SIMM chip.



Locate the SIMM slots on the CPU/Memory board and install the appropriate chips. (All slots must contain the same speed and capacity chips.) See the following figure for the board layout.

Fill one entire bank at a time. You will add memory in blocks of 256 MB.

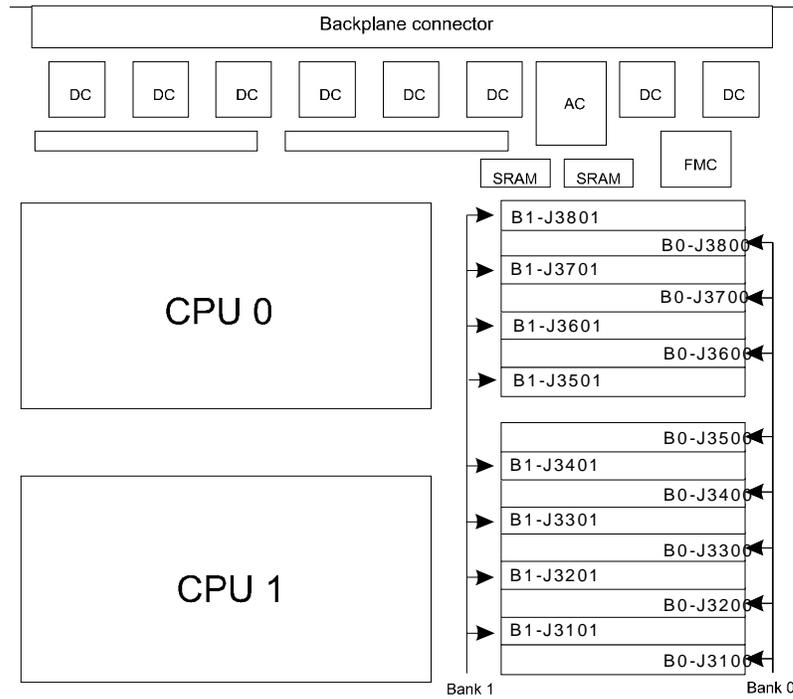
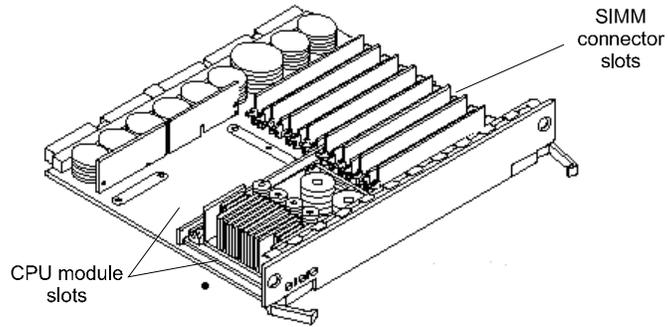
SIMM Installation Sequence

Fill slots in the order shown in the following table.

Installation Sequence	Slot Number	Installation Sequence	Slot Number
1	B0J3100	9	B1J3101
2	B0J3200	10	B1J3201
3	B0J3300	11	B1J3301
4	B0J3400	12	B1J3401
5	B0J3500	13	B1J3501
6	B0J3600	14	B1J3601
7	B0J3700	15	B1J3701
8	B0J3800	16	B1J3801

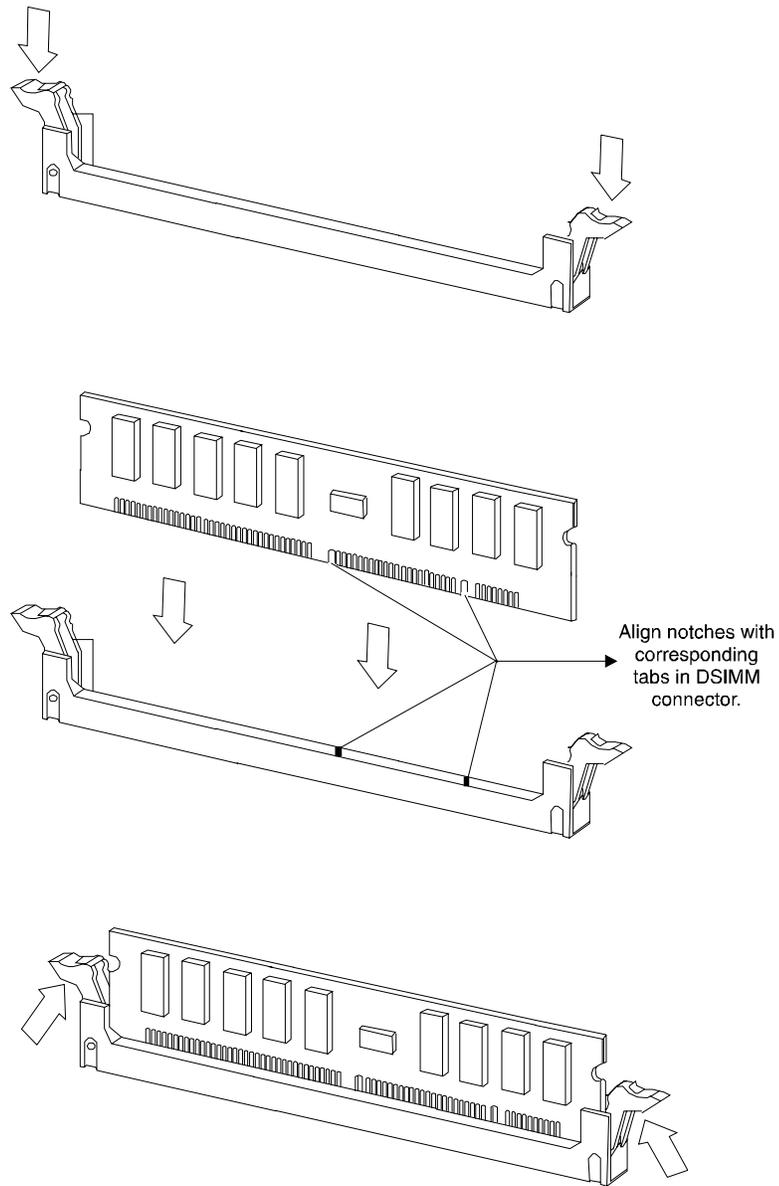
CPU/Memory Board and Layout

This figure shows the CPU/Memory Board and Layout



Installing a SIMM in the *Sun Enterprise 3000* System

This figure shows how to install a SIMM in the *Sun Enterprise 3000* System. To install a SIMM, unlock (press down) the ejector levers at both ends of the connectors, insert the SIMM into the slot, and relock the ejector levers.



Additional Reference

For additional information, see the *Sun Enterprise 3000* System Manual shipped with your unit.

Install SBus Cards

The following is a brief description of how to install an SBus card:

1. Remove the SBus I/O Board from slot 1 (see Chapter 2, *Installing the Sun Enterprise 3000 System*, and “General Procedures” in this Appendix).

⚠ CAUTION:

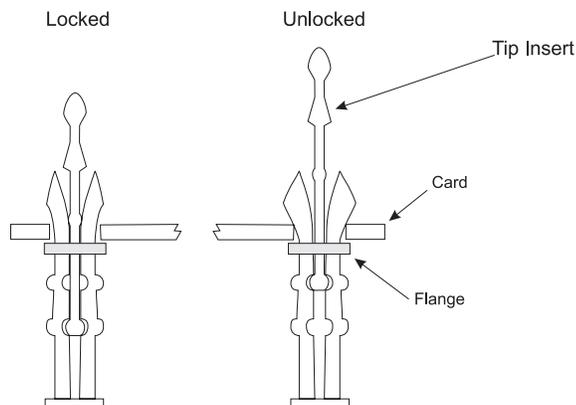
Be sure to wear an ESD wrist strap and use an anti static pad whenever working with electronic components.

2. If there is an SBus card that is being replaced, remove it from the SBus I/O board (see the *Sun Enterprise 3000 System, System Manual*).
3. Unpack the SBus card and prepare it for installation.

⇒ NOTE:

Depending on the card and packaging, some card preparation other than careful unpacking may be required. See the *Sun Enterprise 3000 System, System Manual*.

4. If the plastic standoffs for the desired SBus card slot are locked (in the down position), gently but firmly lift up on the tip inserts until they move to the unlocked position (see the following figure).



5. Holding the I/O card by the edges, place the SBus card faceplate under the springfinger and against the rear face of the SBus I/O board front panel.

The I/O connectors of the SBus card should be visible through the opening in the SBus I/O board front panel.

6. Align the mounting holes in the rear of the SBus card with the unlocked plastic standoffs.
7. Gently but firmly press down on the rear corners of the SBus card until it seat onto the flange of the plastic standoffs.
8. Gently but firmly press down on the tip insert of each plastic standoff until it seats into the locked position (see the Plastic Standoffs for SBus Cards figure).
9. Replace the face plate screws through the front of the SBus I/O board to secure the SBus card to the SBus I/O board front panel.
10. Replace the I/O board in the slot from which you removed it in step 1 (see the *Sun Enterprise 3000 System, System Manual*).

 **NOTE:**

After an I/O board has been removed and reinserted, the system may experience a clock synchronization problem. That is, the clock on the I/O board may become unsynchronized with the clock on the Clock Board. For the procedures to re-synchronize the clocks, see *CentreVu Call Management System, Release 3 Version 6, Software Installation and Maintenance* (585-215-866) document.

 **NOTE:**

Sometimes the system fails to recognize a newly installed HSI card. In this case, `show-devs` does not show the HSI card and `/var/adm/messages` fails to recognize the card upon bootup. If this happens, see the *CentreVu Call Management System, Release 3 Version 6, Hardware Maintenance and Troubleshooting* (585-215-861) document.

Additional Reference

For additional information on installing SBus cards see *Sun Enterprise 3000 System, System Manual*.

Install Additional CPU/Memory Boards

Before installing additional CPU/Memory boards, fill both banks of SIMMs on the memory board(s) already installed [see Install Single In Line Memory Modules (SIMMs)].

CAUTION:

A board should be removed from a powered-on system only after the ARS software has disabled that board. Otherwise, the operating system must be halted and the system powered off prior to board removal.

Fill one or both banks of SIMMs on the CPU/Memory board you are adding (memory must be added in full banks of 256 MB each).

Remove the filler panel from the slot you are going to use for the new CPU/Memory board and install the new board as described in “Install and Remove Boards.”

NOTE:

Adding a board may require adding a Power/Cooling Module (PCM). There must be one PCM for every two boards installed in the system. The PCMs must be installed adjacent to populated board slots to ensure the fan in the PCM can cool the associated boards.

Additional References

For additional information on installing CPU/Memory boards, see the *Sun Enterprise 3000 System Manual* distributed with your unit.

Power/Cooling Module

One Power/Cooling Module (PCM) is needed for every two boards installed in the system. The PCM provides power and cooling for two boards.

Minimum and Redundant Power Supply Requirements

The following table shows the PCM requirements for the *Sun Enterprise 3000* System. A redundant PCM can be installed. If a redundant PCM is present and one PCM fails, the redundant PCM will provide necessary power and cooling for the boards supported by the failed PCM.

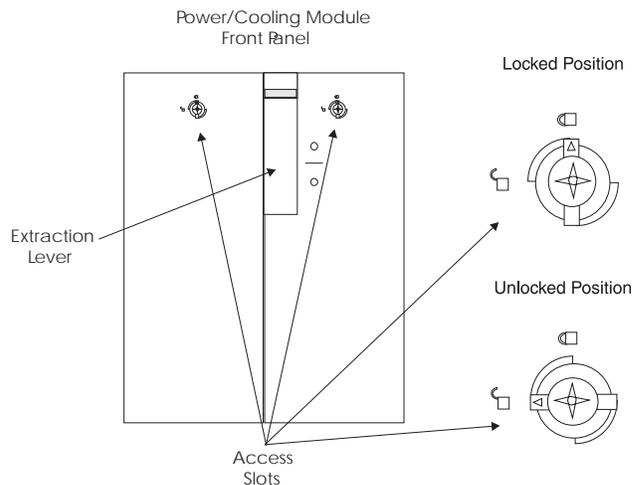
Number of Boards	Minimum Number of Working PCMs	Redundant Working PCMs
1-2	1	2
3-4	2	3

Install or Replace a PCM

The PCM is installed or removed in much the same manner as an I/O board (see Install and Remove Boards). The main difference is in the different configuration of the PCM.

PCM Faceplate

This figure shows a PCM faceplate.



Additional Reference

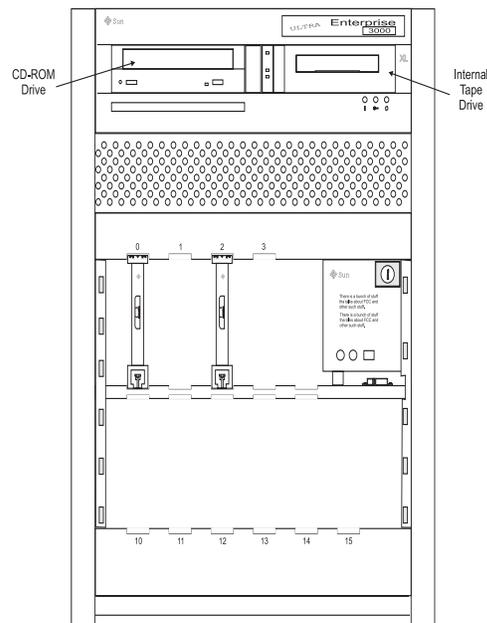
For additional information see the *Sun Enterprise 3000* System Manual distributed with your unit.

Install an Internal Tape Drive

The basic configuration for the *Sun Enterprise 3000* system equipped for the CMS application includes a 14-GB internal tape drive. This unit is installed in the right hand side of the Small Computer System Interface (SCSI) tray which mounts from the front of the system.

Front View of *Sun Enterprise 3000* System

This figure shows the front view of the *Sun Enterprise 3000* System.



To install a tape drive in the SCSI tray:

1. Remove the front bezel.

➡ NOTE:

It may be necessary to apply pressure to release the front bezel anchor pins. To do this, place your thumbs against the face of the SCSI tray installed units and press in with your thumbs while pulling out with your fingers.

2. Loosen the two captive screws.

 **CAUTION:**

When loosening or tightening the captive screws, use your thumb and fingers only. The shaft of these screws is thin and can easily be broken if too much pressure is applied.

3. Remove the SCSI tray with any installed devices.
4. Remove seven screws on top of the tray and remove the top panel.
5. Remove the filler mechanism:
 - a. Loosen the three captive screws and remove the unit
 - b. Separate the filler from what will become the mounting plate by removing the four screws (discard the filler portion)
 - c. Secure the mounting bracket to the tape drive
 - d. Set the SCSI address to 5
 - e. Secure the tape drive with the mounting bracket to the SCSI tray using the three captive screws.
6. Reverse steps 1 through 4 to reassemble.

Additional Reference

For additional information on this process, see the *Sun Enterprise 3000 System Manual*.

Install an Internal Hard Disk Drive

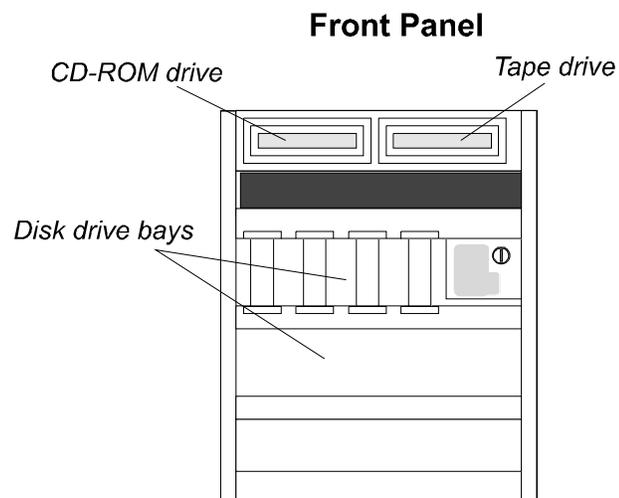
The internal hard disk drives are installed in the front of the system (see the following figure). To expose the disk drive bays, open the access door below the SCSI tray.

⚠ CAUTION:

You must wear an ESD wrist strap when installing or removing hard disk drives to prevent electrical discharge that may harm system components.

Internal Hard Disk Drive Locations

This figure shows the internal hard disk drive locations.



You may install as many as ten internal disk drives. The drive slots are numbered 0 through 3, on the upper level and 10 through 15 on the lower level.

Each disk drive has a retainer latch/drive handle on the front of the drive. To install a drive, unlatch and extend the retainer and slide the drive carefully into the appropriate drive slot. When the drive stops, gently apply pressure to the face of the drive until you hear the connectors engage. Then lower the retainer latch and snap it in place, making certain the drive is secure and does not extend beyond the front of the chassis.

⚠ CAUTION:

Do not use excessive force to seat the connector or to close the retainer latch.

⇒ NOTE:

In a mirrored system, disk drives must be installed in pairs in order to increase system capacity and use all the disk space available. Usually, a factory installed disk-mirroring system has an even/odd mirror arrangement. That is, disks with even target numbers are in submirror d19, while disks with odd target numbers are in d20. However, for easy installation in a field upgrade, the existing disk drives are usually in submirror d19 and the new disk drives are in submirror d20.

Additional Reference

For additional information, see the *Sun Enterprise 3000 System Manual* distributed with your unit.

Glossary

Overview

This Glossary defines terms and acronyms used in this document that may not be familiar to you. The Glossary includes a separate list of Acronyms at the end.

Terminology

Access Permissions

Permissions assigned to a Call Management System (CMS) user so that the user can access different subsystems in CMS or administer specific elements (splits/skills, trunks, vectors, and so on) of Automatic Call Distribution (ACD). Access permissions are specified as **read** or **write** permission. Read permission allows the CMS user to access and view data (for example, run reports or view the Dictionary subsystem). Write permission allows the CMS user to add, modify, or delete data and execute processes.

Acknowledgment

A window that requires the user to confirm an action or to acknowledge a system message (for example, system going down, warning, or fatal error for the user window). This window cannot be moved, sized, or scrolled and disappears only when the user confirms the message.

Action List

A menu in the upper right corner of most user windows. The menu lists the actions available for that particular user window (for example, add, modify, delete, and so on). The user selects an action after entering necessary data in the window.

Add Package

A *Solaris*^{*} operating system command (`pkgadd`) that allows you to add an additional software package.

Agent

A person who answers calls to an extension in an ACD split. This person is known to CMS by a login identification keyed into a voice terminal.

Agent Login ID

A 1- to 4-digit number (Generic 2) or a 1- to 9-digit number (Generic 3) entered by the agent at the ACD extension to activate the position. Agent logins are required for all CMS-measured ACD agents.

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

Agent Skill	The different types of calls a particular agent can handle. An agent can be assigned up to four skills. These skills are assigned as either primary or secondary skills. See “Primary Skill” or “Secondary Skill” definitions in this Glossary.
Agent State	A feature of agent call handling that allows agents to change their availability to the system (for example, ACW, AVAIL, ACD).
Announcement	A recorded message that tells the caller what destination the call has reached. The announcement also often tries to persuade the caller to stay on the line. With Call Vectoring, announcements can be part of a vector’s call processing. An announcement is assigned to a vector by entering an announcement number.
Asynchronous Connector	A logical device used to control the computer timing protocol in which a specific operation is begun upon receipt of an indication (signal) that the preceding operation has been completed.
Asynchronous Data Transmission	A scheme for transmitting data where each character is preceded by a start bit and followed by a stop bit, thus permitting data elements to occur at irregular intervals. This type of transmission is advantageous when transmission is not regular (when characters are typed at a keyboard).
Asynchronous Data Unit (ADU)	A data communications equipment (DCE) type device that allows direct connection between RS-232 equipment and the digital switch.
Automatic Call Distribution (ACD)	<p>A switch feature. ACD is software that channels high-volume incoming call traffic to agent groups (splits or skills).</p> <p>Also an agent state where the extension is engaged in an ACD call (with the agent either talking to the caller or the call waiting on hold).</p>
Backup	The process of protecting data by writing the contents of the disk to a tape that can be removed from the computer and stored safely. A spare copy of data or software that you keep in case the original is damaged or lost. CMS provides three different types of backups: CMSADM File System Backup, CMS Full Maintenance Backup, and CMS Incremental Maintenance Backup.
Boot	To load the system software into memory and start it running.
Bus	<p>A signal route to which several items of a computer system may be connected in parallel so that signals can be passed between them.</p> <p>In general, a multiconductor electrical path used to transfer information over a common connection from any of several sources to any of several destinations.</p>

Cables	Wires or bundles of wires configured with adapters or connectors at each end and used to connect two or more hardware devices.
Call Level Interface (CLI)	A database programming interface from the Structured Query Language (SQL) Access Group, an SQL membership organization. Under CLI, SQL statements are passed directly to the server without being recompiled.
Call Management System Query Language (CMS-QL)	A relational database management (operating) system used to organize most of CMS's data. Automatically comes with CMS and runs in the background.
Call Vectoring	A highly flexible method for processing ACD calls using Vector Directory Numbers (VDNs) and vectors as processing points between trunk groups and splits or skills. Call vectoring permits treatment of calls that is independent of splits or skills.
Cartridge Tape	A 0.25-inch (6.35-mm) magnetic tape used in the tape drive of the Desktop Backup Pack and External Storage Module to read and write data.
CentreVu[®] CMS	<i>CentreVu</i> Call Management System (CMS). A software product used by business customers that have a Lucent Technologies telecommunications switch and receive a large volume of telephone calls that are processed through the Automatic Call Distribution (ACD) feature of the switch.
CMS Administration (CMSADM) Filesystem Backup	A backup that saves all the file systems on the machine which includes <i>Solaris</i> 2.5.1 system and programs, CMS programs and data, and non-CMS data you place on the computer in addition to the CMS data. See the "Backup" definition for more details.
Command	A command is an instruction used to tell the computer to perform a function or to carry out an activity.
Configuration	Configuration is the way that the computer is set up to allow for particular uses or situations.
Copy	Copy means to duplicate information.
Custom Reports	Real-time or historical reports that have been customized from standard reports or created from original design.

Daemon	Pronounced “demon.” A <i>UNIX</i> * program that executes in the background ready to perform an operation when required. Usually unattended processes initiated at start-up, such as print spoolers, e-mail handlers or schedulers.
Data Collection Off	CMS is not collecting ACD data. If you turn off data collection, CMS will not collect data on current call activity.
Database	A group of files that store ACD data according to a specific time frame: current and previous intrahour real-time data and intrahour, daily, weekly, and monthly historical data.
Database Item	A name for a specific type of data stored in one of the CMS databases. A database item may store ACD identifiers (split numbers or names, login IDs, VDNs, and so on) or statistical data on ACD performance (number of ACD calls, wait time for calls in queue, current states of individual agents, and so on).
Database Tables	Tables that CMS uses to collect, store, and retrieve ACD data. Standard CMS items (database items) are names of columns in the CMS database tables.
Data Communications Equipment (DCE)	Modems are a good example of DCE. Any equipment that connects to Data Terminal equipment (DTE) using an RS-232 standard interface.
Data Communications Interface Unit (DCIU)	A hardware device on the Generic 2 switches that prepares and sends architecture messages to other switches or application adjuncts.
Data Terminal Equipment (DTE)	Data Terminal Equipment (DTE) includes terminals, personal computers, and workstations. A <i>Sun</i> † <i>SPARCserver</i> ‡ computer is a DTE device.
Device	The term used to refer to the peripheral itself; for example, a hard disk or a tape drive. A peripheral is sometimes referred to as a subdevice or an Logical Unit (LU).
Disk	A round platter, or set of platters, coated with magnetic medium and organized into concentric tracks for storing data.

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

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

Dynamic random access memory Single In-line Memory Module (DSIMM)	A small printed circuit card that contains Dynamic Random Access Memory (DRAM).
Error Correction Code (ECC)	A code that protects the customer's system and data from single bit soft errors that can occur frequently depending on the environment.
Error Message	An error message is a response from a program indicating that a problem has arisen or something unexpected has happened, requiring your attention.
Ethernet	A type of network hardware that allows communication between systems connected directly together by transceiver taps, transceiver cables, and a coaxial cable. Also implemented using twisted-pair telecommunications wire and cable.
Ethernet Address	A unique number assigned to each system when it is manufactured. The Ethernet address of your system is displayed on the banner screen that appears when you power on your system.
Exception	A type of activity on the ACD which falls outside of the limits the customer has defined. An exceptional condition is defined in the CMS Exceptions subsystem, and usually indicates abnormal or unacceptable performance on the ACD (by agents, splits or skills, VDNs, vectors, trunks, or trunk groups).
Expert Agent Distribution (EAD)	A call queued for a skill will go to the most idle agent (primary skill agent). Agents who are idle and have secondary agent skills will receive the call queued for a skill if there are no primary agents available.
Expert Agent Selection (EAS)	An optional feature that bases call distribution on agent skill (such as language capability). EAS matches the skills required to handle a call to an agent who has at least one of the skills required.
External Controller	A connector that is outside the cabinet and is accessible to the user without having to open any doors, remove any panels, or remove any cabinet covers (also known as an "External Connector").
Forecast Reports	These reports display expected call traffic and agent or trunk group requirements for the customer's call center for a particular day or period in the future.
Gigabyte (GB)	One gigabyte equals 2^{30} bytes (1073741824 bytes).

Hand-Shaking Logic	A format used to initiate a data connection between two data module devices.
Hard Disk	A device that stores operating systems, programs, and data files.
High Speed Serial Interface/SBus (HSI/S)	The HSI/S controller card is a 4-port serial communications SBus card. Each of the four ports is used for a single physical X.25 link. It is an add-on package that is needed by CMS for multiple ACDs.
Historical Database	Contains intrahour records for up to 62 days in the past, daily records for up to 5 years in the past, and weekly or monthly records for up to 10 years for each CMS-measured agent, split or skill, trunk, trunk group, vector, and VDN.
Historical Reports	Reports that display past ACD data for various agent, split or skill, trunk, trunk group, vector, or VDN activities.
Host Adapter	An I/O card that plugs into the computer backplane and is used as an interface between the computer system and the Small Computer System Interface (SCSI) bus.
Host Computer	A computer that is attached to a network and provides services other than simply acting as a store-and-forward processor or communication switch. The <i>Sun SPARCserver</i> or <i>Sun Enterprise 3000</i> computer is your host computer and hosts the CMS application software.
Host Name	A name that you (or your system administrator) assign to your system unit to uniquely identify it to the <i>Solaris 2.5.1</i> operating system (and also to the network).
Hung System	A system that does not respond to input from the keyboard or mouse.
INFORMIX*	A relational database management system used to organize CMS's data. An add-on software package needed by CMS.
Install	The procedures used to set up the hardware and software of a computer, terminal, printer, and modem so that they can be used. Installing often includes customizing the system for a particular situation or user.
Interface	A common boundary between two systems or pieces of equipment.

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

International Telecommunications Union (ITU)	Formerly the Consultative Committee for International Telephony and Telegraphy (CCITT). An international organization that sets communications standards.
Internet Protocol (IP)	An integral part of the internet communication protocol system (see Transmission Control Protocol/Internet Protocol [TCP/IP]). The IP provides the routing mechanism of the TCP/IP. See also Network Address.
Interval-Based Items	A category of database items. These items represent the amount of time during a collection interval spent doing a particular activity. Interval-based items are updated throughout the collection interval and timing is restarted at the end of the interval. Interval-based items should only be used to show the amount of time in an interval for an activity or to calculate percentages of time spent in an interval. Interval-based items should not be used to calculate averages (such as average hold time).
Intrahour Interval	A 15-, 30-, or 60-minute segment of time starting on the hour. An intrahour interval is the basic unit of CMS report time.
Keyboard	An input device for entering information by typing.
Keyboard Port	The port on your Desktop <i>Sun SPARCserver</i> computer unit where the keyboard cable is connected.
Link Access Procedure Balanced	The ITU standard error correction protocol used on most current X.25 packet switching networks.
Link	A transmitter-receiver channel or system that connects two locations.
Log In	The process of gaining access to a system by entering a user name and, optionally, a password.
Log Out	The process of exiting from a system.
Logical Unit	The term used to refer to a peripheral device such as a disk drive.
Measured	A term that means an ACD element (agent, split or skill, trunk, trunk group, vector, VDN) has been identified to CMS for collection of data.
Megabyte (MB)	One megabyte equals 2^{20} bytes (1048576 bytes).
Menu	A list of items from which the user can select one. A menu cannot be moved or sized and does not count in the user window count.

Messages	Temporary windows used only for displaying information like “field help” and syntactical field errors. Message windows cannot be moved, sized, or scrolled and do not count in the user-window count. Messages windows are automatically removed when the user corrects the error or moves to the next field.
Modem	A device that enables a computer or terminal to establish a connection with another computer or terminal and to communicate data through telephone lines.
Multi-user Mode	A mode of CMS in which any administered CMS user can log into CMS. Data continues to be collected if data collection is “on.”
Network Address	A unique number assigned to each system on a network, consisting of the network number and the system number. Also known as Internet Address or Internet Protocol (IP) address.
Network Hub	Hardware that connects a computer to a Network Terminal Server (NTS).
Network Terminal Server (NTS)	A hardware terminal that connects to the Network Hub via cabling. The NTS provides 50-pin switch champ connectors used to attach 64 serial devices using the patch panel cables and patch panels.
Network Terminal Server Patch Panel	Hardware that has ports for connecting serial peripheral devices (for example, printers, terminals and modems). The NTS patch panel connects to the NTS via PBX-Champ cabling.
Non-Volatile Random Access Memory (NVRAM)	A random access memory (RAM) system that holds its contents when external power is lost.
Open Window	A window that remains open because the user has not yet closed it with the “Exit” Screen Label Key (SLK). An open window becomes the current window when it initially appears on the screen or when the user makes it the current window using the “Current” SLK.
Operating System (OS)	The software that controls and allocates the resources, such as memory, disk storage, and the screen display for the computer.
Partitions	Sections of the hard disk that are used to store an operating system and data files or programs. By dividing the disk into partitions, you can use the space allocated in a more efficient and organized manner.
Password	A character string that is associated with a user name. Provides security for a user account. Desktop <i>Sun SPARCserver</i> computers require you to type a

	password when you log into the system, so that no unauthorized person can use your system.
Port (I/O Port)	A designation of the location of a circuit that provides an interface between the system and lines and/or trunks.
Primary Skill	An agent will handle calls to many skills before calls to secondary skills. See “Agent Skill” in this Glossary.
Primary Window	The first window opened in response to a menu selection. A primary window may also generate another user window (secondary window). A primary window can be moved, sized, or scrolled, and counts in the window count.
Printer	A physical device that takes electronic signals, interprets them, and prints them on paper.
Private Branch Exchange (PBX)	A private switch system providing voice-only or voice and data communications services (including access to public and private networks) for a group of terminals within a customer’s premises. Also see Switch.
Processor Interface (PI)	A hardware device on the Generic 3i switches that prepares and sends architecture messages to other switches or application adjuncts.
Queue	A holding area for calls waiting to be answered in the order in which they were received. Calls in a queue may have different priority levels, in which case, calls with a higher priority are answered first.
Read Permission	A mode that allows a CMS user to access and view data (for example, run reports or view the Dictionary subsystem). Read permission is granted from the User Permissions subsystem.
Real-Time Database	A database that consists of the current and previous intrahour data on each CMS-measured agent, split or skill, trunk, trunk group, vector, and Vector Directory Number (VDN).
Real-Time Reports	Reports that display current ACD call activity on agents, splits or skills, trunks, trunk groups, vectors, and VDNs for the current or previous intrahour interval. Current intrahour interval real-time reports are constantly updated as data changes during the interval. Previous intrahour interval real-time reports show data totals for activity that occurred in the previous intra-hour interval.
Recommended Standard (RS)	Any one of several Electronic Industries Association (EIA) standards commonly used in U.S. electronic applications.

Refresh Rate	The number of seconds CMS should wait for each update of the real-time report data. A user's fastest allowable refresh rate is defined in the User Permissions — User Data window as a minimum refresh rate. The default refresh rate when a user brings up the report input window is the administered minimum refresh rate plus 15 seconds.
RS-232	An electrical interface standard, normally using a 25-pin (DB-25) physical connector. The electrical portion of the interface is unbalanced (for example, RS-232 has a positive voltage and a ground). This standard was officially renamed TIA/EIA-232-E in 1984, but the RS-232 designation is still most commonly used.
RS-422	A balanced electrical interface (for example, RS-422 has a positive and a negative voltage). This interface is used by the HSI/S card.
RS-423	An unbalanced electrical interface (for example, RS-423 has a positive voltage and a ground).
RS-449	A 37-pin physical interface used by the HSI/S card.
SBus	The Input/Output bus for the <i>Sun SPARCserver</i> computer. Provides slots for additional cards (for example, HSI Controller Card).
SBus Expansion Subsystem	A peripheral device attached to a computer system. The SBus expansion subsystem provides three additional SBus slots and space for two optional SCSI hard disk drives. The SBus expansion subsystem consists of the following: the SBus expansion chassis, the expansion adapter card (in the computer system), and the SBus expansion subsystem cable.
Screen Labeled Key (SLK)	The first eight function keys at the top of the keyboard that correspond to the screen labels at the bottom of the terminal screen. The screen labels indicate the function each key performs.
Scroll Cursor	<i>INFORMIX</i> provides two kinds of cursors when traversing select results. A scroll cursor allows relative movement backward or forward within the query results while a non-scroll cursor allows only forward movement, one record at a time.
SCSI	See Small Computer System Interface.
SCSI Bus	An industry standard peripheral bus that is used to connect intelligent peripherals to a computer. It uses a daisy-chained cabling arrangement that originates at the Host Adapter to interconnect up to seven intelligent

peripheral controllers on the bus. The *Sun SPARCserver* computer uses a fast SCSI-2 implementation.

SCSI ID	Each tap on the SCSI bus is required to have a unique identification or address, which is the SCSI ID. The ID is set by a switch located on each controller. In a Lucent Technologies' implementation, the Host Adapter card (with a SCSI ID of 7) is preset. The remainder can be set with external devices "push buttons." Users never have to open a chassis or touch a circuit-board switch.
SCSI Single-Ended Bus	A version of the SCSI bus designed to minimize cost and space. Cable lengths up to 6 meters are supported. It is not compatible with the differential version of the SCSI bus.
Secondary Skill	An agent will handle secondary skill calls after primary skill calls. See "Agent Skill" in this Glossary.
Secondary Window	A user window that is generated from a primary window. Secondary windows can be moved, sized, or scrolled and do not count in the user window count.
Serial Interface Y-Cable	A cable that attaches to the A/B port on the back of the <i>Sun SPARCserver</i> 10/20 computer. The Desktop <i>Sun SPARCserver</i> 10/20 computer system has two serial ports located on the two terminations of its optional serial interface Y-cable.
Shortcut	A series of tasks which are run immediately on the screen. Shortcut is a fast, easy way to select windows that the customer might look at every day.
Single-User Mode	A CMS mode in which only one person can log into CMS. Data collection continues if data collection is "on." This mode is required to change some CMS administration.
Skill	In relationship to the call center, think of skill as a specific customer need or requirement, or perhaps a business need of the call center.
Slot	An electronic connection designed to receive a module or a printed circuit board (such as a Single In-line Memory Module [SIMM] or a frame buffer board).
Small Computer System Interface (SCSI)	A hardware interface that allows the connection of peripheral devices (such as hard disks, tape drives and CD-ROM drives) to a computer system.

Solaris	The operating system package on the <i>Sun SPARCserver</i> computer. <i>Solaris</i> is a version of the <i>UNIX</i> System V Release 4. CMS requires <i>Solaris</i> to run on the <i>Sun SPARCserver</i> computer or <i>Sun Enterprise 3000</i> computer.
Split	A group of extensions that receive special-purpose calls in an efficient, cost-effective manner. Normally, calls to a split arrive over one or a few trunk groups.
Storage Device	A hardware device that can receive data and retain it for subsequent retrieval. Such devices cover a wide range of capacities and speeds of access.
Structured Query Language (SQL)	A language used to interrogate and process data in a relational database. SQL commands can be used to interactively work with a database or can be embedded within a programming language to interface to a database.
Submenu	A menu that appears as a result of a menu selection. All menu selections followed by a ">" have submenus.
Subsystem	Each CMS main menu selection (for example, Reports, Dictionary, System Setup, Exceptions, and so on), along with Timetable and Shortcut, is referred to as a subsystem of the Call Management System throughout this document.
Sun Enterprise System	A series of host computer systems manufactured by Sun Microsystems Inc. The <i>Sun Enterprise 3000</i> computer is a platform used to support <i>CentreVu</i> [®] CMS R3V6 and later versions as a replacement for the discontinued <i>Sun SPARCserver 10/20</i> platforms.
Sun SPARCserver Computer	A host computer that is attached to a network and provides services other than simply acting as a store-and-forward processor or communication switch. For CMS R3V6, the <i>Sun SPARCserver 5</i> is available for new installations. See <i>Sun Enterprise</i> systems above for replacement information.
Super-user	A user with full access privileges on a system, unlike a regular user whose access to files and accounts is limited.
Switch	A private switch system providing voice-only or voice and data communications services (including access to public and private networks) for a group of terminals within a customer's premises. Also see PBX.
Syntax	The format of a command line.

System	A general term for a computer and its software and data.
Tap	A tap is any intelligent (microprocessor-based) controller connected to the SCSI bus.
Tape Cartridge	A magnetic piece of hardware that is used as a storage unit for data. The SCSI QIC-150, SCSI QIC 2.5-GB, SCSI 4-8 SLR, 8mm 5-GB, and 8mm 14-GB tape cartridges are used to back up and copy data for the platform.
Task	Used with Timetables and Shortcuts. A task is a combination of inputs on a user window (like a report input window) and the completed action list selection (Add, Modify, and so on) which, when executed, performs an operation (for example, running a report).
Transmission Control Protocol/Internet Protocol (TCP/IP)	A communications protocol that provides interworking between dissimilar systems. It is the de facto standard for <i>UNIX</i> systems.
Terminal	A device that consists of a video display and keyboard that you use to type and display information. A terminal is connected to a serial port on the NTS. This is not the same thing as a monitor.
Timetable	An activity task or group of activities tasks (like reports) scheduled for completion at a time that is convenient and nondisruptive for the call center's operation.
Trunk	A telephone line that carries calls between two switches, between a Central Office (CO) and a switch, or between a CO and a phone.
Trunk Group	A group of trunks that are assigned the same dialing digits — either a phone number or a Direct Inward Dialing (DID) prefix.
UNIX System	The operating system on the computer on which CMS runs. A user can access the <i>UNIX</i> system from the “Commands” SLK. <i>SUN</i> uses <i>Solaris</i> as its <i>UNIX</i> operating system.
User ID	The login ID for a CMS user.
User Name	A combination of letters, and possibly numbers, that identifies a user to the system.
User Window	A window the user can move, size, or scroll. It may contain input fields, reports, or help information.

Vector	A list of steps that process calls in a user-defined manner. The steps in a vector can send calls to splits, play announcements and/or music, disconnect calls, give calls a busy signal, or route calls to other destinations. Calls enter vector processing by way of VDNs, which may have received calls from assigned trunk groups, from other vectors, or from extensions connected to the switch.
Vector Command	The keyword in a vector step that describes the action to be executed on an incoming call (for example, "Queue to main," "check backup," "disconnect").
Vector Directory Number (VDN)	An extension number that is used in ACD software to permit calls to connect to a vector for processing. A VDN is not assigned an equipment location; it is assigned to a vector. A VDN can connect calls to a vector when the calls arrive over an assigned automatic-in trunk group or when calls arrive over a dial-repeating (DID) trunk group, and the final digits match the VDN. The VDN by itself may be dialed to access the vector from any extension connected to the switch.
Vector Step	One processing step listed in a vector. A vector step consists of a command and one or more conditions or parameters.
Voice Terminal	A telephone set, usually with buttons, that gives an agent some control over the way calls are handled.
Weekly/Monthly Data	Daily data that has been converted to a weekly or monthly summary.
Window	Any rectangle on the CMS screen that encloses a menu, data entry fields, reports, or messages.
Window Count	The number of primary windows that can be open at any one time.
Write Permission	A mode of CMS that allows the CMS user to add, modify, or delete data and execute processes. Write permission is granted from the User Permissions subsystem.
X.25	An ITU communications protocol standard for packet switching networks that typically operates at 56 Kbps or less. An add-on software package that allows CMS to communicate with the switch using X.25 protocol.

Acronyms

ACD — Automatic Call Distribution
ADU — Asynchronous Data Unit
ANSI — American National Standards Institute
CLI — Call Level Interface
CMS — Call Management System
CMSADM — Call Management System Administration
CMSSVC — Call Management System Services
DCE — Data Communications Equipment
DCIU — Data Communications Interface Unit
DIP — Dual In-Line Package
DSIMM — Dynamic Random Access Memory Single In-line Memory Module
DTE — Data Terminal Equipment
EAD — Expert Agent Distribution
EAS — Expert Agent Selection
ECC — Error Correction Codes
EIA — Electronic Industries Association
ESQL/C — Embedded SQL within 'C' language
HSI/S — High Speed Serial Interface/SBus
IDI — Isolating Data Interface
ILS — International Language Supplement
IP — Internet Protocol
IPC — Intelligent Ports Card
ITU — International Telecommunication Union
LAPB — Link Access Procedure Balanced
NTS — Network Terminal Server
NVRAM — Non-Volatile Random Access Memory
PBX — Private Branch Exchange
PEC — Price Element Code
QPPCN — Quality Protection Plan Change Notice
RAM — Random Access Memory

RISC — Reduced Instruction Set Computer
RS—Recommended Standard
SCSI — Small Computer System Interface
SIMM—Single In-line Memory Module
SLK — Screen-labeled Key
SLR— Single-channel Linear Recording
SQL — Structured Query Language
TCP/IP—Transmission Control Protocol/Internet Protocol
TIA — Telecommunication Industry Association
TSC — Technical Service Center
UPS — Uninterrupted (or Uninterruptable) Power Supply
VDN — Vector Directory Number

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