

Lucent Technologies
Bell Labs Innovations



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

585-215-857
Comcode 108144874
Issue 1
May 1998

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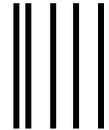
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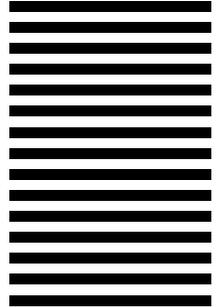
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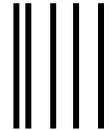
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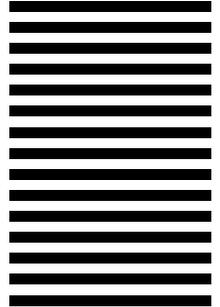
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CentreVu®
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Sun® SPARCserver™ Computers
Hardware Installation

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Preface

Overview

The *CentreVu*[®] *Call Management System Release 3 Version 6 Sun*[®] *SPARCserver*[™] *Computers Installation and Maintenance*, Issue 1 (585-215-868) 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*^{*} *SPARCserver*[†] computers using the *Solaris*[‡] 2.5.1 operating system.

Organization

This document is organized into two volumes, as follows:

- **Chapter 1 — Introduction**

Provides an overview of the supported *CentreVu* CMS software, supported hardware platforms, required software, and supported switch releases. It also includes the purpose of the *Sun SPARCserver* computer, roles and responsibilities, and helpline information.
- **Chapter 2 — Install the *Sun SPARCserver* Computer**

Describes how to set up the *Sun SPARCserver* computer at the customer's location.
- **Chapter 3 — Install Terminals, Printers, and Modems**

Describes how to install terminals, printers, and modems for the *CentreVu* CMS application.
- **Chapter 4 — Connect the *Sun SPARCserver* Computer to the Switch**

Describes how to connect the *Sun SPARCserver* computer to Lucent Technologies switches. In addition, it discusses multi-ACD connectivity.
- **Appendix A — Generic 3i and Generic 1 Administration**

Describes how to administer the *CentreVu* CMS application for Generic 3i and Generic 1 switches.
- **Appendix B — Generic 2 and System 85 Administration**

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

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

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

Describes how to administer the *CentreVu* CMS application for Generic 2 and System 85 R2V4 switches.

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

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

- **Appendix D — *Sun SPARCserver* Computer Factory Installation Procedures**

Outlines the factory hardware and software installation procedures for *Sun SPARCserver* computers. A technician would also use these procedures at a customer site if problems occurred.

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* (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 Migrations, Issue 1* (585-215-856)
- *CentreVu® Call Management System Release 3 Version 6 Sun® SPARCserver Computer, 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, Issue 1* (585-215-866)
- *CentreVu® Call Management System Release 3 Version 6, Hardware Installation, Issue 1* (585-215-867)
- *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 (*CentreVu* 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.

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

This document discusses only the *Sun SPARCserver* 5 computer.

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

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

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

Required Software

To operate properly, the *CentreVu* CMS R3V6 requires the following software packages:

- HSI/S 2.0v1.37 (for all *Sun SPARCserver* computers having multiple ACDs)
- *INFORMIX*^{*}-SE 7.2.2
- *Solaris*[†] 2.5.1
- *SunLink*[‡] X.25 Network Interface Software Version 9.1 or later.
- *Solstice DiskSuite*[§] 4.1
- IONA ORBIX version 2.2 (required for Administration Server).

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

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

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

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

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

Purpose of the Sun SPARCserver Computer

The *Sun SPARCserver* computer provides a hardware and 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.
- Meet the needs of any call center customer by providing support for a varying number of devices typically configured for printers, terminals, and modems (up to 252 serial ports and 4 parallel ports).
- Provide multiprocessor capabilities for performance (two CPUs, 150-MHz clock).
- Enhance system availability by using error-correcting memory which protects the customer's system and data from single-bit soft errors that can occur frequently depending on the environment.
- Improve real-time report refresh rate.
- Increase processor power using Reduced Instruction Set Computer (RISC) technology.
- Include up to two 2-GB internal disks and ten 2-GB external disks for a total of twelve hard disks (see the table below).

Sun SPARCserver 5 Computer	
Internal	One or two 2-GB internal disks
External	Up to ten 2-GB external disks
Total	Up to twelve 2-GB disks

- Allow for cost-effective upgrades (for example, disk storage, memory, and processor power).

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 SPARCserver* computer.

The installation of the prerequisite hardware and 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 the “Sun SPARCserver Computer Factory Hardware Installation Procedures” appendix.

The table below 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 SPARCserver</i> 5 computer and network peripherals	X		
3	Installing terminals, printers, and modems	X		
4	Connecting <i>CentreVu</i> CMS 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 numbers listed below.

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 R3V6 *CentreVu* CMS) and will be connected to the appropriate service organization.

Technician Number

1-800-248-1234

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

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

International Support

For international support, contact your Lucent Technologies Representative/Distributor for more information.

Install the *Sun SPARCserver* Computer

Overview

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

- *Sun SPARCserver* computer and system console
- External SCSI devices
- *SunLink*[‡] HSI/S (High-Speed Serial Interface/SBus) patch panel
- Black Box RS-232/RS-422 interface converter
- Network hub unit
- 8-, 16-, and 64-port Network Terminal Servers (NTSs) and 16-port NTS patch panel(s)
- 8- and 16-port SBus cards
- Connect the Uninterruptible Power Supply (UPS) (optional)
- Set the Remote Console Modem Options
- Connect to Another Network.

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

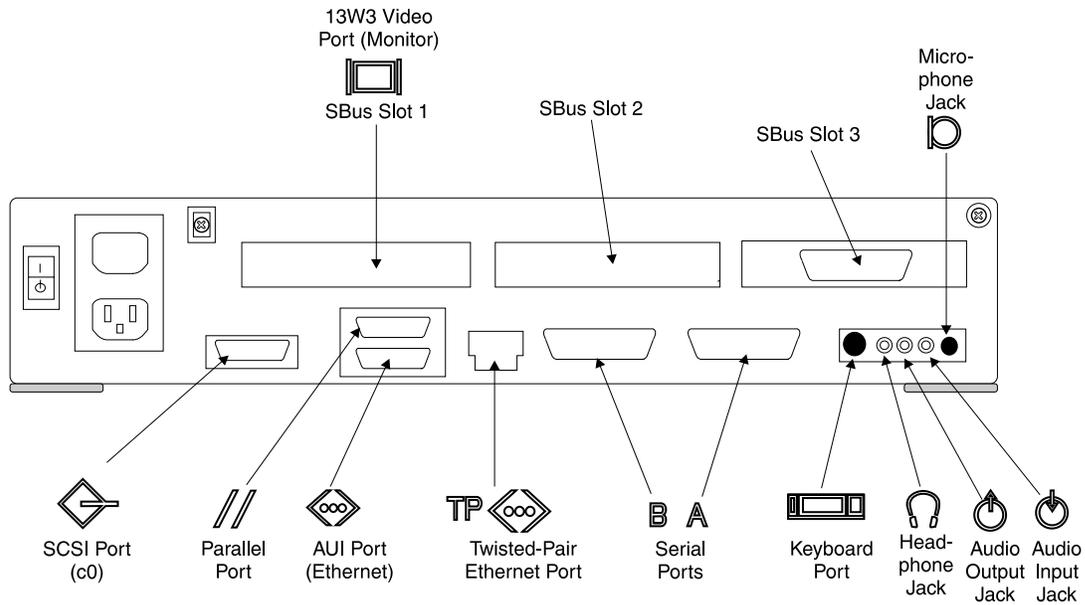
[†]*SPARCserver* is a trademark of SPARC International, Inc.

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

Sun SPARCserver 5 Computer

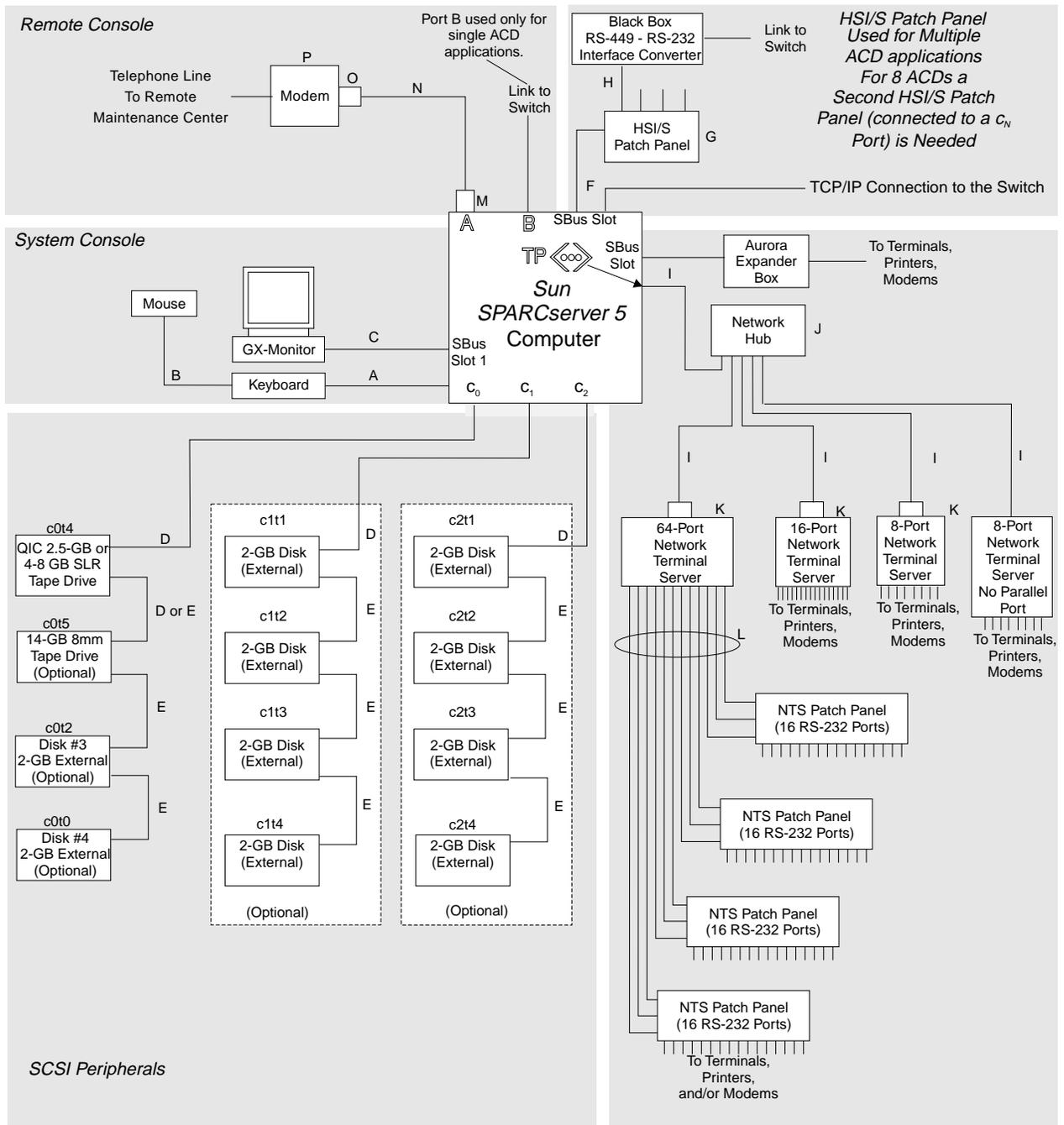
Rear Panel

The figure below shows the rear panel of the *Sun SPARCserver 5* computer and the locations of peripheral connections.



Peripheral Connectivity

The following figure shows how peripheral equipment is connected to the *Sun SPARCserver 5* computer. While this diagram shows up to six different SBus connection, all of these connections cannot be achieved at one time. The *SPARCserver 5* has three SBus slots and one SCSI port (c0). The first SBus slot is required for the monitor. Note the example of terminal, printer, and modem connectivity. This example shows the different hardware that you can use to connect peripherals.



Parts List

The table below lists all the parts required to connect the peripherals to the *Sun SPARCserver 5* computer.

Figure Call Out	Part of Comcode	Vendor Part Number	Description
A	407283415	530-1442-02 Rev C	Keyboard Cable - 2.5' Note: 15' keyboard extension cable available through PEC 12093, Comcode 407361815
B		370-1398-02	Mouse with Cable
C	407272574	9330	Monitor Cable - 2.5' Note: 4-meter monitor extension cable available through PEC 12093, Comcode 407361807 In some instances, the monitor cable is permanently attached to the monitor, so it is not a separate item.
C1			15-pin to 13W3-pin connector adapter (only for a SPARCserver 5 with an entry-level monitor)
D	407537802	530-2115-02 Rev 50	SCSI Cable, 50-to-68 pin (4-8GB Tape Drive)
	407512144		SCSI Cable, 50-to-68 pin (14-GB Tape Drive)
	407579986		SCSI Cable, 50-to-68 pin
E	407579978	530-1884-03 Rev 50	SCSI Cable, 68-to-68 pin (2.1-GB Disk Drive)
	407557859		SCSI Cable, 68-to-68 pin
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'

Figure Call Out	Part of Comcode	Vendor Part Number	Description
J	407086735	IBM [†] Part # - 60G0625	IBM 8222 Network Hub Unit [‡]
		Allied Model # - AT-MR820TR	Allied Telesis <i>CentreCOM</i> [§] Network Hub Unit
K	407086859	LDI-10T	10Base-T transceiver
		<i>CentreCOM</i> 210TS	
L	407068329	460-093-900 Rev 2	PBX Champ Cable for 64-Port NTS - 1 meter
M	846362754	ED3P00170G-1306	ACU Modem Adapter
N	846983039		10-Wire Shielded Modular Cable - 10'
O	846362770	ED3P00170G-1308	Remote Console Adapter
P		Sportster 14.4 Faxmodem	Remote Console Modem
		<i>DataPort</i> [®] Express Model 3715	
		<i>Comsphere</i> [®] 3830	
		<i>Comsphere</i> 3910	
see NOTE:		4261-1002-0600	StarLAN 10 Network Fiber Hub
see NOTE:			LDI 10Base-FL Transceiver
see NOTE:			Fiber-Optic Cable (62.5 mm 2-strand cable)

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

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

[‡]The IBM 8222 Network Hub Unit is no longer available but can be used if the customer has one.

[§]*CentreCOM* is a registered trademark of Allied Telesis

 **NOTE:**

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

Install the Computer

Unpack and Inventory the Equipment

Unpack the *Sun SPARCserver* computer and associated peripheral equipment (for example, external disks and tape drive). Verify the equipment delivered using the shipping papers.

⇒ NOTE:

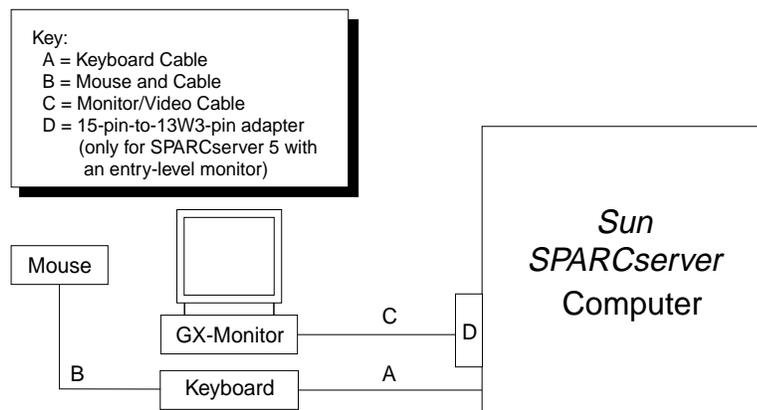
You should wear an electrostatic discharge (ESD) strap when handling internal components.

Contact the Technical Service Center (TSC) for any *Sun SPARCserver* computer 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. 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 *CentreVu® Call Management System Release 3 Version 6 Hardware Maintenance & Troubleshooting* (585-215-861), the “Test the HSI/S Card for Problems” section for details.

Assemble the Computer and System Console

This section describes how to connect the system console peripherals to the *Sun SPARCserver* computer.



Procedure

To assemble the *Sun SPARCserver* computer and system console, do the following:

1. Place the computer in the location selected by the customer. Make sure the power switch is set to Off.
2. Connect the following components (see the previous figure):
 - Keyboard
 - Mouse
 - Monitor
 - 15-pin-to-13W3-pin adapter (only for entry-level monitor)
 - Power cord (to a wall outlet or to a UPS [Uninterruptible Power Supply], if equipped).

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

Additional Reference

For additional information, refer to *Sun SPARCstation 5* Installation Guide.

Identify Installed SBus Cards

This section describes how to identify SBus cards and their locations within the *Sun SPARCserver* computer.

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, as follows, for each SBus card used in either the *Sun SPARCserver* computer.

- cgsix (Turbo GX Video card)
- HSI (HSI/S card)
- lebuffer le dma esp (FSBE/S card in *Sun SPARCserver* computer)
- tr (Token Ring Interface card)
- cseight..... (8-Port Aurora SBus *Multiport** card)
- si016..... (16-Port Aurora SBus *Multiport* card)

**Multiport* is a trademark of Aurora Technologies, Inc.

Identification Procedure

To identify SBus cards in the *Sun SPARCserver* computer, do the following:

1. Assemble your computer (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 SPARCserver Computer...</i>	<i>If You Have Not Yet Powered Up the Sun SPARCserver Computer...</i>
<p><i>then</i> stop the operating system by executing the shutdown command:</p> <pre>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 following command at the `ok` prompt:

```
show-sbus
```

See the following figure for an example of what you would see after entering the `show-sbus` command.

```
Ok show-sbus

Sbus Slot 5

Sbus Slot 4

Sbus Slot 1 cgsix

Sbus Slot 2 lebuffer le dma esp

Sbus Slot 3 cseight

Sbus Slot 0
```

The example in the figure tells you the following:

The *Sun SPARCserver 5* computer has a Turbo GX video card in SBus slot 1, an FSBE/S card in SBus slot 2, and an 8-Port Aurora SBus *Multiport* card in SBus slot 3.

 **NOTE:**

Disregard SBus slots 5, 4, and 0 on the *Sun SPARCserver 5*. These slots are used by devices directly integrated into the system board.

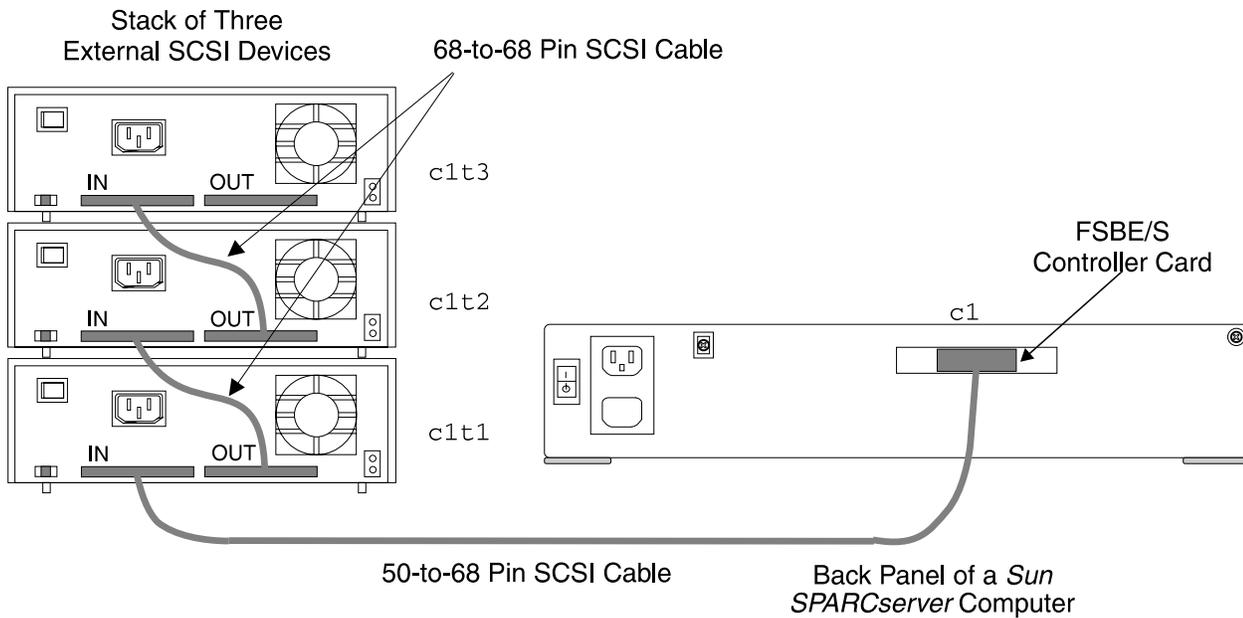
Connect External SCSI Devices

This section describes how to connect the SCSI devices (tape drives, hard disks, and so forth) to the *Sun SPARCserver* computer.

Connect UniPack Devices

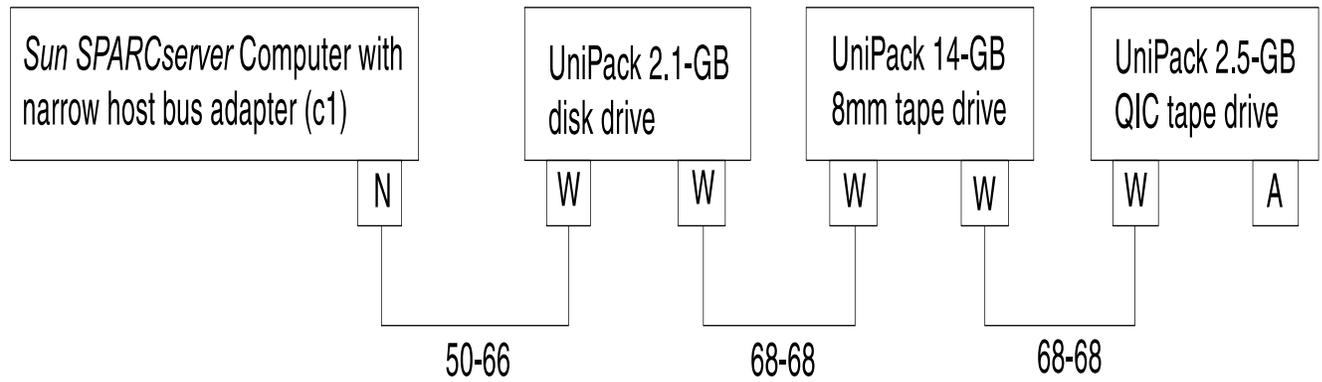
The figure below shows how to connect UniPack SCSI devices. A SCSI cable is connected from the controller card port on the back of the *Sun SPARCserver* to the in-connector on the back of the UniPack device that is closest to the *SPARCserver* in the chain. Another SCSI cable is then connected from the out-connector of that device to the in-connector of the next device. You continue this process until all assigned devices are connected in the SCSI chain.

You do not need to connect a SCSI terminator to the out-connector of the last UniPack device in the chain. To verify that the last UniPack device is terminated, check the LEDs on the back panel of the device labeled Auto Term High and Auto Term Low. In a CMS configuration, both LEDs are lit on the last device in the SCSI chain. If a Unipack device in the SCSI chain is not the last device, then neither termination LED is lit.



SCSI Cabling Schemes

The figure below shows the SCSI cabling schemes possible with *Sun SPARCserver* computers.



W= 68-pin wide SCSI III bus connection

N = 50-pin narrow SCSI II bus connection

A = Auto-terminated

External Hard Drives

The external hard disk drives (shipped from the factory) have already been partitioned and assigned logical addresses. The logical address format is as follows:

$cXtXdXsX$

Slice Partition
 Drive ID Number
 Physical Target ID Number
 (SCSI Device ID)
 Logical Controller ID Number
 (Controller Card Number).

You must connect the disk drives to the same controller card that they were connected to when they were partitioned at the factory. To ensure that the drives are connected properly, a label has been attached to each disk drive. This label uses the first four characters of the address format (for example, $c1t2$) to identify the drive. The figure in *Connect UniPack Devices* shows three external disks connected to the FSBE/S controller card $c1$. Therefore, the external disks are labeled $c1t1$, $c1t2$, and $c1t3$, respectively.

SCSI Controllers

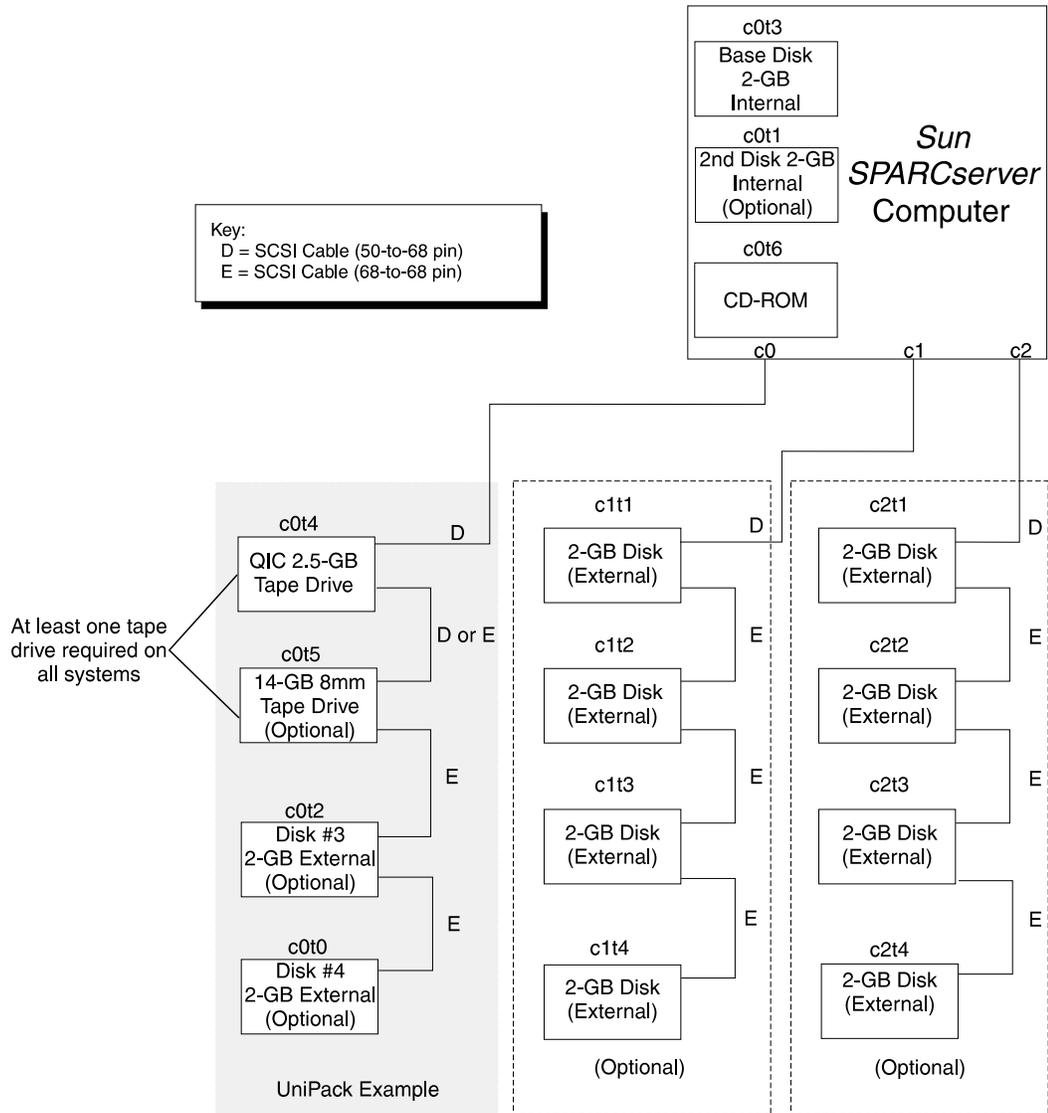
You can have up to three SCSI controllers on your system. One is built into the *Sun SPARCserver* computer and the other two are provided through FSBE/S controller cards. Controller *c1* is the first FSBE/S card and controller *c2* is the second. The system determines which FSBE/S card is first (*c1*) by searching the SBus slots in the order they are listed in The SCSI cabling schemes figure earlier in this chapter.

The SCSI Cabling Schemes figure shows the maximum number of external drives configured for a *Sun SPARCserver 5* computer. If the customer's external configuration is less than maximum, then the number of devices in each chain will vary.

Connect all external SCSI devices to the computers. The next figure shows how to daisy chain the SCSI bus through these devices. In addition, you need to make the power connections for the drives. Since these devices are UniPack devices, a SCSI terminator is not required on the last device in a chain.

If you need additional information about installing SCSI devices, refer to the "Sun SPARCserver Computer Factory Hardware Installation Procedures" appendix and "Additional References" in this chapter.

Daisy Chain the SCSI Bus Through SCSI Devices



Additional References

For additional information, refer to the following documentation:

- *SPARCstorage* UniPack User's Guide
Chapter 3: "Tape Drives"
Chapter 6: "8mm Tape Drive."
- *Sun Solaris** 2.x Handbook for SMCC Peripherals,
Chapter 2: "Setting Up Disk Drives"
Chapter 3: "Setting Up Tape Drives"
Chapter 4: "Setting Up CD-ROM Drives."
- *Desktop Storage Pack Installation and Operation Manual*,
Appendix B: "Small Computer Serial Interface Information."

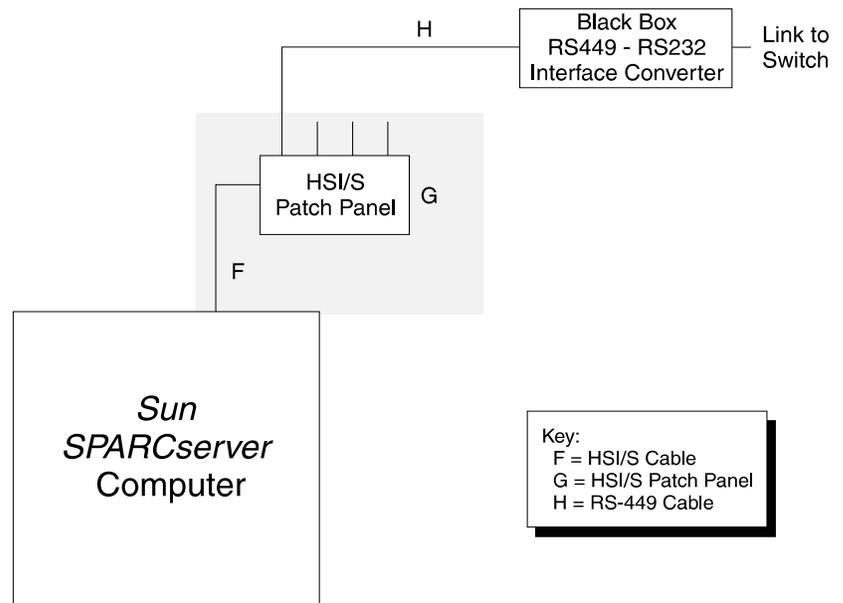
**Solaris* is a registered trademark of Sun Microsystems, Inc.

Connect the SunLink HSI/S Patch Panel

This section describes how to connect the HSI/S patch panel to the HSI/S controller card (previously installed in the *Sun SPARCserver* computer) using a 96-pin cable. (See the figure below.)

⇒ NOTE:

The *Sun SPARCserver 5* needs a *SunLink* HSI/S patch panel **only** if you have an HSI/S card installed.



Procedure

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

1. Connect one end of the 96-pin cable to the 96-pin connector on the HSI/S patch panel.
2. Connect the other end of the 96-pin cable to the 96-pin connector on the HSI/S controller card.
3. Make sure the locking mechanisms on each end of the 96-pin cable click closed.

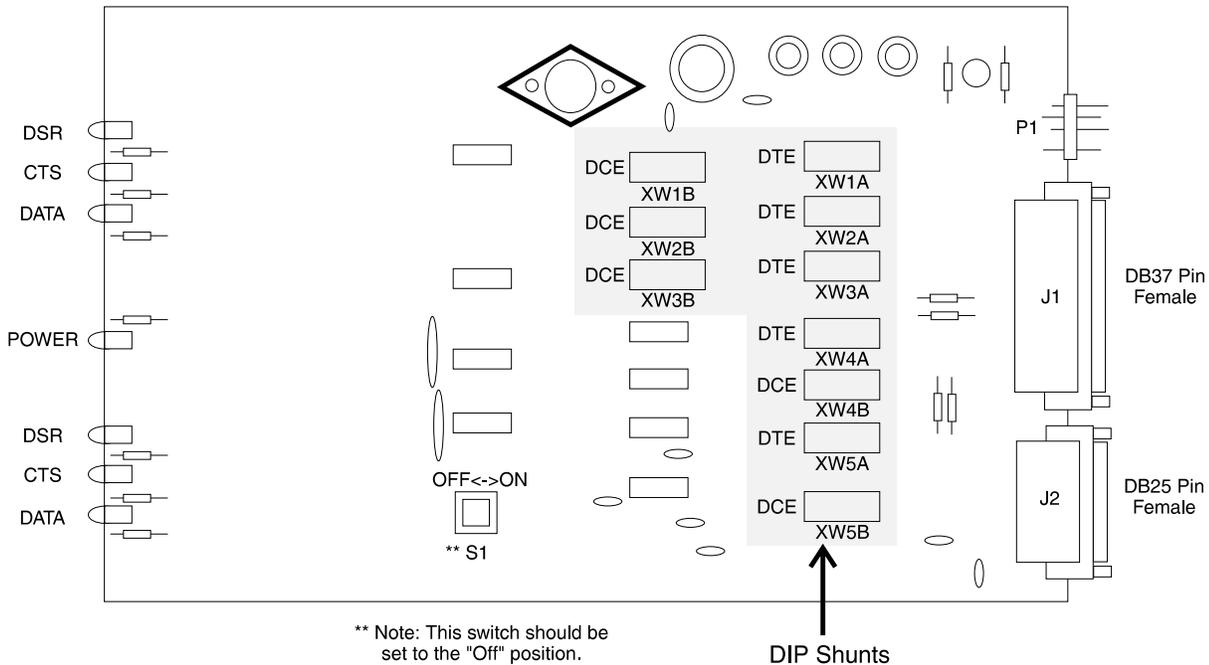
Additional Reference

For additional information, see *SunLink HSI/S 2.0 Installation and Administration Guide*, Chapter 2, "Installing the HSI/S Controller Card and Patch Panel" (Sections 2.11 and 2.12).

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. (See the table and the figure below.)

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



Procedure

To reassign these ports:

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:
 - a. Carefully slide the tip of a common screwdriver between the DIP-shunt jumper and the DIP-shunt socket.

 **CAUTION:**

Be very careful when moving the DIP shunts. The DIP-shunt pins are fragile and could easily be bent or broken.

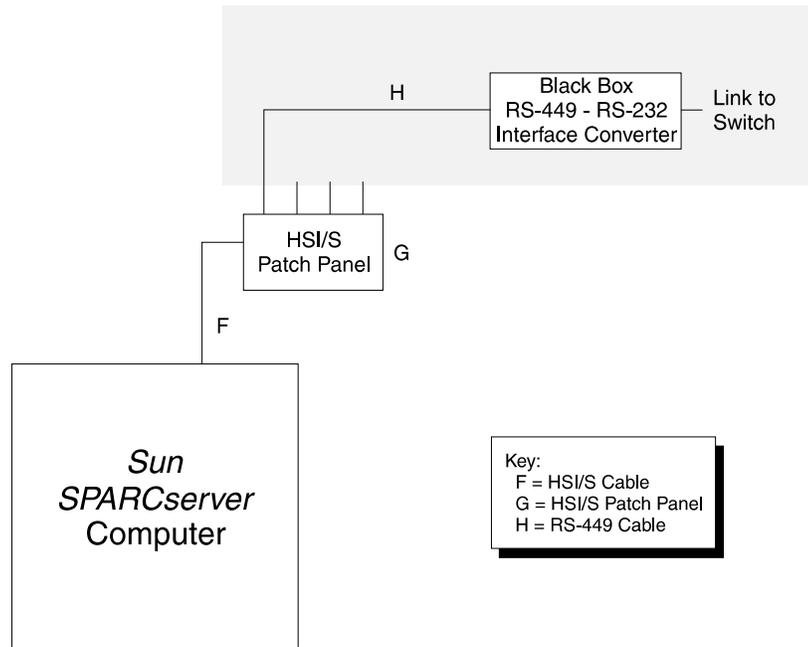
- b. Gently pry/wiggle the DIP-shunt jumper free from the socket.
- c. Move the DIP-shunt jumper to the appropriate socket (see the previous table).
- d. Carefully align the pins, and gently press the DIP-shunt jumper into place.

Additional Reference

For additional information, see *RS-232 ↔ RS-422 Interface Converter Installation and Operation Manual*, Section 2.0: "Introduction," Section 3.0: "Installation," and Section 4.0: "Configuration."

Connect the HSI/S Patch Panel to the Interface Converter

This section describes how to connect an RS-449 port on the HSI/S patch panel to the RS-422/RS-449 DCE port on the black box interface converter. (See the figure below.)



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:

If you connect 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.

Additional Reference

For additional information, refer to the *Sun SPARCstation 5 Installation Guide*.

Connect the Network Hub Unit

This section describes how to connect the network hub unit(s) to the *Sun SPARCserver* computer using Unshielded Twisted-Pair (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.

Three different types of network hub units can be used:

- *IBM 8222* network hub unit (uses standard UTP network cables)
- Allied Telesis *CentreCOM - MR820TR* network hub unit (used standard UTP network cables)
- StarLAN fiber-optic hub unit (uses fiber-optic network cables).

The standard *CentreVu* CMS configuration uses the Allied Telesis *CentreCOM - MR820TR* or *MR820T* network hub unit. The StarLAN fiber-optic hub can be used when you need more distance between the hub unit and the NTS(s). The table below shows the maximum distances associated with each type of network cables being used.

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

If you need more distance between the network hub unit and the NTS(s), refer to the "Optional Fiber-Optic Network Configurations" section in this chapter.

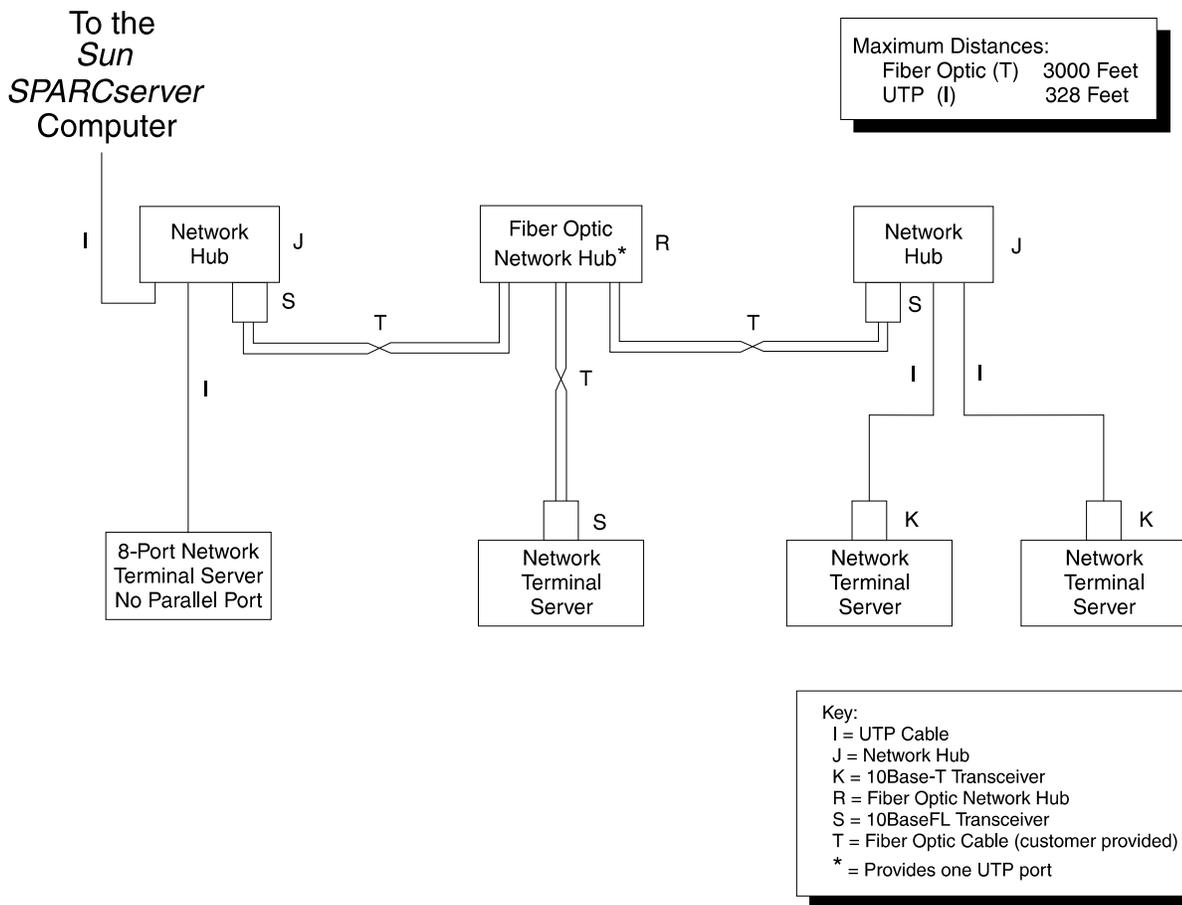
Optional Fiber-Optic Network Configurations

Overview

This section briefly describes additional 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.

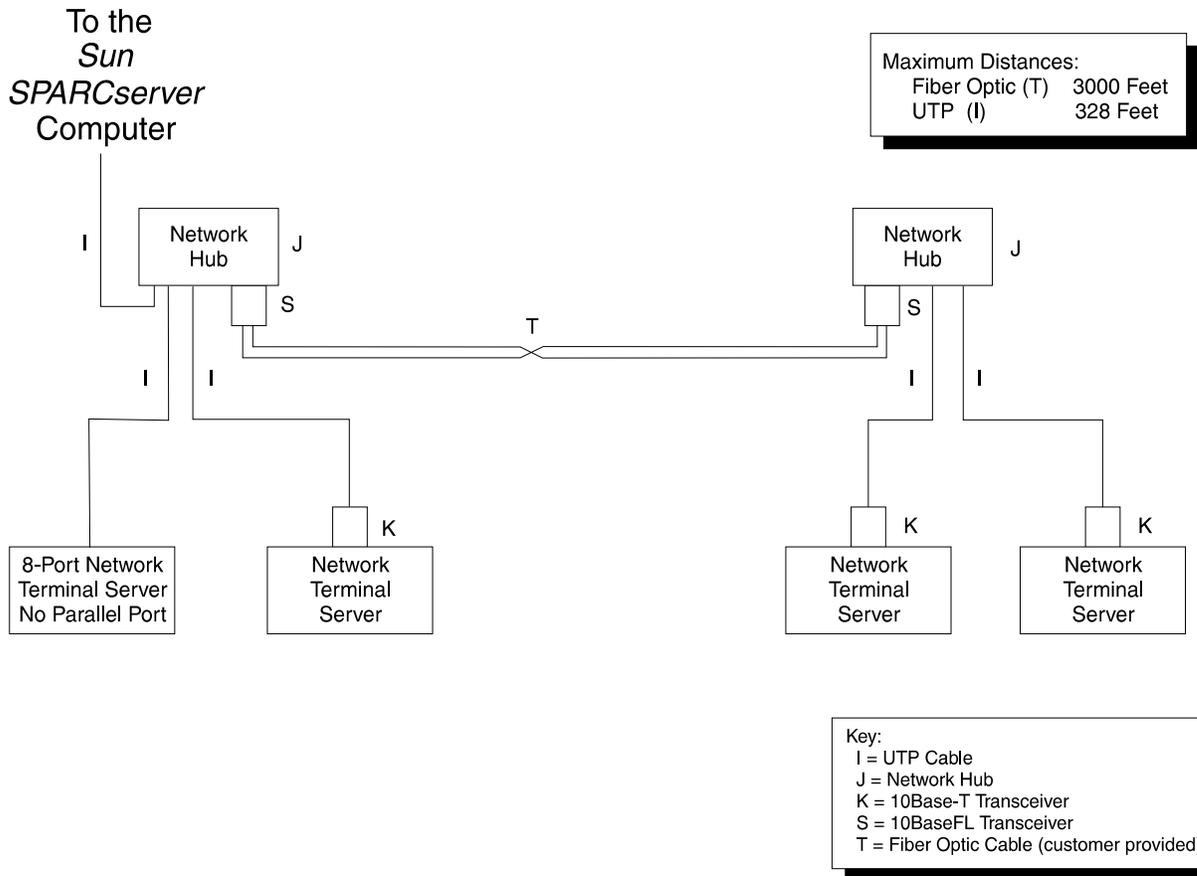
Network Hubs Connected Through Fiber-Optic Network Hub

The configuration shown in the figure below illustrates 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 SPARCserver* computer, network hub, and one NTS are located in one building, the fiber-optic hub and another NTS are located in an adjacent building, and another network hub with two additional NTSs are located in another adjacent building.



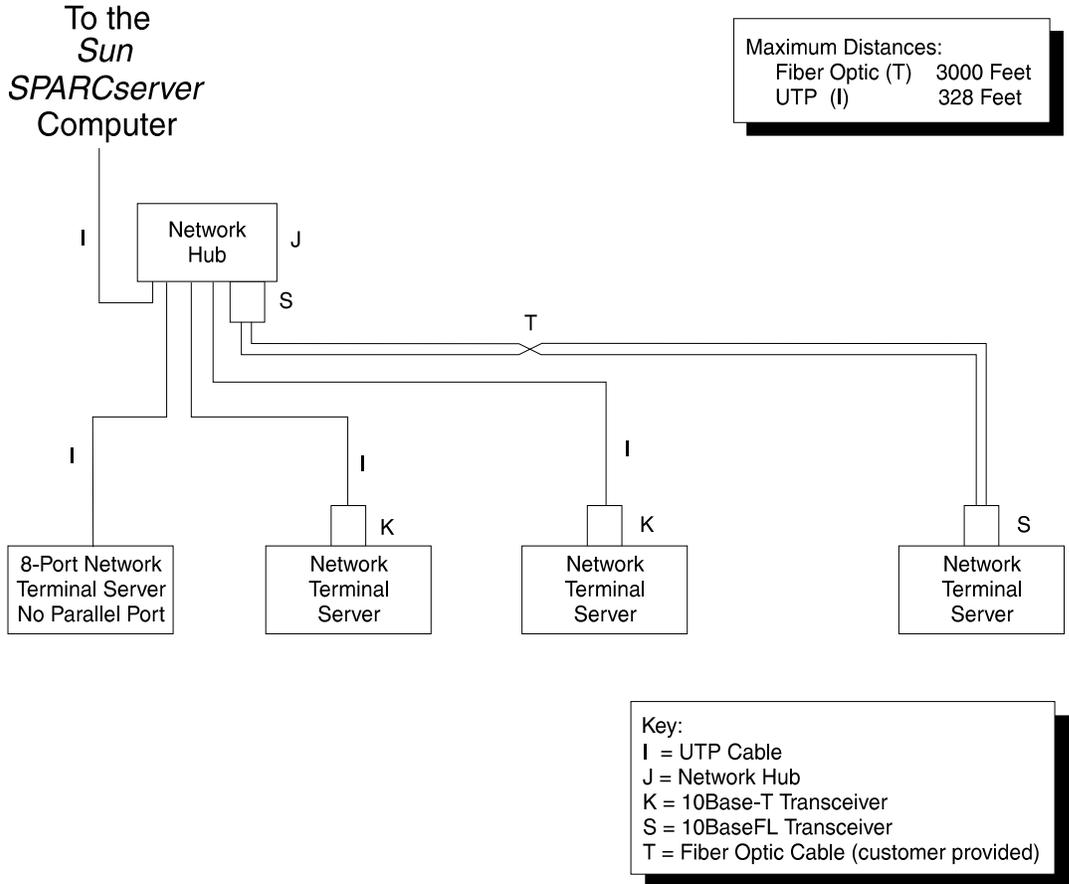
Network Hubs Connected Through Fiber-Optic Cable

The configuration shown in the figure below illustrates two network hubs connected with a fiber-optic cable. This configuration allows the network to be spread across two adjacent buildings. For example, this would be useful in a situation where the *Sun SPARCserver* computer, network hub, and two NTSSs are located in one building, while the other network hub and remaining two NTSSs are located in an adjacent building.



Network Hub Connected to NTSs

The configuration shown in the figure below illustrates a network hub connected to four NTSs. This configuration allows the network to be spread across multiple buildings. For example, this would be useful in a situation where the *Sun SPARCserver* computer, network hub, and three NTSs are located in one building, while an additional NTS is located in an adjacent building.



Conventional Network Configurations

Install Allied Telesis CentreCOM Network Hub Unit

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

Procedure

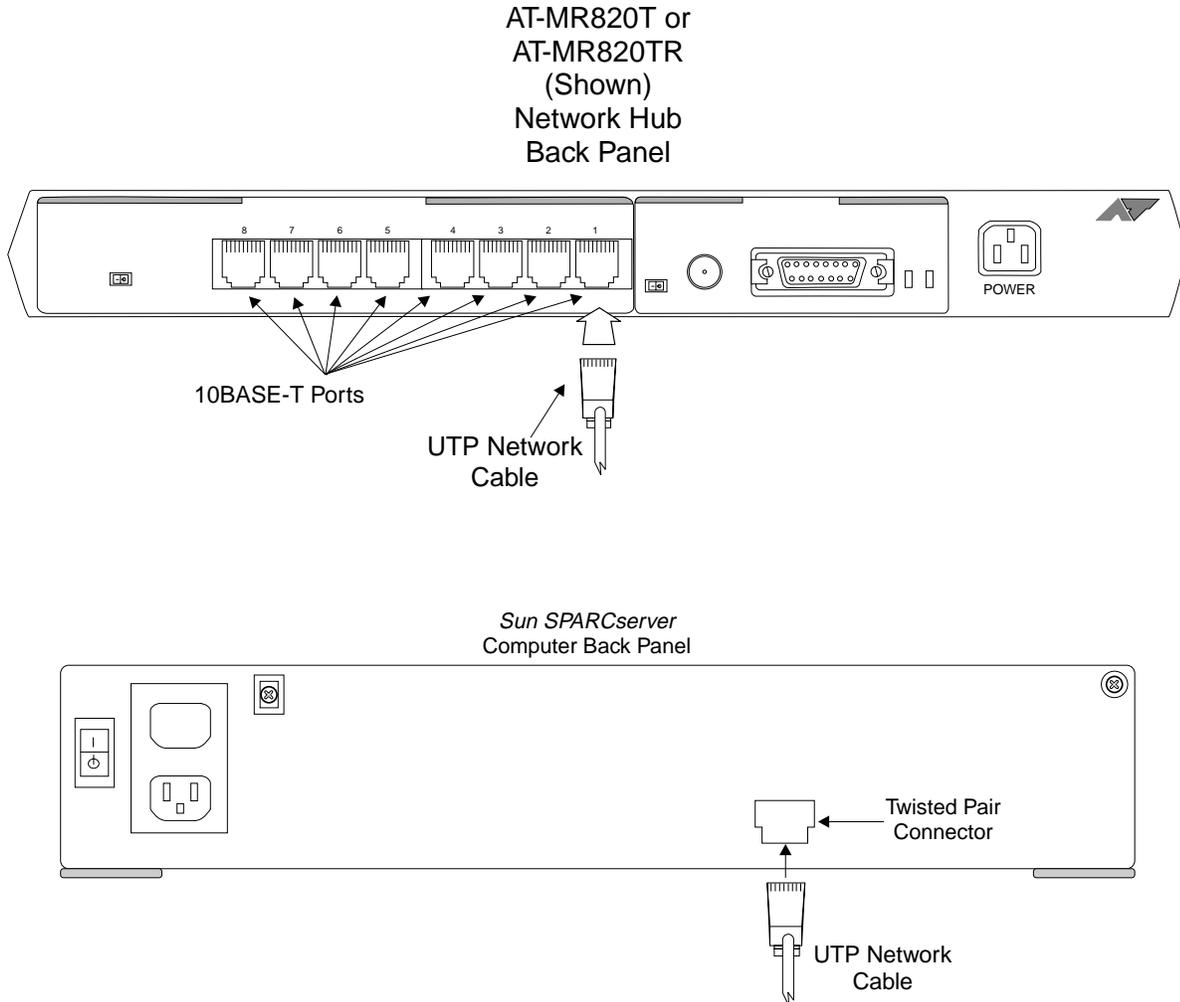
To connect the network hub unit to the *Sun SPARCserver* computer, do the following (see the following figure):

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 SPARCserver* computer.

Use the UTP cable that came with your *Sun SPARCserver* computer (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. (See the figure that follows.)

Connect Network Hub Unit to Sun SPARCserver

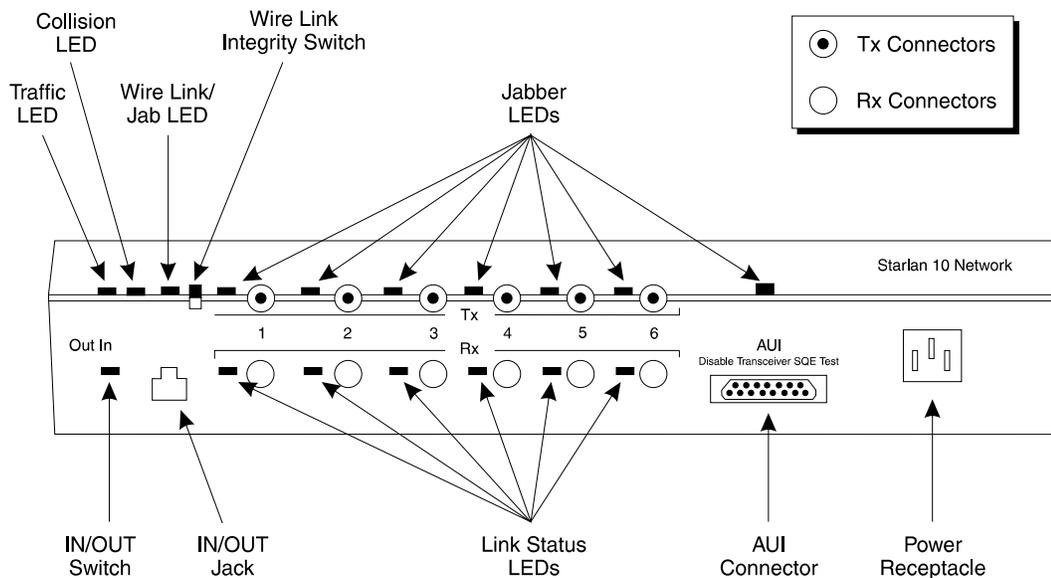


Additional Reference

For additional information, refer to the *Allied Telesis CentreCOM AT-MR820TR or MR820T Multiport 10BASE-T Micro Repeaters Users Manual*, Chapter 2: "Installation."

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 SPARCserver* computer. This hub unit may be used in conjunction with other network hub units.



Procedure

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

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 into the transmit (Tx) and receive (Rx) connectors on the front of the network fiber-optic hub unit (see the figure above).

The fiber-optic cable has two plugs on each end. Generally, the two plugs are color-coded or identified in some other manner. Make a note of which plug is attached to the Tx and Rx ports on the 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 the opposite of how they were connected at the other end (that is, the plug that was connected to the Tx port at the other end should be connected to the Rx port at this end, and the plug that was attached to the Rx port at the other end should be connected 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
Server (NTS) 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.

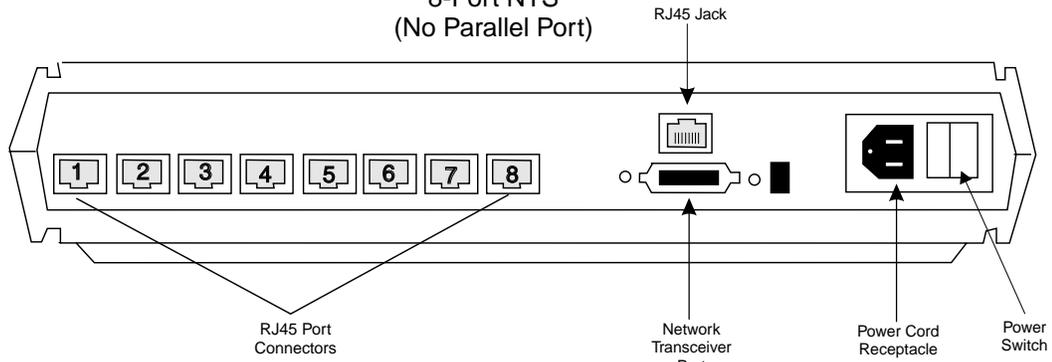
The 64-port NTS provides twelve 50-pin PBX-champ connectors used to attach 64 serial devices using the patch panel cables and patch panels. These serial devices are accessed via the local ethernet network.

⇒ NOTE:

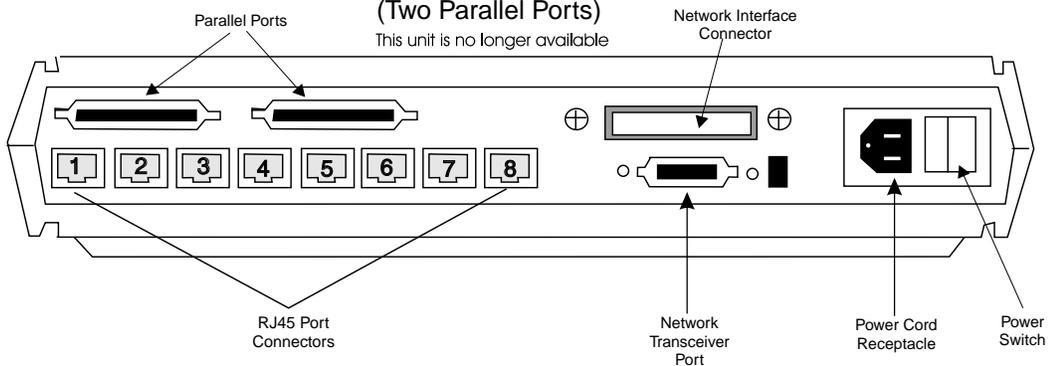
If the NTS needs to be administered (for example, the NTS has not been administered or if you are adding an NTS to your system), follow the procedure outlined in *CentreVu[®] Call Management System Release 3 Version 6 Software Installation and Maintenance (585-215-866)*, the “Administer the Network Terminal Server” section of the “Factory Software Installation Procedures” appendix. The following figure shows the back panels of the 8-, 16-, and 64-ports NTSs.

Back Panel Views of 8-, 16-, and 64-Port NTSs:

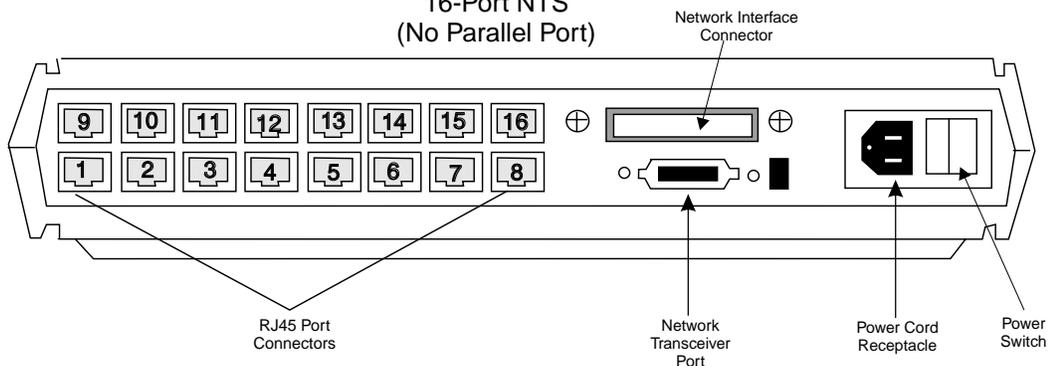
**8-Port NTS
(No Parallel Port)**



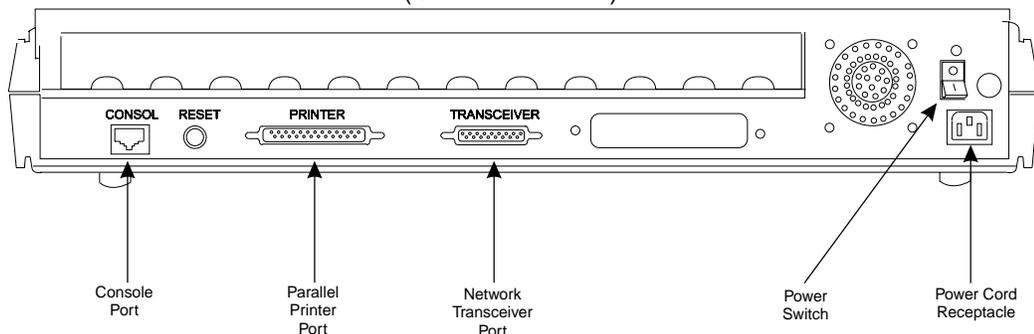
**8-Port NTS
(Two Parallel Ports)**
This unit is no longer available



**16-Port NTS
(No Parallel Port)**



**64-Port NTS
(One Parallel Port)**



Multiple Network Hub Unit Connections

If you are connecting more than one NTS to the network hub unit, use the table below to determine how to connect 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:

5. Position the NTS(s) in the location selected by the customer. Make sure each power switch is set to Off.
6. Plug each power cord into a wall outlet or to a UPS (if equipped).
7. Plug one end of the UTP cable into the next available port on the 10Base-T ports on the network hub unit.
8. 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

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

10. 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:**

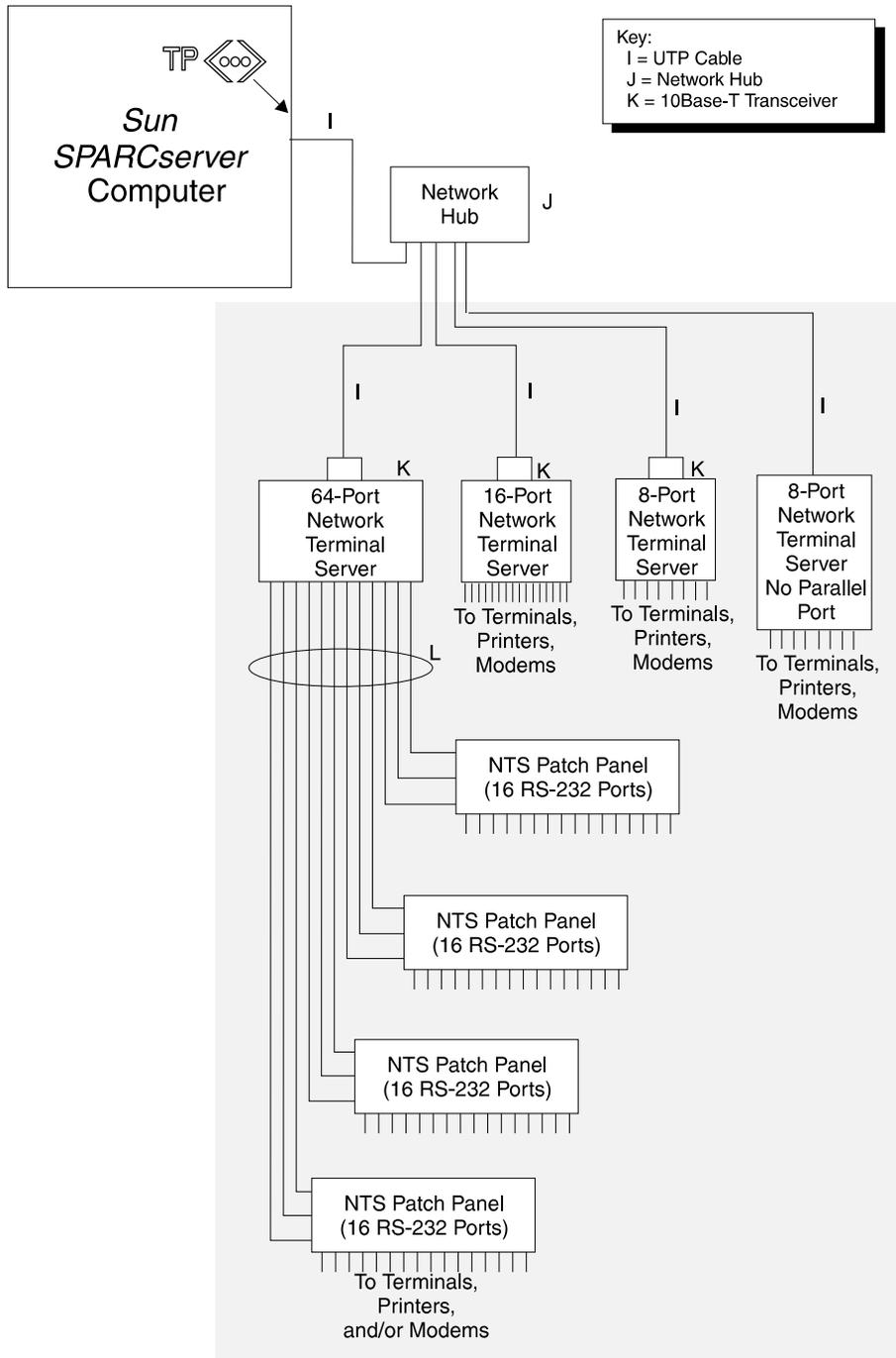
You may have an older version of a 10Base-T transceiver which allows you to physically change three switch settings: SQE, Link, and LRT. If you have this older version, verify that the switch settings are set to the following:

- SQE = Off
- Link = On
- LRT = Off.

11. Plug the other end of the UTP cable into the transceiver previously connected to the back of the NTS.

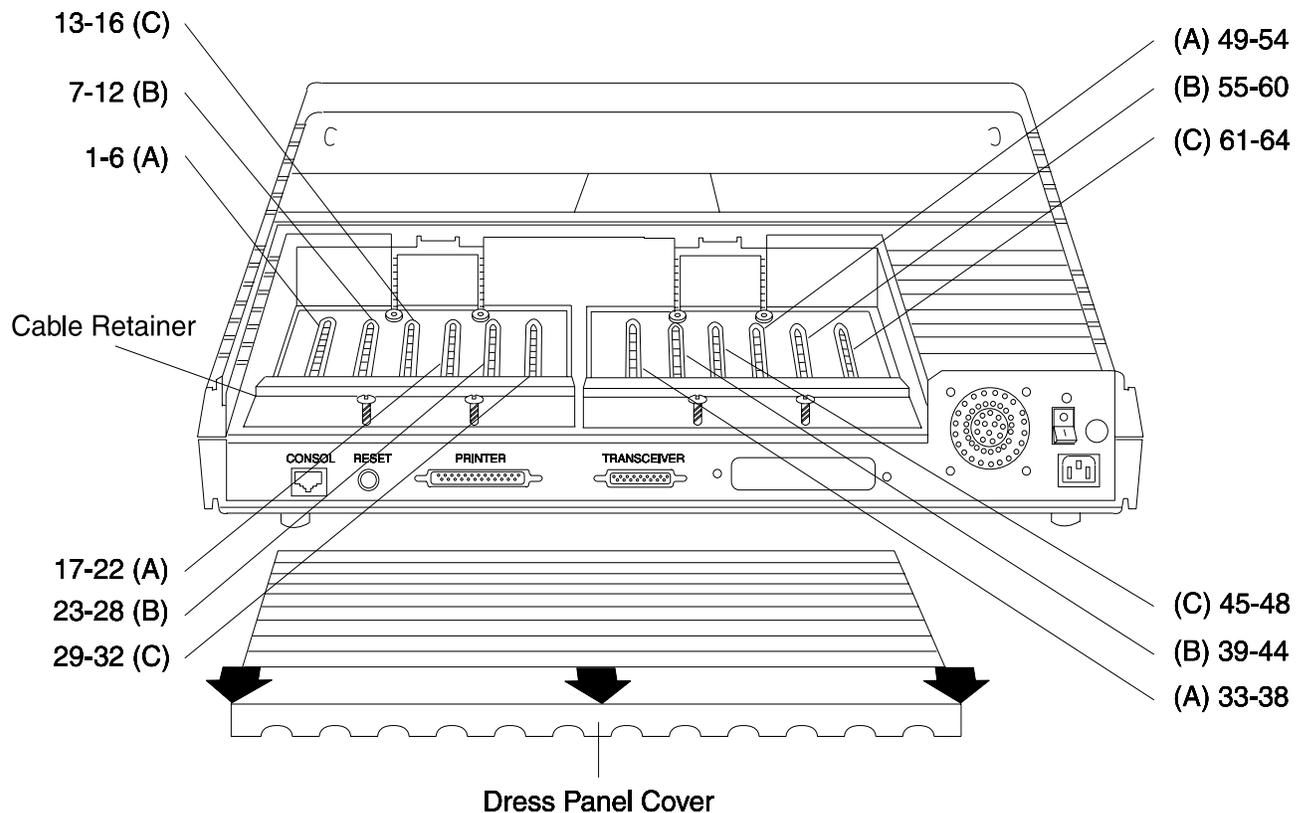
See the following figure to see how the NTSs are connected to the network hub unit. The following figure shows how to connect the 8-, 16-, or 64-port NTS to the network hub unit.

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 (see the two figures that follow).

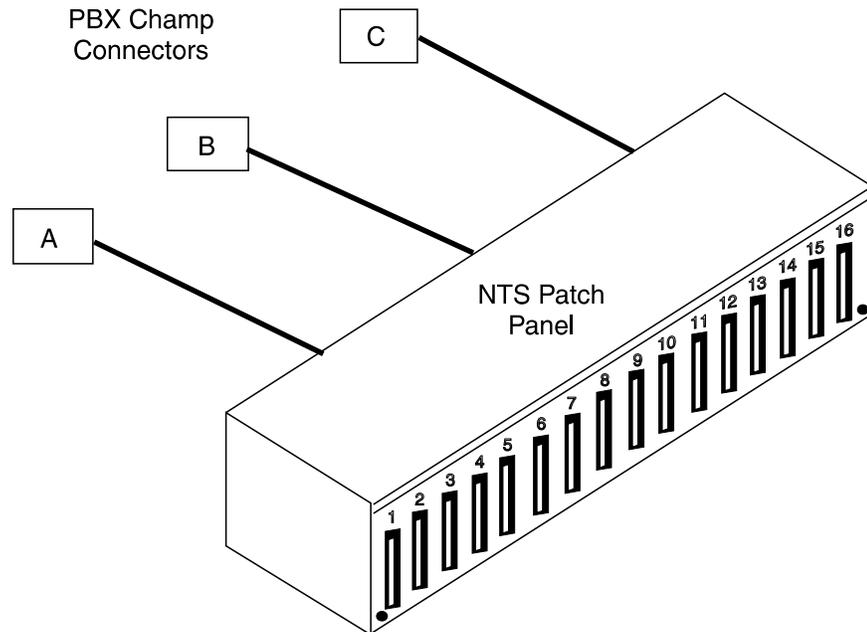


Procedure

To connect a 16-port NTS patch panel (see the following figure) to the 64-Port NTS (see the figure above) do the following:

1. Remove the dress panel cover 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 figure below) that connect to the PBX-champ connectors located inside the NTS (see the figure above). 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 dress panel cover of the 64-Port NTS (to its original position) by sliding it toward the front of the NTS.

Additional References

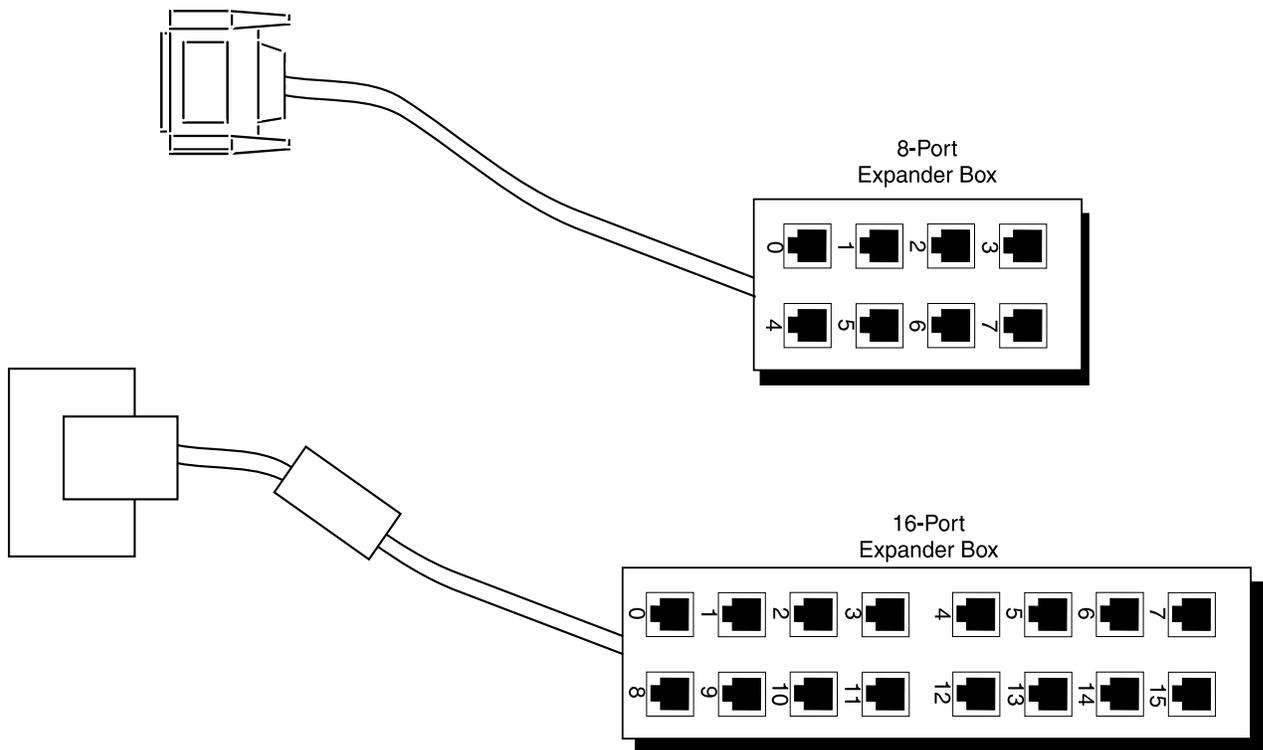
For additional information, refer to the following documentation:

- *Network Terminal Server: Hardware Installation Guide*, Chapter 2: "Installing the NTS."
- *Xylogics Micro Annex** Communications Server Hardware Installation Guide, Chapter 2: "Installing the *Micro Annex*."

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

Connect the 8- or 16-Port Expander Box

The Aurora SBus *Multiport* card is used to connect terminals, printers, and modems to your *Sun SPARCserver* computer. Each SBus *Multiport* card is shipped with an expander box that attaches to the *Multiport* card and breaks out the new ports (see the figure below). In order to connect the 8- and 16-port expander box to the *Sun SPARCserver* computer, you must first identify the installed SBus *Multiport* card(s). See the “Identify Installed SBus Cards” section in this chapter.



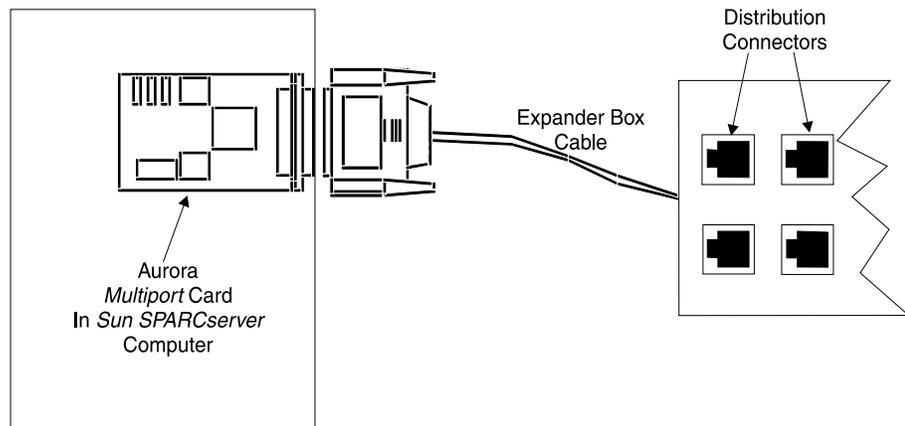
⇒ NOTE:

Ports 12-15 on the 16-port expander box can not be used to connect modems.

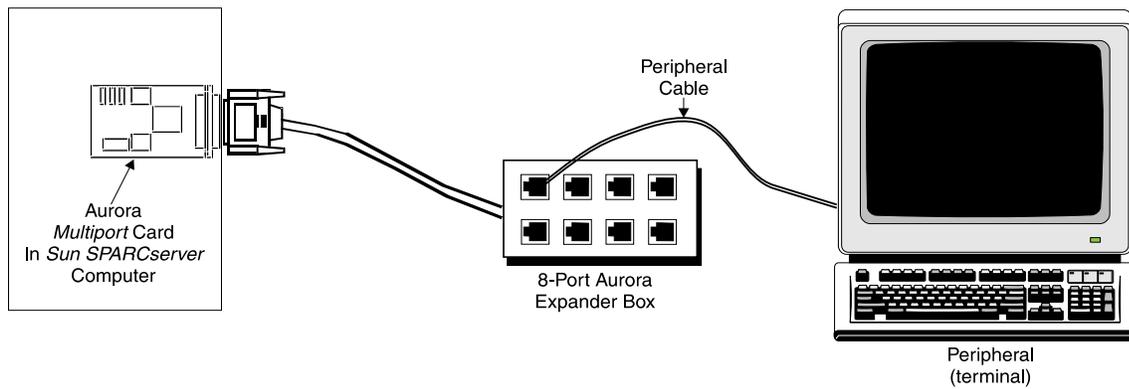
Procedure

To connect a peripheral device to the expander box, do the following:

1. Attach the expander box cable to the SBus *Multiport* card. Tighten the thumbscrews securely. See the following figure.



2. Choose the correct peripheral cable.
3. Attach one end of the cable to the peripheral, and the other to one of the distribution connectors (see the figure below).



4. Record the slot number of the SBus *Multiport* card and the port number the peripheral is connected to. If only one Aurora SBus *Multiport* card is installed in the system, the breakout connectors are numbered to match the device names that will be created when the driver software is installed. You will need to know which port the peripheral was connected to when you set up port services for it.

 **NOTE:**

If you have more than one Aurora SBus *Multiport* card installed, see *CentreVu® Call Management System Release 3 Version 6 Hardware Maintenance & Troubleshooting* (585-215-861), the “Maintenance” chapter, for a discussion of how devices are numbered and how to match them to the physical ports on an expander box.

Other Devices and Connections

Connect the Uninterruptible Power Supply (UPS)

The Uninterruptible Power Supply (UPS) provides a temporary electrical supply to the *Sun SPARCserver* computer for about seven minutes. If the computer is without power for longer than seven minutes, the system may shut down and you could lose data. Use the procedures in this section to connect the UPS to the *Sun SPARCserver* computer.

⇒ 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 table below)
- Appropriate power supply and outlet strip(s).

UPS Model	PEC	Comcode
1KVA	2403-405	407195379
2KVA	2403-420	407336098
3KVA	2403-123	406672345
4.5KVA	2403-245	406929620
6KVA	2403-206	406974071
8KVA	2403-208	406929638
10KVA	2403-220	406974089
12KVA	2403-222	406974097
14KVA	2403-314	406687616
18KVA	2403-318	406672352

Procedure

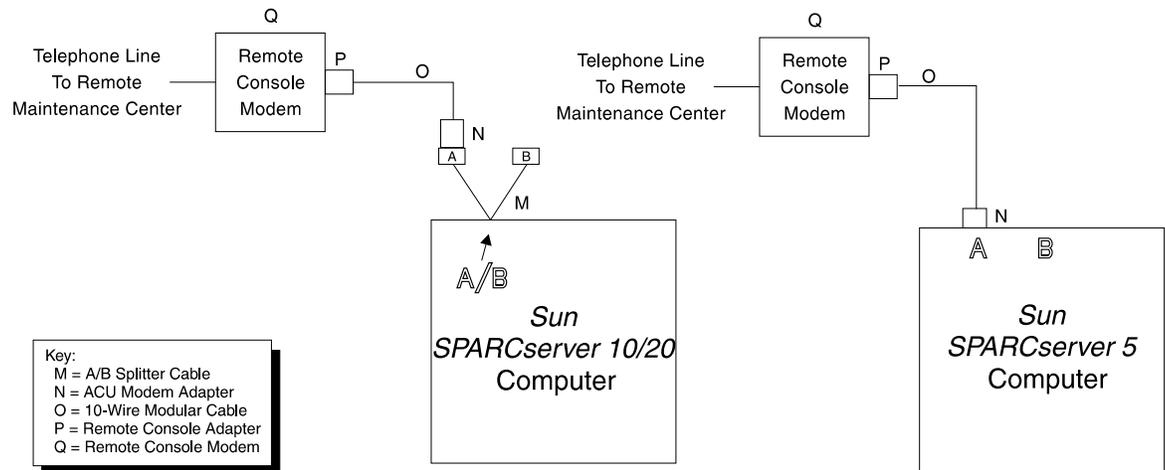
To connect the UPS, do the following:

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 SPARCserver* computer which allows the TSC to dial in and do remote maintenance.

If you need additional information, refer to the Remote Console section(s) of the “Sun SPARCserver Computer Factory Hardware Installation Procedures” appendix.



Procedure

To connect the Remote Console modem to the *Sun SPARCserver*, do the following (see the figure above):

1. Connect the ACU Modem adapter to the “A” serial port interface.
2. Connect one end of the 10-conductor cable to the ACU Modem adapter installed in the previous step.
3. Connect the other end of the 10-conductor cable to the Remote Console adapter.
4. Connect the Remote Console adapter to the RS-232C port on the modem.
5. Connect the telephone line to the jack labeled “LINE” on the modem.
6. Make the necessary power connections to the modem.

Power Up the Computer and Verify POST

Procedure

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

1. Do the following in sequential order:
 - a. Turn on the devices connected to the SBus Expansion Subsystem.

⇒ NOTE:

Remember to power on the SCSI devices starting with the device at the end of the SCSI chain, and work your way down to the *Sun SPARCserver* computer.

- b. Turn on the devices attached to the *Sun SPARCserver*.
- c. Turn on the *Sun* SBus Expansion Subsystem.
- d. Turn on the *Sun SPARCserver* computer.
- e. Turn on the system monitor.

⇒ NOTE:

The power-on diagnostics will occur each time you turn on the computer. 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:

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

The program responds:

```

/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. Verify that the system recognizes all of the SCSI peripherals attached to your system.
5. Reboot the system by entering the following command:

```
ok boot
```

The system reboots.

Additional Reference

For additional information, refer to the *Sun Desktop SPARC Hardware Owner's Guide*, Chapter 3: "Turning the System Power On and Off."

Set the Remote Console Modem Options

The *Sun SPARCserver* computer supports the following modems:

- *Paradyne*[®] *Comsphere*[®] 3830
- *Paradyne Comsphere* 3910
- *Paradyne DataPort Express* Model 3710
- *Paradyne DataPort Express* Model 3715
- *U.S. Robotics*^{*} *Sportster*[†] Faxmodem.

Procedure

For all models except the *Comsphere* 3910, complete the steps below. The *Comsphere* 3910 modem options are set via the front panel. See the chapter “Installing Terminals, Printers, and Modems,” “*Paradyne Comsphere* 3910” section to set the options for this modem.

1. Skip this step if you are using a modem other than the *U.S. Robotics Sportster*; otherwise, continue. Set DIP switches 1, 3, 7, and 8 on the dress panel cover of the *Sportster* to the down (ON) position, and switches 2, 4, 5, and 6 to the up (OFF) position. See Chapter 3, *Installing Terminals, Printers, and Modems*, “*U.S. Robotics Sportster Faxmodem*” 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 display.

5. At the system console, enter the options. Use the following table to decide what options to enter:

NOTE:

Use numerical ones and zeros when entering the options.

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

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

**Comsphere 3830
Options**

```
AT&F3      (loads factory default configuration options into
            active memory)
ATS41=3    [sets Dial-Line Rate to 9600 (V.32bis)]
AT&S1&W0   [Data Set Ready (DSR) control follows standard RS-232
            operation, save current Active(Operating) to Active
            (Save)]
```

**Dataport Express
Model 3710 Options**

```
AT&F      (loads factory default configuration options
           into active memory)
ATS41=3   [sets Dial-Line Rate to 9600 (V.32bis/V.32)]
AT&T5     (denies request for Remote Digital Loopback test)
AT&C1     [Carrier Detect (CD) control follows standard
           RS-232 operation]
ATE0Q1&S1&W0 [disables echo, disables result codes, Data Set
           Ready (DSR) control follows standard RS-232
           operation, save to profile 0]
```

**Dataport Express
Model 3715 Options**

```
AT&F      (loads factory default configuration options into
           active memory)
AT%B9600  (sets modulation/data rate to V.32bis/V.32,
           maximum rate 9600 bps)
AT&T5     (denies request for Remote Digital Loopback test)
ATE0Q1&S1&W0 [disables echo, disables result codes, Data Set
           Ready (DSR) control follows standard RS-232
           operation, save to profile 0]
```

U.S. Robotics
Sportster Faxmodem
Options

```
AT&F1      (loads factory default configuration options
           into active memory)
AT&N6      (sets forced connect speed to 9600 bps)
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. Skip this step if you are using a modem other than the *U.S. Robotics Sportster*; otherwise, continue. Set all the DIP switches on the dress panel cover of the *Sportster* to the up (OFF) position except switches 4 and 8, which are set to the down (ON) position. See the “*U.S. Robotics Sportster* Faxmodem” section in the “Installing Terminals, Printers, and Modems” chapter for more information.
8. If needed, reset the modem using the power switch.

Connect to Another Network

This section describes how to change the Internet Protocol (IP) addresses on the *Sun SPARCserver* computer 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 SPARCserver* 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:

- *For Servers:* What is the internet address assigned to the CMS?
- *For Servers:* 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.

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

Change the TCP/IP Address

To change the TCP/IP address of the *Sun SPARCserver* computer and the NTSSs, do the following:

Changing the NTSSs Address

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 R13.3 February 4th, 1997
command:
```

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

Follow Steps 4 through 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 cmsterm(x)
```

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

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

```
command:
```

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

```
command: write cmsterm(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:

```
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 255.255.0.0 (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 cmstern(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 SPARCserver*.

Change the Sun SPARCserver Address

1. Edit the `/etc/hosts` file by entering:

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

⚠ WARNING:

If you change the IP address of the *Sun SPARCserver* you must reboot the system within 12 hours. If you do not reboot the system within 12 hours, X.25 will stop.

2. Add the new address(es) for the NTS(s) and the *Sun SPARCserver* computer in the `/etc/hosts` file that corresponds to the new addresses.
3. Add the router IP and name in the `/etc/hosts` file.
4. Remove or comment out old entries in the `/etc/hosts` file.
5. Write and quit the file.
6. Create the `/etc/defaultrouter` file by entering:

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

7. Add the router node name given in the `etc/hosts` file.
8. Write and quit the file.
9. Edit the `/etc/netmasks` file by entering:

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

10. 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).
11. Write and quit the file.

Reboot the System

1. Reboot the system by entering:

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

2. 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 says “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 *SPARC* 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 SPARCserver* computer 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 SPARCserver* 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.

Procedure

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 SPARCserver* computer IP address (use the table below to record this information)
 - NTS IP address for each NTS (use the table below to record this information).

Device	Network Name	IP Address
<i>SPARCserver</i> Computer		
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:

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

3. Locate the lines (in the `/etc/hosts` file) that contain the IP addresses for the *Sun SPARCserver* Computer and the NTS(s).
4. Change the existing IP addresses (in the file) to the new addresses recorded in the table above.
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).

Required Parts

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

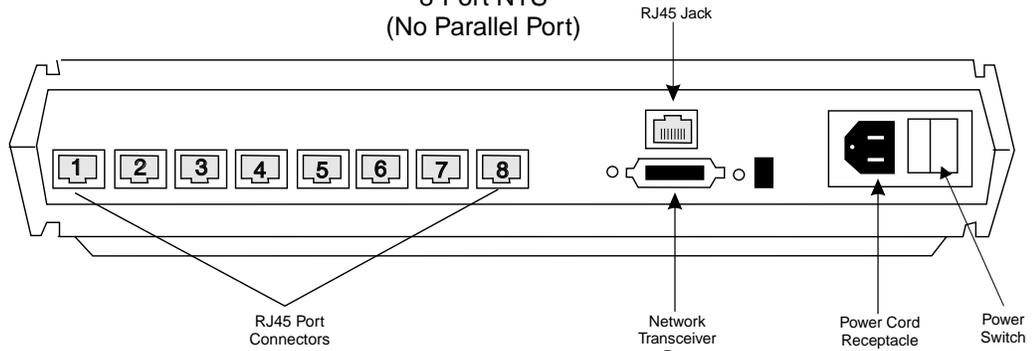
- Console cable
- Adapter - comcode 407361823
- Null Modem - comcode 407122043.

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

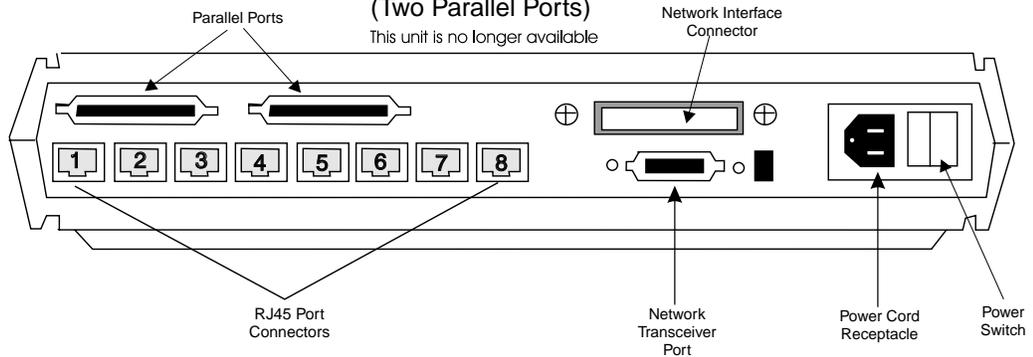
- Console cable
- Adapter - part number 06-988-260-20.

Back Panel Views of 8-, 16-, and 64-Port NTSs:

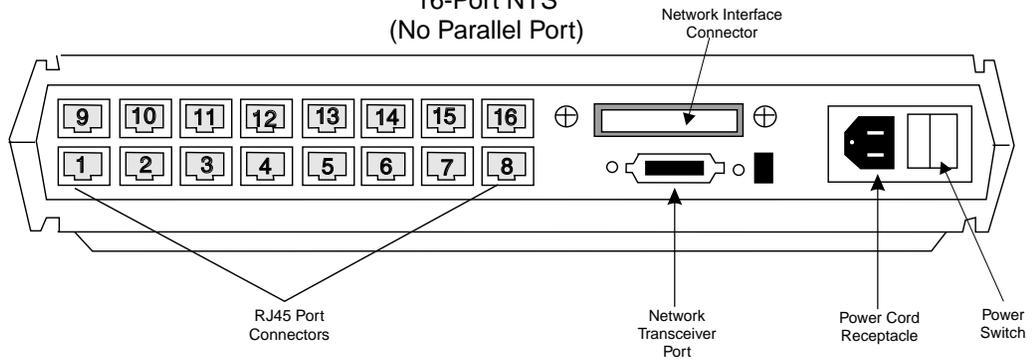
**8-Port NTS
(No Parallel Port)**



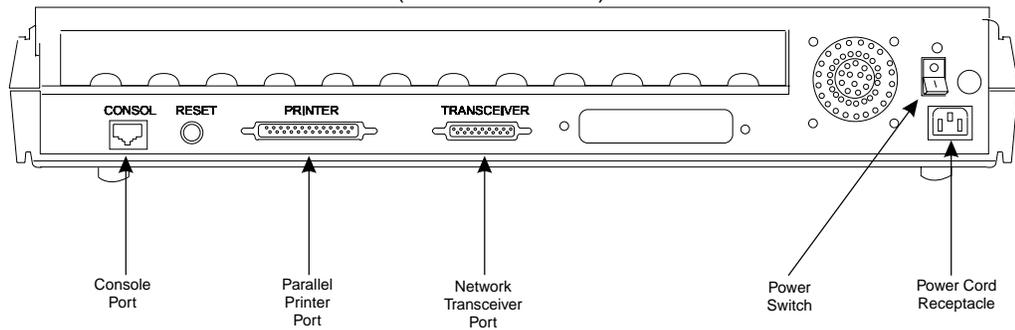
**8-Port NTS
(Two Parallel Ports)**
This unit is no longer available



**16-Port NTS
(No Parallel Port)**

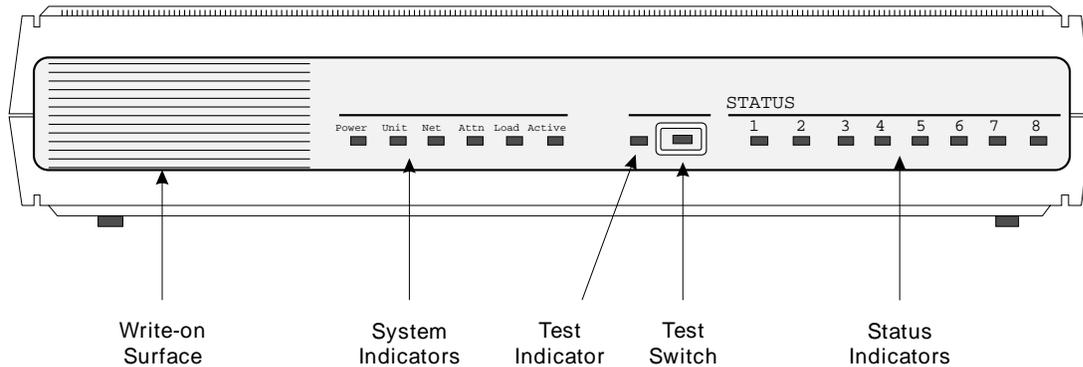


**64-Port NTS
(One Parallel Port)**



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

Front View of NTS:



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

```
Monitor:
```

10. 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 just 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:

```
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:

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

12. Enter Y. The program responds:

```
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. through 14. (substituting 2 in step 11.) 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:

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

16. Enter the IP address for this NTS. This should follow the IP address structure outlined in the table where you filled in your IP addresses earlier.

The program responds:

```
Internet address: XXX.XXX.XXX.XXX
```

```
Enter Subnet mask [255.255.0.0]::
```

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

```
Subnet mask: 255.255.0.0
```

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

18. Enter the IP address of the *Sun SPARCserver* computer.

The program responds:

```
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:

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

20. Enter the IP address of the *Sun SPARCserver* computer. The program responds:

```
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:

```
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 continues with:

```
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 References

For additional information, refer to the *Network Terminal Server Guide*, *Quick Installation Guide*, or the *Sun Network Terminal Server Leaflet*.

Install Terminals, Printers, and Modems

Overview

This chapter describes how to connect terminals, printers, and modems to a *Sun*^{*} *SPARCserver*[†] computer.

Refer to the “Installing the *Sun SPARCserver* Computer” chapter before connecting to terminals, printers, and modems.

You can use a Network Terminal Server (NTS) or Aurora SBus *Multiport*[‡] card to connect to the terminals, printers, and modems.

You can also use the parallel ports on the back of the NTS and on the back of the *Sun SPARCserver* to connect parallel printers. One parallel printer can be connected directly to the *Sun SPARCserver*. Additional parallel printers can be connected to the parallel ports on an NTS when provided.

See the “Connect Terminals, and Printers to a 64-Port NTS” or “Connect Terminals and Printers to an 8- or 16-port NTS” sections in this chapter for details on how to use cables and adapters to connect the NTS to terminals, printers, and modems.

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

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

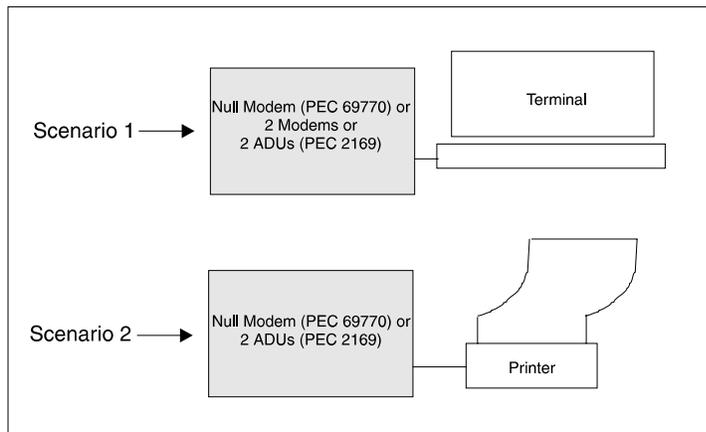
[‡]*Multiport* is a trademark of Aurora Technologies, Inc.

Supported Terminal and Printer Equipment

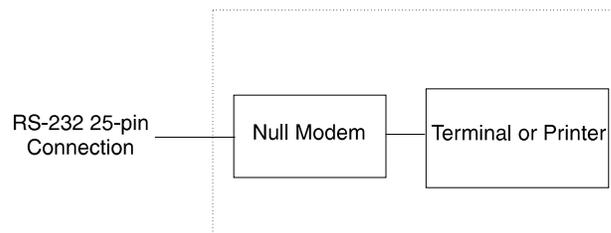
Overview

Use scenario 1 or 2 depending on whether you are connecting a terminal or printer (see the figure below). Scenario 1 provides you three options for connecting a terminal, and scenario 2 provides two options for connecting a printer. The different options are explained in this section.

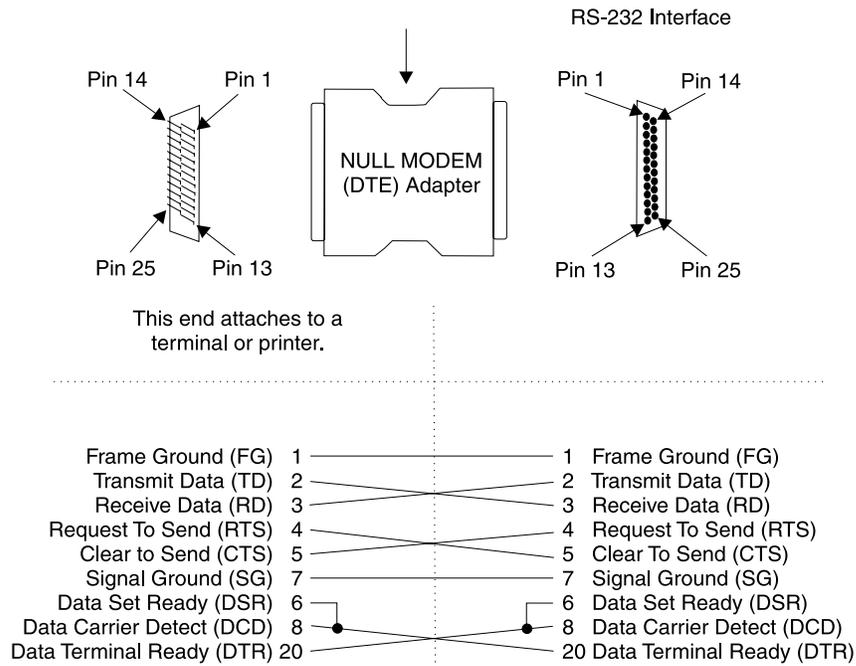
Connection Options



Null-Modem Option Null-Modem connection (see the figure below).

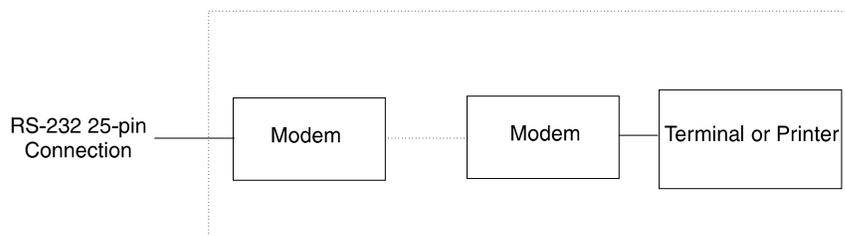


An example of a null modem is shown in the figure below.



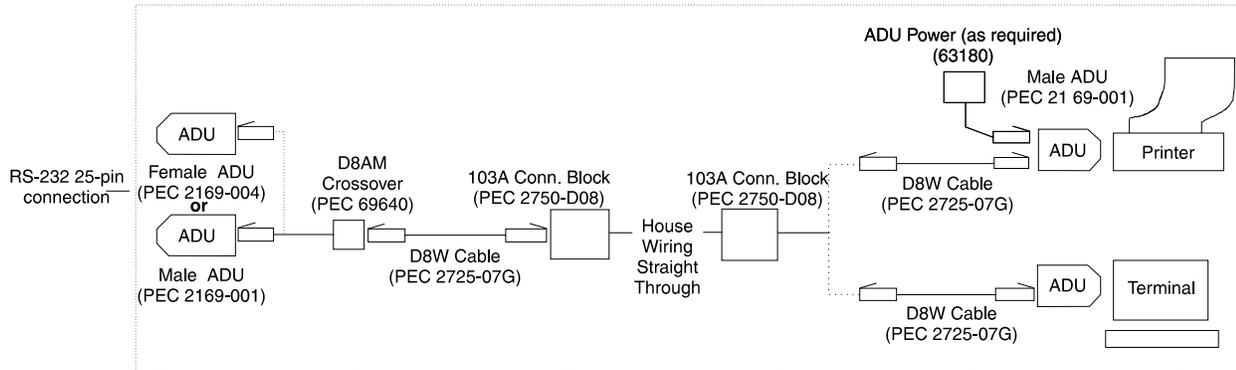
Modem Option

Two-Modem connection (see below).



Asynchronous Data Unit (ADU) Option

Two-Asynchronous Data Units (ADUs) connection (see the figure below).



When using ADUs with the 64-port NTS, one male ADU (Price Element Code [PEC] 2169-001) plugs directly into the NTS and one male ADU (PEC 2169-004) plugs into the terminal or printer. Optionally, an 8- or 10-wire cable with two NTS serial port adapters (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 port adaptors if it is convenient.

Supported Terminals

Overview

This section describes terminals that can be connected to the *Sun SPARCserver* computer for use with the *CentreVu™* Call Management System (CMS) R3V6 software application. See the table below for a list of the approved and supported terminals.

⇒ NOTE:

The *Sun SPARCserver* computer currently supports up to 252 peripherals (terminals, printers, and modems).

Model	Description	Offered	Discontinued	PEC
615 CMT	Color Multi-Tasking Terminal (color controller, color monitor, 6000 series 98-key keyboard)		X	NA
615 MT	Multi-Tasking Terminal		X	NA
620 MTG	Multi-Tasking Graphics Terminal		X	NA
705 MTG	Multi-Tasking Terminal (controller, monitor, and keyboard)	X		69643 (Amber or White)
715 BCT	Business Communications Terminal (controller, monitor, and keyboard)		X	6950-ET6 (Amber) 6950-ET7 (White)
2900/AWTC	Color Terminal		X	NA
4000/AWTC	Color Terminal		X	NA
2900/260lfc	Small Footprint Color Terminal	X		69779 (Monitor) 69780 (Controller) 69781 (Keyboard)

Supported Printers

This section describes printers that can be connected to the *Sun SPARCserver* computer for use with the *CentreVu CMS R3V6* software application. See the table below for a list of the approved and supported printers.

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 computer, the printer port must be administered so that the computer can recognize the new printer.

Supported Modems

This section describes modems that can be connected to the *Sun SPARCserver* computer for use with the *CentreVu* CMS R3V6 software application.

The table below lists the approved and supported modems for use with the *Sun SPARCserver* computer and the *CentreVu* CMS R3V6 software application.

Type of Modem	Offered	Discontinued	PECs
<i>U.S. Robotics</i> [*] <i>Sportster</i> [†] 14.4 Faxmodem, External Version, (Model 000268-0)		X	2569-268
<i>U.S. Robotics Sportster</i> 14.4 Faxmodem, External Version		X	
<i>U.S. Robotics Sportster</i> 33.6 Faxmodem	X		
<i>Paradyne</i> [®] <i>DataPort</i> [®] Express (Model 3710/3715)		X	2271-GEI
<i>Paradyne Comsphere</i> [®] 3830	X		63184
<i>Paradyne Comsphere</i> 3910 (international)	X		

^{*}*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 computer, the modem port must be administered so that the computer can recognize the new modem.

In the following figures, the shaded portion corresponds to the shaded portion of the Connection Options figure earlier in the Supported Terminal and Printer Equipment section. You can use the Connection Options figure to determine what type of connections you need between your terminal and/or printer.

Connect Terminals, Printers, and Modems

Overview

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

You can connect terminals and printers directly to the serial ports to meet RS-232 specifications up to a recommended maximum distance of 300 feet for NTSs and 200 feet for Aurora SBus *Multiport* cards. 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 the “Upgrade Installation Procedures,” section in this chapter for more information.

New Installation Procedures

Connect a terminal, printer, modem, or ADU to an NTS patch panel (16-port RS-232), 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 scenarios.

NOTE:

To extend cabling beyond the 25 or 50 feet described in some of the following figures, you can use house wiring that will extend up to 200 feet (Aurora SBus *Multiport* card) or 300 feet (NTS patch panel). Or see the Asynchronous Data Unit Option figure earlier in this chapter for an additional option. If you are using ADUs or modems, you do **not** need to use a null modem.

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

1. Null-modem adapter
2. Pair of modems
3. Pair of ADUs.

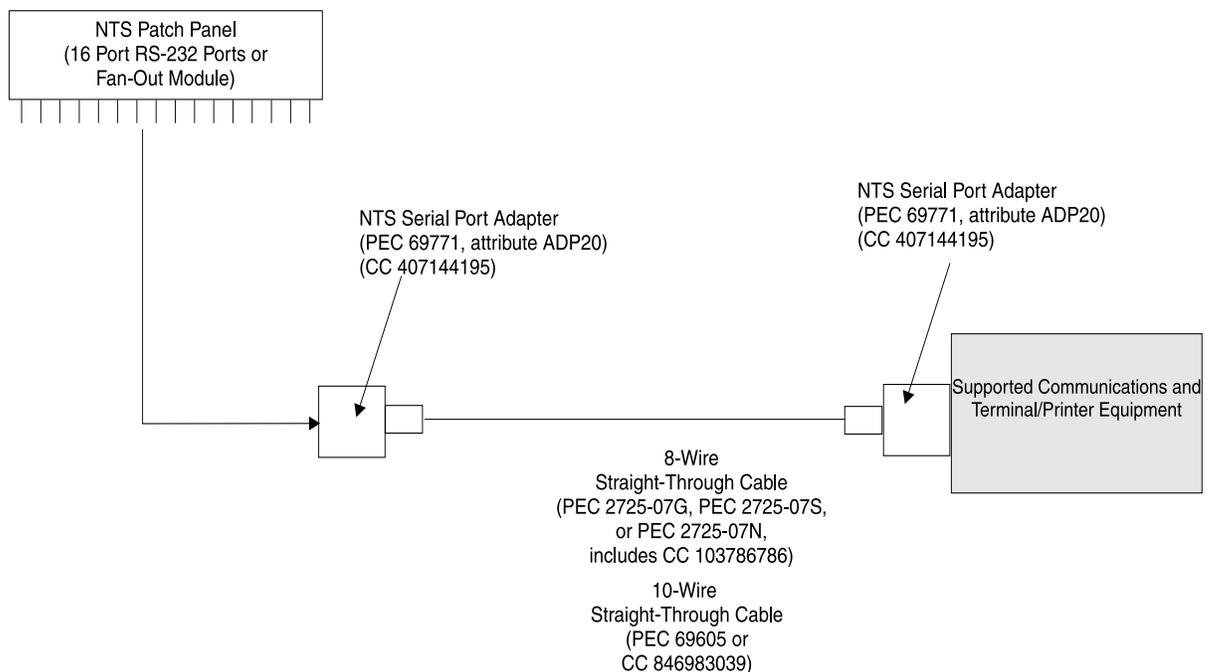
Connect Terminals, and Printers to a 64-Port NTS

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 the “Parallel Printers” section in this chapter for more information.

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



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

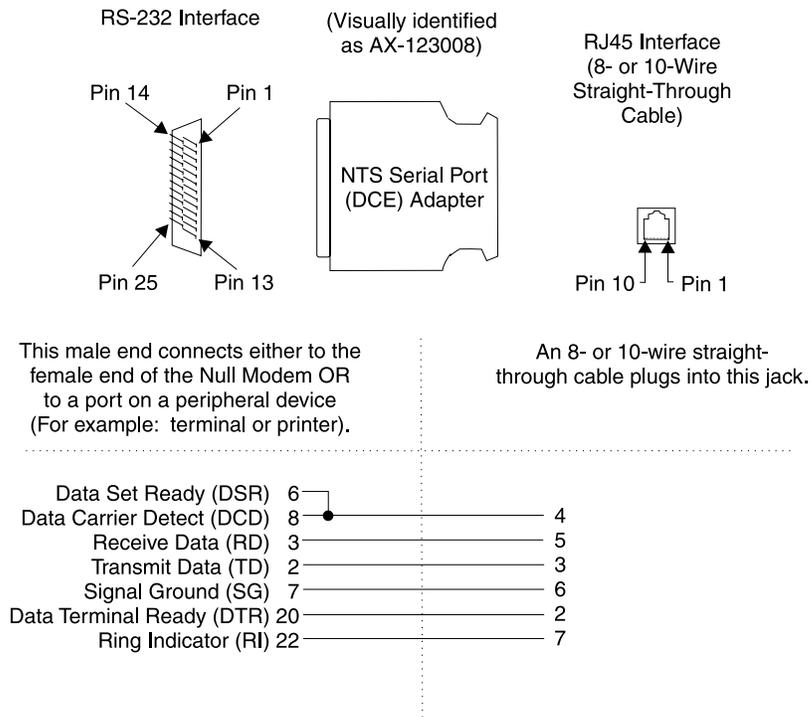
You can connect supported communications, terminal, and printer equipment to an *CentreVu* CMS R3V6 using 8- or 10-wire modular straight-through cables. In this case, you will need the following parts for each terminal or printer connected to the NTS patch panel (16-port RS-232):

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

Refer to the previous 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.

The figure below shows the adapters used to connect 8- and 10-wire straight-through cabling to the NTS patch panel.



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

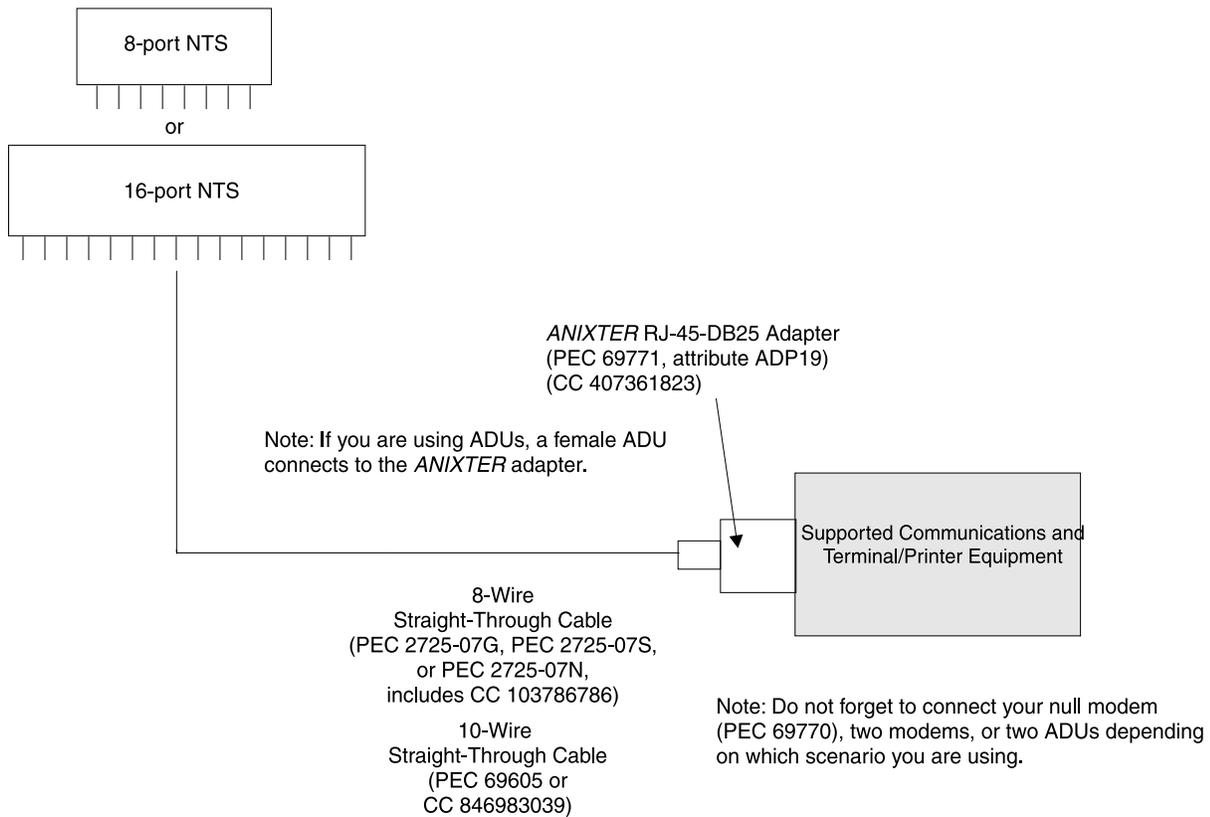
Neither an 8- nor a 16-port NTS has an NTS patch panel. Terminals and printers connect directly to the NTS.

⇒ NOTE:

The 8-port NTS can have either two parallel ports or none. These ports can be used to connect parallel printers. See the “Parallel Printers” section 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 “Using 8- or 10-Wire Straight-Through Cabling for an 8- or 16-Port NTS” figure later in this chapter).

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



⇒ **NOTE:**

If you are using ADUs, a female ADU will connect to the *ANIXTER* adapter. See the Supported Communications, Terminal, and Printer Equipment section for more information.

⇒ **NOTE:**

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

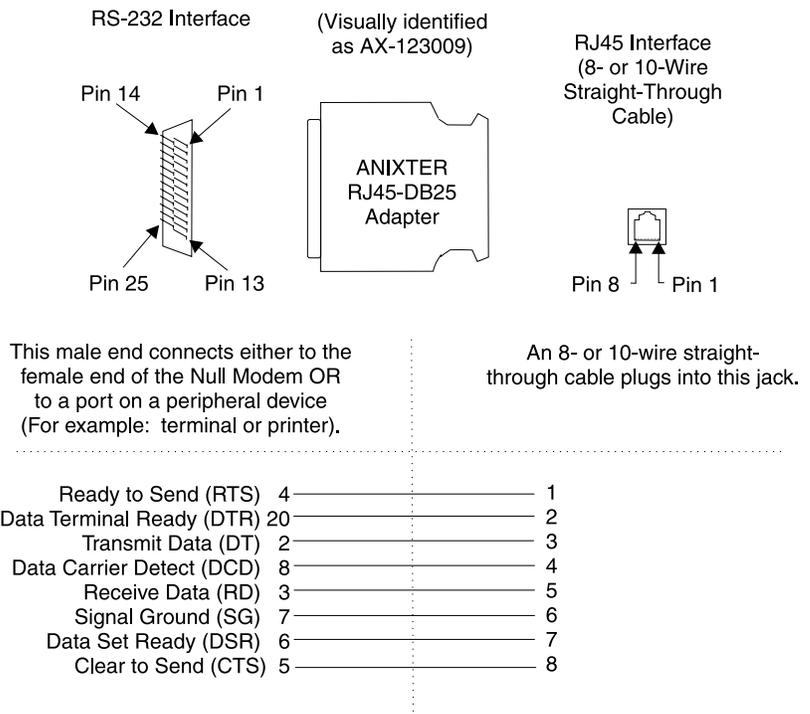
Using 8- or 10-Wire Straight-Through Cabling for an 8- or 16-Port NTS

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 (see the following figure)
- One 8- or 10-wire cable.

Refer to the previous figure and do the following steps to connect a terminal, printer, or modem to an 8- or 16-port NTS:

1. Plug an 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.

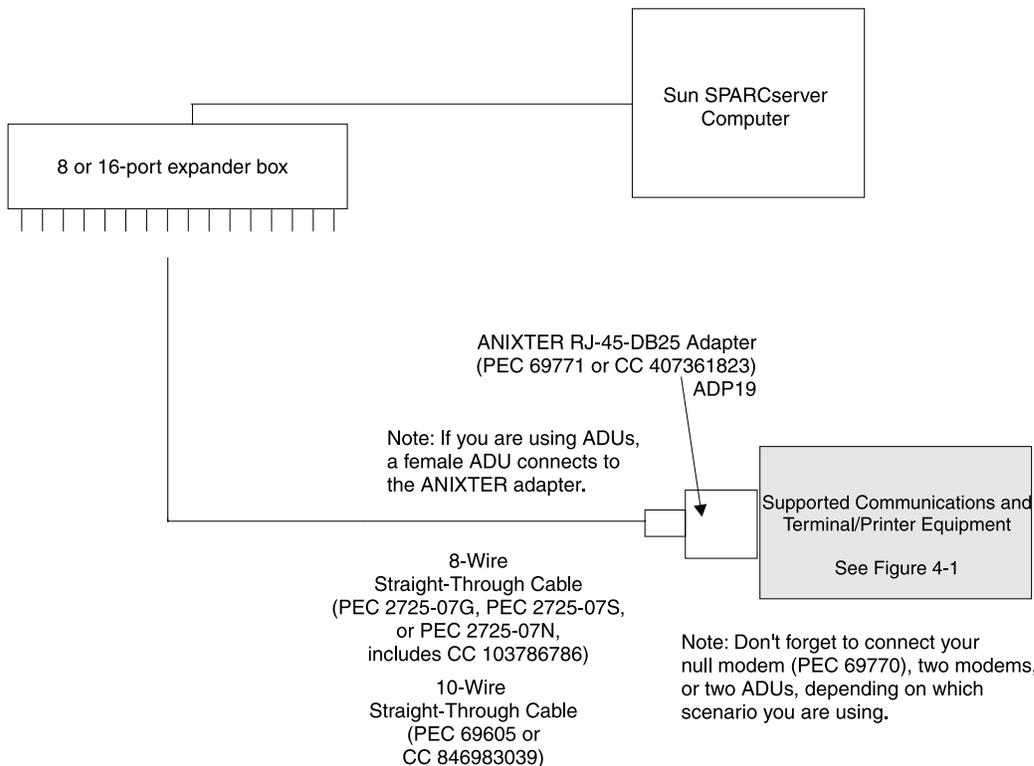


Connect Terminals, and Printers to Aurora SBus Multiport Cards

The 8- and 16-port Aurora SBus *Multiport* cards provide RJ45 jacks and need an adapter (*ANIXTER* RJ45-DB25) to convert to a 25-pin RS-232 connection (see the following figure).

⇒ NOTE:

To extend cabling beyond the 25- or 50-foot limit, you can use house wiring that extends up to 200 feet, or see the Asynchronous Data Unit Option figure earlier in this chapter for an additional option. If you are using ADUs or modems, you do **not** need to use a null modem (see the “Modem Option” figure or the “Asynchronous Data Unit Option” figure earlier in this chapter).



⇒ NOTE:

If you are using ADUs, a female ADU will connect to the *ANIXTER* adapter. See the “Supported Communications, Terminal, and Printer Equipment” section for more information.

⇒ NOTE:

Do not forget to connect your 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 Aurora SBus Multiport Card

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 need the following parts for each terminal or printer connected to the 8- or 16-port expander box:

- *ANIXTER* RJ45-DB25 adapter (see the Using 8- or 10-Wire Straight-Through Cabling for an 8- or 10-Port NTS figure)
- One 8- or 10-wire cable.

Refer to the previous figure and do the following steps to connect a terminal, printer, or modem to an 8- or 16-port expander box:

1. Plug the 8- or 10-wire cable into the 8- or 16-port expander box.
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.

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.

If you are upgrading to a new *Sun SPARCserver* computer, you may have one of the following cable schemes (see the table below):

Platform	Serial Card	Cabling	Color of Cable
3B2	EPORTS	8-wire flipped	black

Platform	Serial Card	Cabling	Color of Cable
<i>INTEL</i> *	IPC-1600	10-wire straight-through	gray
3332	<i>EQUINOX</i> †	8-wire flipped	black

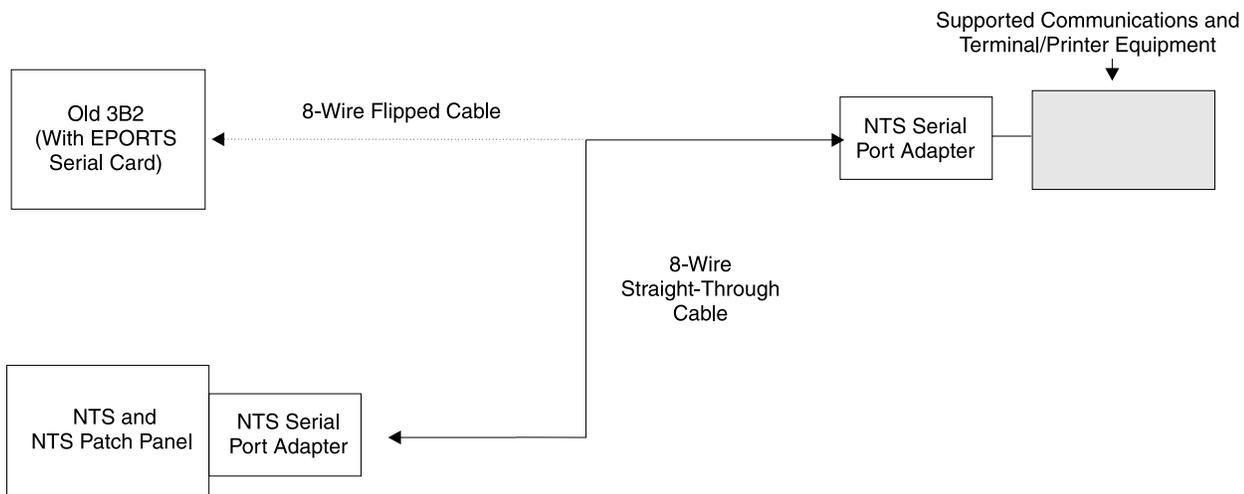
**INTEL* is a registered trademark of Intel Corp.

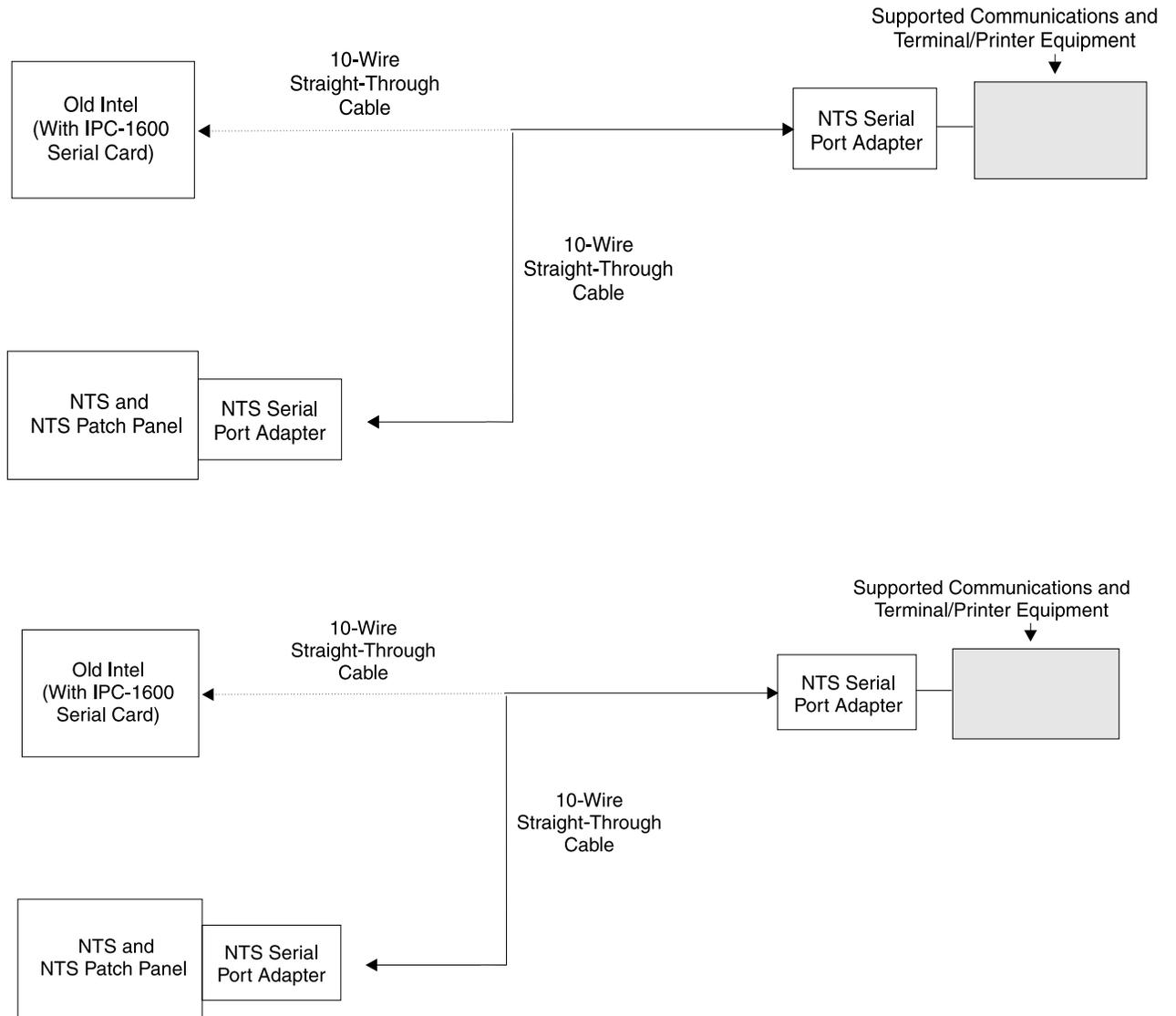
†*EQUINOX* is a registered trademark of Equinox Systems, Inc.

⇒ NOTE:

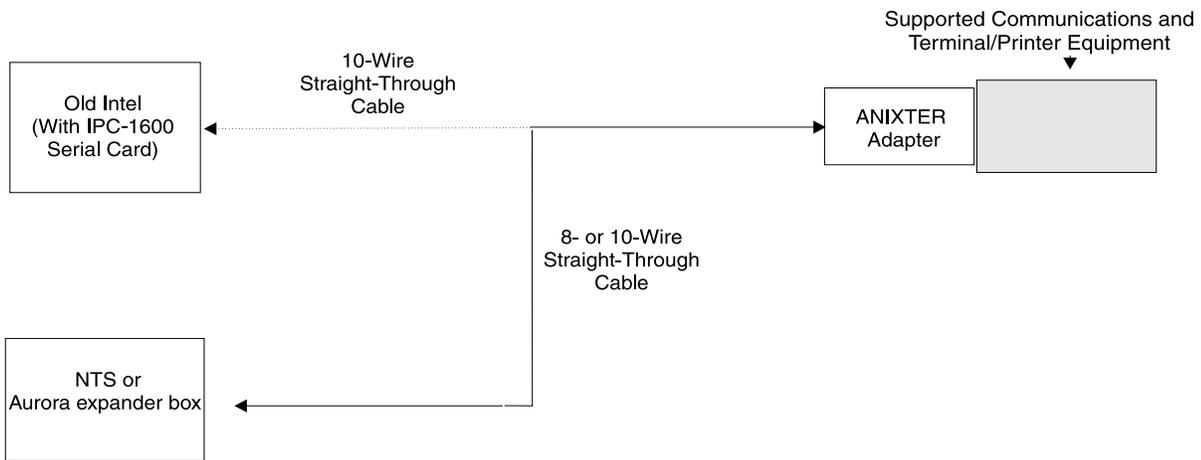
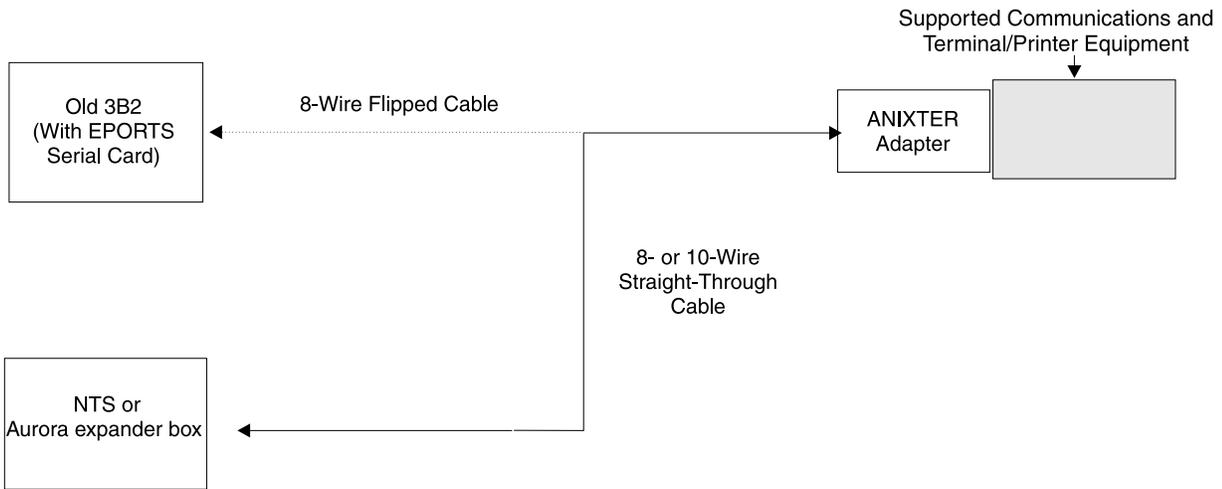
The 8-wire cabling used with the earlier platforms is flipped (for example, pin 1 RS-232 signals at one end of the cable are present at pin 8 of the other end). See “Adapter” figures in this chapter for details of each adapter’s pin connectivity. With the NTS, both the 8- and 10-wire cables must have straight-through RS-232 signals.

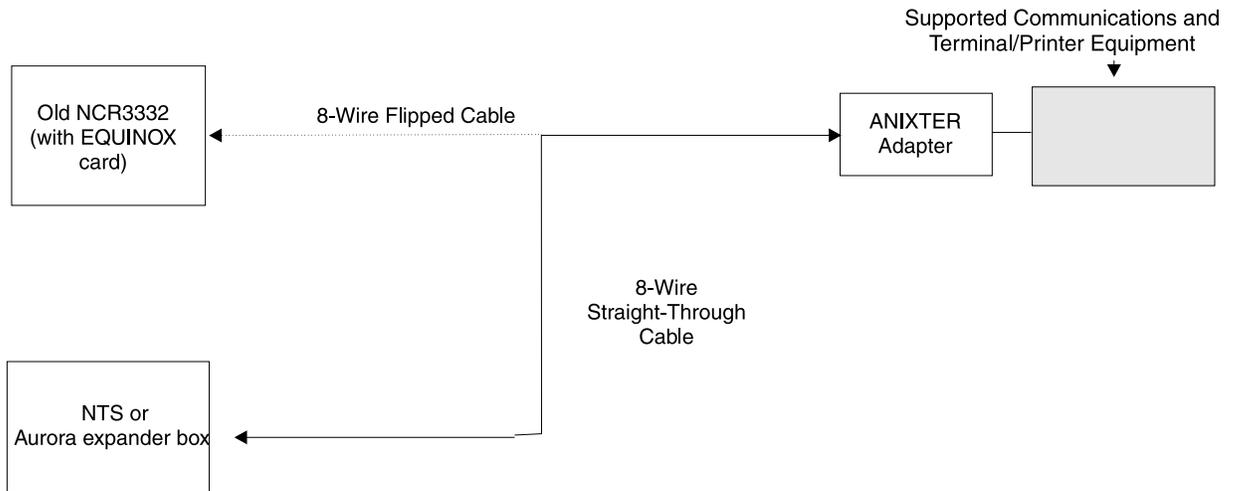
If you are upgrading the cabling for a 3B2 or a 3332, you must replace the cables and adapters with new cables and adapters. See the three figures below for upgrade scenarios with a 64-port NTS, and the two figures that follow those for upgrade scenarios with an 8- or 16-port NTS.





See the "Using 8- or 10-Wire Cabling" sections in this chapter for more details.





Administer Terminals

Overview

This section describes how to set port parameters for terminals connected to:

- an NTS patch panel
 - an 8- and 16-port NTS
 - an 8- and 16-port Aurora SBus *Multiport* cards.
-

Administer Terminals on NTS

After the terminals are connected, you must complete the `na` administration for the *Sun SPARCserver* computer 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:

```
Annex network administrator R7.0 October 13, 1992
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.

You can specify one NTS or multiple NTSs. See the table below for the recommended NTS names and addresses found in the `/etc/hosts` file.

Recommended NTS Names and Addresses

Device	IP Address	Terminal	File Name
<i>Sun SPARCserver computer</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:

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

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

⇒ 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.

⇒ NOTE:

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

For more details about using the `set port` command string, use the table below. 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 SPARCserver</i> computer address)	Set to your <i>Sun SPARCserver</i> computer 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:

```
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, `ntslinfo`), enter the following command:

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

The system responds:

```
cmsterm1: Annex-3-UX R7.0, 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. See the “Recommended NTS Names and Addresses” table earlier in this section for examples.

⇒ 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.

To quit, enter the following command:

```
command: quit
```

The system responds:

```
#
```

7. If this is the initial installation, reboot the *Sun SPARCserver* computer.

⇒ NOTE:

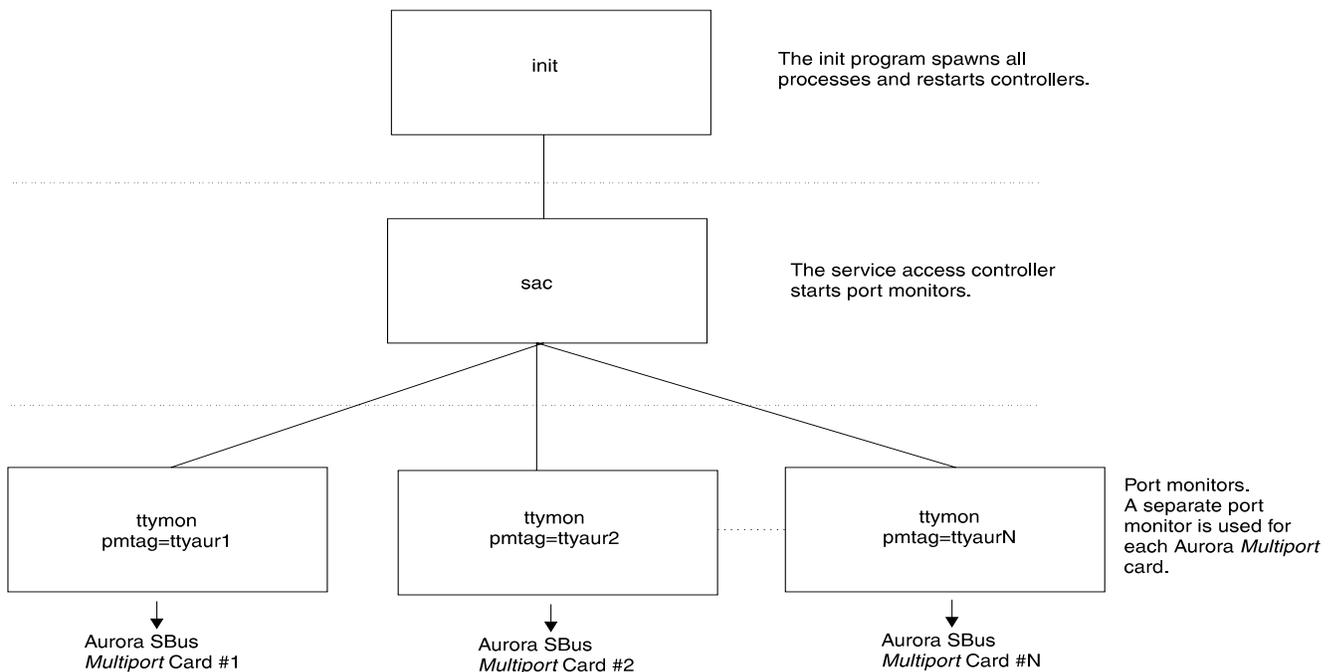
You can wait to reboot your system after you complete all the terminal, printer, and modem administration, if desired.

Overview of Sun Port Administration Used for Aurora SBus Multiport Cards

Each Aurora SBus *Multiport* card needs to have a port monitor administered. To find out which port monitors are running, type `sacadm -l`. There will be one entry for each Aurora SBus *Multiport* card installed and administered.

Each port on an Aurora SBus *Multiport* card used by terminals or incoming modems needs to have a port administered. To see the administration for each port monitor, enter `pmadm -l`. There will be one entry for each port on that Aurora SBus *Multiport* card that is used for logging in from a terminal or a modem. Ports used by printers or outgoing modems will not appear.

The figure below shows the process involved in port administration.



Administer Terminals on the Aurora SBus Multiport Cards

Setting up a terminal requires that you use either:

- the `sacadm` and `pmadm` commands, or
- the `admintool&` command.

Administer Terminals Using `sacadm` and `pmadm`

Setting up a terminal with `sacadm` and `pmadm` requires that you execute the `sacadm` command followed by the `pmadm` command. For each serial ports card, execute the following `sacadm` command (system response is in **bold**):

```
# sacadm -a -p ttyaur<card number> -t ttymon -c /usr/lib/saf/ttymon -v 1 -y "aurports"
```

The <card number> represents the serial ports card number. Start at one for the first card, two for the second, and so on. Enter `sacadm -l` and verify that there is one entry for each Aurora SBus *Multiport* card on the system. If there are any entries that are not needed or if there is one administered incorrectly, it can be removed by entering

```
sacadm -r -p <pmtag>
```

For each terminal and incoming modem connected to the expander box (that is, connected to the serial ports card), execute the following command:

```
# pmadm -a -p ttyaur<card number> -s <port number> -i root -f u -v 1 -m ``ttyadm -d /dev/term/<port number> -l n9600 -s /usr/bin/login -m ldterm,ttcompat -S n``
```

If a port is administered incorrectly, the administration can be removed by entering `pmadm -r -p <pmtag> -s <svctag>`. The value for `pmtag` and `svctag` can be obtained from the `pmadm -l` command.

To remove the port administration for an entire ports card, enter:

```
# sacadm -r -p <pmtag>
```

For example, to administer two terminals connected to ports 2 and 7 on the first Aurora SBus *Multiport* card, you would enter the following:

```
# sacadm -a -p ttyaur1 -t ttymon -c /usr/lib/saf/ttymon -v 1 -y "aurports"
# pmadm -a -p ttyaur1 -s 2 -i root -f u -v 1 -m ``ttyadm -d /dev/term/2 -l n9600 -s /usr/bin/login -m ldterm,ttcompat -S n``
# pmadm -a -p ttyaur1 -s 7 -i root -f u -v 1 -m ``ttyadm -d /dev/term/7 -l n9600 -s /usr/bin/login -m ldterm,ttcompat -S n``
```

Administer Terminals Using the Administration Tool

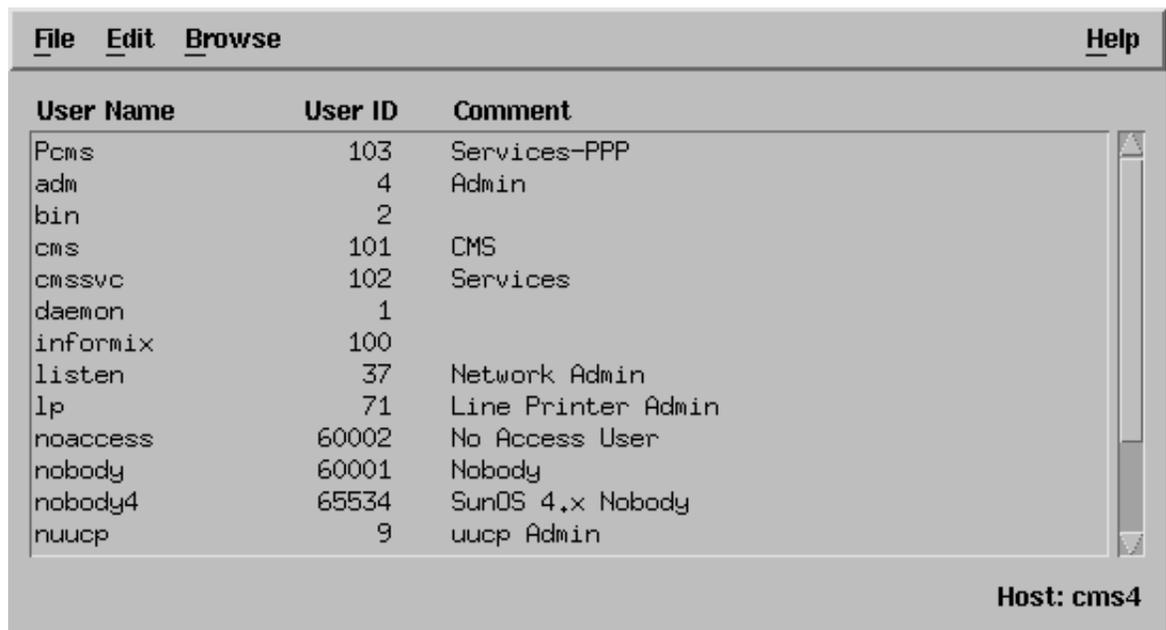
To administer terminals on the Aurora SBus *Multiport* cards (8- and 16-ports) using the `admintool&` command, do the following:

1. Enter the following command:

:

```
# admintool&
```

The Administration Tool window appears:



2. Select the **Browse** pulldown menu, then select **Serial Ports**.

The following window appears. The information in the window will differ depending upon your configuration.



The screenshot shows a terminal window with a menu bar at the top containing 'File', 'Edit', 'Browse', and 'Help'. Below the menu bar is a table with four columns: 'Port', 'Port Monitor', 'Service Tag', and 'Comment'. The table contains two rows of data. The first row has 'a' in the 'Port' column, 'ttymona' in the 'Port Monitor' column, 'ttya' in the 'Service Tag' column, and 'CMS ttya port device' in the 'Comment' column. The second row has 'b' in the 'Port' column and '< no service >' in the 'Service Tag' column. The rest of the table is empty. At the bottom right of the window, it says 'Host: cms4'.

Port	Port Monitor	Service Tag	Comment
a	ttymona	ttya	CMS ttya port device
b		< no service >	

Host: cms4

3. Highlight the port you want to administer. In the example below, all ports on the second Aurora card are selected.

The Admintool of Solaris 2.5.1 allows administration of only one port at a time.



The screenshot shows a window titled "Administer Terminals" with a menu bar containing "File", "Edit", "Browse", and "Help". Below the menu bar is a table with the following columns: "Port", "Port Monitor", "Service Tag", and "Comment". The table contains two rows: the first row is highlighted and shows "a" for Port, "ttymona" for Port Monitor, "ttya" for Service Tag, and "CMS ttya port device" for Comment; the second row shows "b" for Port, an empty cell for Port Monitor, "< no service >" for Service Tag, and an empty cell for Comment. At the bottom right of the window, it says "Host: cms4".

Port	Port Monitor	Service Tag	Comment
a	ttymona	ttya	CMS ttya port device
b		< no service >	

4. Select the **Edit** pulldown menu, then select **Modify**.

The Modify Serial Port window appears:

The screenshot shows the 'Modify Serial Port' window with the following settings:

- Template: Terminal - Hardwired
- Detail: Basic More Expert
- Port: a
- Service Enable:
- Baud Rate: n9600
- Terminal Type: (empty field)

Buttons at the bottom: OK, Apply, Reset, Cancel, Help.

5. Click on the **Expert** button.

The following window appears:

The screenshot shows the 'Modify Serial Port' window with the 'Expert' detail level selected. The settings are as follows:

- Template: Terminal - Hardwired
- Detail: Basic More Expert
- Port: a
- Service Enable:
- Baud Rate: n9600
- Terminal Type: (empty field)
- Options:
 - Initialize Only:
 - Bidirectional:
 - Software Carrier:
- Login Prompt: login:
- Comment: CMS ttya port device
- Service Tag: ttya
- Port Monitor Tag: ttymona
- Expert Options:
 - Create utmp Entry:
 - Connect on Carrier:
- Service: /usr/bin/login
- Streams Modules: idterm,ttcompat
- Timeout (secs): Never

Buttons at the bottom: OK, Apply, Reset, Cancel, Help.

6. Click on the **Service Enable** button.

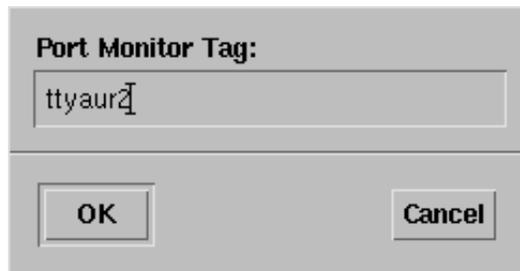
7. Click on the menu to the right of **Baud Rate:** and select **other**.

The Baud Rate window appears:

8. Type `n<baud rate>` in the `/etc/ttydefs` **Entry:** text line.
9. Click on the **OK** button.
The Baud Rate window disappears and the **Modify Serial Port** window becomes active.

10. Click on the menu to the right of **Port Monitor Tag:** and select **other**.

The **Set Port Monitor Tag** window appears.



11. Type `ttyaur2`.

The **Set Port Monitor Tag** window disappears and the **Modify Serial Ports** window becomes active.

12. Place the pointer in the **Streams Modules:** text line and type `ldterm,ttcompat`.

13. In the **Expert Options:** area, click on option **Create utmp Entry**.

14. When you have completed Steps 7-13, the window will look like the one on the following page.

Template: <input type="text" value="Terminal - Hardwired"/>	Detail: <input type="radio"/> Basic <input type="radio"/> More <input checked="" type="radio"/> Expert
Port: <input type="text" value="a"/> <input checked="" type="checkbox"/> Service Enable	Baud Rate: <input type="text" value="n9600"/> Terminal Type: <input type="text"/>
Options: <input type="checkbox"/> Initialize Only <input checked="" type="checkbox"/> Bidirectional <input type="checkbox"/> Software Carrier	Login Prompt: <input type="text" value="login:"/> Comment: <input type="text" value="CMS ttya port device"/> Service Tag: <input type="text" value="ttya"/> Port Monitor Tag: <input type="text" value="ttyaur2"/>
Expert Options: <input checked="" type="checkbox"/> Create utmp Entry <input type="checkbox"/> Connect on Carrier	Service: <input type="text" value="/usr/bin/login"/> Streams Modules: <input type="text" value="ldterm,ttcompat"/> Timeout (secs): <input type="text" value="Never"/>
<input type="button" value="OK"/>	<input type="button" value="Apply"/> <input type="button" value="Reset"/> <input type="button" value="Cancel"/> <input type="button" value="Help"/>

15. Click on the **Apply** button.

The status line at the bottom of the window displays what port the system is administering.

16. Click on **OK**.

The system brings you back to the Serial Port Manager window, which displays the changes you made.

The ports you selected in the beginning of this procedure are now administered for terminals. Follow these procedures for each Aurora SBus *Multiport* card needing administration.

 **NOTE:**

If you want to readminister ports that you just administered, use the same procedures (Steps 1-15).

Terminal Options

Overview

After you connect the terminal to the computer, 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 Terminal (MT)
- 615 Color Multi-Tasking Terminal (CMT)
- 615 Multi-Tasking Terminal (MT)
- 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.

Recommended Option Values

After making the change, you should set the 715 BCS options to the values shown below.

**User Preferences
Window for a 715 BCT**

The figure below shows the recommended user preferences 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 for a
715 BCT**

The figure below 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 for a 715 BCT

The figure below 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 figure below 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 for a 7115
BCT**

The figure below 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 for a 715 BCT**

The figure below 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 Terminal (MT)

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.

Recommended Option Values

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

User Preferences Window for a 705 MT

The figure below shows the recommended user preferences 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 for a
705 MT**

The figure below 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 for a 705 MT**

The figure below 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 for a 705 MT

The figure below 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 for a 705 MT

The figure below 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 for a 705 MT

The figure below 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 Terminal (CMT)

The figure below 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

  CHANGE OPTION  DEFAULT VALUES  SAVED VALUES  SAVE  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 Terminal (MT)

The figure below 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_		
Monitor Mode	_off_	Cursor Type	_blck_
Autowrap	_on_	Cursor Blink	_no_
Newline on LF	_no_	Labels	_off_
Return Key	_CR_		
Enter Key	<--		
DONE		615MT 1.1	
<input type="button" value=""/>	<input type="button" value=""/>	<input type="button" value="CHANGE
OPTION"/>	<input type="button" value="DEFAULT
VALUES"/>
		<input type="button" value="SAVED
VALUES"/>	<input type="button" value="SAVE"/>
		<input type="button" value="NEXT
SETUP"/>	<input type="button" value="CLEAR
TO END"/>

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 figure below shows the recommended 605 BCT Terminal options.

OPTIONS SETUP

Communications	User Preferences		
Speed	9600	Columns	__80__
Send Parity	spac	Reverse Video	__no__
Check Parity	__no__	Bell	__on__
Local Echo	__off__	Key Click	__off__
Monitor Mode	__off__	Scrolling	__jump__
Auto Wrap	__on__	Scroll Speed	med
Newline on LF	__no__	Cursor Type	blck
Return Key	__CR__	Cursor Blink	__no__
Enter Key	<--	Labels	__on__
Terminal Mode	norm	Swap Delete/Del	__no__

DONE 605 BMT - 1.0

CHANGE
OPTIONDEFAULT
VALUESSAVED
VALUESSAVENEXT
SETUPCLEAR
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 figure below shows the recommended 620 MTG Terminal options.

```

                                OPTIONS SETUP

    Communications                                User Preferences

Speed                9600                        Reverse Video      _no_
Send Parity          spac                        Volume            jump
Check Parity         _no_                       Key Click         _no_
Local Echo          _off
Generate Flow       _off
Receive Flow        _on_
Pass Flow           _off

Monitor Mode        _no_
Auto Wrap           _on_
Newline on LF       _no_
Return Key          _CR_
Enter Key           <--

DONE                                                        620/Basic - 1.1

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

```

If any of the 620 MTG 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.

Recommended Option Values

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

User Preferences Window

The figure below shows the recommended user preferences options.

The screenshot shows a window titled "USER PREFERENCES" with a list of settings. The "Screen Lines" option is highlighted with a horizontal bar. At the bottom of the window, there are several buttons: "SETUP MENU", "PREVIOUS SCREEN", "NEXT SCREEN", "CHANGE OPTION", and four empty rectangular boxes.

Option	Value
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

Communications Options Windows

There are two communications options submenus - one for each port. These are SES 1, shown in the following figure; and SES 2, shown in the figure following that.

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 figure below 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
MENUPREVIOUS
SCREENNEXT
SCREENCHANGE
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 figure below 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

General Options Window

The figure below shows the recommended general options.

GENERAL OPTIONS

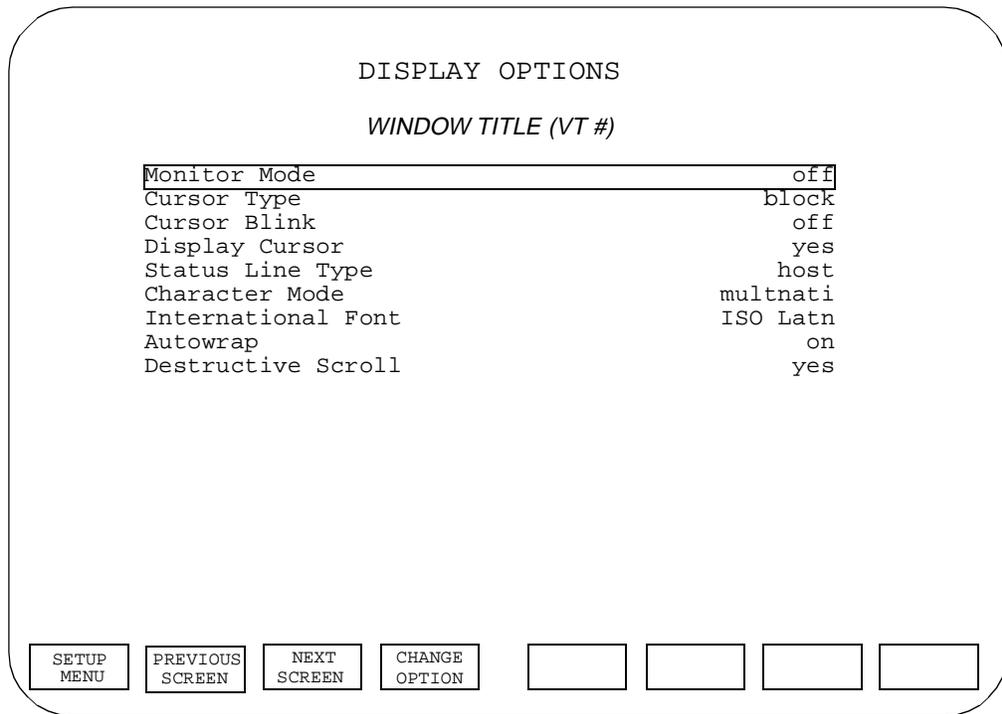
WINDOW TITLE (VT #)

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

SETUP MENU PREVIOUS SCREEN NEXT SCREEN CHANGE OPTION CLEAR TO END

Display Options Window

The figure below shows the recommended display options.



**Keyboard Options
Window**

The figure below 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 figure below 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 with their current values:

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 four labeled buttons: "SETUP MENU", "PREVIOUS SCREEN", "NEXT SCREEN", and "CHANGE OPTION", followed by four empty rectangular boxes.

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.

Recommended Option Values

User Preferences Window

The figure below shows the recommended user preferences 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.
These are the SES 1 and the SES 2, shown in the figures below.

**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 figure below 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 figure below 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

General Options Window

The figure below shows the recommended general options.

GENERAL OPTIONS

WINDOW TITLE (VT #)

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

SETUP MENU PREVIOUS SCREEN NEXT SCREEN CHANGE OPTION CLEAR TO END

Display Options Window

The figure below 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 figure below 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
MENUPREVIOUS
SCREENNEXT
SCREENCHANGE
OPTION CLEAR
TO END

Printer Options Window

The figure below 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 4000/AWTC terminal options are incorrect, refer to the *4000/AWT Color Guide to Operations* for instructions on how to change the terminal options.

2900/260If Small Footprint Terminal

To use setup mode, do the following:

- Press **Ctrl** **Scroll Lock** to enter terminal Setup mode.
- To exit Setup, press **Pause** and y or n.

Recommended Option Values

The recommended 2900/260If Terminal values are shown in the figures on the following pages. Twelve of the menus are accessed by the function keys F1 through F12. The thirteenth menu is accessed by the Print Screen key and provides terminal operations which may be executed.

F1 Quick Window

The figure below 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/Para				<table border="1"> <tr><td>Parameters</td></tr> <tr><td>EIA Baud Rate=9600</td></tr> <tr><td>Aux Baud Rate=9600</td></tr> <tr><td>Lanuguage=U.S.</td></tr> </table>				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																						
Parameters																																		
EIA Baud Rate=9600																																		
Aux Baud Rate=9600																																		
Lanuguage=U.S.																																		
<table border="1"> <tr><td>Choices</td></tr> <tr> <td>ADDS-VP</td> <td>Wyse-60</td> <td>Wyse-325</td> <td>Wyse-50+</td> <td>Wyse-350</td> <td>PC-Term</td> <td>TVI-925</td> </tr> <tr> <td>VT-300-7</td> <td>VT-300-8</td> <td>Intecolor</td> <td>VT-200-7</td> <td>VT-200-8</td> <td>VT-100</td> <td></td> </tr> <tr> <td>SCO Console</td> <td>AT386</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>													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					
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																																	
<table border="1"> <tr><td>Select</td></tr> </table>				Select	Enter/S-Enter: Next/Prev Choice				Exit : PauseKey																									
Select																																		
↑ > ↓ <				: Parameter																														

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

F2 General (Genrl) Window

The figure below shows the F2 General 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
Emulation=VT-300-7 Auto Font Load=On Monitor Mode=Off Warning Bell=On Sessions=One				<div style="border: 1px solid black; padding: 2px; text-align: center;">Parameters</div> 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				
<div style="border: 1px solid black; padding: 2px; text-align: center;">Choices</div>												
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				<div style="border: 1px solid black; padding: 2px; text-align: center;">Select</div> Enter/S-Enter: Next/Prev Choice				Exit : PauseKey				

F3 Display (Displ) Window

The figure below 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				Parameters Screen Length=26 Lines Cursor=Blink Block Erase Color=Black				Screen Video=Normal Auto Adjust Cursor=On Speed=Fast				
Choices 24 25 42 43 48 50 84 86 96 100 168 172 192 200 *24 *25 *42 *43												
↑ → ↓ ← : Parameter				Select Enter/S-Enter: Next/Prev Choice				Exit : PauseKey				

F4 Keyboard (Kybd) Window

The figure below 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				<div style="border: 1px solid black; padding: 2px; text-align: center;">Parameters</div> Char Set Mode=ANSI Key Repeat=On Key Lock=Caps				Key Mode=ASCII Key Rate=20 cps Caps Lock=Toggle				
<div style="border: 1px solid black; padding: 2px; text-align: center;">Choices</div> 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				<div style="border: 1px solid black; padding: 2px; text-align: center;">Select</div> Enter/S-Enter: Next/Prev Choice				Exit : PauseKey				

F5 Keys Window

The figure below 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 figure below 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			
				Parameters											
EIA Baud Rate=9600				EIA Data Format=8/1/N				EIA Parity Check=Off							
AUX Baud Rate=9600				AUX Data Format=8/1/N				AUX Parity Check=Off							
EIA Xmt=No Protocol				EIA Recv=Xany-Xoff(XPC)				EIA Xmt Pace=Baud							
AUX Xmt=No Protocol				AUX Recv=Xany-Xoff(XPC)				AUX Xmt Pace=Baud							
EIA Break=250 ms				EIA Modem Control=Off				EIA Disconnect=2 sec							
AUX Break=250 ms				AUX Modem Control=Off				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 figure below 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; display: inline-block;">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; display: inline-block;">Choices</div>												
Full Duplex Half Duplex Full Block Half Block												
↑ → ↓ ← : Parameter				<div style="border: 1px solid black; padding: 2px; display: inline-block;">Select</div> Enter/S-Enter: Next/Prev Choice				Exit : PauseKey				

F8 Print Window

The figure below 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				Parameters Prnt Region=Screen				Prnt Block Term=None				
Choices												
Normal Auto Controller												
↑ → ↓ ←				Select								
: Parameter				Enter/S-Enter: Next/Prev Choice				Exit : PauseKey				

F9 Emulation (Emul) Window The figure below 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				Parameters Cursor Kpd=Cursor ANSI-ID=VT320 Feature Lock=Off				Send Data=All Function Key Lock=Off Status Line=Off				
Choices												
Numeric Application												
↑⇒↓⇐				Select				: Parameter Enter/S-Enter: Next/Prev Choice Exit : PauseKey				

F10 Tabs Window

The figure below 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 figure below 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 figure below 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: 100%; height: 20px;" type="text"/>													
Label: <input style="width: 50px;" type="text"/>				Bytes Remaining:									
Choices													
F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12		
↑ ⇒ ↓ ⇐ : Parameter				Select				Enter/S-Enter: Next/Prev Choice					Exit : PauseKey

Print Screen Execute (PrtSc Exec) Window

The figure below 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 Save Session Reset Terminal Clear Screen				<input type="button" value="Parameters"/> Recall Terminal Recall Session Reset Session Default Session UDKs				Default Terminal Default Session Reset Ports				
<input type="button" value="Choices"/>												
Use Enter Key to Execute Action												
<input type="button" value="↑>↓<"/> : Parameter				<input type="button" value="Select"/>				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 scenarios:

- Serial Printers — connected to ports on the NTS patch panel.
- Parallel Printers — connected to a back-panel port on an NTS (an NTS can have 0, 1, or 2 parallel ports).
- Parallel Printers — connected to the parallel port on the *Sun SPARCserver* computer.
- Serial Printers connected to the Aurora SBus *Multiport* cards.



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`, `rtnet`, and `lpadmin` administration for the *Sun SPARCserver* computer 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 R13.3 February 4th, 1997
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. See the "Configuration Information" table for specific devices, IP addresses, terminals, and file names.

The system responds:

```
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 none 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 table below 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 SPARCserver</i> computer).	Set to your <i>Sun SPARCserver</i> computer internet address.
<code>control_lines</code>	<code>none</code>	Set to <code>none</code> .	NA
<code>input_flow_control</code>	<code>bell</code>	Set to <code>start/stop</code> .	NA
<code>output_flow_control</code>	<code>none</code>	Set to <code>start/stop</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>	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 <code>none</code> .	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:

```
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:

```
# 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:

```
cmsterm1: Annex-3-UX R7.0, 64 ports
        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:

```
#
```

RTELNET Administration

Serial printers require some additional 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 SPARCserver* computer.

To place the command for serial printers in a file, place the `Speripherals` file into the `/etc/rc2.d` directory as follows:

1. To change from the root directory, at the system prompt, enter the following command:

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

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

```
# vi Speripherals
```

3. 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
```

4. To exit the file and return to the system prompt, press **Shift** and **Z** **Z**.
5. To return to the *root* directory, enter the following command:

:

```
# cd /
```

6. At the *Sun SPARCserver* console, enter the following system command (one line for 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/cmstermintf -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 SPARC* server 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 8). If the speed is **not** 9600, use `-o "stty=<baud rate>."`

See the table below 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	—	—
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

Printer	“lpadmin” Type	Emulation Mode	Product Status
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>	—
<i>Okidata</i> 183	ibmproprinter	<i>IBM</i>	—
<i>Okidata</i> 320	ibmproprinter	<i>IBM</i>	—
<i>Okidata</i> 321	ibmproprinter	<i>IBM</i>	—
<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 SPARCserver* computer.

⇒ 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

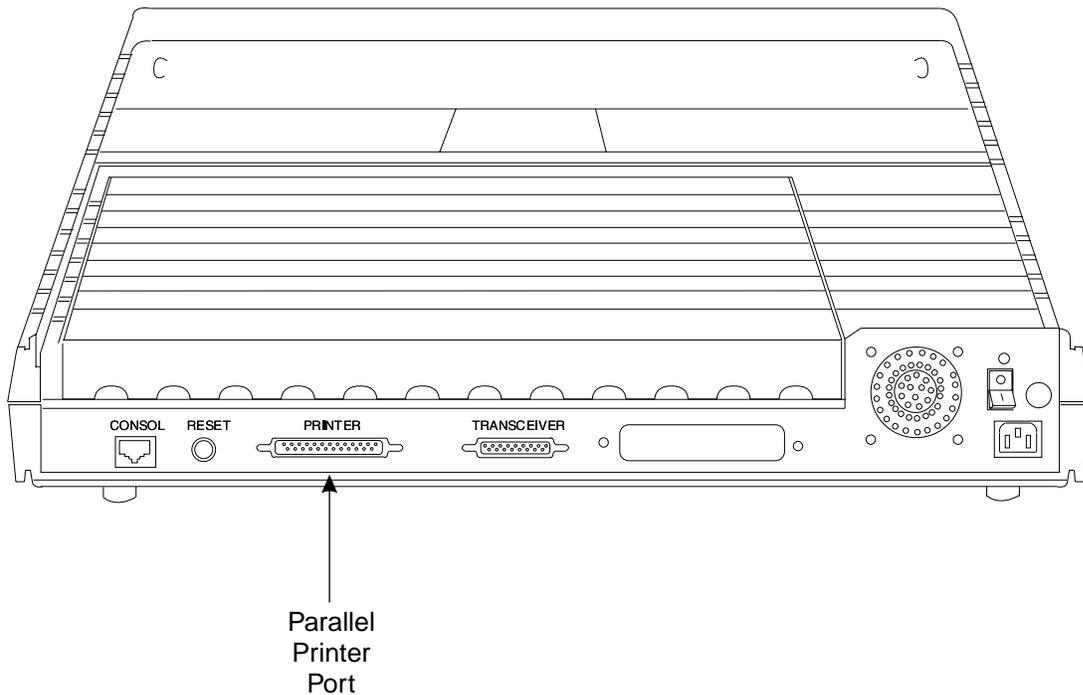
Set up the printers by connecting the printer to the NTS parallel port. The port used to connect parallel printers is found on the back panel of the network terminal server (see the two figures below). This NTS parallel port supports either a Centronics- or *Dataproducts**-compatible printer.

⇒ **NOTE:**

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

Physical Connections

To connect your printer to the 64-port NTS, see the figure below.

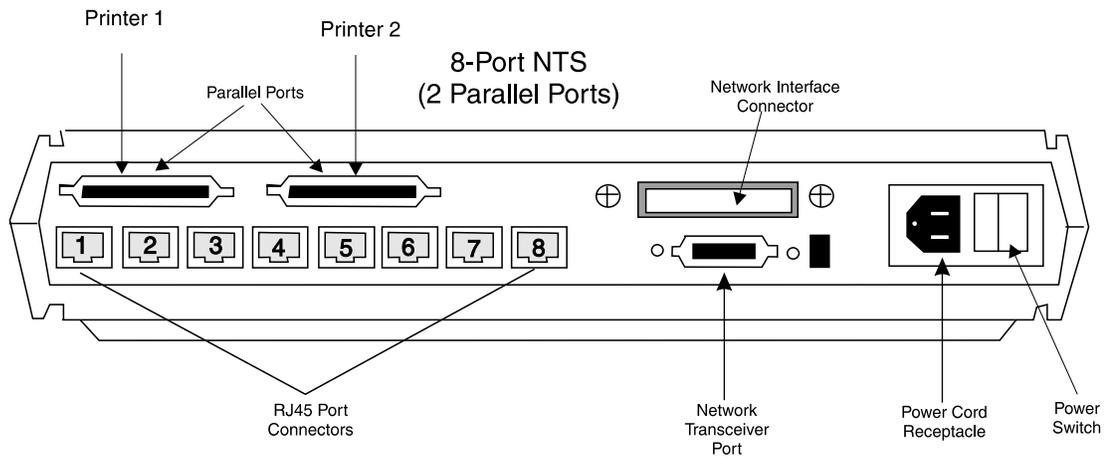


⇒ **NOTE:**

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.

To connect your printer to the 8-port NTS, see the figure below.

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



Procedure for na Administration

To 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 R13.3 February 4th, 1997
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.

See the table in the Administer Terminals section earlier in this chapter for specific devices, IP addresses, terminals, and file names.

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`.

⇒ NOTE:

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

⇒ NOTE:

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:

```
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 SPARCserver* console at the system prompt:

```
# lpadmin -p <printername> -D "comment about printer location"  
-v /dev/lpnull -A mail -i /usr/spool/lp/cmsterm1pr -T <type>
```

⇒ NOTE:

The first parallel printer ports on the three other NTSs will use `cmsterm2pr`, `cmsterm3pr`, and `cmsterm4pr` instead of `cmsterm1pr`. If the speed is not 9600, add the `-o stty=<baud>` to the command string. The second parallel printer ports will use `cmsterm1pr2` 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/cmsterm1pr` 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`.

See the table in the LPADMIN Administration section earlier in this chapter to identify the correct `lpadmin` type.

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

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

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

```
# enable <printername>
```

The system responds:

```
<printername> enabled
```

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

```
# accept <printername>
```

The system responds:

```
<printername> accepted
```

5. If this is the initial installation, reboot the *Sun SPARCserver* computer.

⇒ NOTE:

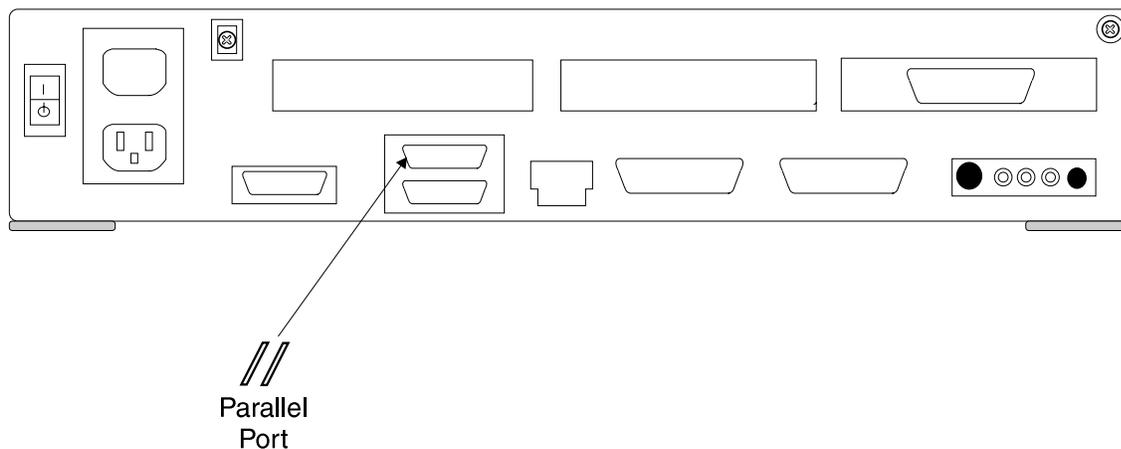
You can wait to reboot your system until after you complete all the terminal, printer, and modem administration, if desired.

See the table in the LPADMIN Administration section earlier in this chapter to identify the correct lpadm `type`.

Parallel Printers Connected to the Built-in Port on the Sun SPARCserver Computer

A parallel printer may be connected to a *CentreVu* CMS system by using the parallel port on the *Sun SPARCserver* computer. There are two types of cables that can be used to connect the parallel printer to the *Sun SPARCserver* computer. 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 the supported printers use Centronics. For the correct cable to use in connecting the printer to the parallel port, see the table below. (See the figure below for the location of the parallel port.)

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



To administer a printer using the built-in port on the *Sun SPARCserver* computer, use the following steps:

1. For the built-in *Sun SPARCserver* parallel port, issue the following command on the console at the system prompt:

```
# lpadmin -p <printername> -D "comment" -v /dev/bpp0 -A mail  
-i /usr/spool/lp/cmsppr -T <type>
```

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

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

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

```
# enable <printername>
```

The system responds:

```
<printername> enabled
```

4. To allow the lp subsystem to accept print jobs for this printer, enter the following command:

```
# accept <printername>
```

The system responds:

```
<printername> accepted
```

5. If this is the initial installation, reboot the *Sun SPARCserver* computer.

⇒ NOTE:

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

Serial Printers Connected to the Aurora SBus Multiport Cards

First verify that a port monitor is not using the desired port. Type `pmadm -l` and see if there are any entries that use the same device (`/dev/term/<port number>`). If there is one, it needs to be removed. Type `pmadm -r -p <pmtag> -s <svctag>` where `pmtag` and `svctag` is obtained from the `pmadm -l` command done earlier.

To administer a serial printer, do the following:

1. Issue the following commands (the system prompts/responses are in **bold**):

```
# lpadmin -p <printername> -D "comment" -v /dev/term/<port
number> -A mail -T <type> -o <no>banner -o "stty='9600 cs8
-parenb -cstopb -crtcts ixon tabs'"
# chown lp /dev/term/<port number>
# chmod 600 /dev/term/<port number>
# enable <printername>
<printername> enabled
# accept <printername>
<printername> accepted
```

2. If you wish to make the printer the default destination, enter the following command from the *Sun SPARCserver* console:

```
# lpadmin -d <printername>
```
3. If your printer has options that can be set, then set your printer to the correct baud rate, 8 data bits, no parity, 1 stop bit and xon-xoff flow control.
4. If this is the initial installation, reboot the *Sun SPARCserver* computer.

⇒ NOTE:

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

See the table in the LPADMIN Administration section earlier in this chapter to identify the correct `lpadmin type`.

Administer Modems

Overview

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

⇒ NOTE:

If you are using the Aurora SBus *Multiport* card, then do not use ports 12-15 for modems. The last four ports cannot be used to connect modems.

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 both the `na` and `rtelnet` administration to enable the *Sun SPARCserver* computer 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 SPARCserver* computer to recognize the new inbound modem(s).

You can administer both outbound and inbound modems using the “Complete NA Administration” procedures given for each type of modem arrangement. These provide 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:

```
Annex network administrator R13.3 February 4th, 1997
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.

See the Configuration Information table in the Administer Terminals section earlier in this chapter for specific devices, IP addresses, terminals, and file names.

The system responds:

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

```
command:
```

4. 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 **DataPort Express Model 3710/3715** or 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>
```

For the **Comsphere 3830** or **3910**, use this string:

```
command: set port=x-y mode slave type dial_in
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 the `location` and `user_name` so that any user-reported problems can be traced to the correct port.

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

Outbound Modem Configuration Guidelines for a *Dataport Express* Model 3710/3715 or *U.S. Robotics Sportster* Faxmodem:

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 (<i>Sun SPARCserver</i> computer).	Set to your <i>SunSPARCserver</i> computer 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	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 SPARCserver* computer.

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, press **Shift** and **Z**.

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

```
# cd /
```

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

```
# rtelnet -fmrt cmstern2 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 cmstern2 20 /dev/s_pdev220`).

- 3. If this is the initial installation, you must reboot the *SunSPARCserver* computer.

⇒ 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 R7.0 October 13, 1992
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.

See the configuration information table in the Administer Terminals section earlier in this chapter for specific devices, IP addresses, terminals, and file names.

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
```

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 table below 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 SPARCserver computer)	Set to your Sun SPARCserver computer's internet address.
control_lines	none	modem_control	NA

Port Generic Parameter	Default Parameter	Recommended Setting	Comments
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.

5. 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@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 quit, enter the following command:

```
command: quit
```

The system responds:

```
#
```

7. If this is the initial installation, reboot the *Sun SPARCserver* computer.

⇒ NOTE:

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

Modems Connected to the Aurora SBus Multiport Cards

Inbound Modem — For an inbound modem, administer the port the same way as for a terminal.

Outbound Modem — For an outbound modem, no port-specific administration is required. Make sure that existing administration is removed from that port by entering the following command:

```
# pmadm -r -p ttyaur<card number> -s <port number>
```

⇒ NOTE:

Ports 12-15 on the 16-port expander box cannot be used to connect modems.

Modem Options

Overview

After you connect the modem to the computer, 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 computer can recognize the new modem.

The sections that follow describe how to set options for the following modems:

- *Paradyne DataPort Express Model 3710*
 - *Paradyne DataPort Express Model 3715*
 - *U.S. Robotics Sportster Faxmodem*
 - *Paradyne Comsphere 3830*
 - *Paradyne Comsphere 3910 (international only).*
-

Paradyne DataPort Express Model 3710

Do these steps to set the options for the *Paradyne DataPort Express Model 3710* modem:

1. Connect a dumb terminal to the 25-pin connector located 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 SPARCserver* computer as described in the *Install the Sun SPARCserver Computer* chapter.

2. Make the necessary power connections to the modem and to the terminal.
3. Turn on the modem and the terminal.

4. At the terminal, enter the following soft options (use numerical ones and zeros in the commands):

```
AT&F          (loads factory default configuration options
              into active memory)
ATS41=3       [sets Dial-Line Rate to 9600 (V.32bis/V.32)]
AT&T5        (denies request for Remote Digital Loopback test)
AT&C1        [Carrier Detect (CD) control follows standard
              RS-232 operation]
ATE0Q1&S1&W0 [disables echo, disables result codes, Data Set
              Ready (DSR) control follows standard RS-232
              operation, save to profile 0]
```

If needed, reset the modem using the power switch on the back.

Paradyne DataPort Express Model 3715

Do these steps to set the options for the *Paradyne DataPort Express Model 3715* modem:

1. Connect a dumb terminal to the 25-pin connector located 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 SPARCserver* computer as described in the *Install the Sun SPARCserver Computer* chapter.

2. Make the necessary power connections to the modem and to the terminal.
3. Turn on the modem and the terminal.

4. At the terminal, enter the following soft options (use numerical ones and zeros in the commands):

```

AT&F          (loads factory default configuration options
              into active memory)
AT%B9600     (sets modulation/data rate to V.32bis/V.32,
              maximum rate 9600 bps)
AT&T5       (denies request for Remote Digital Loopback test)
ATE0Q1&S1&W0 [disables echo, disables result codes, Data Set
              Ready (DSR) control follows standard RS-232
              operation, save to profile 0]

```

If needed, reset the modem using the power switch on the back.

U.S. Robotics Sportster 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 figure below).

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 SPARCserver* computer as described in the *Install the Sun SPARCserver Computer* chapter.

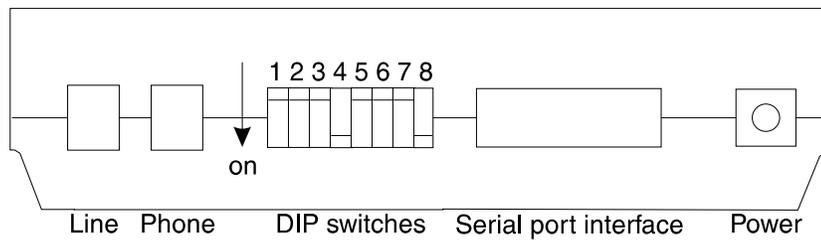
2. Make the necessary power connections to the modem and to the terminal.
3. Set DIP switches 1, 3, 7, and 8 to the down (ON) position and DIP switches 2, 4, 5, and 6 to the up (OFF) position.
4. Turn on the modem and the terminal.

- 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&N6      (sets forced connect speed to 9600 bps)
AT&W0      [writes the current configuration to NVRAM 0
           template (Y0)]
    
```

- Set all DIP switches to the up (OFF) position except switches 4 and 8, which are set to the down (ON) position. The figure below shows the final DIP switch settings for CMS, and the table below explains the settings.
- Reset the modem using the power switch on the front.



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

Paradyne Comsphere 3830

Do these steps to set the options for the *Paradyne Comsphere 3830* modem:

1. Connect a dumb terminal to the 25-pin connector located 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 SPARCserver* computer as described in the *Install the Sun SPARCserver Computer* chapter.

2. Make the necessary power connections to the modem and to the terminal.
3. Turn on the modem and the terminal.
4. At the terminal, enter the following soft options (use numerical ones and zeros and in the commands):

```
AT&F3      (loads factory default configuration options into
           active memory)
ATS41=3    [sets Dial-Line Rate to 9600 (V.32bis)]
AT&S1&W0   [Data Set Ready (DSR) control follows standard RS-232
           operation, save current Active(Operating) to Active
           (Save)]
```

If needed, reset the modem using the power switch on the back.

Paradyne Comsphere 3910

The *Paradyne Comsphere 3910* modem has been type-approved for sale to **international** customers in the countries where *CentreVu* CMS is sold. This modem may be used as the CMS Remote Console modem or as a device that provides serial connectivity to CMS through an NTS.

Recommended Options

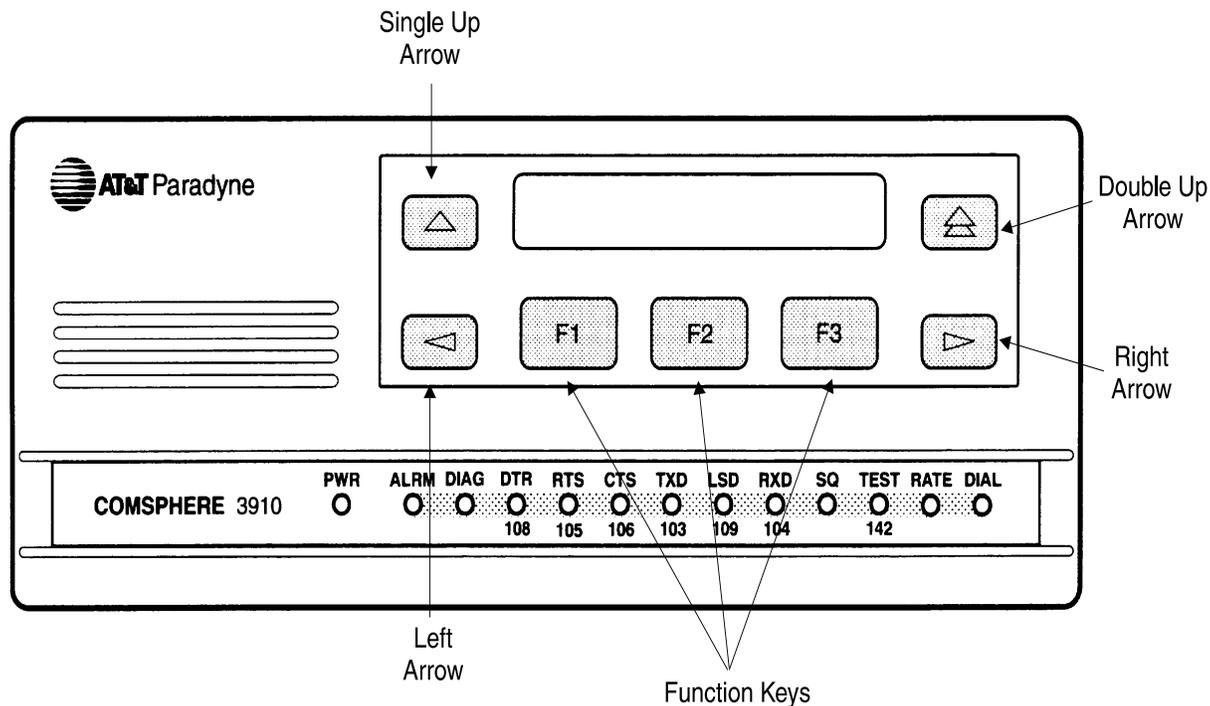
The recommended options for using the *Comsphere* 3910 include selecting factory preset defaults for "UNIX_Dial" with the following **two** changes:

- Asynchronous DTE Rate is changed to 9600
- Dial Line Rate is changed to 9600 (V32b).

Option Buttons

The seven buttons that are used to option the modem (see the figure below) include:

- Single Up Arrow - move up one level in the menu tree
- Double Up Arrow - move to the Top-Level menu
- Left Arrow (arrow pointing to the left) - move to the previous choice(s) for the current level in the menu tree
- Right Arrow (arrow pointing to the right) - move to subsequent choice(s) for the current level in the menu tree
- Function 1 (F1) - select the choice that is currently printed in the display above F1. (There may or may not be a choice printed in the F1 option.)
- Function 2 (F2) - select the choice that is currently printed in the display above F2. (There may or may not be a choice printed in the F2 option.)
- Function 3 (F3) - select the choice that is currently printed in the display above F3. (There may or may not be a choice printed in the F3 position.).



Set the Options

To option the *Comsphere* 3910 for CMS, complete the following.

Configure Factory/Async_Dial

1. Press F2 for Configure. "Ld EditArea frm" is displayed.
2. Press the Right Arrow four times. "Factory" is displayed.
3. Press F1 to select "Factory." "Ld Fact Preset:" is displayed.
4. Press Right Arrow four times.
5. Press F1 for "UNIX_Dial."
6. Press F3 for "Save." "Sav EditArea to" is displayed.
7. Press F1 to save to "Active(Saved)." Since you are changing the active area to a new set of options (that is, "Factory/Async_Dial"), the modem will automatically do another Power-On-Self-Test (POST). Since the new options match the way the modem is connected, the ALRM LED will not turn red. The display lines will be "Idle: 19.2" and "Status Configure." Any time you would like to return to this Top-Level Menu, press the Double Up Arrow.

Set Data Rate

1. Press F2 for Configure. "Ld EditArea frm" is displayed.
2. Press the Right Arrow once. "Active(Saved)" is displayed.
3. Press F1. "Choose Function" is displayed.
4. Press F1 for "Edit." "Edit StrapGroup" is displayed.
5. Press F1 for "DTE_Interface." "Async/Sync Mode" is displayed.
6. Press F1 for "Nxt." "Async DTE Rate" is displayed.
7. Press the Right Arrow five times for "9600."
8. Press F2 to select "9600."

Set Handshake Options

1. Press F1 for "Nxt." "Asyn #Data Bits (8)" is displayed.
2. Press F1 for "Nxt." "Asyn Parity Bit (None)" is displayed.
3. Press F1 for "Nxt." "Asyn #Stop Bits (1)" is displayed.
4. Press F1 for "Nxt." "DTR Action (Ignore)" is displayed.
5. Press F1 for "Nxt." "DSR Control (Forced_On)" is displayed.
6. Press F1 for "Nxt." "RTS Action (Ignore)" is displayed.
7. Press F1 for "Nxt." "CTS Control (WinkWhenDisc)" is displayed.
8. Press F1 for "Nxt." "RTS/CTS Delay (0 msec)" is displayed.
9. Press F1 for "Nxt." "LSD Control (WinkWhenDisc)" is displayed.
10. Press F1 for "Nxt." "CT111_Rate Cntl (Disable)" is displayed.
11. Press F1 for "Nxt." "DTE_Rate=VF (Disable)" is displayed.
12. Press F1 for "Nxt." "Extend Main Ch. (Disable)" is displayed.
13. Press F1 for "End." "Edit StrapGroup" is displayed.

Set Dial_Line Strap Group

1. Press the Right Arrow three times to get to the "Dial_Line" strap group. Nothing needs to be changed for CMS in the "DTE_Dialer" or "Line_Dialer" strap groups, so you can skip them.
2. Press F1 to edit the "Dial_Line" strap group. "Dial Line Rate" is displayed.
3. Press the Right Arrow four times for "9600(V32b)."
4. Press F2 to select "9600(V32b)."
5. Press F1 for "Nxt." "V32bis Automode (Enable)" is displayed.

6. Press F1 for "Nxt." "V32bis Autorate (Enable)" is displayed.
7. Press F1 for "Nxt." "Dial Tx Level (Permissv (-9))" is displayed.
8. Press F1 for "Nxt." "V22b Guard Tone (Disable)" is displayed.
9. Press F1 for "Nxt." "V32bis Train (Long)" is displayed.
10. Press F1 for "End." "Edit StrapGroup" is displayed. The other strap groups ("V42/MNP/Buffer," "Test," "Misc," and "Security") will not be changed for CMS.

Save Your Settings

1. Press the Single Up Arrow to display "Choose Function" and "Edit Save."
2. Press F3 for "Save." "Save EditArea to" is displayed.
3. Press F1 to select "Active(Saved)." "Command Complete" is displayed.
4. Press the Single Up Arrow again to display "Save EditArea to."
5. Press the Right Arrow once to select "Customer 1."
6. Press F1 to save to "Customer 1." "Command Complete" is displayed.
7. Press the Double Up Arrow. "Idle: 9600" and "Status Configure" are displayed. If the modem is powered off, it should return to this state when it is powered on.
8. If you wish to check the status of the *Comsphere* 3910 modem, use the "Status" choice in the Top-Level menu, or use the Right and Left Arrow buttons to view other Top-Level Menu choices.

Connect the *Sun SPARCserver* Computer to the Switch

Overview

Lucent Technologies technicians connect the *Sun*^{*} *SPARCserver*[†] 5 computer to the Lucent Technologies switch. This connection allows the *CentreVu*[®] Call Management System (CMS) software on the *Sun SPARCserver* computer 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 the following Lucent Technologies switches:

- *DEFINITY*[®] Communications System Generic 3r

⇒ NOTE:

This includes the G3V2 (Generic 3r Version 2) and the G3V3 (Generic 3r Version 3) releases.

- *DEFINITY* Communications System Generic 3i
- *DEFINITY* Communications System Generic 2
- System 85, R2V2 (Release 2 Version 2)
- *DEFINITY* Communications System Generic 1.

This chapter contains the following sections which give instruction for connecting the *CentreVu* CMS to these switches:

- Connecting the *CentreVu* CMS to the Generic 3r.
- Connect the *CentreVu* CMS to the Generic 2 or System 85 .
- Connect the *CentreVu* CMS to the Generic 3i or Generic 1.

⇒ NOTE:

DEFINITY Communications System G3V4 (Generic 3 Version 4) can also be connected to the *CentreVu* CMS.

The configurations described in this chapter are for maintenance purposes only. Much of the equipment described 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.

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

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

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

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

- **Appendix A** — contains reference material about the link administration for the Generic 3i and Generic 1 switches.
- **Appendix B** — contains reference material about the Data Communications Interface Unit (DCIU) link administration for the Generic 2 and System 85 switch.
- **Appendix C** — contains reference material about the link administration for the Generic 3r switch.

⇒ NOTE:

When using a Generic 3r, set the `Number of Outstanding Frames (w)` field to 4. See the “Administering *CentreVu* CMS Interface on Generic 3r” appendix.

***Sun SPARCserver* HSI/S Patch Panel**

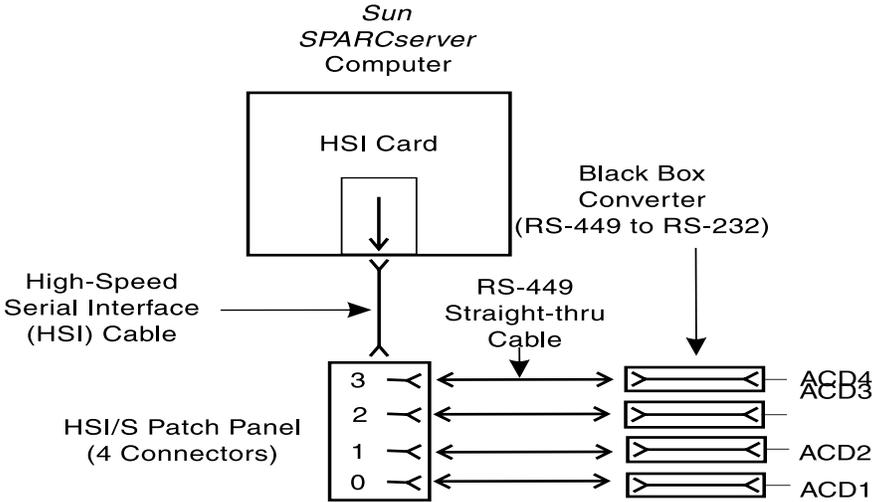
There are two different methods for connecting the switch to a *Sun SPARCserver* computer. These methods are:

- *SunLink** High Speed Serial Interface/SBus (HSI/S) Patch Panel
- Serial Port B.

⇒ NOTE:

The *SunLink* HSI/S Patch Panel is used on the *Sun SPARCserver 5* only for multiple ACD systems (see the figure below). The Serial Port B is used on the *Sun SPARCserver 5* for single ACD systems (see the “Sun SPARCserver Serial Port B” figure).

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



⇒ NOTE:

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

⚠ WARNING:

Use the black box converter when connecting the computer 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 SPARCserver* computer or switch components.

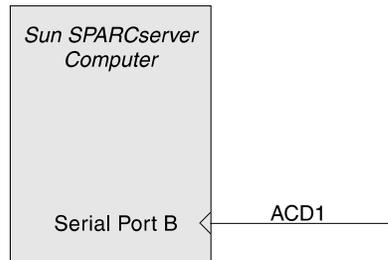
Verify that the *Sun SPARCserver* computer, HSI/S patch panel, and black box converter are connected properly (see the figure above).

⇒ NOTE:

These connections should have been made when the HSI/S controller card was installed in the *Sun SPARCserver* computer. If these connections have not been made, see the “Install the Sun SPARCserver Computer” chapter, “Connect the SunLink HSI/S Patch Panel” section.

Sun SPARCserver **Serial Port B**

The *Sun SPARCserver* serial port B is used only on the *Sun SPARCserver 5*. It is used for single ACD systems (see the figure below). It cannot be used when an HSI/S card is installed in the *Sun SPARCserver 5*. The serial port B cannot be used for a switch connection with the *Sun SPARCserver 10* and *20*. See the rear panel figure in the “Install the Sun SPARCserver Computer” chapter for a detailed view of the *Sun SPARCserver 5* serial port B.



Connecting the *CentreVu* CMS to the Generic 3r

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 SPARCserver* to the Packet Gateway board (TN577) on the Generic 3r. This connection uses the RS-232C protocol.

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 SPARCserver* and the Generic 3r is 200 feet.
- 7400D Data Module (7400D). With this method, the maximum distance between the DTE (RS-232) output port of the *Sun SPARCserver* 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.

Isolating Data Interface (IDI)

This section describes how to connect the DTE (RS-232) port on the *Sun SPARCserver* to the Packet Gateway board on the Generic 3r via an IDI (see the following figure). With this method, the maximum allowable distance between the DTE (RS-232) output port of the *Sun SPARCserver* and the Generic 3r switch is 200 feet.

Required Parts

Obtain the following parts:

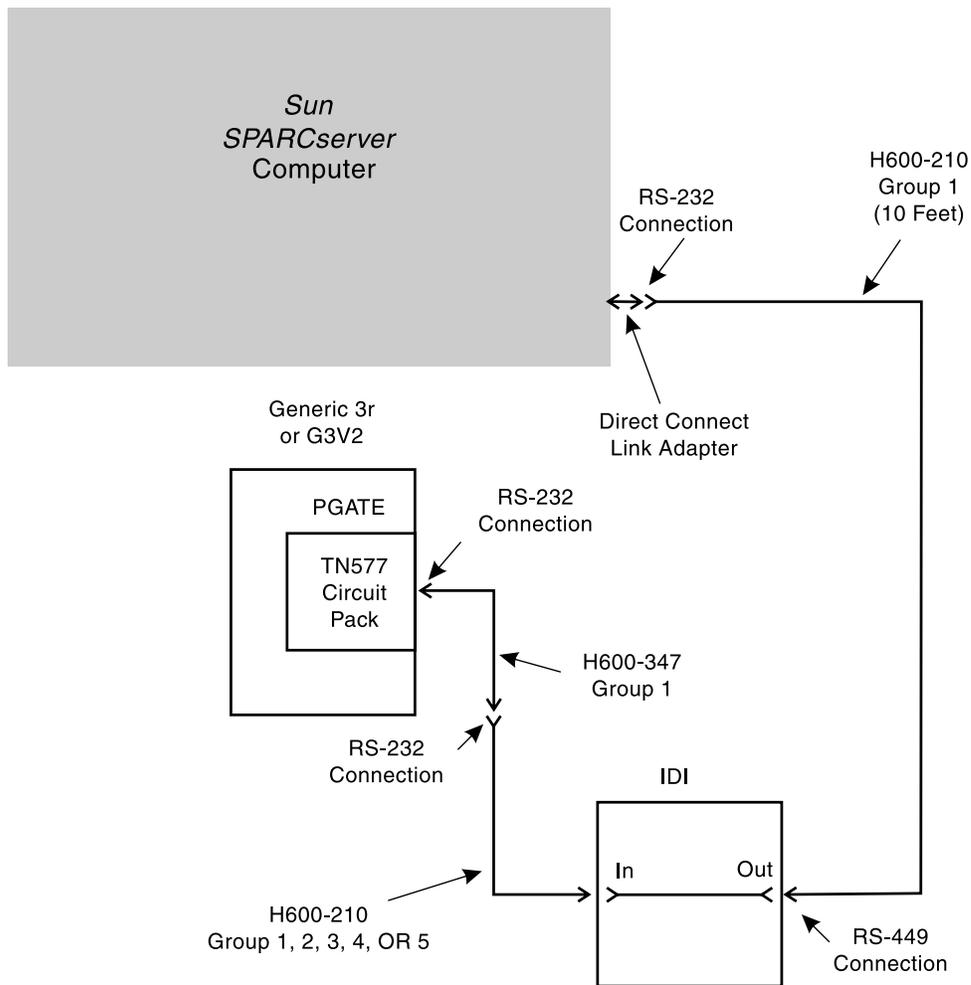
- DB25 M/M Direct Connect Link adapter
- H600-210, Group 1 (RS-232C to RS-449) cable
- IDI unit
- H600-210, Group 1, 2, 3, 4, or 5 (RS-232C to RS-449) cable.

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.	

- H600-347, Group 1 (RS-232C) cable.



Procedure

Do these steps to connect the *Sun SPARCserver* computer to the Packet Gateway of a Generic 3r switch via an IDI unit (see the figure above):

1. If an HSI/S card is installed, connect the direct-connect link adapter to the DTE (RS-232) output port on the black box converter. If **no** HSI/S card is installed, connect the direct-connect link adapter to the serial port B (*Sun SPARCserver* 5 only).
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 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.

In the next step, the switch technician should make the final connection to the Packet Gateway board.

6. Connect the male end of the H600-347, Group 1 cable to the Packet Gateway board.
 7. Verify with the switch technician that the ACD/*CentreVu* CMS feature is administered on the switch.
-

7400D Data Module

This section describes how to connect the DTE (RS-232) port on the *Sun SPARCserver* to the Packet Gateway board on the Generic 3r using 7400D Data Modules (see the following figure).

With this method, the maximum allowable distance between the DTE (RS-232) output port of the *Sun SPARCserver* 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

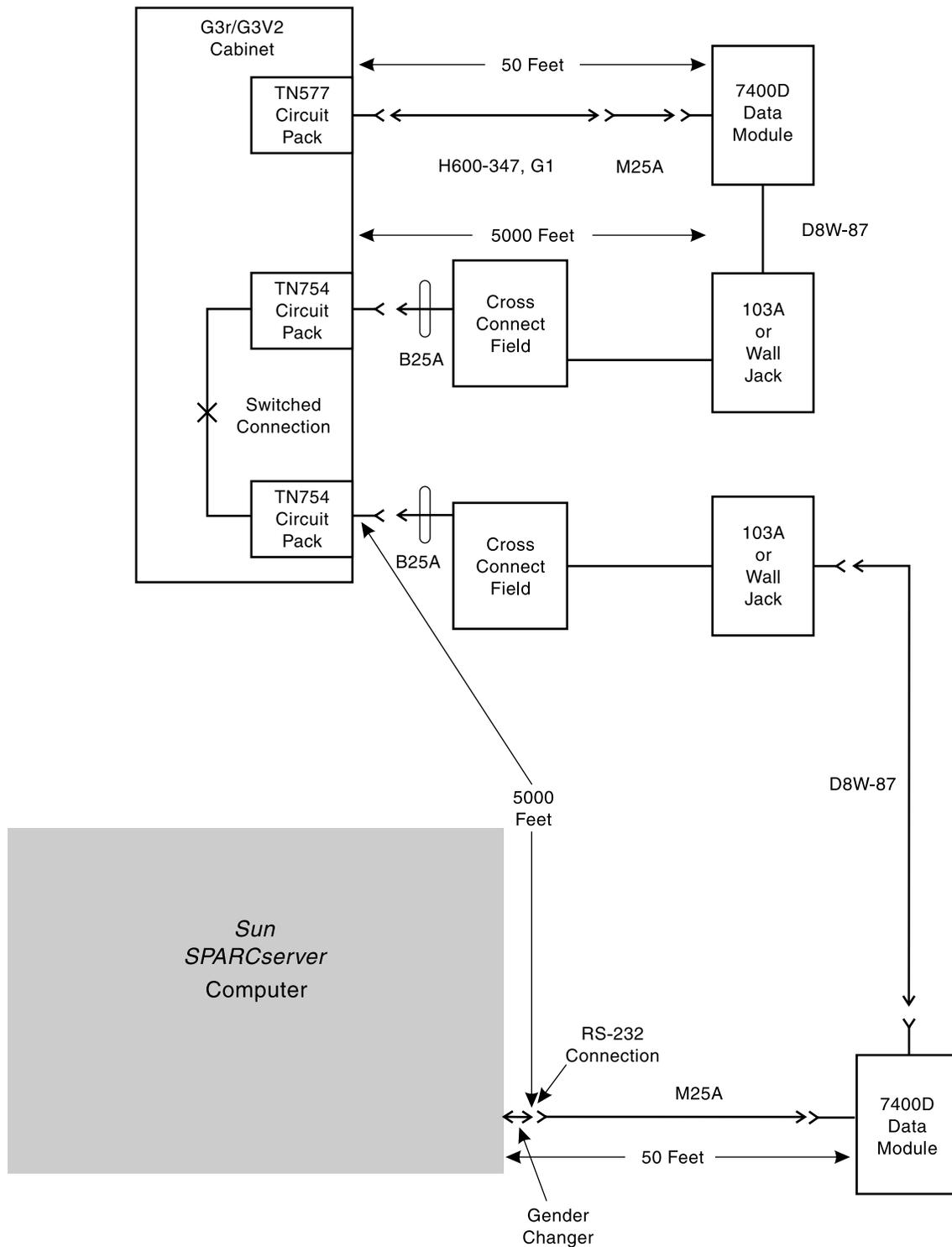
Obtain the following parts:

- 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)
- 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.



Connect to the Packet Gateway Board

Do these steps to connect the *Sun SPARCserver* computer to a Packet Gateway board on the Generic 3r switch (see the previous 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.

Connect to the 7400D Data Module

1. Connect the male end of the M25A cable to the connector labeled "PORT 1" on the 7400D.
2. 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, change the speed of the 7400Ds to 19200. The remaining default options are acceptable for *CentreVu* CMS. Refer to the *7400D Data Module User's Guide* (555-020-712) for information on options and setting options.

3. Connect one end of a D8W-87 modular plug telephone cord into the LINE jack on the 7400D.
4. 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.

In the next procedure, the switch technician should make the final connection to the digital port.

Set Up the Cross-Connection

1. 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.
2. 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.

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

 **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.

Complete the Connections

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

2. Connect the male end of the M25A cable to port 1 (RS-232) on the 7400D.
3. Connect the female end of the M25A cable to the gender changer.
4. If an HSI/S card is installed, connect the gender changer to the DTE (RS-232) output port on the black box converter. If **no** HSI/S card is installed connect the gender changer to the serial port B.
5. Verify with the switch technician that the ACD/*CentreVu* CMS feature on the switch is administered.

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 SPARCserver* (see the following figure).

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 SPARCserver* computer to a private line:

- 110-type cross-connect hardware
- 829 Channel Interface Unit

 **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 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.

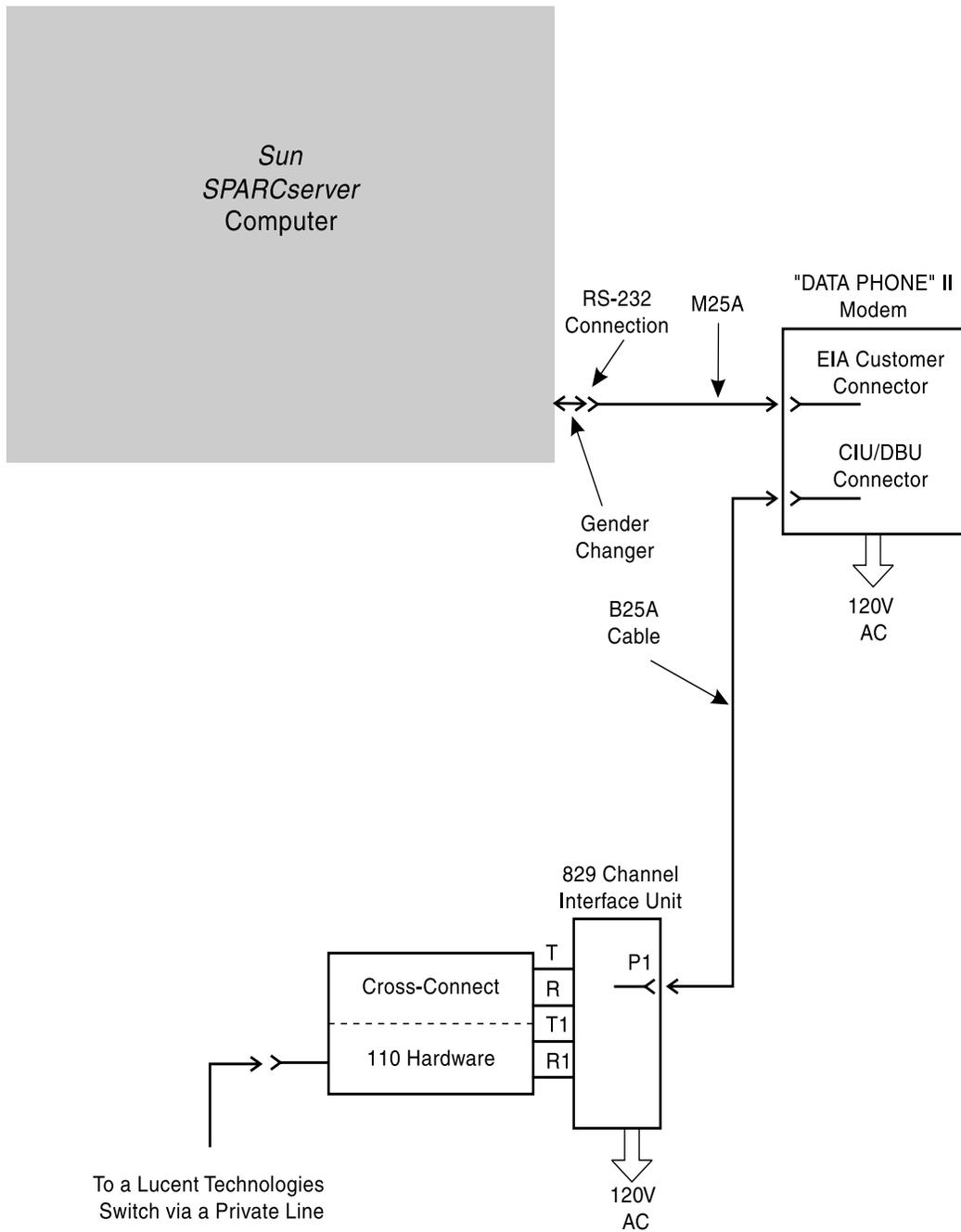
Also, obtain these parts to connect the Generic 3r to a private line:

- 110-type cross-connect hardware
- 829 Channel Interface Unit

 **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 must order this unit through the Custom Systems organization via the CSAP.

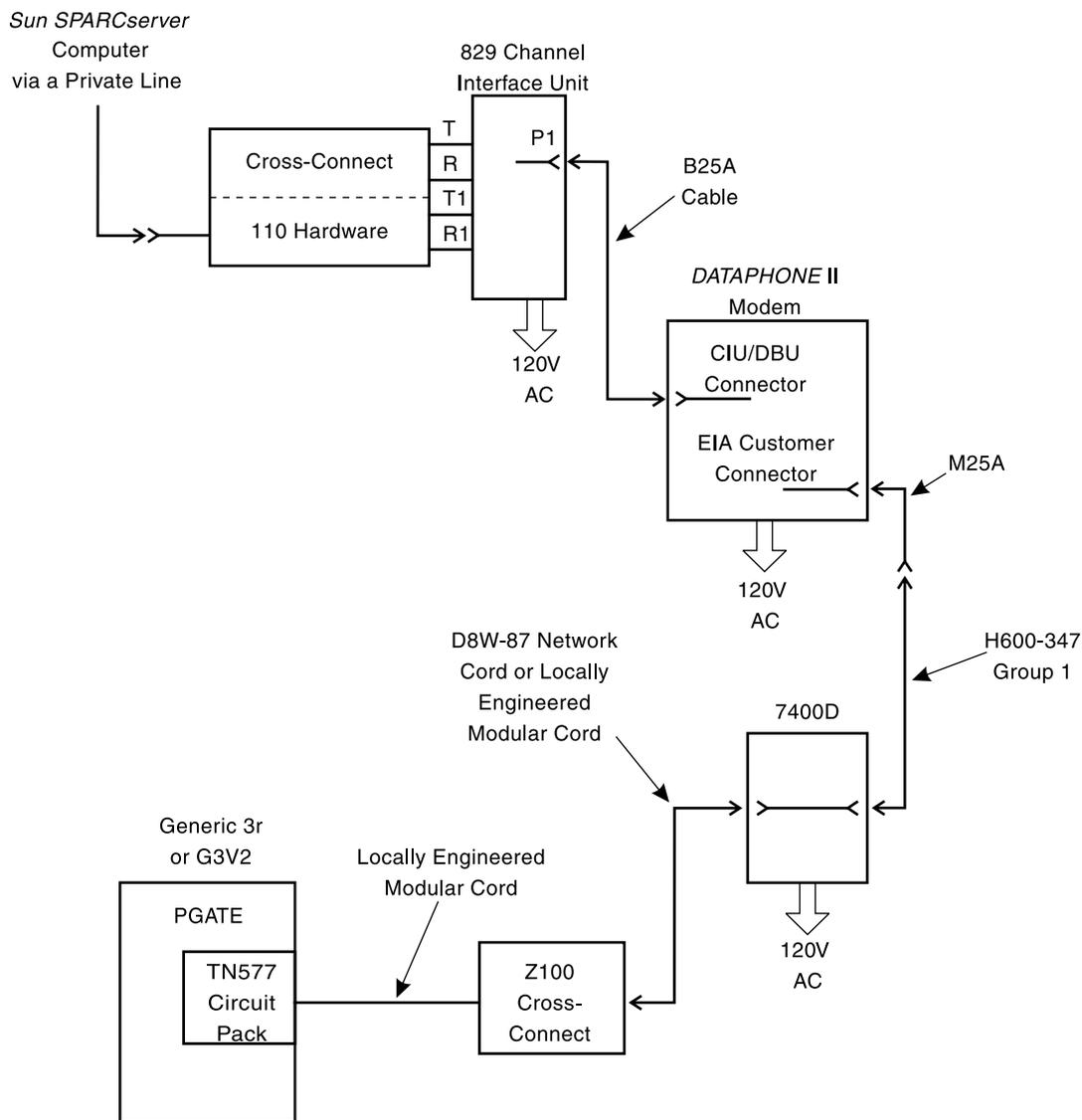
- M25A cable
- One 2096C *Dataphone II* modem.



Connect the *Sun SPARCserver* Computer to a Private Line

Do these steps to connect the *Sun SPARCserver* computer to a private line (see the previous 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. If **no** HSI/S card is installed connect the gender changer to the serial port B (*Sun SPARCserver 5* only).
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.
4. Connect the 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.



Connect the Generic 3r to a Private Line

Do these steps to connect the Generic 3r to a private line (see the figure above):

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 the other end of the B25A cable to the P1 receptacle on the 829 Channel Interface Unit.
4. Connect the other end of the M25A 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 Packet Gateway fanout cable.
9. Verify with the switch technician that the ACD/*CentreVu* CMS feature on the switch is administered.

Connect the *CentreVu* CMS to the Generic 2 or System 85

To connect the *Sun SPARCserver* computer to the System 85 or Generic 2, you will need to connect the DTE (RS-232C) port on the *Sun SPARCserver* to the Data Communications Interface Unit (DCIU) on the Generic 2 or System 85. This connection uses the RS-232C protocol.

You can connect the *Sun SPARCserver* computer to the Generic 2 or System 85 switch by using one of the following methods:

- Isolating Data Interface (IDI). With this method, the maximum allowable distance between the DTE (RS-232) output port of the *Sun SPARCserver* and the Generic 2 or System 85 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 SPARCserver* and the Generic 2 or System 85 is 100 feet.
- Remote Data Service Units (RDSUs). Use this method when the distance between the DTE (RS-232C) output port of the *Sun SPARCserver* and the Generic 2 or System 85 is over 100 feet.

NOTE:

For this method, 4-wire nonloaded metallic lines are required to interconnect the 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.

Isolating Data Interface (IDI)

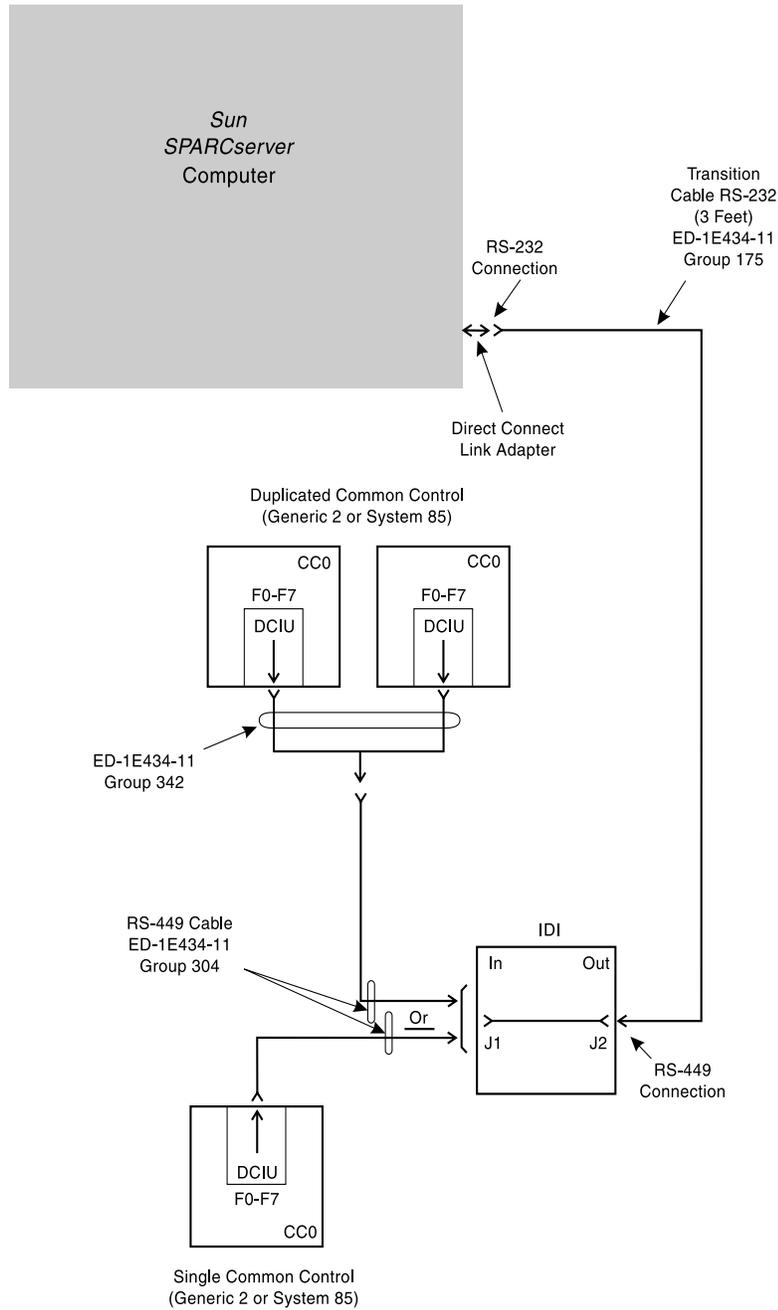
Required Parts

With this method, the maximum allowable distance between the DTE (RS-232) output port of the *Sun SPARCserver* and Generic 2 or System 85 switch is 400 feet (see the following figure).

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.



Data Communications Interface Unit (DCIU) / IDI Connection

Do these steps to connect the *Sun SPARCserver* computer to the DCIU on the Generic 2 or System 85 via an IDI (see the figure above):

1. If an HSI/S card is installed, connect the direct-connect link adapter to the DTE (RS-232) output port on the black box converter. If **no** HSI/S card is installed connect the direct-connect link adapter to the 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 plug end of the ED-1E434-11, Group 304 cable to the **IN** connector on the IDI.

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

4. If the Generic 2 or System 85 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.
5. If the Generic 2 or System 85 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.
6. 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.
7. Verify with the switch technician that the ACD/*CentreVu* CMS feature on the switch is administered.

Local Data Service Units (LDSUs)

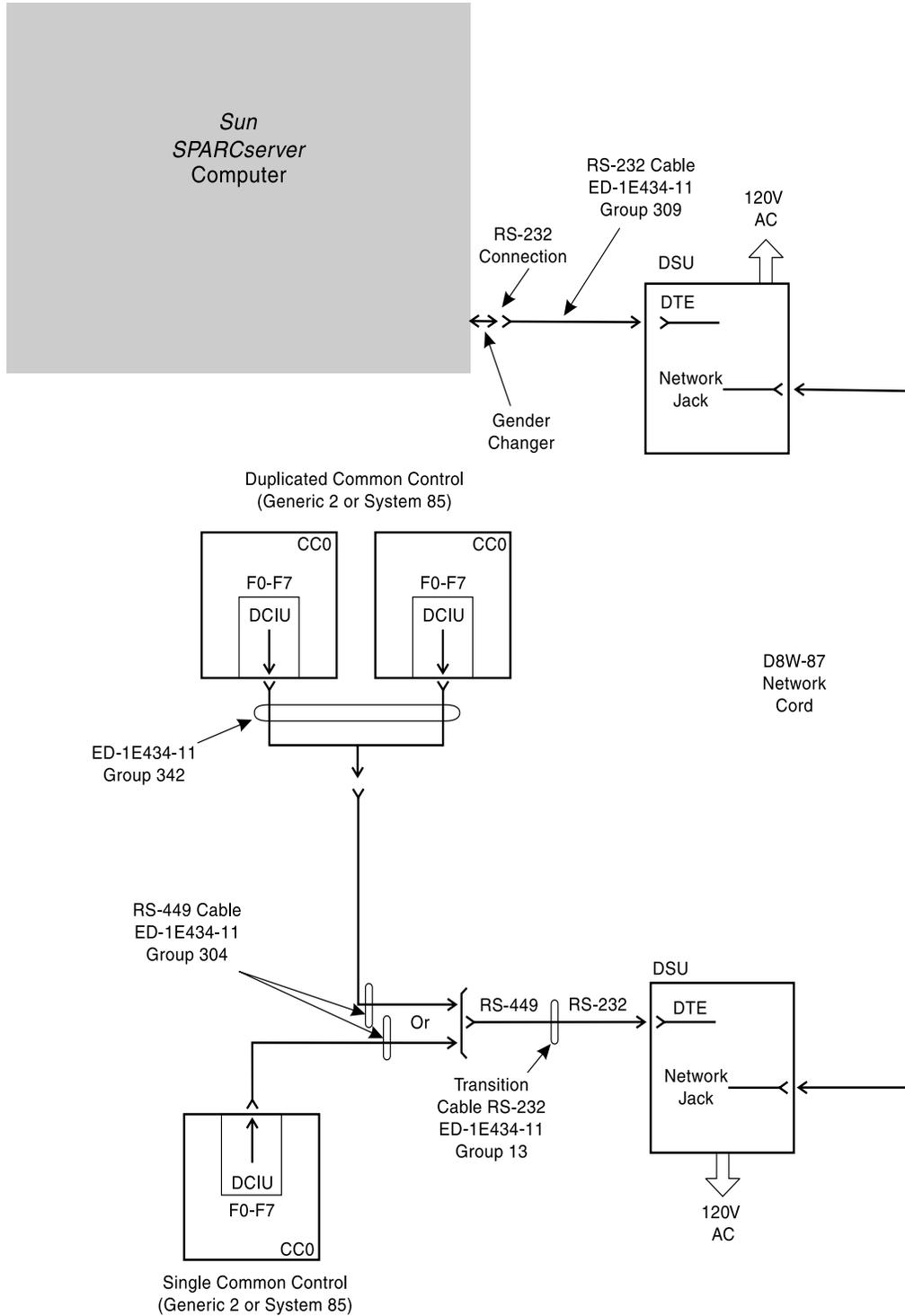
This section describes how to connect the DTE (RS-232) port on the *Sun SPARCserver* to the DCIU on the Generic 2 or System 85 using LDSUs. See the following figure for details.

With this method, the maximum allowable distance between the DTE (RS-232C) output port of the *Sun SPARCserver* and the Generic 2 or System 85 switch is 100 feet.

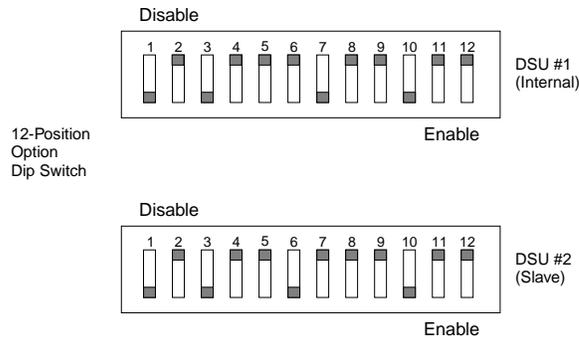
Required Parts

Obtain the following parts:

- DB25 M/M Gender Changer
- One ED-1E434-11, Group 309 (RS-232) cable
- Two Data Service Units (DSUs)
- 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.



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. 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 (see example below). You can also use this document as a reference when doing the installation steps in this section.



Connect to the SPARCserver Computer

Do these steps to connect the *Sun SPARCserver* computer to the DCIU on the Generic 2 or System 85 using LDSUs (see the Connect to Generic 2 or Ssystem 85 Cabling with Local DSUs figure earlier in this section):

1. If an HSI/S card is installed, connect the gender changer to the DTE (RS-232) output port on the black box converter. If **no** HSI/S card is installed connect the gender changer to the serial port B (*Sun SPARCserver 5* only).
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.

Make DSU Interconnections

1. 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.
2. Connect each DSU to an AC power source by using the DSU power packs.
3. 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.
4. 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 steps, the switch technician should make the final connection to the DCIU port.

Connect to DCIU on a Generic 2 or to LDSUs on a System 85

1. If the Generic 2 or System 85 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.
2. If the Generic 2 or System 85 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.
3. 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.
4. Verify with the switch technician that the ACD/*CentreVu* CMS feature on the switch is administered.

Remote Data Service Units (RDSUs)

This section describes how to connect the DTE (RS-232) port on the *Sun SPARCserver* to the DCIU on the Generic 2 or System 85 using Remote Data Service Units (RDSUs) (see the following figure).

Use this method when the distance between the DTE (RS-232) output port of the *Sun SPARCserver* and the Generic 2 or System 85 switch is over 100 feet.

Required Parts

Obtain the following parts:

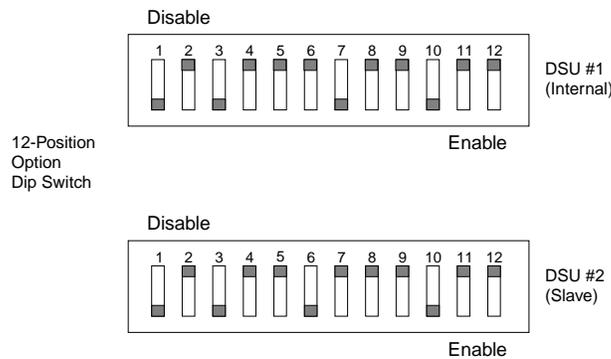
- DB25 M/M Gender Changer
- One ED-1E434-11, Group 309 (RS-232) cable
- Two DSUs
- Two D8W-87 network cords (25 feet) — one cord is provided with each DSU
- Two Network Interface adapters — one adapter is provided with each DSU
- ED-1E434-11, Group 13 transition (RS-449 to RS-232C) cable (3 inches)

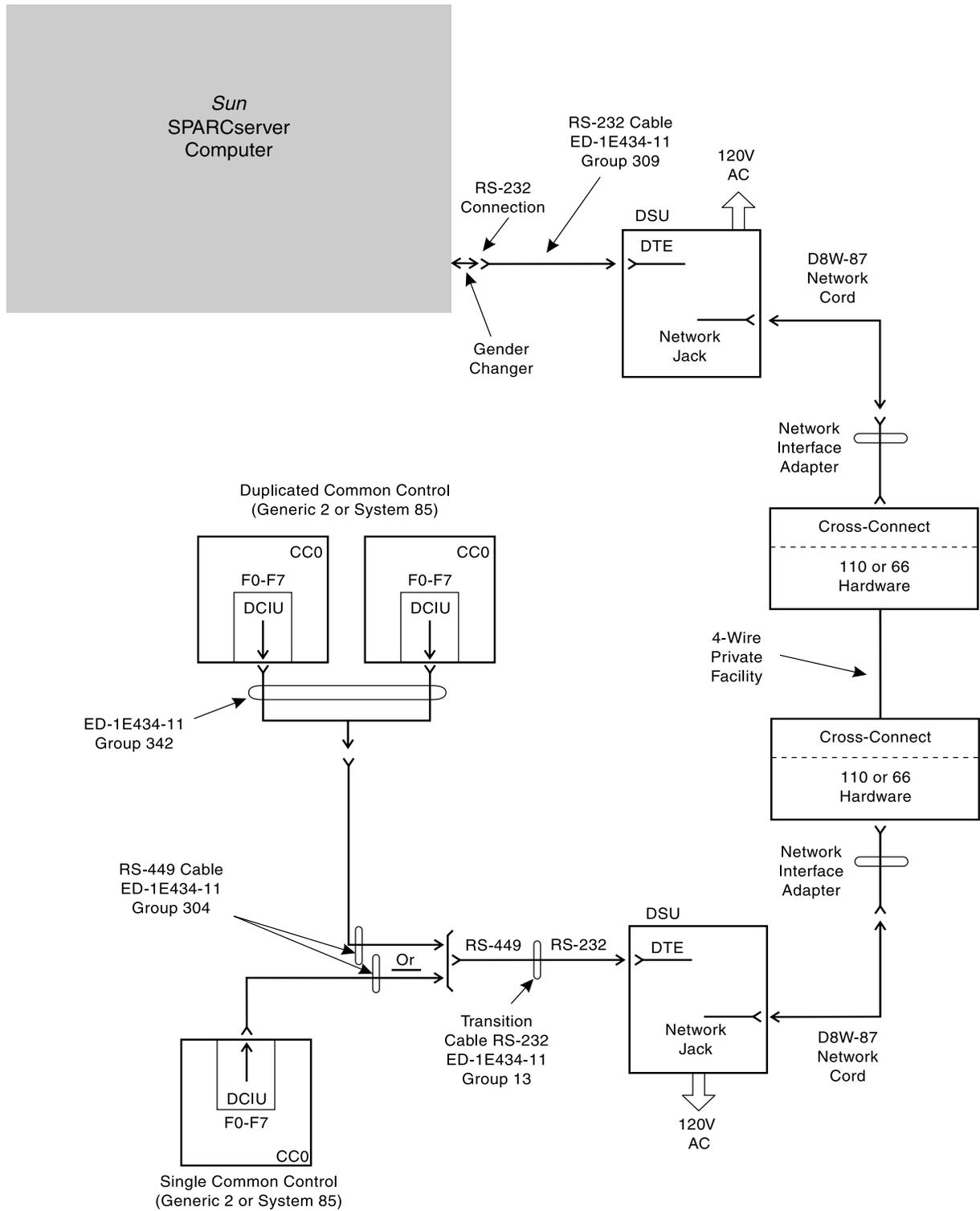
- ED-1E434-11, Group 304 cable (RS-449) — for single or duplicated common controls
- ED-1E434-11, Group 342 Y-cable (9 feet) — for duplicated common controls only
- 110- or 66-type cross-connect hardware
- 4-wire nonloaded metallic lines (LADC equivalent) — use lengths as needed.

The table below 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

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. 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 (see example below). You can also use this document as a reference when doing the installation steps in this section.





Connect to the *Sun SPARCserver* Computer

Do the following steps to connect the *Sun SPARCserver* computer to the DCIU on the Generic 2 or to a System 85 using RDSUs (see the previous 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. If **no** HSI/S card is installed, 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 SPARCserver* computer's cross-connect hardware.

NOTE:

Use 4-wire nonloaded metallic lines (LADC equivalent) to interconnect the cross-connect hardware.

Make DSU Interconnections

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.

Connect to the DCIU on a Generic 2 or to RDSUs on a System 85

1. If the Generic 2 or System 85 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 or System 85 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.

2. Verify with the switch technician that the ACD/*CentreVu* CMS feature on the switch is administered.
-

Analog Private Line

This section describes how to connect the Generic 2 or System 85 to the DTE (RS-232) port on the *Sun SPARCserver* using an analog private line.

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

NOTE:

To connect the *Sun SPARCserver* computer to an analog private line, refer to the previous section in this chapter titled “*Connect the CentreVu CMS to an Analog Private Line.*”

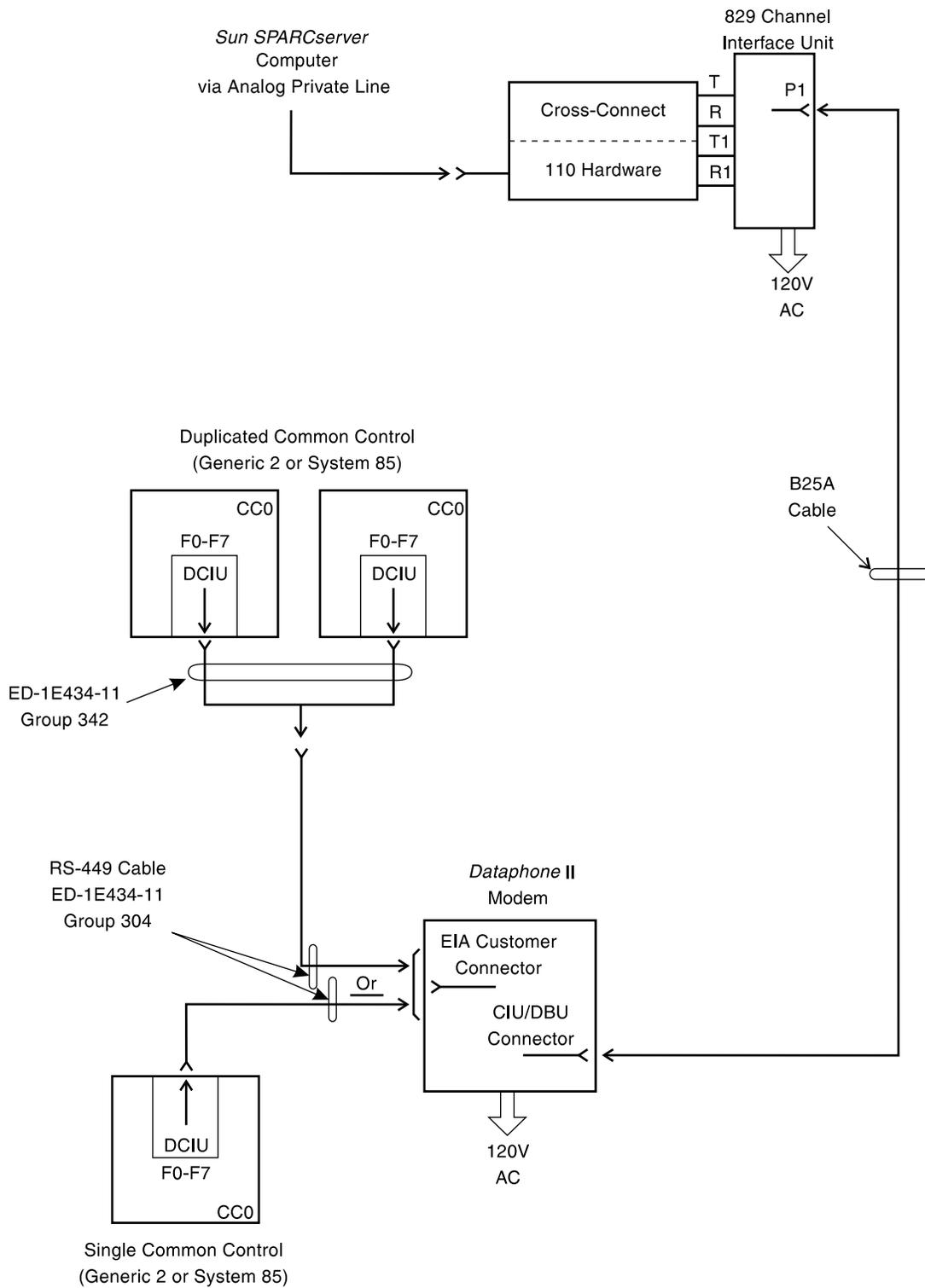
Required Parts

Obtain the following parts to connect the System 85 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
- B25A cable
- 829 Channel Interface unit

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.



Connect the Switch to an Analog Private Line

Do these steps to connect the Generic 2 or System 85 to an analog private line (see the previous 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 or System 85 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 or System 85 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/*CentreVu* CMS feature on the switch is administered.

Connect the *CentreVu* CMS to the Generic 3i or Generic 1

To connect the *Sun SPARCserver* computer to the Generic 3i or Generic 1, you will need to connect the DTE (RS-232) port on the *Sun SPARCserver* to a digital port on the Generic 3i or Generic 1 switch. This connection uses the RS-232C protocol.

You can connect the *Sun SPARCserver* computer to the Generic 3i or Generic 1 switch by using one of the following methods:

- EIA Connector on the Processor Interface (PI)

With this method, the maximum allowable distance between the DTE (RS-232) output port of the *Sun SPARCserver* and the Generic 3i or Generic 1 is 50 feet.

- 7400D Data Module

With this method, the maximum allowable distance between the DTE (RS-232) output port of the *Sun SPARCserver* and the 7400D is 50 feet. The maximum allowable distance between the 7400D and the Generic 3i or Generic 1 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 SPARCserver* to the EIA connector of a PI on the Generic 3i or Generic 1.

CAUTION:

If the Generic 3i or Generic 1 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 SPARCserver* and the Generic 3i or Generic 1 switch is 50 feet.

NOTE:

If the Generic 3i or Generic 1 switch and the DTE (RS-232) output port of the *Sun SPARCserver* are over 50 feet apart, refer to the section “*Connecting the CentreVu CMS to the Generic 3i or Generic 1*” for the proper cabling configuration.

Required Parts

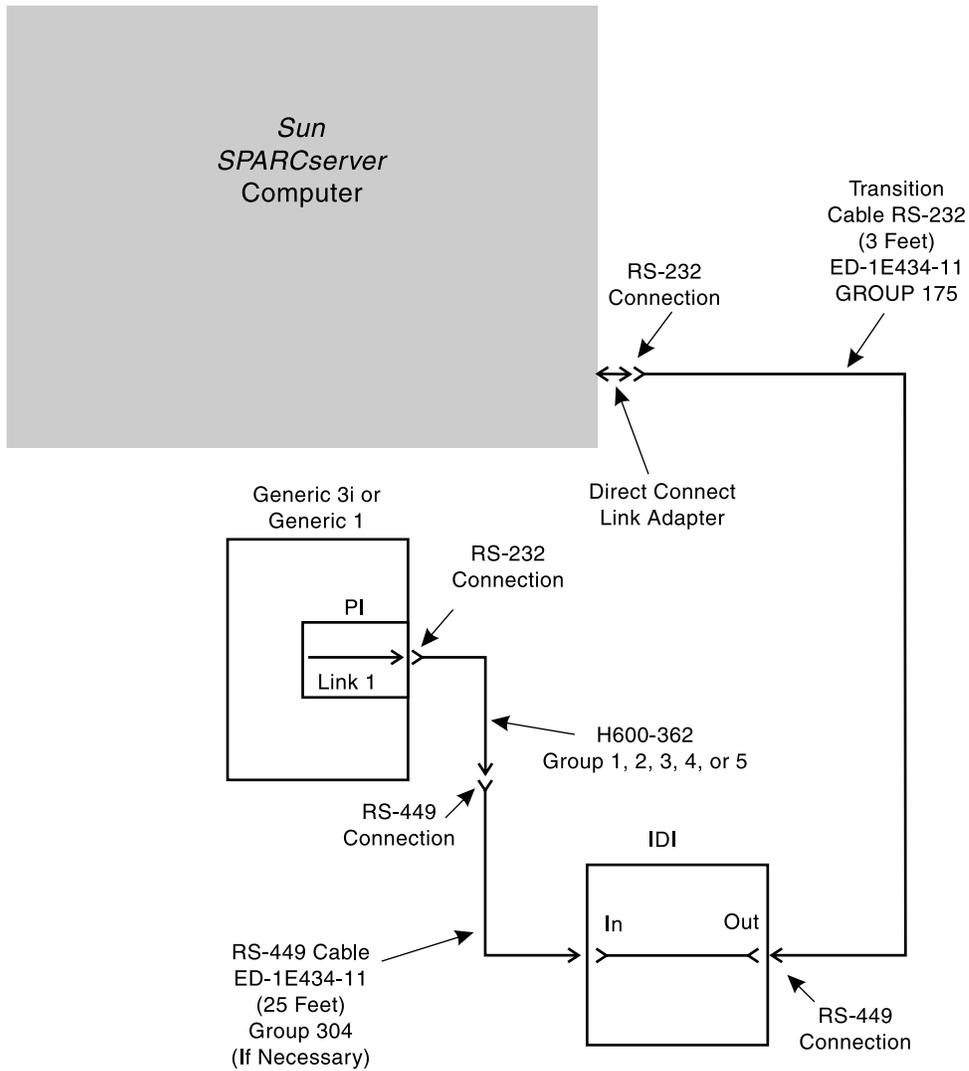
Obtain the following parts:

- 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 shown below:

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



Connect the Sun SPARCserver to the Processor Interface

Do these steps to connect the *Sun SPARCserver* computer to the Processor Interface of a Generic 3i or Generic 1 switch (see the figure above):

1. If an HSI/S card is installed, connect the direct-connect link adapter to the DTE (RS-232) output port on the black box converter. If **no** HSI/S card is installed, connect the direct-connect link adapter to the serial port B (*Sun SPARCserver* 5 only).
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 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/*CentreVu* CMS feature on the switch has been administered.
-

7400D Data Module

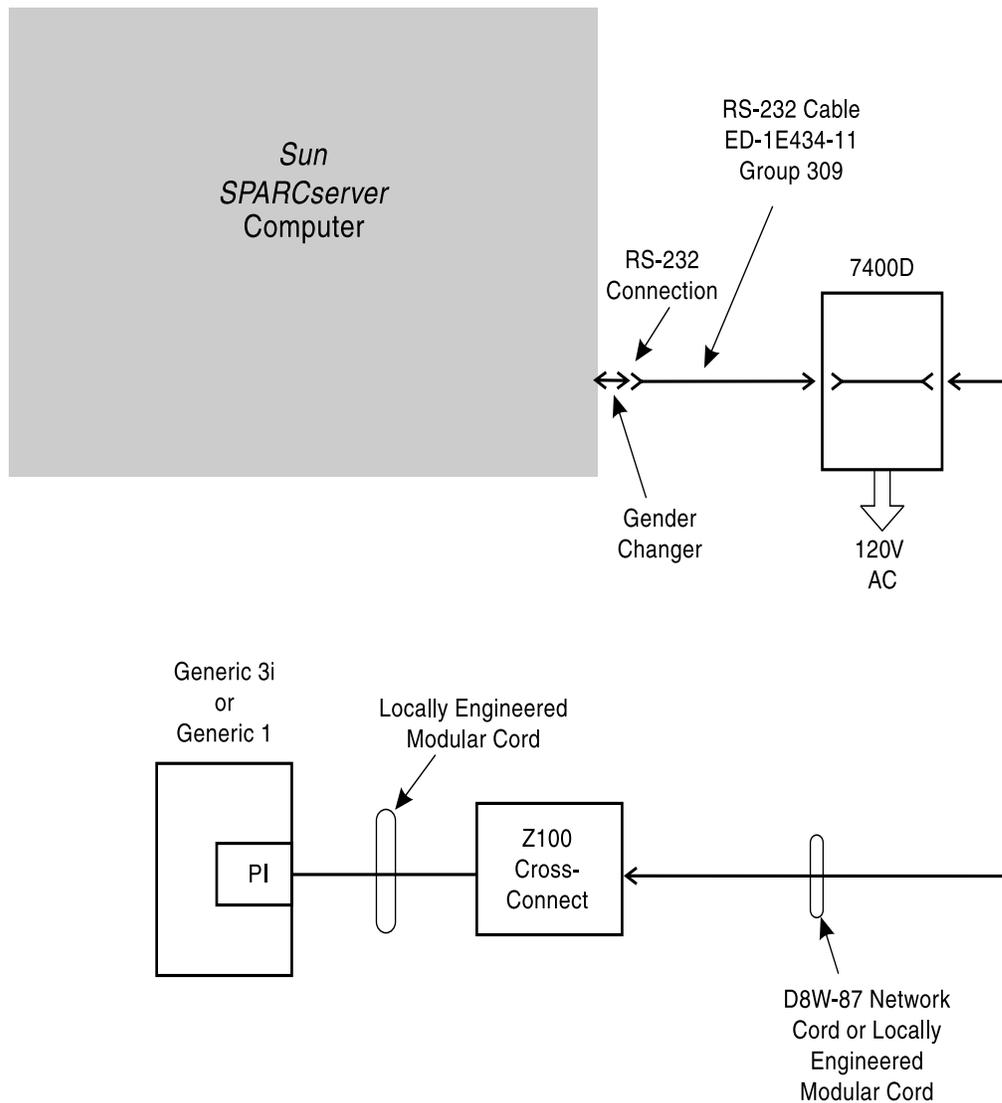
This section describes how to connect the DTE (RS-232) port on the *Sun SPARCserver* to the Packet Gateway board on the Generic 3i or Generic 1 using 7400D Data Modules.

With this method, the maximum allowable distance between the *Sun SPARCserver* computer and the 7400D Data Module is 50 feet. The maximum allowable distance between the 7400D and the Generic 3i or Generic 1 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).



Connect the Sun SPARCserver to a Digital Port

Do these steps to connect the Sun SPARCserver computer to a digital port on the Generic 3i or Generic 1 switch (see the figure above):

1. If an HSI/S card is installed, connect the gender changer to the DTE (RS-232) output port on the black box converter. If **no** HSI/S card is installed, connect the gender changer to the 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 or Generic 1 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 or Generic 1. This cable also requires a modular plug on each end.
7. Ask the switch technician to verify that the ACD/*CentreVu* CMS feature on the switch has been administered.

Analog Private Line

This section describes how to connect the Generic 3i or Generic 1 to an analog private line that connects to a *Sun SPARCserver* computer. This method uses two *Dataphone II* modems and the 7400D Data Module, and is required when the 7400D distance limitations are insufficient.

Required Parts

Obtain the following parts to connect the *Sun SPARCserver* computer to an analog private line:

- DB25 M/M Gender Changer
- M25A cable

⇒ NOTE:

If the M25A cable isn't long enough to reach the *Dataphone II* modem, get an ED-1E434-11, Group 309 (RS-232C) cable to make the connection.

- One 2096C *Dataphone II* modem
- B25A cable
- 829 Channel Interface Unit.

⇒ 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 Custom Systems Automation Program (CSAP).

Also, obtain the following parts to connect the Generic 3i or Generic 1 to an analog private line:

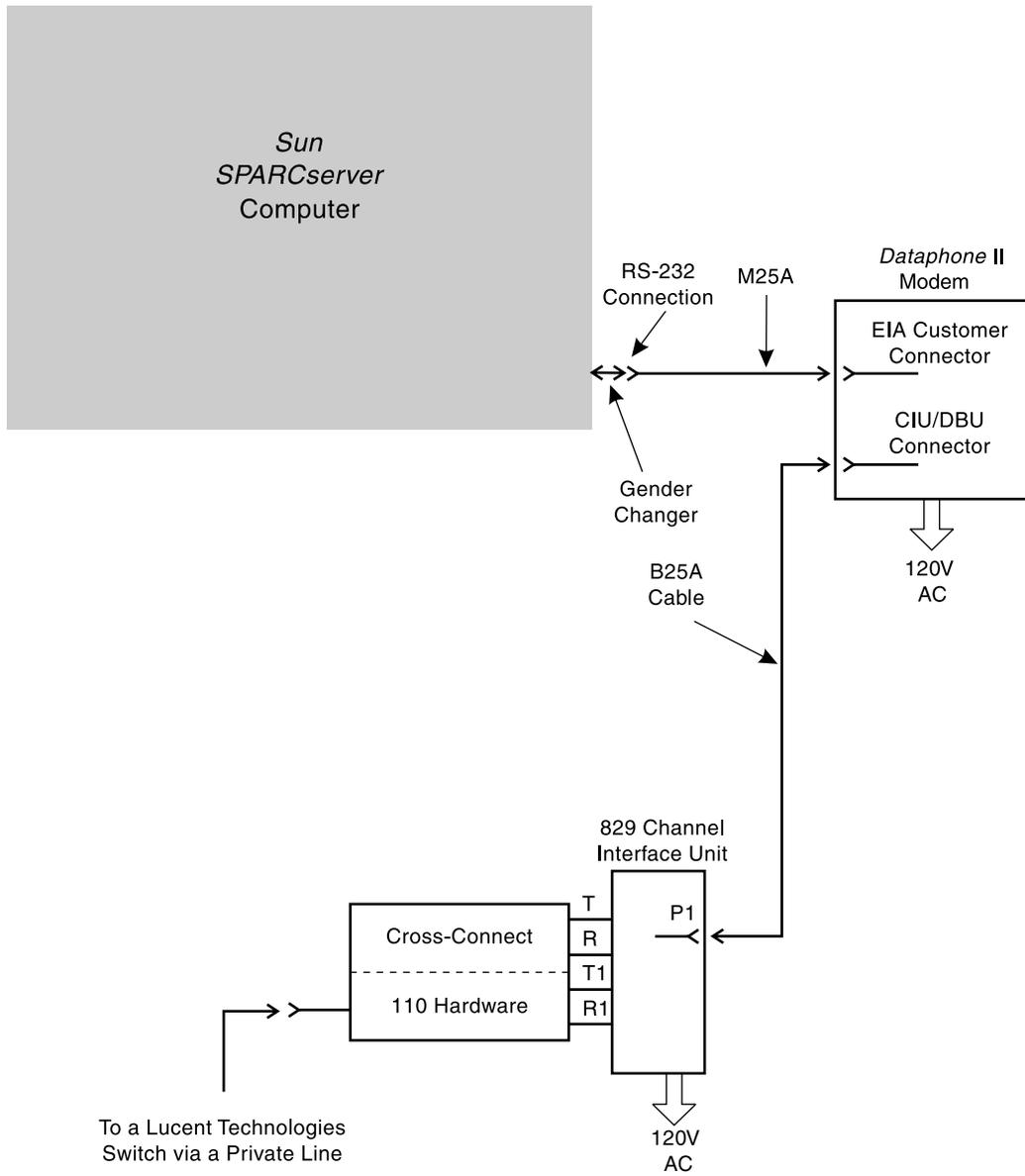
- 110-type cross-connect hardware
- 829 Channel Interface Unit

 **NOTE:**

If the Channel Interface Unit is not available, 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
- RS-232C cable
- One 7400D Data Module
- D8W-87 cord.

Connect the CentreVu CMS to the Generic 3i or Generic 1



Connect the *Sun SPARCserver* to an Analog Private Line

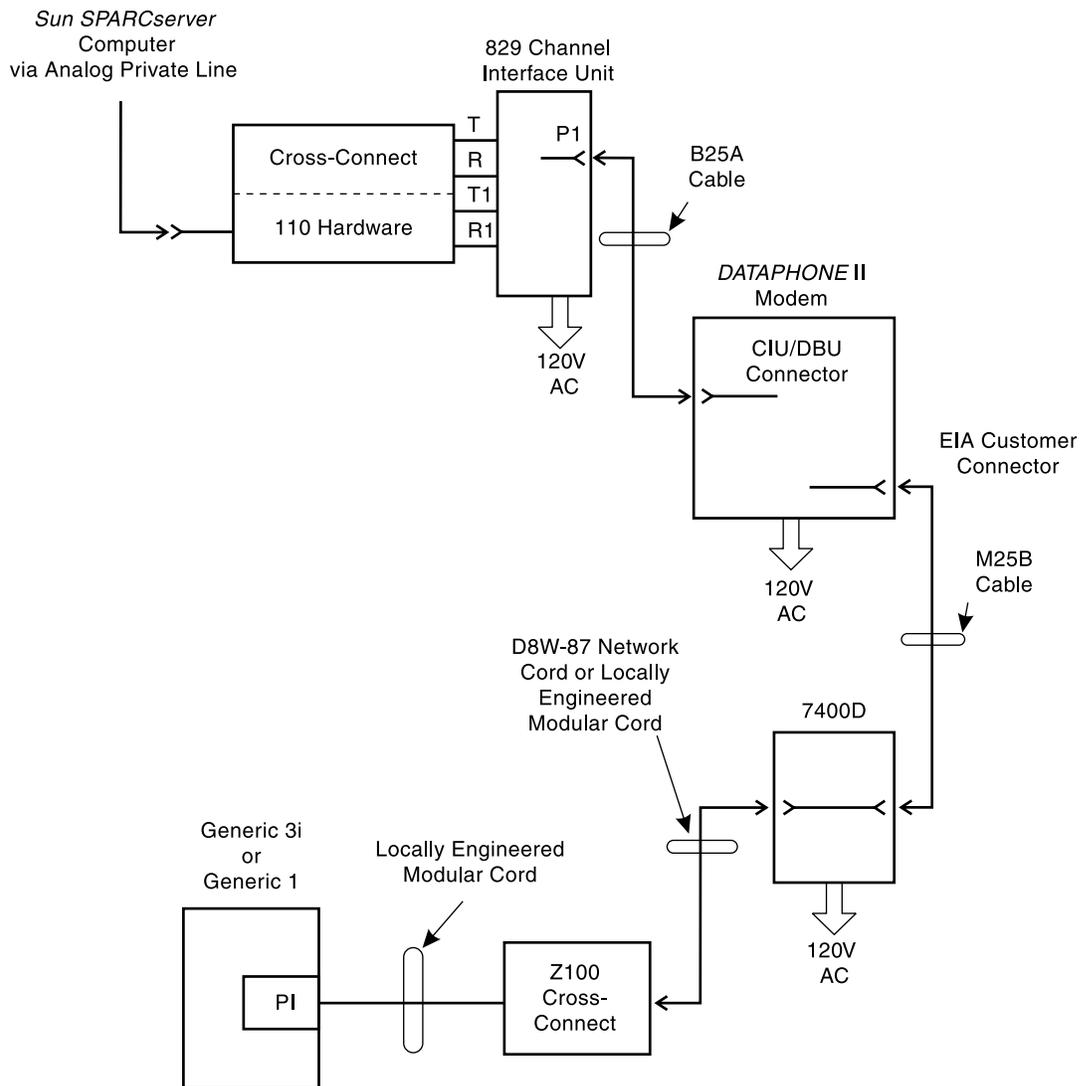
Do these steps to connect the *Sun SPARCserver* computer to an analog private line (see the previous figure):

1. If an HSI/S card is installed, connect the gender changer to the DTE (RS-232) output port on the black box converter. If **no** HSI/S card is installed, connect the gender changer to the 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.



Set Up the Interconnection Hardware

Do these steps to setup the interconnection hardware (see the figure above):

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.

Connect the Generic 3i or Generic 1 to an Analog Private Line

Do these steps to connect the Generic 3i or Generic 1 to an analog private line (see the previous figure):

1. Connect the other end of the D8W-87 cord to the Generic 3i or Generic 1 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.

2. Make the necessary power connections to the 7400D.

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

3. Run a locally engineered cable from the Z100 cross-connect to the digital port on the Generic 3i or Generic 1. This cable also requires a modular plug on each end.
4. Ask the switch technician to verify that the ACD/*CentreVu* CMS feature on the switch has been administered.

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.

⇒ NOTE:

An ACD can be added only if it has been purchased.

Before you begin the procedures in this section, do a CMSADM file system backup. See the “Performing a CMSADM File System Backup” section in the “Maintenance” chapter.

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.

Adding an ACD to the *CentreVu* CMS R3V6 consists of these tasks:

- Prepare for adding the ACD.
- Turn off *CentreVu* CMS.
- Execute the `acd_create` option.
- Perform tasks for adding a third ACD (if necessary).
- Connect the link.
- Turn on *CentreVu* CMS.

Prepare for Adding the ACD

You need to furnish certain information about the switch and the *CentreVu* CMS. Before you start, make a copy of the table below.

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										600
Total split/skill members, summed over all splits/skills										10,000 with <i>Solstice DiskSuite</i>
Number of shifts									n/a	n/a
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 with <i>Solstice DiskSuite</i>
Number of trunk groups										665
Number of trunks										4000 (see note)
Number of unmeasured trunk facilities										800 minimum (8 X 100)
Number of vectors										2048
Number of VDNs										2000

⇒ NOTE:

For the preceding table, the sum of the ACD1, ACD2, ACD3, and ACD4 entities (splits, agents, trunk groups, trunks, vectors, and VDNs) cannot exceed the *CentreVu* CMS-supported maximum values.

A maximum of 100 unmeasured trunks is required by each ACD. If more than 100 unmeasured trunks are required, and the ACD is currently using the maximum number of trunks, then the measured trunks must be reduced accordingly.

You use the `swinfo` option on the *CentreVu* CMS Services menu to obtain information about existing ACDs.

Obtain ACD Parameter Values

1. Log in as root.
2. Access the *CentreVu* CMS Services menu by entering `cmssvc` at the `#` prompt. The *CentreVu* CMS Services menu appears as follows:

```
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:
```

3. 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.
4. Record the above entities on the copy of the Prepare for Adding the ACD table you made before starting.
 5. Log into *CentreVu* CMS and access the Data Storage Allocation window. See the *CentreVu[®] CMS R3V6 Administration* (585-215-850) document.
 6. Use the **Commands** Screen Labeled Key (SLK) to print the Data Storage Allocation window.
 7. From the Data Storage Allocation printout, record the values for the following entities on the copy of the “Prepare for Adding the ACD” table you made before starting:
 - 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.
 8. Repeat Steps 2 through 7 for each existing ACD.

Check ACD Values Against Supported Maximums

1. Enter the values for the entities associated with the new ACD into the “Prepare for Adding the ACD” table.
2. 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 “Prepare for Adding the ACD” table.
3. 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

Use the `run_cms` option on the *CentreVu* CMS Administration menu to turn *CentreVu* CMS on.

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 *CentreVu Call Management System, Release 3 Version 6, Software Installation and Maintenance (585-215-866)*, “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 Table 4-2.

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 SPARCserver* computer.

Each HSI/S supports four RS-232C ports.

Turn On *CentreVu* CMS

Use the `run_cms` option on the *CentreVu* CMS Administration menu to turn *CentreVU* CMS on.

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 and Generic 1 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 and Generic 1 switches. 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 and Generic 1, the hardware interface is a processor interface. This hardware interface is sometimes called the *CentreVu* CMS interface.

In addition to the *CentreVu* CMS interface, the following *CentreVu* CMS features on the switch must also be administered:

- Abandoned Call Search
- Agent Call Handling
- Hunt Groups
- Intraflow and Interflow
- Queue Status Indications
- Recorded Announcements
- Service Observing.

NOTE:

For the screens to administer the Expert Agent Selection (EAS) feature, see the *CentreVu Call Management System, Release 3 Version 6, Administration Volumes 1 and 2* (585-215-850).

The following documents can be used by a qualified switch technician to implement the *CentreVu* CMS interface and features:

- *Lucent Technologies DEFINITY Communications System Generic 1 Implementation Manual* (555-204-654, Issue 1)
- *Lucent Technologies DEFINITY Communications System Generic 1 Installation and Test* (555-204-104)
- *Lucent Technologies DEFINITY Communications System Generic 1 Wiring* (555-204-111)
- *Lucent Technologies DEFINITY Communications System Generic 1 Maintenance* (555-204-105).

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 question about these procedures, refer to the appropriate switch documentation.

 **CAUTION:**

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*^{*} *SPARCserver*[†] computer 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 SPARCserver* computer.

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 SPARCserver* computer, you do not have to fill out the data module form.

^{*}*Sun* is a registered trademark of Sun Microsystems, Inc.
[†]*SPARCserver* is a trademark of SPARC International, Inc.

Assigning 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 following figure for reference.)

3. 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 `Physical Channel` field.

4. 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 SPARCserver* computer, physical channel number `01` must be used.

5. Press the **Return** key.

The cursor is positioned on the `Name` field.

6. Enter `R3V6 CMS`, and press the **Return** key.

The cursor is positioned on the `COS` field.

⇒ NOTE:

The `COS` and `COR` fields are defaulted to `1`.

7. Do not make changes to the COS and COR fields; press the key.

Screen displays:

command successfully completed

enter command:

```

                                DATA MODULE
Data Extension: 2005      Type: procr-infc      Physical Channel: 01
      Name: R3 CMS      COS: 1      COR: 1
Maintenance Extension:

ABBREVIATED DIALING

List1:

HOT LINE DESTINATION
Abbreviated Dialing Dial Code (From above list):

ASSIGNED MEMBERS ( Stations with a data extension button for this data module )
      Ext      Name      Ext      Name
      1:      3:
      2:      4:
    
```

Assigning a Data Module to the Sun SPARCserver Computer

After the processor interface has been assigned, the data module can be administered and connected to the *Sun SPARCserver* computer 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 SPARCserver* computer, 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 data module. 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. Press the **Return** key.

The screen displays a data module form. (See the following figure for reference.)

3. The cursor is positioned on the `Type` field. This field is defaulted to `pdm`. If the *CentreVu* CMS is remotely connected, this field needs to be changed to `tdm`.
4. Press the **Return** key.

The cursor is positioned on the `Port` field.

5. Enter the port location to which the data module is connected.

For a Generic 3i, 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), and the last two characters identify the circuit number (01-24).

Press the **Return** key.

The cursor is positioned on the `Name` field.

6. Enter `cms link pdm`, or if *CentreVu* CMS is remotely connected, enter `cms link tdm`, and press the **Return** key.

The cursor is positioned on the COS field.

⇒ NOTE:

The COS and COR fields are defaulted to 1, and the Connected To field is defaulted to dte.

7. Move the cursor to the Remote Loop-Around Test field.
8. Enter Y if the module supports a loopback at the EIA interface; otherwise, enter N. (The 7400D data module does not support a loopback.)

⇒ NOTE:

If the *CentreVu* CMS is remotely connected (using a modem and MTDM), enter N.

9. Press the key.

Screen displays:

```
command successfully completed
enter command:
```

```

                                DATA MODULE
Data Extension: 2009   BCC:    
      
   Remote Loop-Around Test? y

ABBREVIATED DIALING

List1:

HOT LINE DESTINATION
Abbreviated Dialing Dial Code (From above list):

ASSIGNED MEMBERS ( Stations with a data extension button for this data module )
    Ext      Name                               Ext      Name
    1:                                             3:
    2:                                             4:

```

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 SPARCserver* computer.

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 Figure A-3 for reference.)

⇒ NOTE:

The sample screen shown in the following 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 `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, see the *CentreVu Call Management System, Release 3 Version 6, Software Installation and Maintenance (585-215-866)*, Appendix A CMSADM and CMSSVC Menus, "swsetup."

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.

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		Interface			Remote	
Chan	Appl.	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 following figure for reference.)

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 SPARCserver* computer, 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 SPARCserver* computer, and press the **Return** key.

The cursor is positioned on the `DTE/DCE` field.

8. Enter `DTE` for the *Sun SPARCserver* computer, 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.

Screen displays:

command successfully completed,
enter command:

INTERFACE LINKS								
Link	Enable	Est	PI		Destination	DTE/		Identification
		Conn	Ext	Prot	Digits	Brd	DCE	
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 SPARCserver* computer, see the figure below.

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.

Administering *CentreVu* CMS Interface on the Generic 1 Switch

This section contains the procedures required to establish a communications link between the *Sun SPARCserver* computer and the Generic 1 switch.

The processor interface on the Generic 1 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 SPARCserver* computer.

You assign the *CentreVu* CMS interface by logging in on the 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 SPARCserver* computer, you do not have to fill out the data module form.

Assigning the Processor Interface Data Module

The following procedures can be used to add the processor interface on the Generic 1:

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 figure for reference.)

3. In the field labeled `Type`, enter `procr-infc` for Generic 1. After entering the appropriate `Type`, press the **Return** key.

The cursor is positioned on the `Physical Channel` field.

4. 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 SPARCserver* computer, physical channel number `01` must be used.

5. Press the **Return** key.

The cursor is positioned on the `Name` field.

6. Enter `R3 CMS`, and press the **Return** key.

The cursor is positioned on the `COS` field.

⇒ NOTE:

The `COS` and `COR` fields are defaulted to `1`.

7. Make no changes to the `COS` and `COR` fields, and press the **Enter** key.

Screen displays:

command successfully completed,

enter command:

```

                                DATA MODULE

Data Extension: 2005           Type: procr-infc           Physical Channel: 01
                                Name: R3 CMS              COS: 1              COR: 1

                                Maintenance Extension:

ABBREVIATED DIALING

List1:

HOT LINE DESTINATION
Abbreviated Dialing Dial Code (From above list):

ASSIGNED MEMBERS ( Stations with a data extension button for this data module )
  Ext      Name                      Ext      Name
  1:                                     3:
  2:                                     4:

```

Assigning a Data Module to the Sun SPARCserver Computer

After assigning the processor interface module, the data module can be administered and connected to the *Sun SPARCserver* computer 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 SPARCserver* computer, 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 are 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 for reference.)

3. The cursor is positioned on the `Type` field. This field is defaulted to `pdm`. If the *CentreVu* CMS is remotely connected, this field needs to be changed to `tdm`.
4. Press the **Return** key.

The cursor is positioned on the `Port` field.

5. Enter the port location to which the data module is connected. Press the **Return** key.

For a Generic 1, 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), and the last two characters identify the circuit number (01-24).

The cursor is positioned on the `Name` field.

6. Enter `cms link pdm`, or if *CentreVu* CMS is remotely connected, enter `cms link tdm`, and press the **Return** key.

The cursor is positioned on the COS field.

⇒ NOTE:

The COS and COR fields are defaulted to 1, and the Connected To field is defaulted to dte.

7. Move the cursor to the Remote Loop-Around Test field.
8. Press **Y** if the module supports a loopback at the EIA interface; otherwise, enter **N**. (The 7400D data module does not support a loopback.

⇒ NOTE:

If the *CentreVu* CMS is remotely connected (using a modem and MTDM), press **N**.

9. Press the **Enter** key.

Screen displays:

```
command successfully completed,
enter command:
```

```

                                DATA MODULE
Data Extension: 2009   BCC:
Name: cms link pdm   Type: pdm   Port: 1A0101
COS: 1               COR: 1
Connected to: dte    Remote Loop-Around Test? y

ABBREVIATED DIALING
List1:

HOT LINE DESTINATION
Abbreviated Dialing Dial Code (From above list):

ASSIGNED MEMBERS ( Stations with a data extension button for this data module )
Ext      Name                               Ext      Name
1:                                     3:
2:                                     4:

```

After assigning the processor interface and the data module, 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 SPARCserver* computer.

The following procedure can be used to assign processor channels on the Generic 1:

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 following figure for reference.)

⇒ NOTE:

The sample screen shown in Figure A-8 illustrates a configuration that 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 `App1` field of an available channel.

⇒ NOTE:

The processor channel number should be the same number that was selected for the `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)*, “CMSADM and CMSSVC Menus” appendix, “swsetup.”

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.

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.

Cursor is positioned on the MACHINE-ID field.

10. Make no entry, and press the **Enter** key.

Screen displays:

```
command successfully completed,  
enter command:
```

```
PROCESSOR CHANNEL ASSIGNMENT
```

Proc Chan	Appl.	Interface Link	Chan	Priority	Remote 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 1:

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 for reference.)

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 `Est Conn` field.

4. Enter **Y** to establish a connection to the MPDM that connects to the *Sun SPARCserver* computer, 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.

5. Enter `BX.25` in the `Prot` field.

The cursor is positioned on the `Destination Digits` field.

6. Enter the extension number for the MPDM that connects to the *Sun SPARCserver* computer, and press the **Return** key.

The cursor is positioned on the `DTE/DCE` field.

7. Enter `DTE` for the *Sun SPARCserver* computer, and press the **Return** key.

The cursor is positioned on the `Identification` field.

8. Enter a 15-character name for the link. This field may be left blank.
9. Press the **Enter** key.

Screen displays:

command successfully completed,
enter command:

INTERFACE LINKS							
Link	Enable	Est Conn	PI Ext	Prot	Destination Digits	DTE/ Brd 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 on a Generic 1 is used to make the connection to the *Sun SPARCserver* computer, see the figure below.

⇒ NOTE:

For R3V6 *CentreVu* CMS, the DTE/DCE field must be set to DTE.

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

Generic 2 and System 85 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 and System 85 R2V4 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.

The following documents can be used by a qualified switch technician to administer the *CentreVu* CMS and ACD features:

- *Lucent Technologies DEFINITY Communications System Generic 2 Administration of Features and Hardware* (555-104-507, Issue 1)
- *Lucent Technologies System 85 Feature Translation Service Manual Release 2, Version 4, Issue 1* (555-103-107).

Use this appendix to do the following:

- Administer the *CentreVu* CMS Feature on the *DEFINITY* Generic 2.1 and System 85 R2V4.
- Administer the *CentreVu* CMS Feature on the *DEFINITY* Generic 2.2.
- Administer the Dedicated Switch Connection (DSC) Feature on the System 85 R2V4.
- 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.

For the procedures to administer the Expert Agent Selection (EAS) feature, see the *CentreVu Call Management System Release 3 Version 6 Administration* (585-215-850).

Administering the *CentreVu* CMS Feature on the *DEFINITY* Generic 2.1 and System 85 R2V4

On a Generic 2.1, use the Manager II to administer the *CentreVu* CMS feature. On a System 85 R2V4, use the VMAAP or MAAP panel.

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*^{*} *SPARCserver*[†] computer.
- 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.
[†]*SPARCserver* 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 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:

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 — (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 the *CentreVu* CMS to an extension or group of extensions.

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, a VDN (vector number), measuring 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 SPARCserver* computer.
- 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.

Administering a Dedicated Switch Connection on the System 85 R2V4

On a System 85 R2V4, use the VMAAP or MAAP panel to administer the DSC (Dedicated Switch Connection) feature.

 **NOTE:**

The System 85 R2V4 must have tape issue 1.1 (with patches 946, 947, and 954) to establish a connection between the switch and *CentreVu* CMS R3V6.

The translations should be done at both the local and distant end switches. If one of the switches is a *DEFINITY* Generic 2, follow the administration procedures in the “Administering a Dedicated Switch Connection on a *DEFINITY* Generic 2” section in this appendix.

000 Word 1 Administers the extension number and class of service.

Field 1 Enter the extension number of the distant end.

Field 7 Enter the class of service associated with the extension.

051 Word 1 Administers the characteristics of the data module.

Fields 1-5 Enter the terminal equipment location of the MPDM.

Field 6 Enter 4 to specify “PDM” as the type of data module.

Field 10 Enter 2 to set the extension origination preference as the “Prime Appearance.”

Field 11 Enter 0 to set the extension termination preference to “None.”

Field 13 Enter 0 to disable keyboard dialing feature.

- 052 Word 1** Administers the characteristics of the data module.
- Fields 1-5 Enter the terminal equipment location of the MPDM.
 - Field 6 Enter 0 to specify the device type as a basic set.
 - Field 7 Enter 0 to specify the button number.
 - Field 8 Enter the extension number of the MPDM.
 - Field 9 Enter 1 to specify the line appearance number.
 - Field 10 Enter 1 to specify the line type.
 - Field 11 Enter 1 to set ringing type.
 - Field 12 Enter 1 to specify that it is the home terminal.
 - Field 13 Enter 0 to specify that the terminal is not an originating only terminal.
 - Field 14 Enter 0 to specify that this terminal is not in a SAC group.

Activate the Dedicated Switch Connection Feature:

- 360 Word 1** Administers the Dedicated Switch Connection (DSC) between the MPDM and the DS1 circuit.
- Field 1 Enter 1 to activate the DSC feature.
 - Field 2 Enter an unused DSC number (0-1023).
 - Fields 3-7 Enter the equipment location for the MPDM.
 - Field 8 Enter 1 to set the "I" channel to *voice*.
 - Fields 10-14 Enter the equipment location for the DS1 channel.
 - Field 15 Enter - to specify the port is not a GPP.

 **NOTE:**

When using the DSC feature, Procedure 260, Word 1, Field 8 should be set to 0 to specify 24th Channel Signaling. Also, Procedure 116, Word 1, Field 8 should be set to 1 to disable signaling.

Administering a Dedicated Switch Connection on the *DEFINITY* Generic 2

On a *DEFINITY* Generic 2.1, administer the DSC (Dedicated Switch Connection) feature.

The translations should be done at both the local and distant end switches. If one of the switches is a System 85 R2V4, follow the administration procedures in the “Administering a Dedicated Switch Connection on the System 85 R2V4” section in this appendix.

000 Word 1 Administers the extension number and class of service.

Field 1 Enter the extension number of the distant end.

Field 7 Enter the class of service associated with the extension.

051 Word 1 Administers the characteristics of the data module.

Fields 1-5 Enter the terminal equipment location of the MPDM.

Field 6 Enter 1 to specify “PDM” as the type of data module.

Field 7 Enter 0 to specify terminal options as “Data Only.”

Field 8 Enter 1 to specify that it is a DTDM (data stand or ADM-T).

Field 9 Enter - to specify that the display is not assigned.

Field 10 Enter 2 to set the extension origination preference as the “Prime Appearance.”

Field 11 Enter 0 to set the extension termination preference to “None.”

Field 13 Enter 0 to disable keyboard dialing feature.

Field 15 Enter a - (dash) to specify that Terminal Alarming does not apply.

052 Word 1 Administers the characteristics of the data module.

- Fields 1-5 Enter the terminal equipment location of the MPDM.
- Field 6 Enter 0 to specify the device type as a basic set.
- Field 7 Enter 0 to specify the button number.
- Field 8 Enter the extension number of the MPDM.
- Field 9 Enter 1 to specify the line appearance number.
- Field 10 Enter 1 to specify the line type.
- Field 11 Enter 1 to set ringing type.
- Field 12 Enter 1 to specify that it is the home terminal.
- Field 13 Enter 0 to specify that the terminal is not an originating only terminal.
- Field 14 Enter 0 to specify that this terminal is not in an SAC group.

Activate the Dedicated Switch Connection Feature:

360 Word 1 Administers the DSC (Dedicated Switch Connection) between the MPDM and the DS1 circuit.

- Field 1 Enter 1 to activate the DSC feature.
- Field 2 Enter an unused DSC number (0-1023).
- Fields 3-7 Enter the equipment location for the MPDM.
- Field 8 Enter 1 to set the "I" channel to *voice*.
- Fields 10-14 Enter the equipment location for the DS1 channel.
- Field 15 Enter - to specify the port is not a GPP.

 **NOTE:**

When using the DSC feature, Procedure 260, Word 1, Field 8 should be set to 0 to specify 24th Channel Signaling. Also, Procedure 116, Word 1, Field 8 should be set to 1 to disable signaling.

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.

In addition to the *CentreVu* CMS interface, the following features on the switch must also be administered:

- Abandoned Call Search
- Agent Call Handling
- Hunt Groups
- Intraflow and Interflow
- Queue Status Indications
- Recorded Announcements
- Service Observing.

NOTE:

For the screens to administer the EAS (Expert Agent Selection) feature, see the *CentreVu*[™] CMS R3V6 Administration (585-215-8__) document.

The following documents can be used by a qualified switch technician to implement the *CentreVu* CMS interface and features:

- *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

This section contains the procedures required to establish a communications link between the *Sun*^{*} *SPARCserver*[†] computer 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 SPARCserver* computer.

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 is used to make the connection to the *Sun SPARCserver* computer, 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.
[†]*SPARCserver* is a trademark of SPARC International, Inc.

Changing 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 figure for reference.)

3. In the field labeled `Adjunct CMS Release`, enter `R3V6 CentreVu CMS for Generic 3r`. Press the **Return** key.
4. In the `Automatic Call Distribution (ACD) Log-in Identification Length` field, enter the length of the agent login IDs. The length of the agent login IDs for the Generic 3r is 0-9 characters. Press the **Enter** key.

Screen displays:

```
command successfully completed,
```

```
enter command:
```

FEATURE-RELATED SYSTEM PARAMETERS

SYSTEM PRINTER PARAMETERS

System Printer Type: _____

Printer Speed: _____

SYSTEM-WIDE PARAMETERS

Switch Name: _____

CALL MANAGEMENT SYSTEM PARAMETERS

BCMS Measurement Interval: _____

Adjunct CMS Release: R3V6

Automatic Call Distribution (ACD) Log-in Identification Length: X_

MALICIOUS CALL TRACE PARAMETERS

Apply MCT Warning Tone? _

MCT Voice Recorder Trunk Group: ____

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 for reference.)

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 for reference.)

3. In the field labeled `Type`, enter `x.25`. Press the **Return** key.

The cursor is positioned on the `Port` field.

4. 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 `Name` field.

5. Enter `Pgate 1C0302` where *1C0302* is the physical equipment location of the Pgate board. Press the **Return** key.
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.

The cursor is positioned on

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 SPARCserver* computer 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: 01C0302
Name: pgate 1C0302      COR: 1
Endpoint Type: adjunct  DTE/DCE: dte    Baud Rate: 19.2
Error Logging? n        Remote Loop-Around Test? n

Permanent Virtual Circuit? y      Highest PVC Logical Level: 64
Switched Virtual Circuit? n
```

```
DATA MODULE

LAYER 2 PARAMETERS

Number of Outstanding Frames (w) : 7
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 SPARCserver* computer.

Assigning 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 for reference.)

3. The cursor is positioned on the `Type` field. This field is defaulted to `pdm`. If the *CentreVu* CMS is remotely connected, this field needs to be changed to `tdm`.
4. Press the **Return** key.

The cursor is positioned on the `Port` field.

5. Enter the port location to which the data module is connected. Press the **Return** key.

For a Generic 3r, 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), and the last two characters identify the circuit number (01-24).

The cursor is positioned on the `Name` field.

6. Enter `switch pdm`, or if *CentreVu* CMS is remotely connected, enter `switch tdm` and press the **Return** key.

The cursor is positioned on the `COS` field.

⇒ NOTE:

The `COS` and `COR` fields are defaulted to 1, and the `Connected To` field is defaulted to `dte`.

7. Press the key.

Screen displays:

command successfully completed,
enter command:

```
DATA MODULE
Data Extension: 2009  BCC:    
    
  ITC: restricted
Remote Loop-Around Test? y

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.

Assigning a Data Module to the Sun SPARCserver Computer

After assigning the interface on Packet Gateway board, the data module can be administered and connected to the *Sun SPARCserver* computer 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 for reference.)

3. The cursor is positioned on the `Type` field. This field is defaulted to `pdm`. If the *CentreVu* CMS is remotely connected, this field needs to be changed to `tdm`.
4. Press the **Return** key.

The cursor is positioned on the `Port` field.

5. Enter the port location to which the data module is connected. Press the **Return** key.
6. For a Generic 3r, 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 last two characters identify the circuit number (01-24).

The cursor is positioned on the `Name` field.

7. Enter `cms link pdm`, or if *CentreVu* CMS is remotely connected, enter `cms link tdm`, and press the **Return** key.

The cursor is positioned on the `COS` field.

⇒ NOTE:

The `COS` and `COR` fields are defaulted to 1, and the `Connected To` field is defaulted to `dte`.

8. Move the cursor to the Remote Loop-Around Test field.
9. Press Y if the module supports a loopback at the EIA interface; otherwise, enter N (The AT&T 7400D does not support loopback.)
10. Press the Enter key.
11. Screen displays:

command successfully completed,
enter command:

```
DATA MODULE
Data Extension: 2009   BCC:   Type: pdm   Port: 1c0401
Name: cms link pdm   COS: 1   COR: 1
Connected to: dte
ITC: restricted
Remote Loop-Around Test? y

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.

Enabling 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 for reference.)

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 SPARCserver* computer, 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			

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 SPARCserver* computer.

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 Figure C-8 for reference.)

⇒ 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, see the *CentreVu* Call Management System, Release 3 Version 6, Software Installation and Maintenance document 585-215-866, Appendix A CMSADM and CMSSVC Menus, "swsetup."

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 Chan	Appl.	Interface Link Chan	Local Port	Remote Port	Adjunct Name	Machine-ID
1:	mis	1 1	1	1		
2:						
3:						
4:						
5:						
6:						
7:						
8:						
9:						
10:						
11:						
12:						
13:						
14:						
15:						
16:						

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 figure below for reference.)

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 SPARCserver computer. 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 SPARCserver* Computer Factory Hardware Installation Procedures**

Overview

This appendix outlines the hardware installation procedures performed by the factory for the *Sun*^{*} *SPARCserver*[†] computers. You can use these procedures to bring a *Sun SPARCserver* computer in the field up to factory standard. The factory performs the following installation procedures:

- Unpack the system
- Install the Dynamic Single In-line Memory Modules (DSIMMs)
- Install the Video Single In-line Memory Modules (VSIMMs)
- Install SBus Cards
- Install the internal hard disk drives
- Install the internal floppy drive (optional)
- Install the internal CD-ROM drive
- Set the black box DTE/DCE DIP shunts
- Connect the system console peripherals
- Connect the external disks
- Connect the Network Terminal Server (NTS) to the Network Hub Unit
- Connect the 8-and 16-port expander box.

^{*}*Sun* is a registered trademark of Sun Microsystems, Inc.
[†]*SPARCserver* is a trademark of SPARC International, Inc.

General Procedures

Overview

⚠ WARNING:

Before you begin the hardware installation, make sure that the computer is plugged in, the power is off, and you are wearing an Electro-Static Discharge (ESD) ground strap.

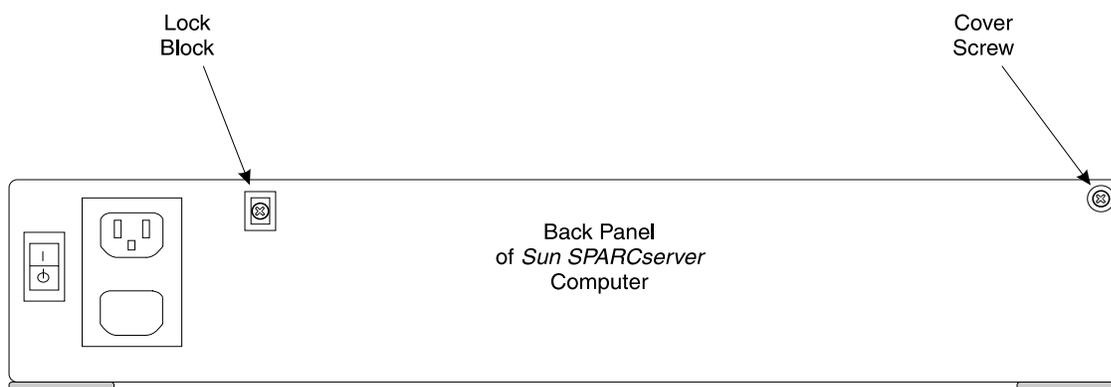
The following steps outline the factory hardware installation procedures and include the following:

- Installation procedures
 - Documentation references
 - SCSI ID and option settings, board locations, etc.
-

Opening the Machine

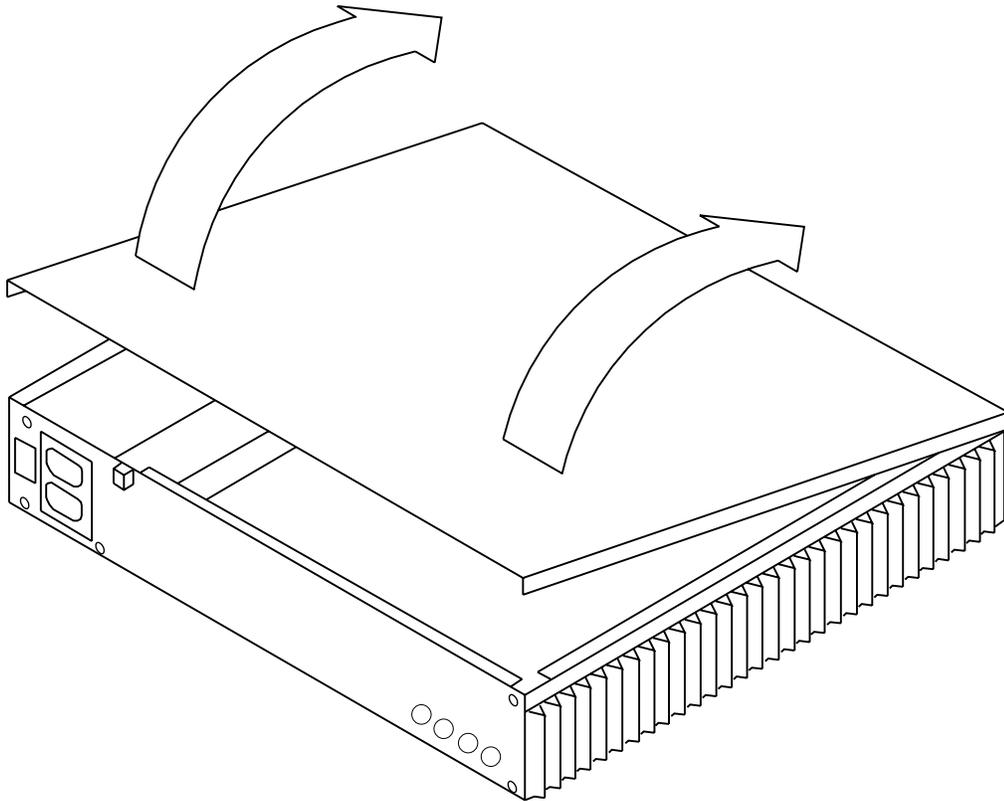
To open your *Sun SPARCserver* computer, do the following:

1. Shut down your system.
2. When the system has finished its shutdown, turn off the power to all the peripherals, the monitor, and the computer system.
3. Back out the cover screw located on the top right rear of the back panel (see the figure below).



4. Find and remove the lock block located towards the top left corner of the back panel (see the figure above).

5. Face the back panel, and grasp the sides of the cover. Carefully lift the back of the cover up and away from the back panel (see the figure below). The cover should start to swing up towards the front of the machine.



6. When the cover is at a 60-degree angle or greater (relative to the system unit), push the cover forward until the cover's hinge tabs are free of the system unit.

Additional References

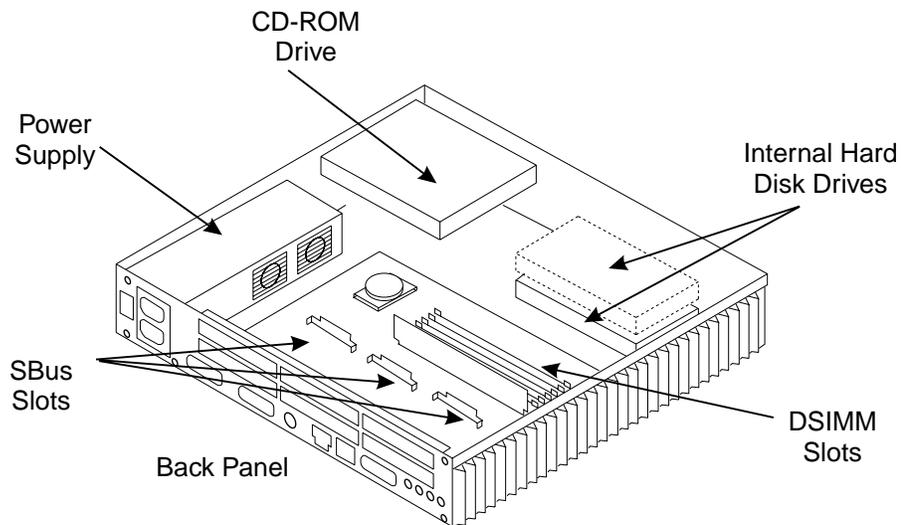
For additional information, see the following documentation:

- *Sun SPARCstation Installation Guide*, "Opening the System Unit."
- *Installing SBus Cards in Desktop SPARCstations*.

Identifying the Internal Hardware Components

Identify the following components in your *Sun SPARCserver* computer (see the figure below):

- Internal CD-ROM Drive
- Internal Hard Disk Drives
- DSIMM Slots/Receptacles
- SBus Slots
- Power Supply



Additional Reference

For additional information, see *Installing SBus Cards in Desktop SPARCstations*, (Use "4 and 3 SBus slot SPARCstation" references).

Install Specific Components

Install the DSIMMs — *Sun SPARCserver 5*

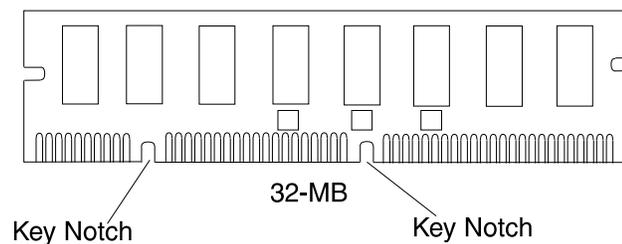
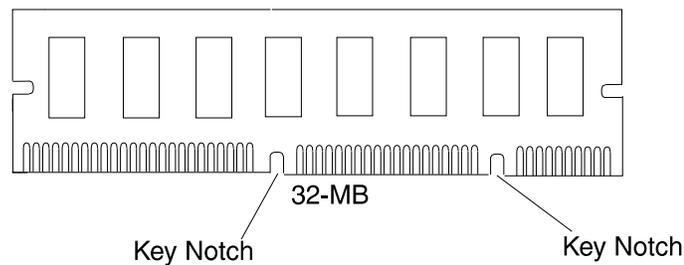
The *Sun SPARCserver 5* computer comes equipped with a DSIMM installed. It should be a 32-MB DSIMM but may not be.

⇒ NOTE:

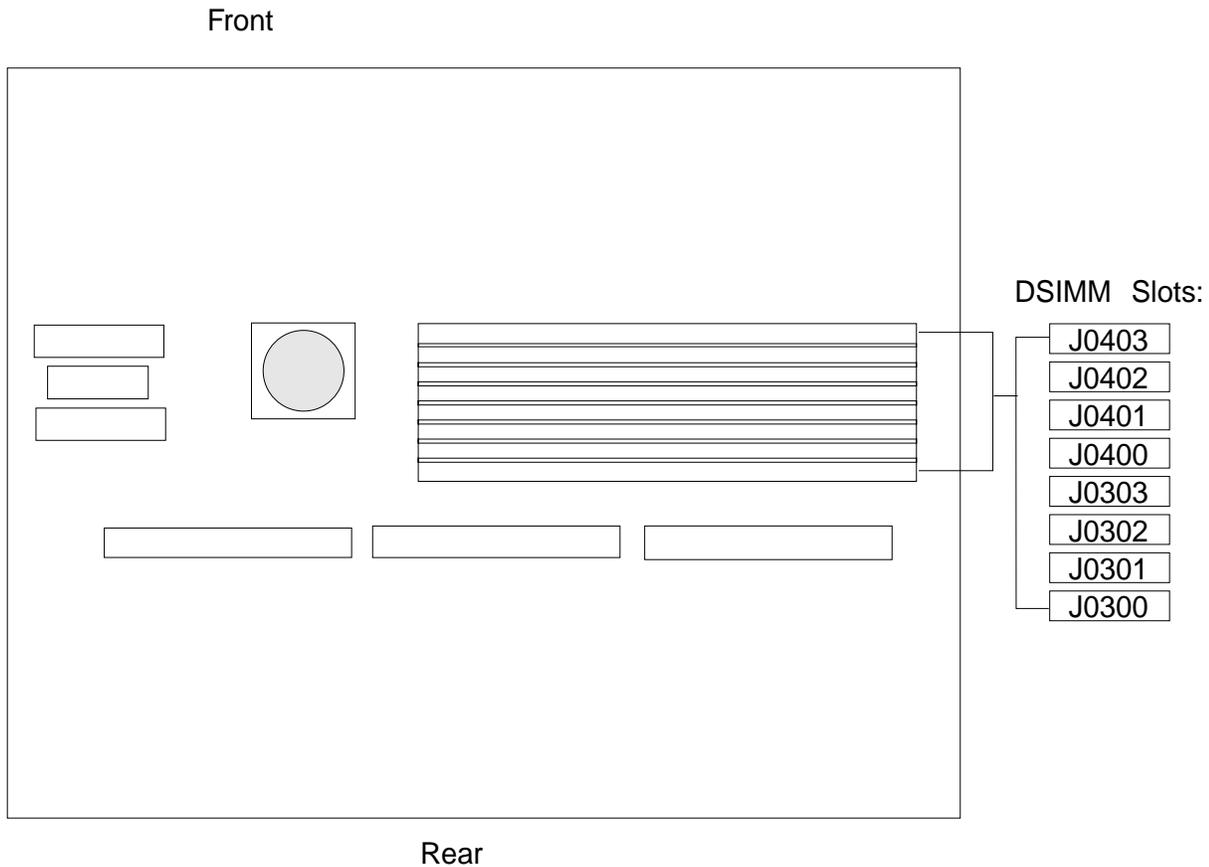
You may have to replace the installed DSIMM or install additional DSIMMs to support the *CentreVu* CMS configurations.

Overview

To properly install the DSIMMs, you need to identify the front and back of the DSIMM and be able to align it properly with the DSIMM slots (located on the main logic board inside the computer). The two figures below show the back and front of a 32-MB DSIMM chip.



In addition to identifying the front and back of a DSIMM chip, you must also locate the DSIMM slots on the main logic board of the computer (see the figure below).



Procedure

To install a DSIMM, do the following:

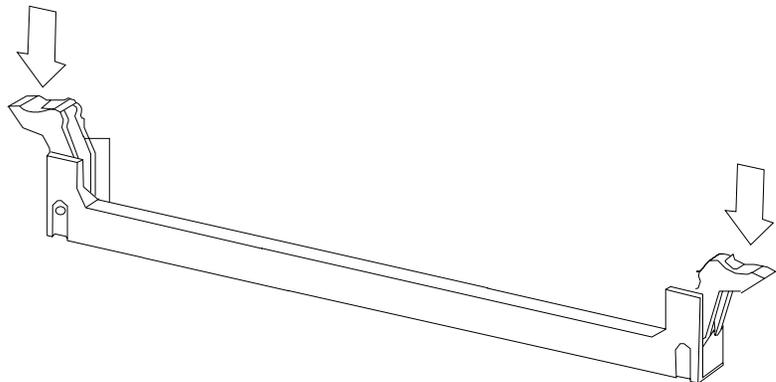
1. Carefully remove the new DSIMM from its protective packaging, and place it on an antistatic surface. The bag that the DSIMM came packed in is a good antistatic surface.
2. Choose the next available slot. Refer to the following table for DSIMM installation order.

Installation Sequence <i>Sun SPARCserver 5</i>	Slot Number
1 (DSIMM)	J0300
2 (DSIMM)	J0301
3 (DSIMM)	J0302
4 (DSIMM)	J0303
5 (DSIMM)	J0400
6 (DSIMM)	J0401
7 (DSIMM)	J0402
8 (DSIMM)	J0403

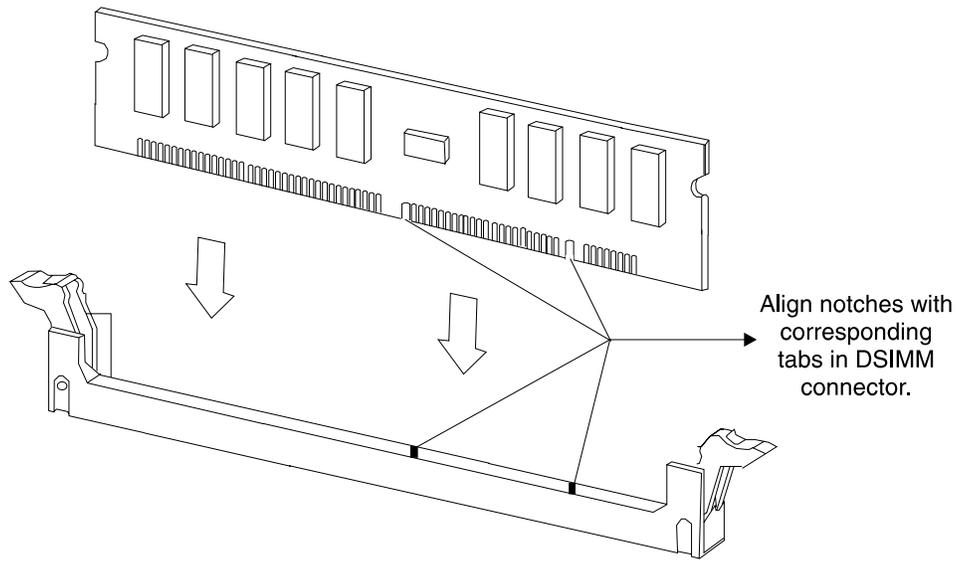
⇒ NOTE:

Slot J0300 (on the *Sun SPARCserver 5*'s main logic board) must have a DSIMM installed. Also, the largest (memory capacity) DSIMM must be installed in slot J0300.

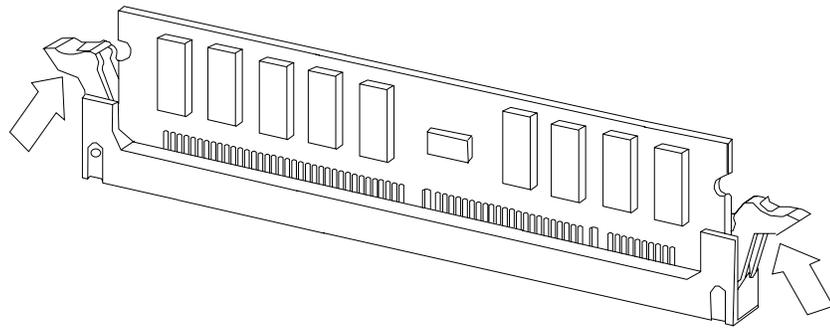
3. Unlock (press down) the ejector levers at both ends of the connectors (see the figure below).



4. Align the DSIMM with the slot. Hold the DSIMM by its edges and orient it so that the two notches at the bottom of the DSIMM line up with the two tabs in the DSIMM connector (see the following figure).



5. Place your thumbs on the top of the DSIMM, and push down firmly while pulling up on both ejector levers to lock them into the upright position (see the figure below).



Additional Reference

For additional information, refer to *SPARCstation DSIMM/VSIMM Installation*, “General Installation Instructions,” “Installing DSIMMs,” and “Removing DSIMMs/VSIMMs/AVB.”

SBus Slots in the Sun Hardware Platforms

The number of available SBus slots on the *Sun SPARCserver* computer varies depending on your hardware configuration (see the table below).

Select the SBus Slots

Three SBus slots available

Slots 1, 2, and 3

The SBus slots in the *Sun SPARCserver 5* computer should be filled as follows:

- Fill slot 1, 2, and then 3

The table below lists the different SBus cards. These cards should be assigned to SBus slots in the order shown in the table.

SBus Card	SBus Slot	Required/Optional
Turbo GX Video Card	SBus Slot 1 for the <i>SPARC 5</i>	Required for <i>Sun SPARCserver 5</i>
HSI/S Card	Next available SBus slot for the <i>SPARC 5</i>	Optional
FSBE/S Card (Fast SCSI and Ethernet SBus card)	Next available SBus slot for the <i>SPARC 5</i>	Optional
TRI Card (Token Ring Interface card)	Next available SBus slot for the <i>SPARC 5</i>	Optional
Aurora <i>Multiport</i> ^a Card	Next available SBus slot for the <i>SPARC 5</i>	Optional

^a *Multiport* is a registered trademark of Aurora Technologies, Inc.

Use the table below to record SBus cards and associated SBus slots that you will install in the system. The customer needs this information to reassemble their hardware.

Sun SPARCserver 5 Computer	
Slot #	SBus Card
1	
2	
3	

Install SBus Cards

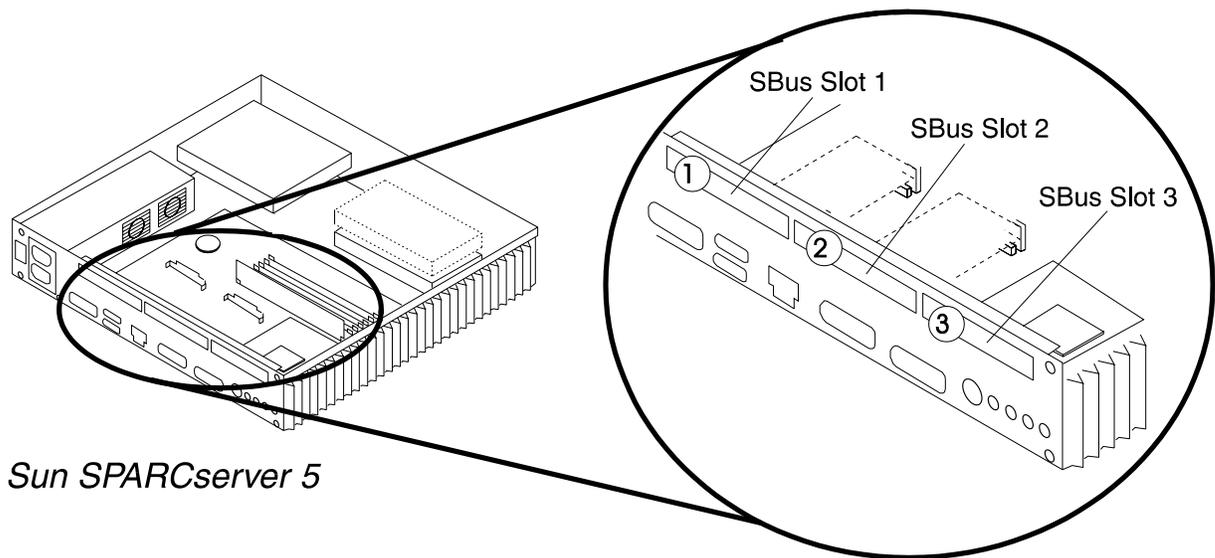
The following figure shows the SBus slot locations on the *Sun SPARCserver 5* .

Equipment Required

The following equipment is required for this procedure:

- Electro-static Discharge (ESD) wrist grounding strap
- *Phillips** screw driver.

**Phillips* is a registered trademark of the Phillips Screw Company.



Sun SPARCserver 5

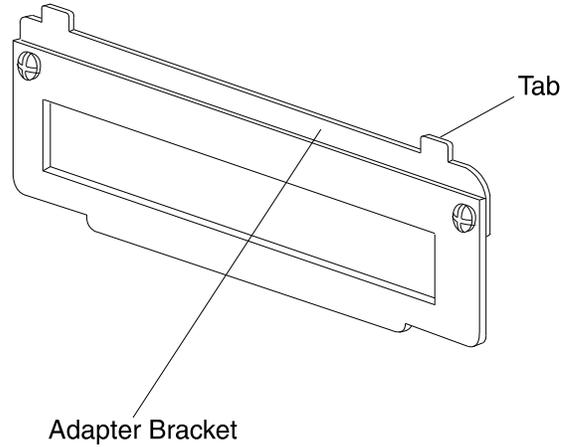
Procedure

Install each SBus card listed in the previous table by doing the following:

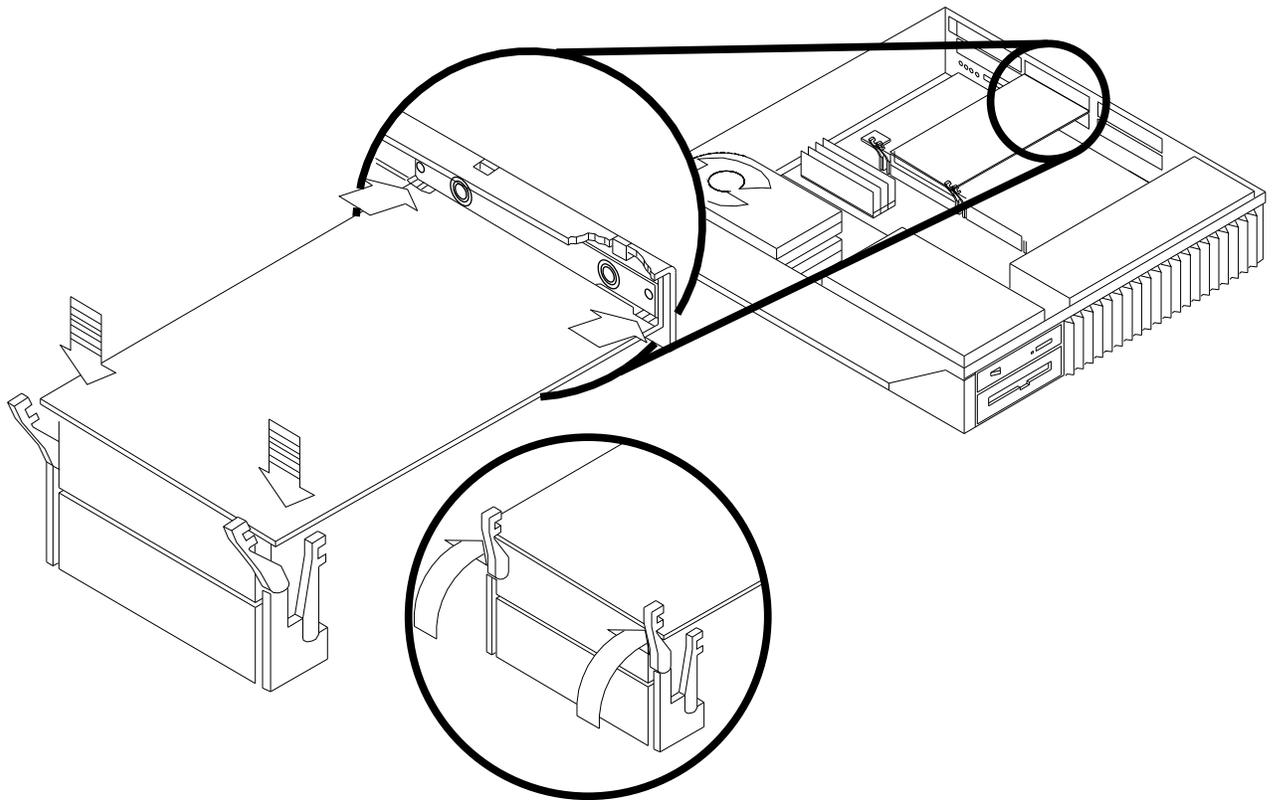
1. Make sure your ESD wrist strap is securely attached.
2. Look at the back of your system to identify how the filler panel is attached. The filler panel can be attached either by screws and washers (visible from the back of the unit) or by tabs (visible from inside the system unit).
3. Remove the filler panel from the SBus slot where the card will be installed using the appropriate one of the following procedures:
 - **Screw and Washer Mounted Filler Panels** — If the filler panel is held in place by screws and washers, do the following:
 - a. Remove the screws and washers from outside the filler panel. Save the screws and washers because you will need them later.
 - b. Press in on the outside of the filler panel to release it.
 - c. Carefully remove and save the filler panel. You will need the filler panel if you ever remove an SBus card from the computer.
 - **Tab Mounted Filler Panels** — If the filler panel is held in place by tabs, do the following:
 - a. From inside the machine, use both hands to grasp the tabs at the base of the filler panel.
 - b. Firmly squeeze both tabs until they are disengaged from

the system chassis/unit, and swing the base of the filler panel away from the unit back panel.

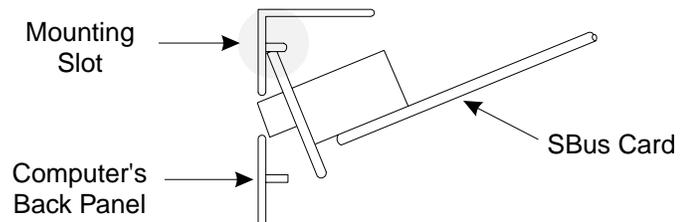
- c. Carefully remove and save the filler panel. You will need the filler panel if you ever remove an SBus card from the computer.



4. Place the SBus card at an angle (see the following figure) in the opening of the back panel.



5. Hook the upper card tabs into the mounting slot located above the rectangular openings in the back panel. The figure below shows a side view of how the card should hook into the mounting slot.



6. Align the card's connector to the socket on the main-logic board.
7. Gently press the card into the socket. Do not force the card or you may damage the pins on the card.
8. Push the rear card retainers forward over the rear edge of the SBus card.

9. Replace the washers and screws (removed earlier). Tighten the screws to secure the SBus board to the back panel of the computer.

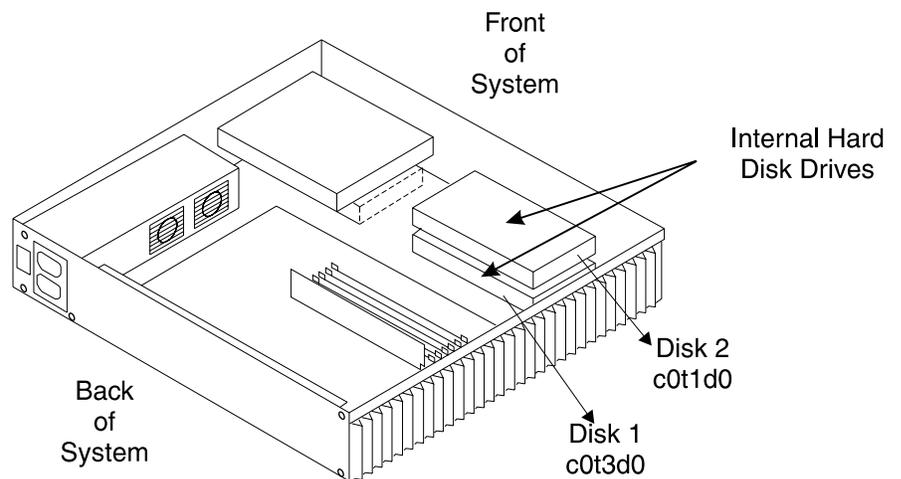
Additional References

For additional information, refer to the following documentation:

- *Sun SPARCstation Installation Guide (5)*, Chapter 7. “Installing SBus Cards.”
- *SunLink HSI/S 2.0 Installation and Administration Guide*, Chapter 2, “Installing the HSI/S Controller Card and Patch Panel.”
- *FSBE/S SBus Card Manual*, Chapter 1, “Introducing the FSBE/S SBus Card,” *Installing SBus Cards in Desktop SPARCstations*, (Use “4SBus and 3SBus slot SPARCstation.”)

Install the Internal Hard Disk Drives

The internal hard disk drives (maximum of two) are installed in the left front corner of the system (see the figure below).



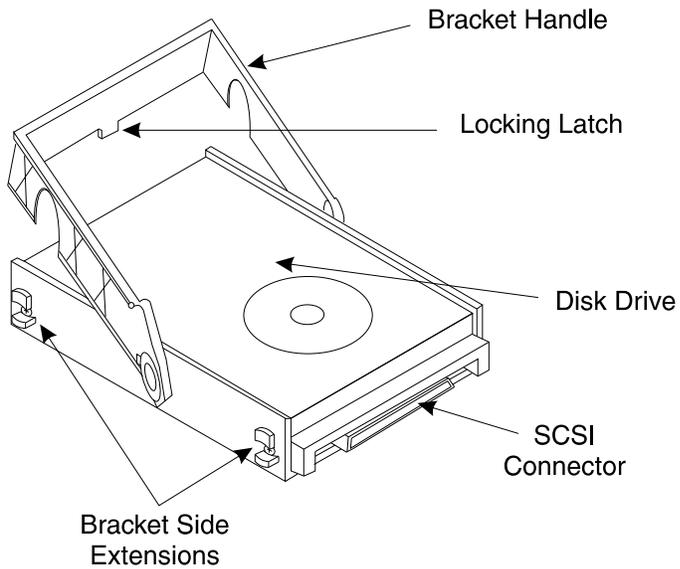
Procedure

To install the internal hard disk drives, do the following:

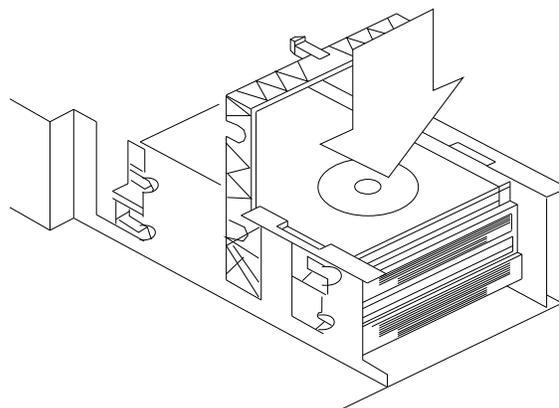
➤ NOTE:

You do not need to set the SCSI IDs on the internal hard drives.

1. Make sure your ESD wrist strap is securely attached to the power supply.
2. Unpack the disk drive from the shipping box.
3. Remove the disk drive from the antistatic bag, lay the bag on a flat surface, and place the disk drive (PCB-side up) on top of the antistatic bag (see the following figure).



4. Check the drive for any problems/damage that may have occurred during shipment.
5. Raise the plastic handle to a vertical position by pressing the handle-locking latch and pulling the handle up (see the figure above).
6. Pick the drive up with one hand and steady it with the other hand so that the drive is in a horizontal position.
7. Lower the drive into the chassis (connector end of the drive towards the side of the system case) and align the bracket side extensions of the drive casing with the holes in the rails of the chassis (see the figure below).



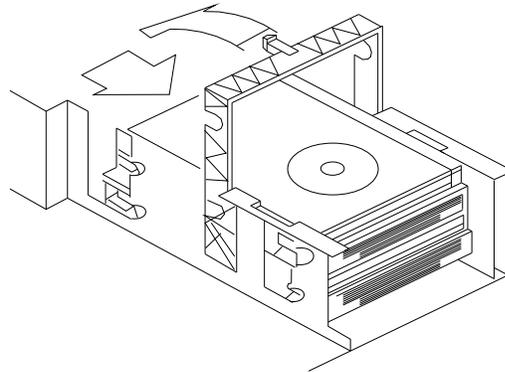
⇒ NOTE:

You may have to “wiggle” the drive to make sure it is aligned properly.

8. Push the handle down towards the back of the drive (opposite of the SCSI connector). See the figure below. As you lower the handle, the drive will slide slowly towards the connector.

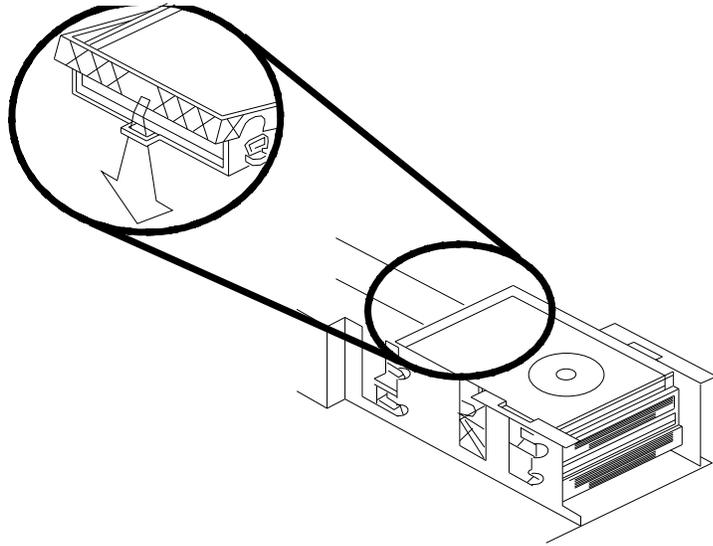
⚠ CAUTION:

Do not use excessive force to push the handle down or seat the connector.



Continue lowering the handle until the connector is properly seated and the drive handle locks into the locking latch on the back of the drive.

9. Make sure the handle is locked in position with the locking latch on the back of the drive (see the following figure).



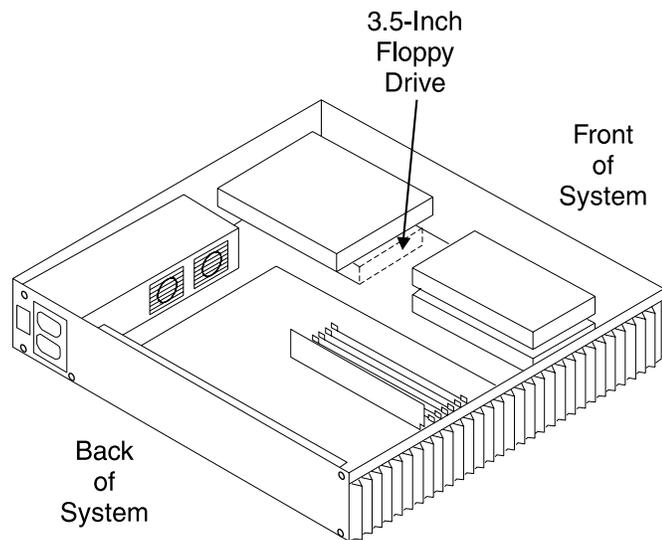
10. Repeat the steps outlined in this section when installing any additional internal disk drives.

Additional Reference

For additional information, refer to the *1.05 and 2.1 GByte Single Connector Disk Drive Installation Manual*, Chapter 1, “Before You Start,” Chapter 2, “Installing Disk Drives.”

Install the Internal Floppy Drive (Optional)

The internal floppy disk drive installs in the right-front corner of the system, directly beneath the CD-ROM drive.



⇒ NOTE:

The internal floppy drive is not a SCSI device. It connects to an 8-bit internal bus in the *SPARCserver* system.

Remove the CD-ROM Drive

If the internal CD-ROM drive has already been installed, you must remove it to gain access to the floppy drive slot. To remove the CD-ROM drive, do the following:

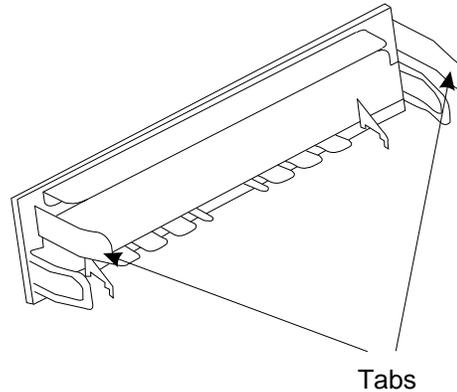
1. Make sure the power is turned off to the system.
2. Disconnect the cables from the rear of the CD-ROM drive.
3. Disengage the drive by sliding it toward the side wall. Make sure that you push only on the rear of the drive; *do not push on any connectors or drive components*. See “Install the Internal CD-ROM Drive” in this Appendix for details.
4. Lift out the drive and place it on an antistatic surface.

Install the Floppy Drive

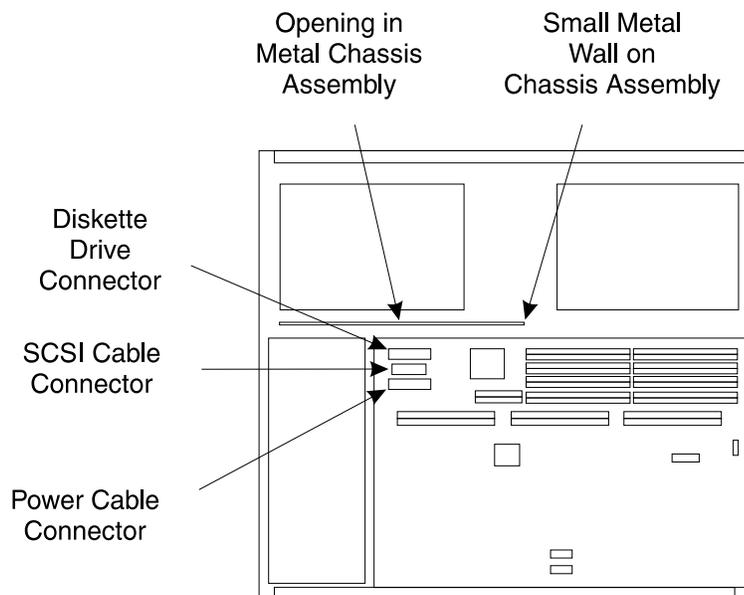
To install the internal floppy drive, do the following:

1. Make sure your ESD wrist strap is securely attached.

2. Remove the lower filler panel from the system chassis. Press the tabs toward the center of the filler panel, and push the panel toward the outside of the system chassis.

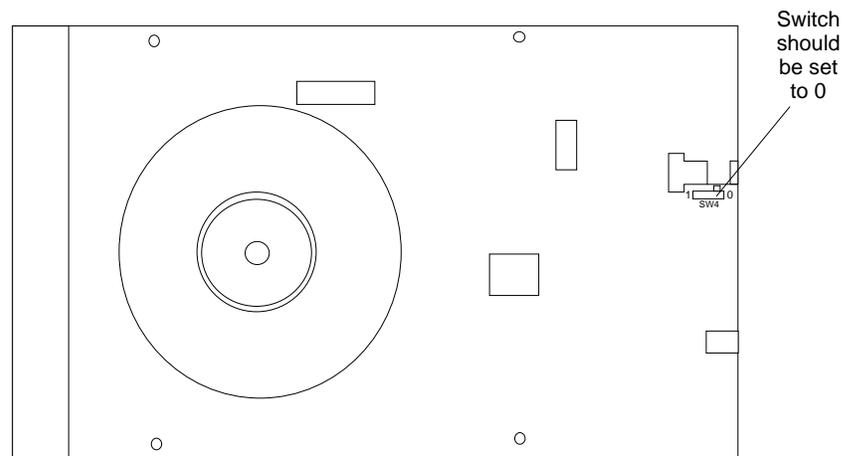


3. Disconnect the power supply cable and the SCSI disk cable from the system board (see the figure below). To disconnect the power cable, first press down on the connector latch.



4. Remove the floppy drive data cable from the shipping package. The cable has two connectors: one is straight, the other is bent at a 90° angle. The straight connector plugs into the system board; the bent connector plugs into the disk drive.

5. Feed the data cable's pull loop through the front of the opening in the metal chassis assembly, and tug the connector through the opening. Then attach the connector to the system board's diskette drive connector (See the previous figure).
6. Reconnect the power supply and SCSI data cables.
7. Remove the disk drive, the four mounting grommets, and the four mounting screws from the shipping package. Place the drive on an antistatic surface, and install the screws and grommets on the drive.
8. Verify that microswitch SW4, on the bottom (PCB side) of the drive, is set to 0. Set the switch by sliding it toward the rear of the drive (see the figure below).



9. Move the SCSI data and CD-ROM power cables away from the floppy disk drive opening, and locate the two-wire power cable labeled "P4."

⇒ NOTE:

There are two power connectors. The larger one (labeled P2) is for the CD-ROM drive and the smaller one (labeled P4) is for the floppy disk drive.

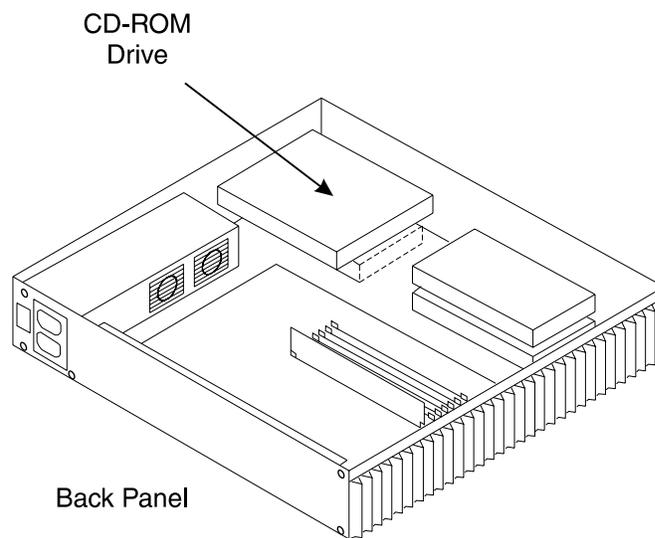
10. Lift the P4 and floppy drive data cables out of the way, and lower the drive into place. Push the drive forward so it is fully seated in the drive mounts, being careful to push only on the rear edge of the drive. *Do not push on exposed motors or connectors.*
11. Connect the P4 and data cables to the drive. To connect the data cable, route it over the disk drive.

12. Install the slotted floppy disk drive filler panel. Place the three tabs on the bottom of the panel into the corresponding openings in the front of the chassis. Rotate the panel upward to latch it into place.

If you removed a CD-ROM drive (or are installing one), replace or install the CD-ROM drive now.

Install the Internal CD-ROM Drive

The internal CD-ROM drive should be installed in the right-front corner of the system (see the figure below).



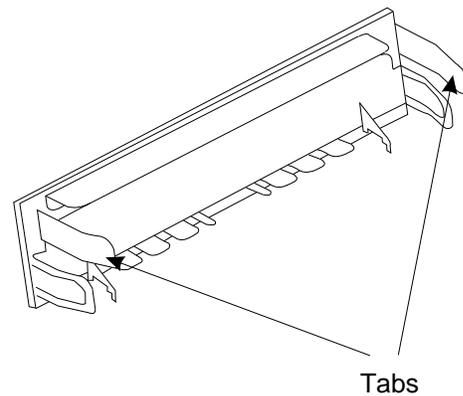
➡ NOTE:

If you are also going to install a Floppy Disk drive, perform that procedure first. See “Install the Internal Floppy Drive (Optional).”

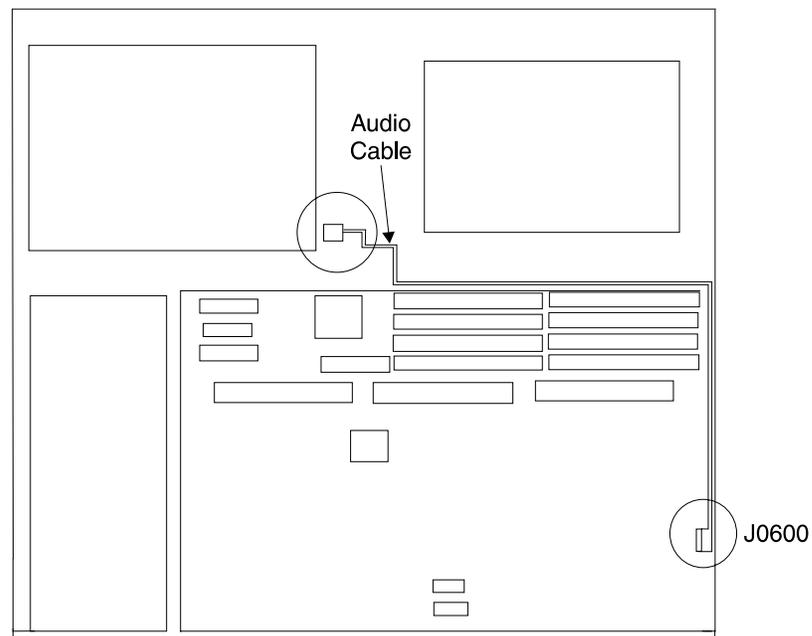
Procedure

To install the internal CD-ROM drive, do the following:

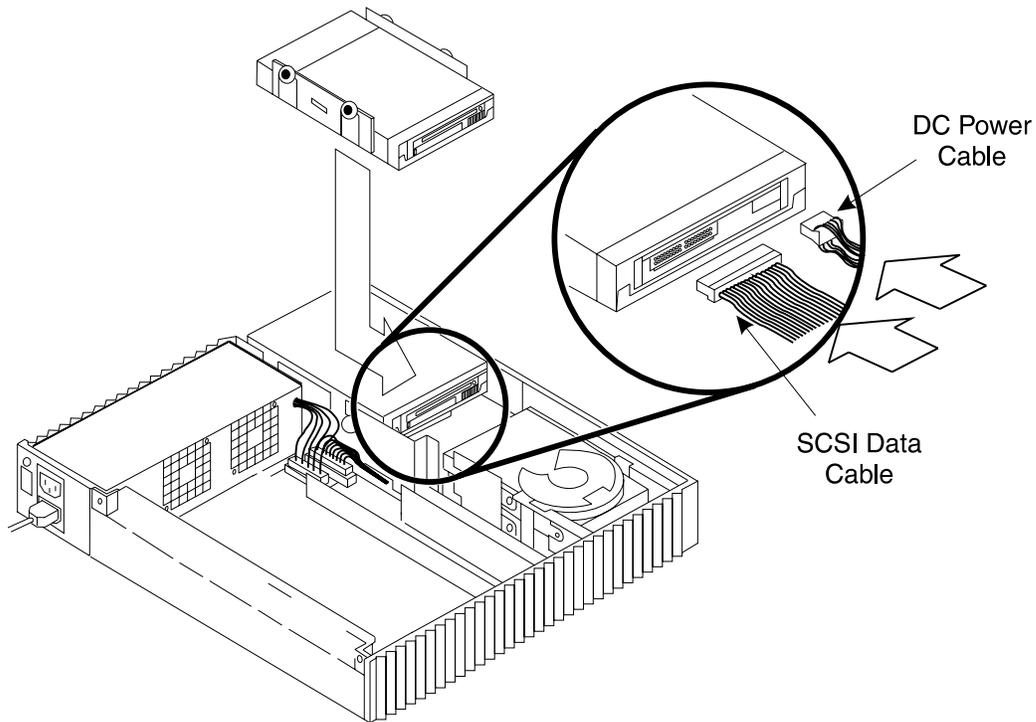
1. Make sure your ESD wrist strap is securely attached.
2. Remove the top filler panel from the system chassis (see the following figure). Press the tabs toward the center of the filler panel, and push the panel towards the outside of the system chassis.



3. Remove the drive from the shipping package.
4. Verify that the jumpers (located on the rear of the drive) are set to the factory defaults.
5. Plug one end of the audio cable into the Audio Out Port on the rear of the drive. Plug the other end of the Audio cable into J0600 on the main logic board (see the figure below).



6. Insert the drive in the system, and push the drive towards the center of the system (see the following figure).

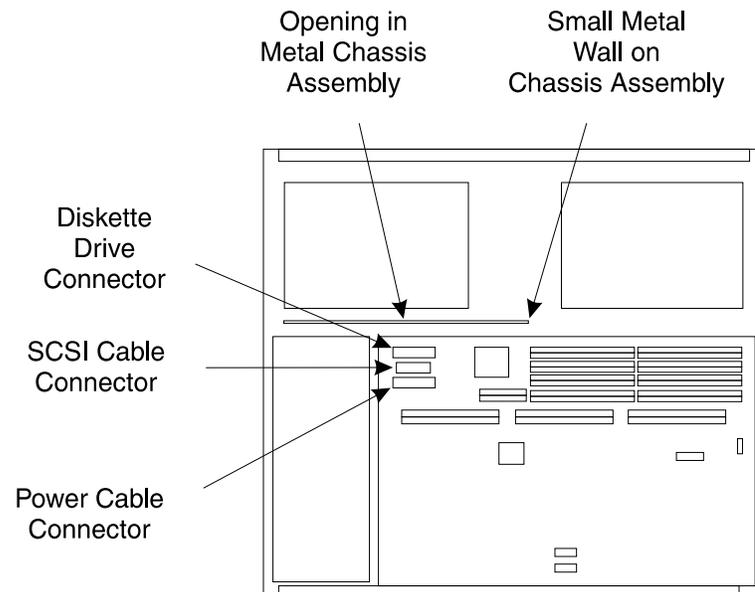


7. Connect the power cable to the back of the CD-ROM drive (see the figure above).

⇒ NOTE:

There are two power connectors. The larger one (labeled P2) is for the CD-ROM drive and the smaller one (labeled P4) is for the floppy disk drive.

8. Attach one end of the SCSI data cable (labeled P2) to the connector on the back of the CD-ROM drive (see the figure above), and the other end of the SCSI data cable to the connector on the system board (see the following figure).



Additional Reference

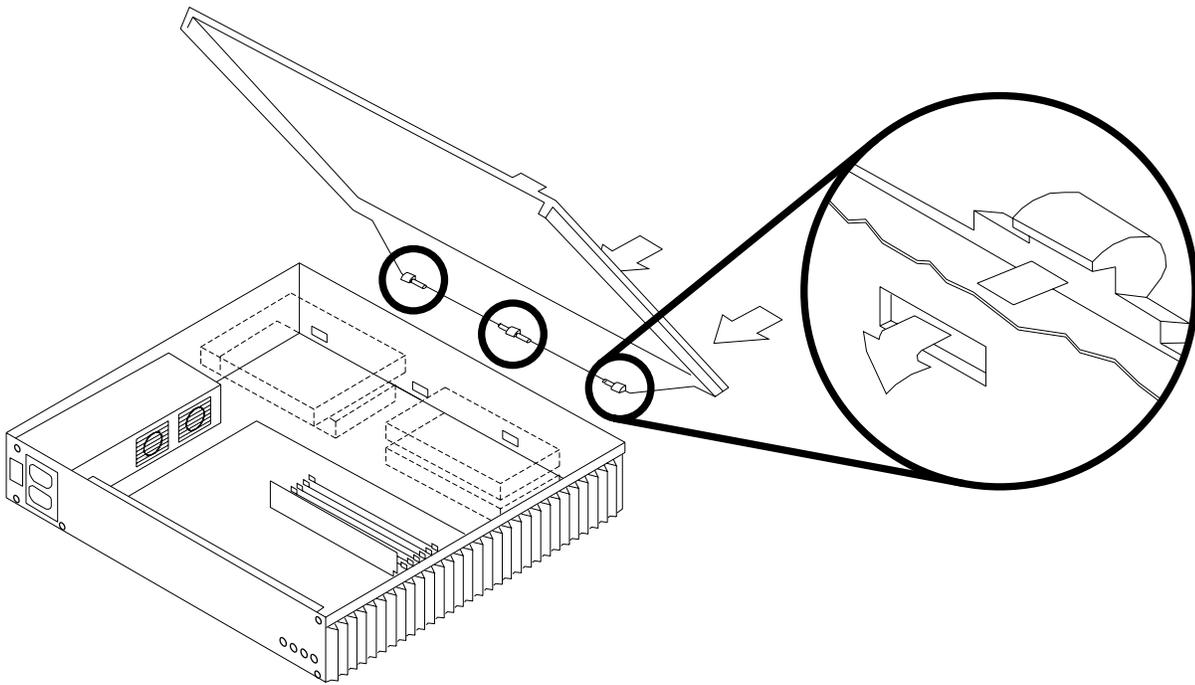
For additional information, refer to:

- *SPARCstation 5* Installation Guide

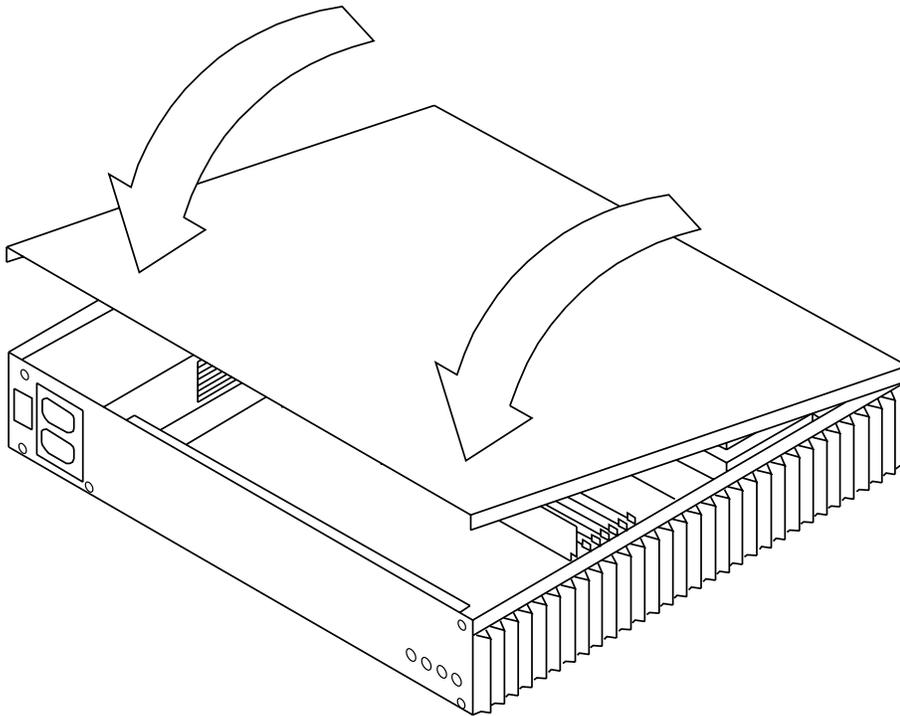
Close the Machine

To close your *Sun SPARCserver* computer, do the following (see the two figures that follow):

1. Hold the cover at a 60-degree or greater angle to the system unit.
2. Gently guide the cover's hinge hooks into the tab slots located on the front of the system unit (see the following figure).



3. Gently lower the cover onto the system unit.



4. Insert and tighten the cover screw on the top right side of the rear panel using a *Phillips* screwdriver.
5. Insert and tighten the lock block towards the top left side of the rear panel using a *Phillips* screwdriver.
6. Reconnect all peripherals/cables to the computer.

Additional References

For additional information, see the following documentation:

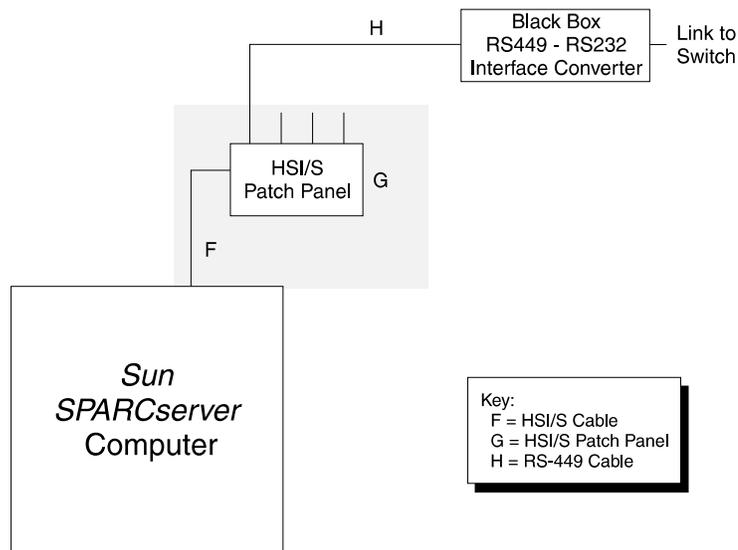
- *Sun SPARCstation Installation Guide*, “Closing the System Unit”
- *Installing SBus Cards in Desktop SPARCstations*.

Connect the SunLink HSI/S Patch Panel

This section describes how to connect the HSI/S patch panel to the HSI/S controller card (previously installed in the *Sun SPARCserver* computer) using a 96-pin cable (see the figure below).

⇒ NOTE:

The *Sun SPARCserver 5* needs a *SunLink* HSI/S Patch Panel only if you have multiple ACDs.



Procedure

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

1. Connect one end of the 96-pin cable to the 96-pin connector on the HSI/S patch panel.
2. Connect the other end of the 96-pin cable to the 96-pin connector on the HSI/S controller card.
3. Make sure the locking mechanisms on each end of the 96-pin cable click closed.

Additional Reference

For additional information, see *SunLink HSI/S 2.0 Installation and Administration Guide*, Chapter 2: "Installing the HSI/S Controller Card and Patch Panel" (Sections 2.11 and 2.12).

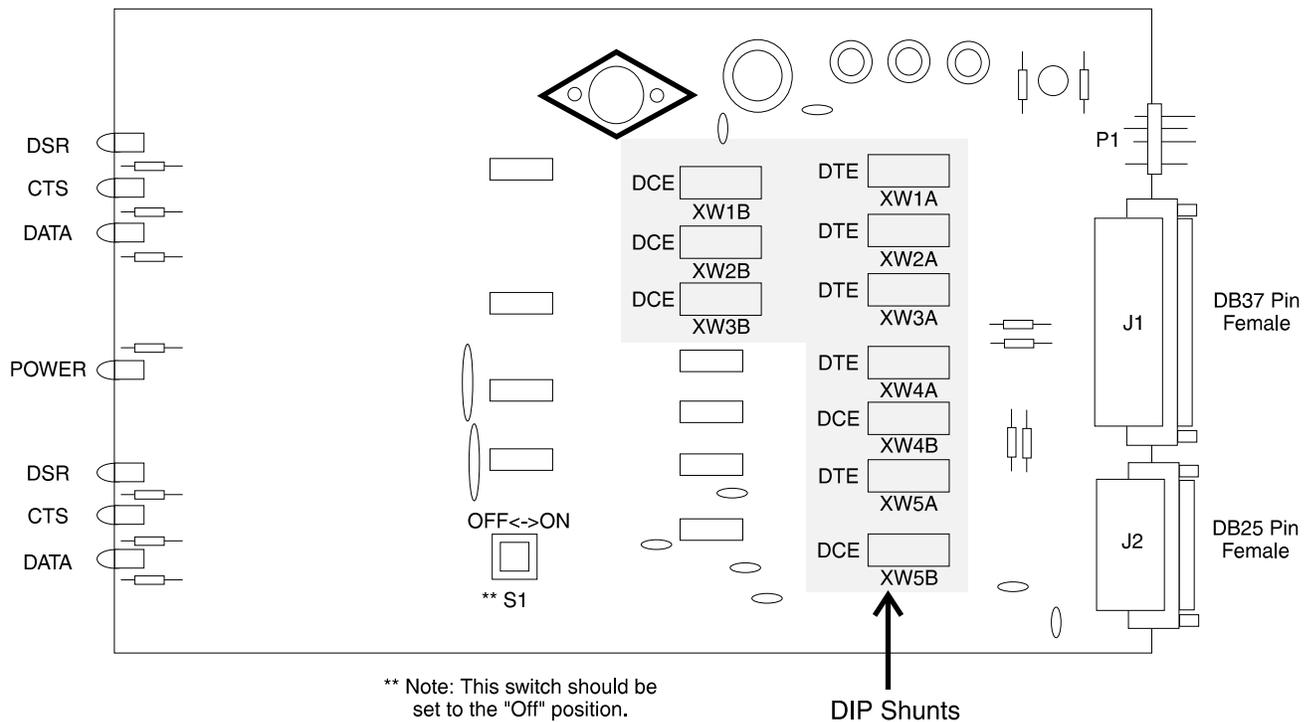
Set the Black Box DTE/DCE DIP Shunts

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 DCE operation and the RS-232 output port for DTE operation (see the following table and figure).

⇒ NOTE:

This section applies only to *Sun SPARCserver* computers that have an HSI/S card installed.

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



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:
 - a. Use an IC-removal tool to grasp the DIP-shunt jumper, or carefully slide the tip of a common screwdriver between the DIP-shunt jumper and the DIP-shunt socket.

⚠ CAUTION:

Be very careful when moving the DIP shunts. The DIP-shunt pins are very fragile and could easily be bent or broken.

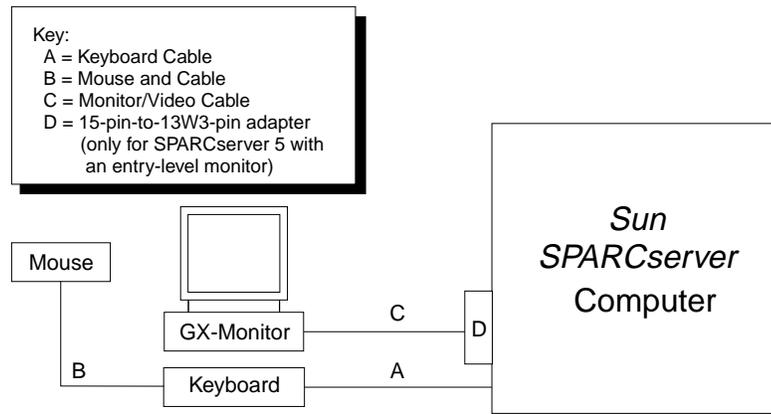
- b. Gently "pry/wiggle" the DIP-shunt jumper free from the socket.
- c. Move the DIP-shunt jumper to the appropriate socket (see the previous table).
- d. Carefully align the pins, and gently press the DIP-shunt jumper into place.

Additional Reference

For additional information, see *RS-232 ↔ RS-422 Interface Converter Installation and Operation Manual*, Section 2.0: "Introduction," Section 3.0: "Installation," and Section 4.0: "Configuration."

Connect the System Console Peripherals

This section describes how to connect the system console peripherals to the *Sun SPARCserver* computer.



Procedure

To assemble the *Sun SPARCserver* computer and system console, do the following (refer to the previous figure):

- Position the computer in the location selected by the customer. Make sure the power switch is set to *Off*.
- Connect the following components (see the previous figure):
 - Keyboard
 - Mouse
 - Monitor
 - Power cord (to a wall outlet or to an Uninterruptible Power Supply [UPS], if equipped).

This basic configuration represents the *CentreVu* CMS console terminal.

Additional Reference

For additional information, see *Sun Desktop SPARC Hardware Owner's Guide*, Chapter 1: "Getting Started" and Chapter 2: "Installing Your System."

Install External SCSI Devices

Overview

Each system can be configured to have various SCSI peripheral devices.

This section describes how to connect the SCSI devices (tape drives, CD-ROM drives, and external hard disks) to the computer. The procedures outlined include the following:

- Set the SCSI device IDs
- Connect the SCSI devices to the computer.

⇒ NOTE:

The SCSI hard disks will be configured/partitioned during the installation of the *Solaris 2.5.1* operating system.

Additional References

For additional information, see the following documentation:

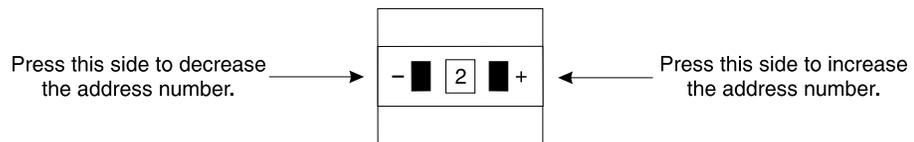
- *Sun Solaris 2.x Handbook for SMCC Peripherals*, Chapter 2: "Setting Up Disk Drives," Chapter 3: "Setting Up Tape Drives," and Chapter 4: "Setting Up CD-ROM Drives"
- *SPARCstorage UniPack User's Guide*
- *SPARCstorage UniPack Installation*.

Set the SCSI IDs and Label the Devices

Each SCSI device on the SCSI bus must have a unique address or SCSI ID. Also, after you partition the disk drives and they are shipped to the customer site, the SCSI devices must be connected in the same way they were connected at the factory. To ensure that this occurs, you need to set the SCSI ID and label the drives appropriately.

To set the SCSI IDs, do the following:

1. Locate the target address switch on the rear panel of the SCSI device (see the figure below).



2. Identify which SCSI IDs will be associated with each of the devices on a specific SCSI bus (see the three following tables).
3. Press the left or right button of the switch until the appropriate SCSI ID number appears in the window.

Device	SCSI ID	Node	Location
Base Disk	3	c0t3	Internal
Disk #2	1	c0t1	Internal
4-8 GB SLR Tape Drive ^a	4	c0t4	External
5-GB or 14-GB 8mm	5	c0t5	External
CD-ROM	6	c0t6	Internal
Disk #3	2	c0t2	External
Disk #4	0	c0t0	External
SCSI Controller	7	N/A	Internal

^aThis tape drive replaces the QIC 2.5-GB Tape Drive, which is no longer available.

Device	SCSI ID	Node	Location
Disk #5	1	c1t1	External
Disk #6	2	c1t2	External
Disk #7	3	c1t3	External
Disk #8	4	c1t4	External
SCSI Controller	7	N/A	Internal

Device	SCSI ID	Node	Location
Disk #9	1	c2t1	External
Disk #10	2	c2t2	External
Disk #11	3	c2t3	External
Disk #12	4	c2t4	External
SCSI Controller	7	N/A	Internal

Additional References

For additional information, see the following documentation:

- *Sun Solaris 2.x Handbook for SMCC Peripherals*, Chapter 2: "Setting Up Disk Drives," Chapter 3: "Setting Up Tape Drives," and Chapter 4: "Setting Up CD-ROM Drives"
- SPARCstorage UniPack User's Guide
- *SPARCstorage UniPack Installation*.

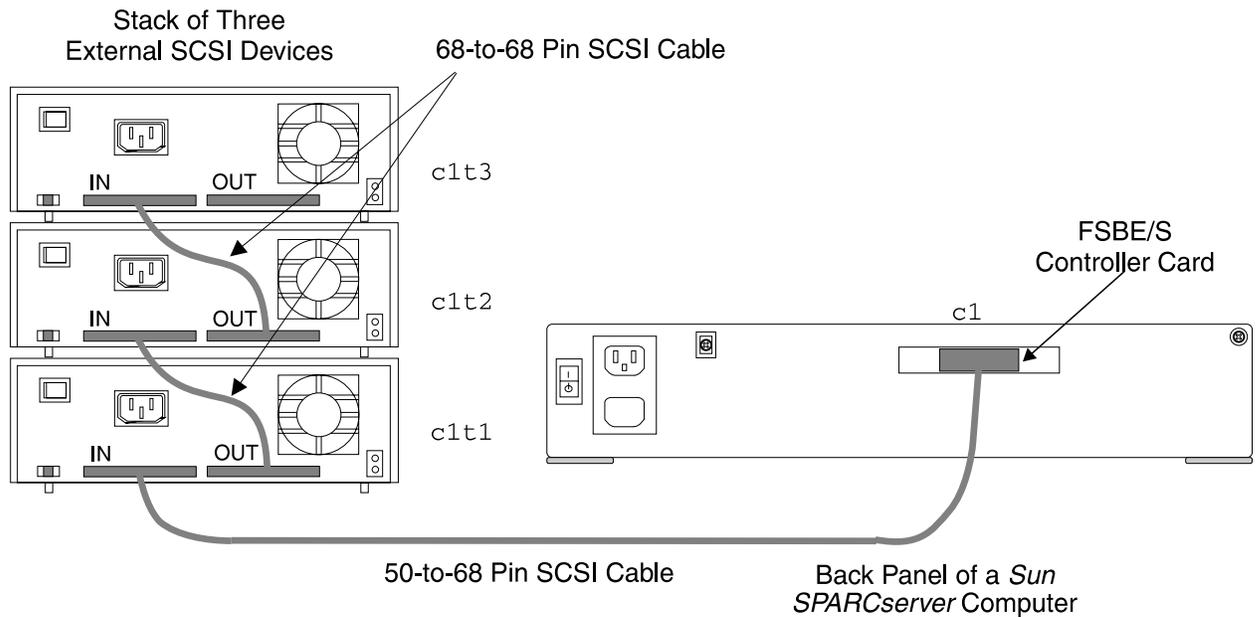
Connect External SCSI Devices

This section describes how to connect the SCSI devices (tape drives, hard disks, etc.) to the *Sun SPARCserver* computer.

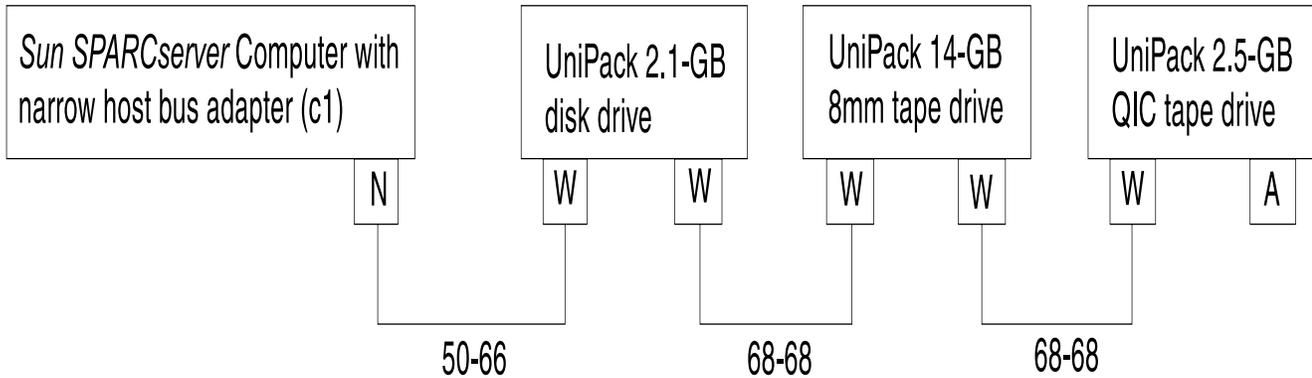
The following figure shows how to connect UniPack SCSI devices. A SCSI cable is connected from the controller card port on the back of the *Sun SPARCserver* to the in-connector on the back of the UniPack device that is closest to the *SPARCserver* in the chain. Another SCSI cable is then connected from the out-connector of that device to the in-connector

of the next device. Continue this process until all assigned devices are connected in the SCSI chain.

Since UniPack devices are auto-terminated, the last UniPack device in a SCSI chain does not require a terminator. To verify that the last UniPack device is terminated, check the LEDs on the back panel of the device labeled Auto Term High and Auto Term Low. In a CMS configuration, both LEDs are lit on the last device in the SCSI chain. If a UniPack device in the SCSI chain is not the last device, then neither termination LED should be lit.



The figure below shows two SCSI cabling schemes that are possible with *Sun SPARCserver* computers.



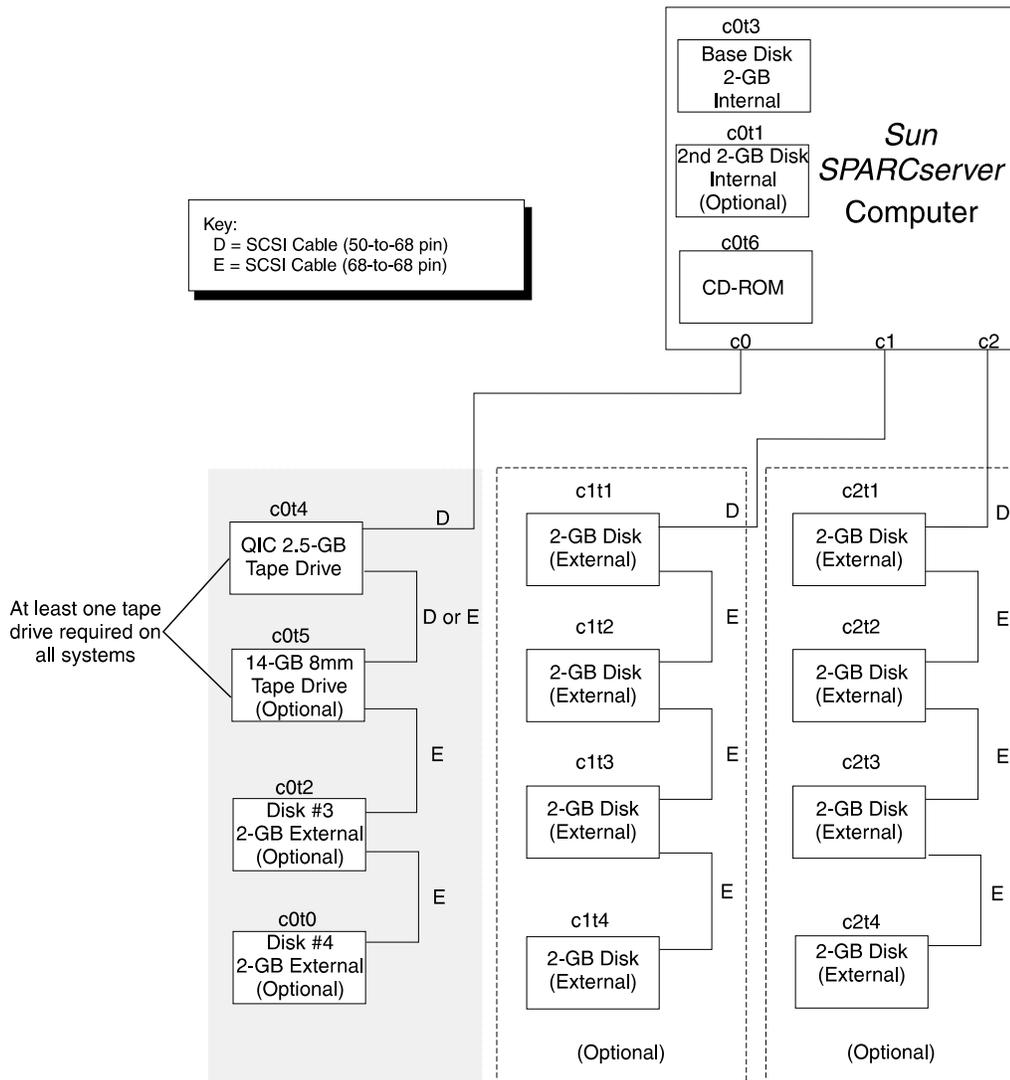
W= 68-pin wide SCSI III bus connection
 N = 50-pin narrow SCSI II bus connection
 A = Auto-terminated

You can have up to three SCSI controllers on your system. One is built into the *Sun SPARCserver* computer and the other two are provided through FSBE/S controller cards (see the table below). Controller *c1* is the first FSBE/S card and controller *c2* is the second. The system determines which FSBE/S card is first (*c1*) by searching the SBus slots. See the "Install the Sun SPARCserver Computer," chapter, "Example of Show-SBus Command (No SBus Expansion Subsystem)" section, for an example.

SCSI C0	SCSI C1	SCSI C2
Built into the <i>Sun SPARCserver</i> Computer	1st FSBE/S card	2nd FSBE/S card

Connect all external SCSI devices to the computer. The following figure shows how to daisy-chain the SCSI bus through these devices. In addition, you need to make the power connections for the drives.

The following figure shows the maximum number of external drives configured for the *Sun SPARCserver* computer. If the customer's external configuration is less than maximum, then the number of devices in each chain will vary.



Additional References

For additional information, refer to the following documentation:

- *Sun Solaris 2.x Handbook for SMCC Peripherals*, Chapter 2: “Setting Up Disk Drives,” Chapter 3: “Setting Up Tape Drives,” and Chapter 4: “Setting Up CD-ROM Drives”
- SPARCstorage UniPack User’s Guide
- *SPARCstorage UniPack Installation*.

Connect A Network Hub Unit

Overview

This section describes how to connect the network hub unit(s) to the *Sun SPARCserver* computer using Unshielded Twisted-Pair (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.

Two different types of network hub units can be used:

- Allied Telesis MR820T network hub unit (uses standard UTP network cables)
- StarLAN fiber-optic hub unit (uses fiber-optic network cables).

The standard *CentreVu* CMS configuration uses the Allied Telesis - MR820T network hub unit. The StarLAN Fiber-Optic Hub can be used when you need more distance between the hub unit and the NTS(s). The table below outlines the maximum distances associated with each type of network cable being used.

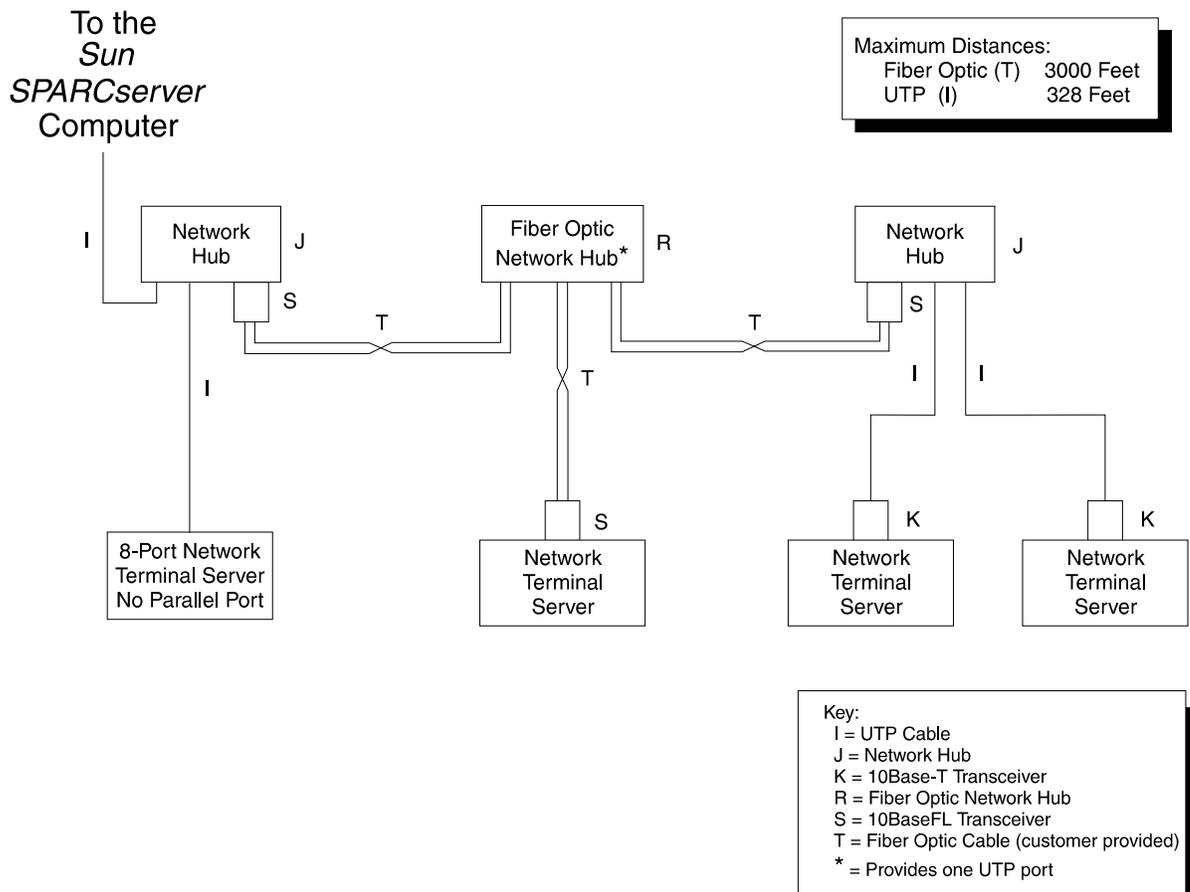
Type of Cable	Maximum Cable Distance
Unshielded Twisted Pair (UTP) (Category 3 or 5)	100 meters / 328 feet
15-pin AUI	100 meters / 328 feet
Fiber-optic cable (62.5mm dual strand cable)	3000 feet

If you need more distance between the network hub unit and the NTS(s), see "Optional Fiber-Optic Network Configurations."

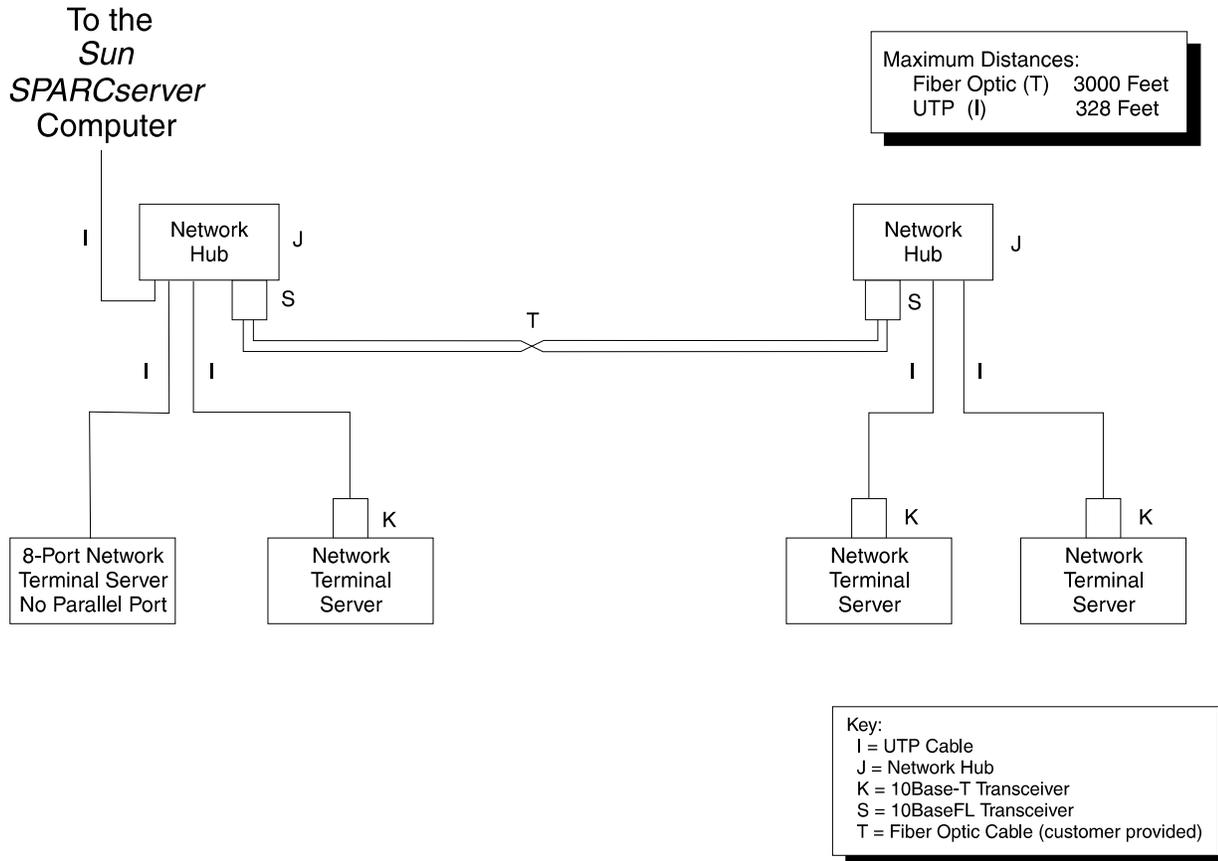
Optional Fiber-Optic Network Configuration

This section briefly describes additional 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.

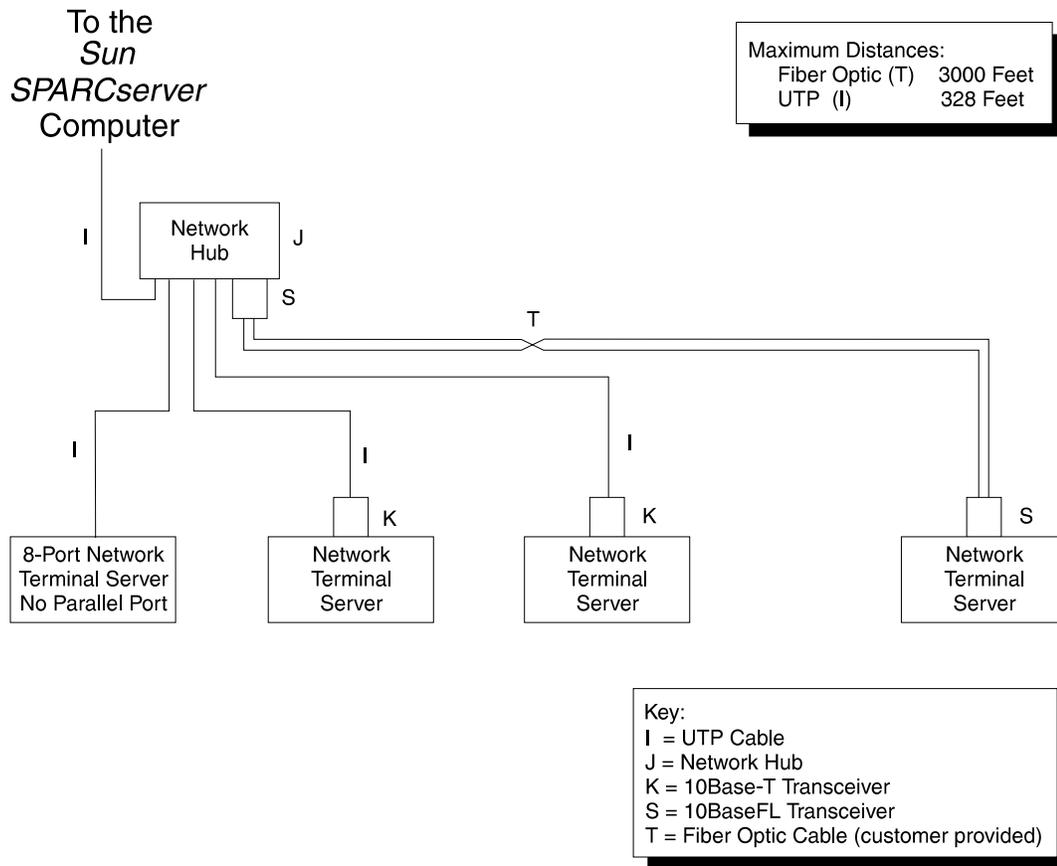
The configuration shown in the figure below illustrates two network hubs connected through a fiber-optic network hub. This configuration allows the network to be spread across multiple buildings. For example, this would be useful in a situation where the *Sun SPARCserver* computer, network hub, and one NTS were located in one building, the fiber-optic hub and another NTS were located in an adjacent building, and another network hub with two additional NTSs were located in another adjacent building.



The configuration shown in the figure below illustrates two network hubs connected with a fiber-optic cable. This configuration allows the network to be spread across two adjacent buildings. For example, this would be useful in a situation where the *Sun SPARCserver* computer, network hub, and two NTSs were located in one building, while the other network hub and remaining two NTSs were located in an adjacent building.



The configuration shown in the figure below illustrates a network hub connected to four NTSSs. This configuration allows the network to be spread across multiple buildings. For example, this would be useful in a situation where the *Sun SPARCserver* computer, network hub, and three NTSSs were located in one building, while an additional NTSS was located in an adjacent building.



Install the Allied Telesis Network Hub Unit

This section describes how to connect the Allied Telesis network hub unit to the *Sun SPARCserver* computer. This hub unit may be used in conjunction with other network hub units.

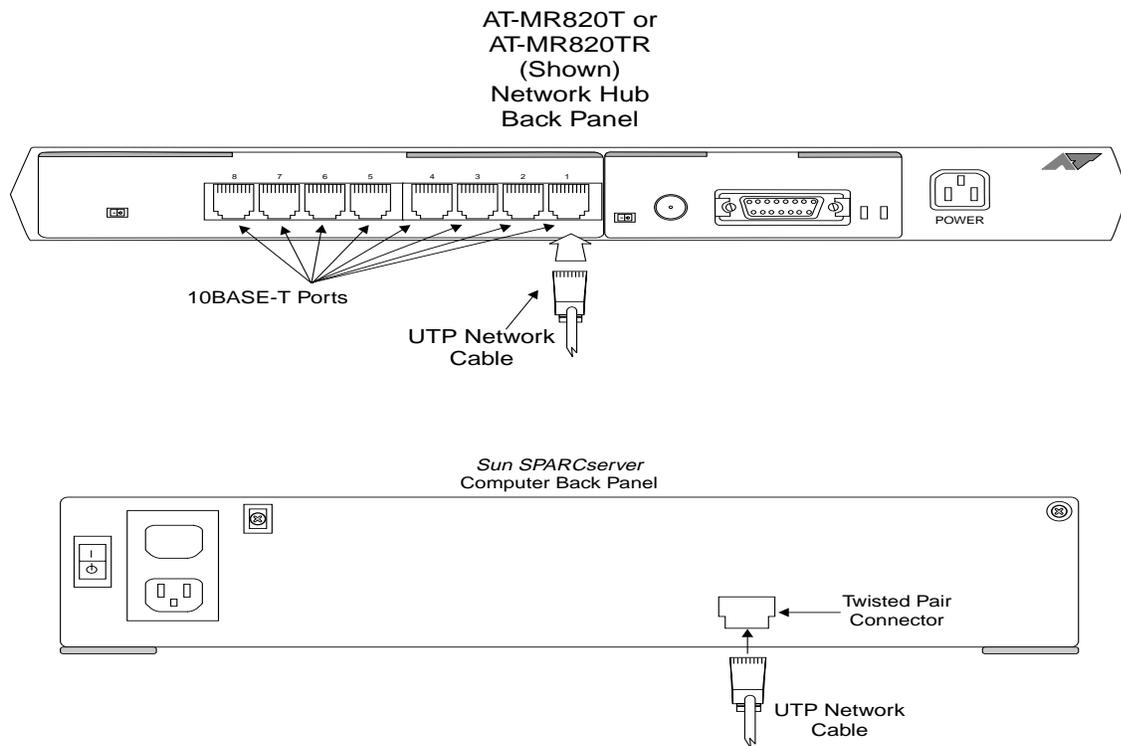
Procedure

To connect a network hub unit to the *Sun SPARCserver* computer, do the following (see the figure below):

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 SPARCserver* computer.

Use the UTP cable that came with your *Sun SPARCserver* computer (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 (see the figure below).



Additional Reference

For additional information, refer to the *Allied Telesis CentreCOM* AT-820T Multiport 10Base-T Micro Repeaters Users Manual*, Chapter 2: "Installation."

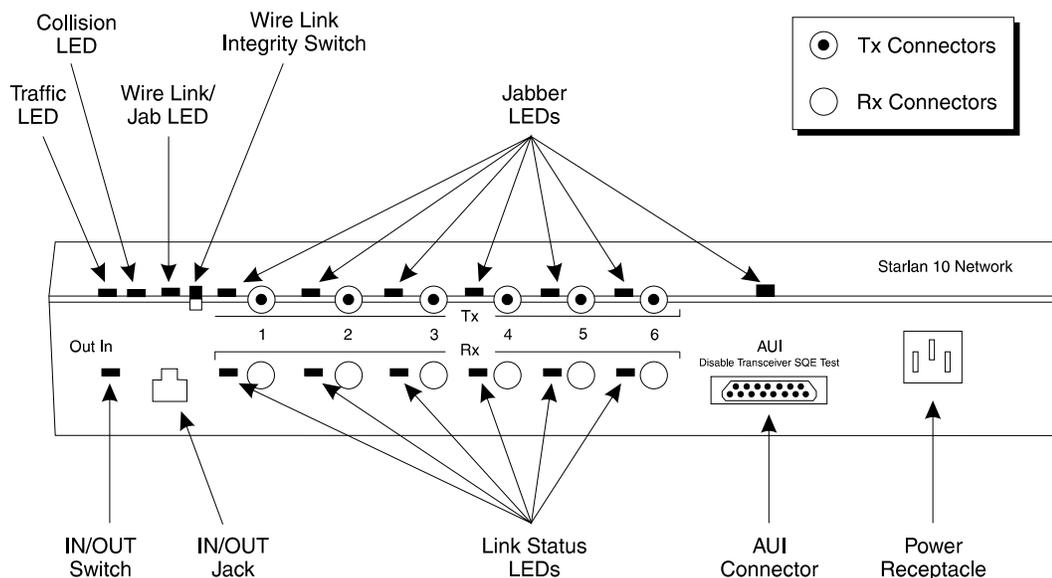
Install the StarLAN 10 Network Fiber-Optic Hub Unit

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

Procedure

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

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 into the Tx (transmit) and Rx (receive) connectors on the front of the network fiber-optic hub unit (see the figure below).



*CentreCom is a registered trademark of Allied Telesis.

The fiber-optic cable has two plugs on each end. Generally, the two plugs are color-coded or identified in some other manner. Note which plug was attached to the Tx and Rx ports on the hub unit.

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

Connect the plugs just opposite of how they were connected at the other end (that is, the plug that was attached to the Tx port at the other end should be connected to the Rx port at this end, and the plug that was attached to the Rx port at the other end should be connected 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 Server (NTS) to the Network Hub Unit

This section describes how to connect the 8-, 16-, or 64-port NTS(s) to the network hub unit (see the two following figures). This section also describes how to connect the four 16-port NTS patch panel(s) 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 12 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.

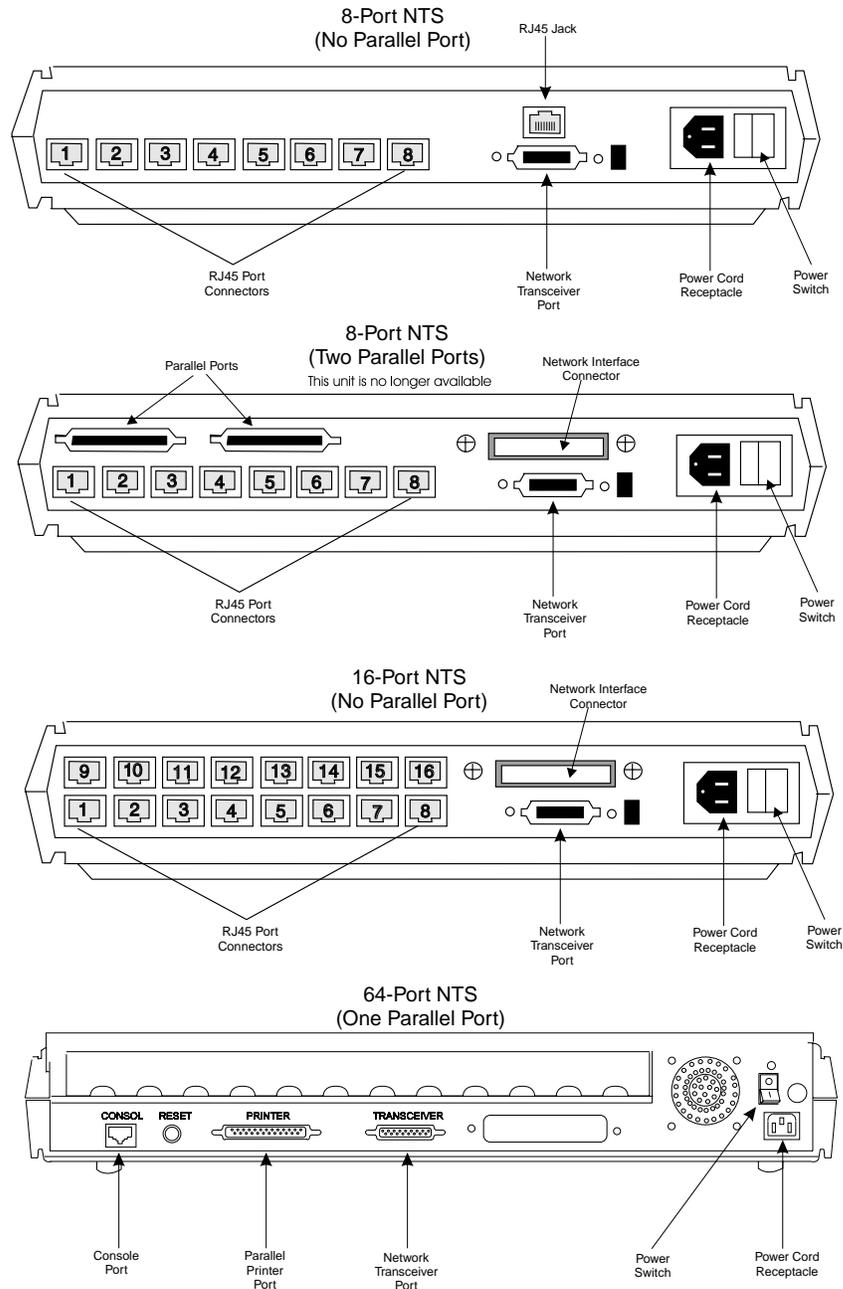
⇒ NOTE:

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), then follow the procedure outlined in the *CentreVu Call Management System, Release 3 Version 6, Software Installation and Maintenance* document 585-215-866, Appendix B Factory Software Installation Procedures, "Administer the Network Terminal Server."

Additional References For additional information, refer to the following documentation:

- *Network Terminal Server: Hardware Installation Guide*, Chapter 2: "Installing the NTS."
- *Xylogics* Micro Annex Communications Server Hardware Installation Guide*, Chapter 2: "Installing the Micro Annex."

The two following figures shows NTS(s) and network hub connectivity.



*Xylogics is a registered trademark of Xylogics, Inc.

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

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 an UPS (if equipped).
3. Plug one end of the UTP cable into a 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

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.

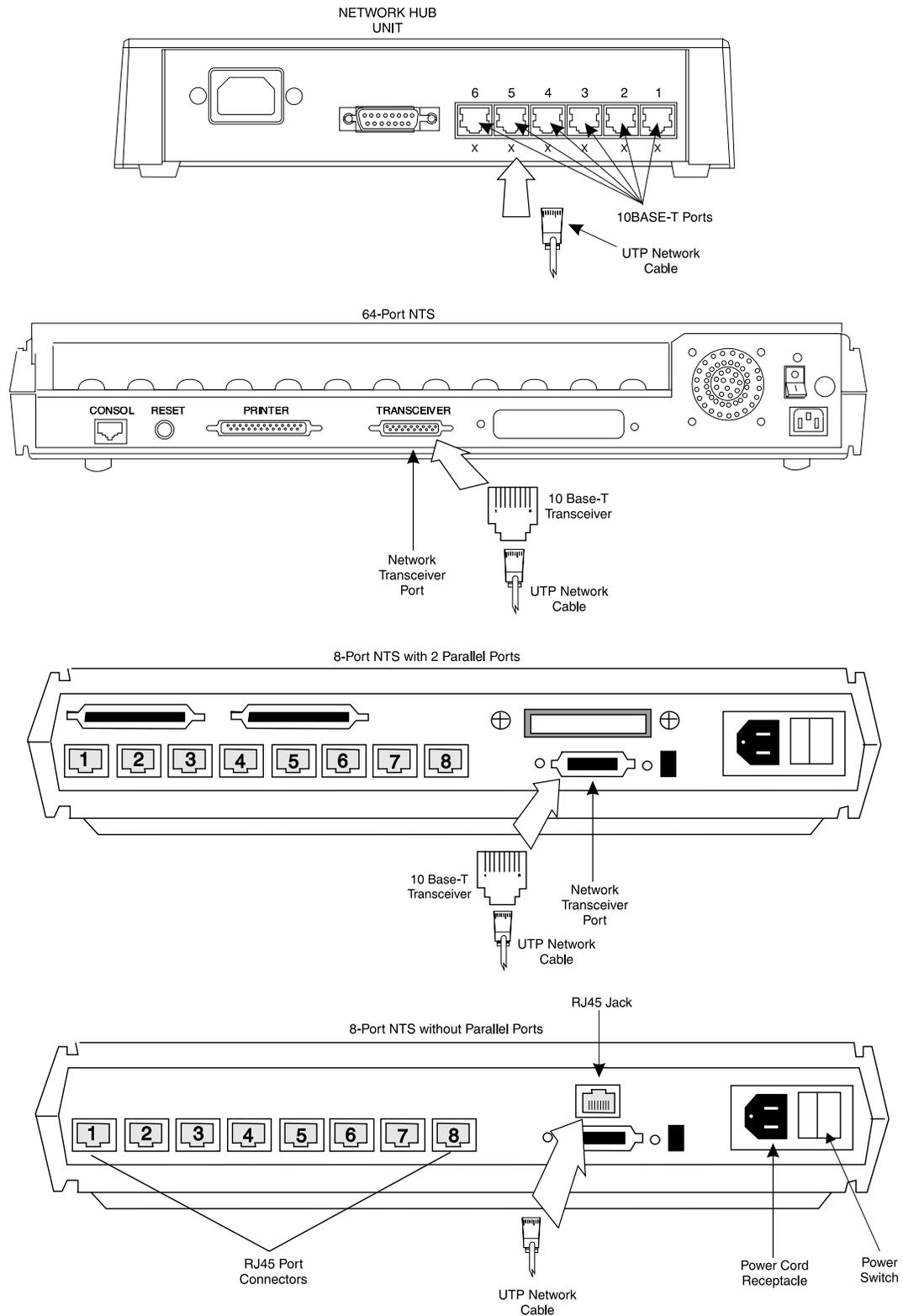
⇒ NOTE:

You may have an older version of a 10Base-T transceiver which allows you to physically change three switch settings: SQE, Link, and LRT. If you have this older version, verify that the switch settings are set to the following:

- SQE = Off
- Link = On
- LRT = Off.

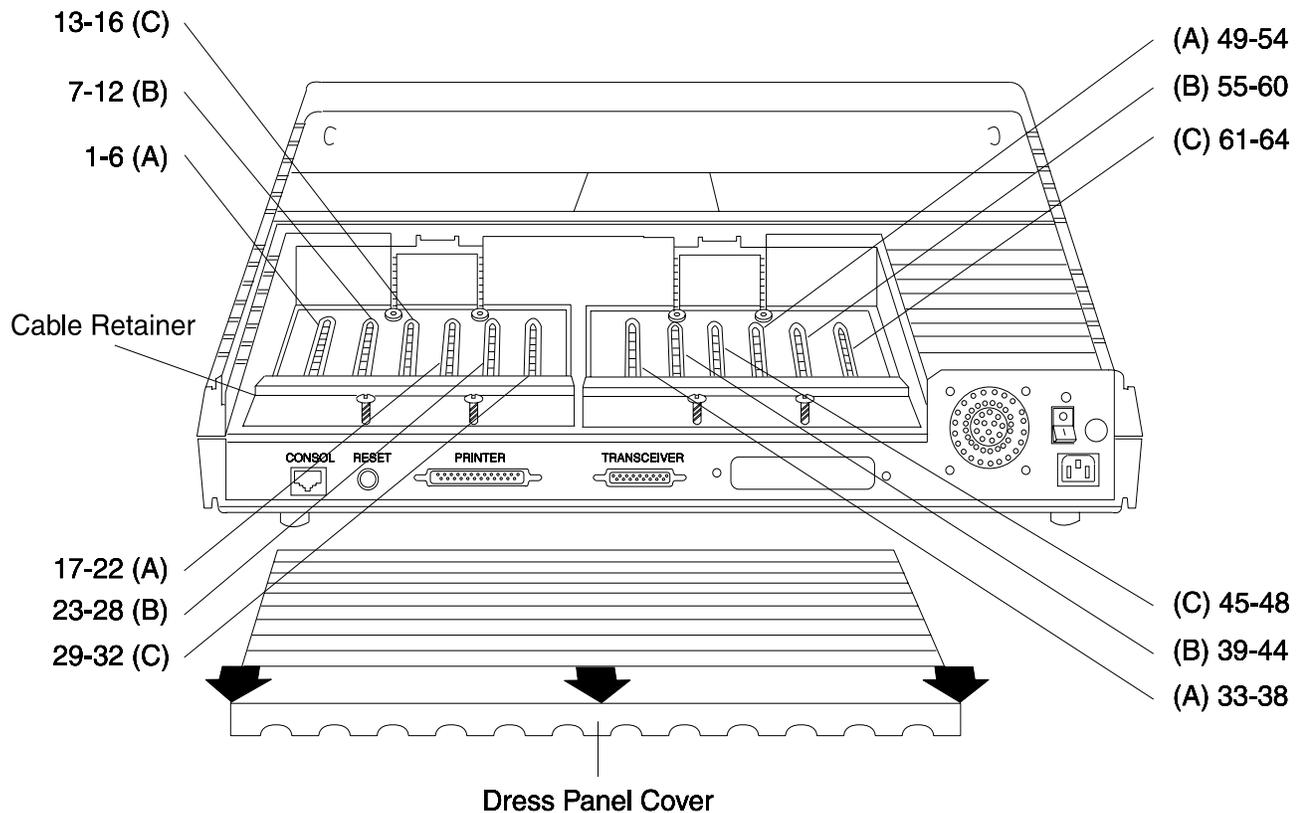
7. Plug the other end of the UTP cable into the transceiver previously connected to the back of the NTS.

The figure below shows the network hub and NTS connectivity.



Connect the NTS Patch Panel to the 64-Port NTS

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

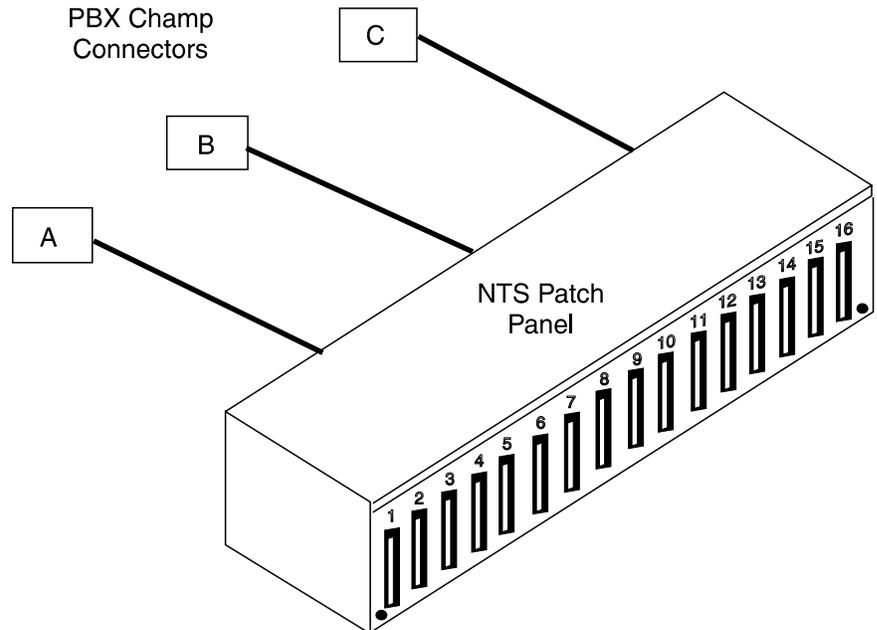


Procedure

To connect a 16-port NTS patch panel (see Figure D-45) to the 64-port NTS (see the figure above), do the following:

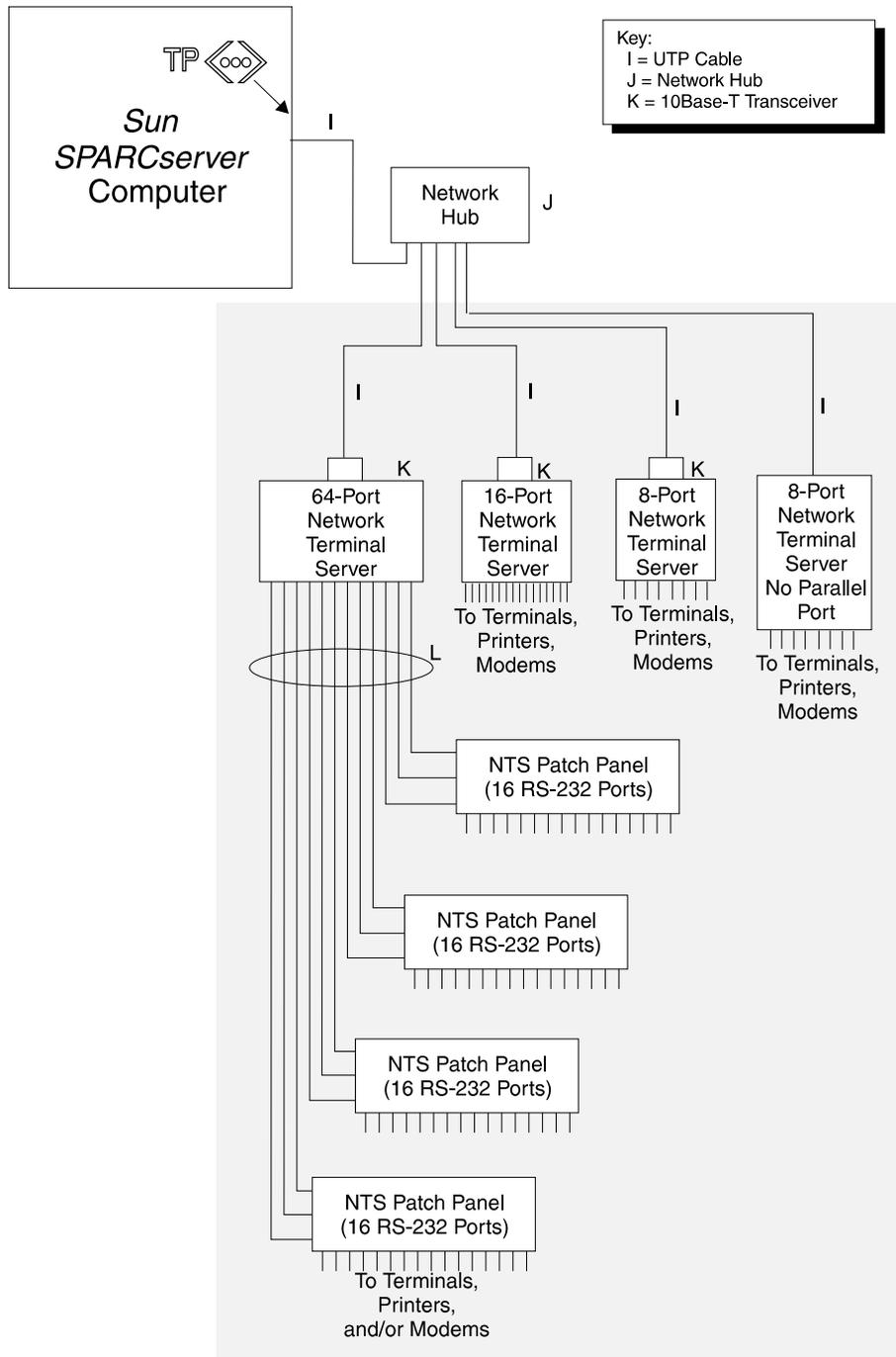
1. Remove the dress panel cover of the NTS by sliding it toward the back of the NTS. (This cover is located on the top back corner of the NTS.)
2. Slide the cable retainer back to allow room for the cable(s).
3. Position the 16-port patch panel in the location selected by the customer.
4. Connect the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

Each 16-port patch panel has three connectors (see the figure below) which connect to the PBX-champ connectors located inside the NTS (see the previous figure). 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. See the following figure for a graphical view of the network terminal server connectivity.



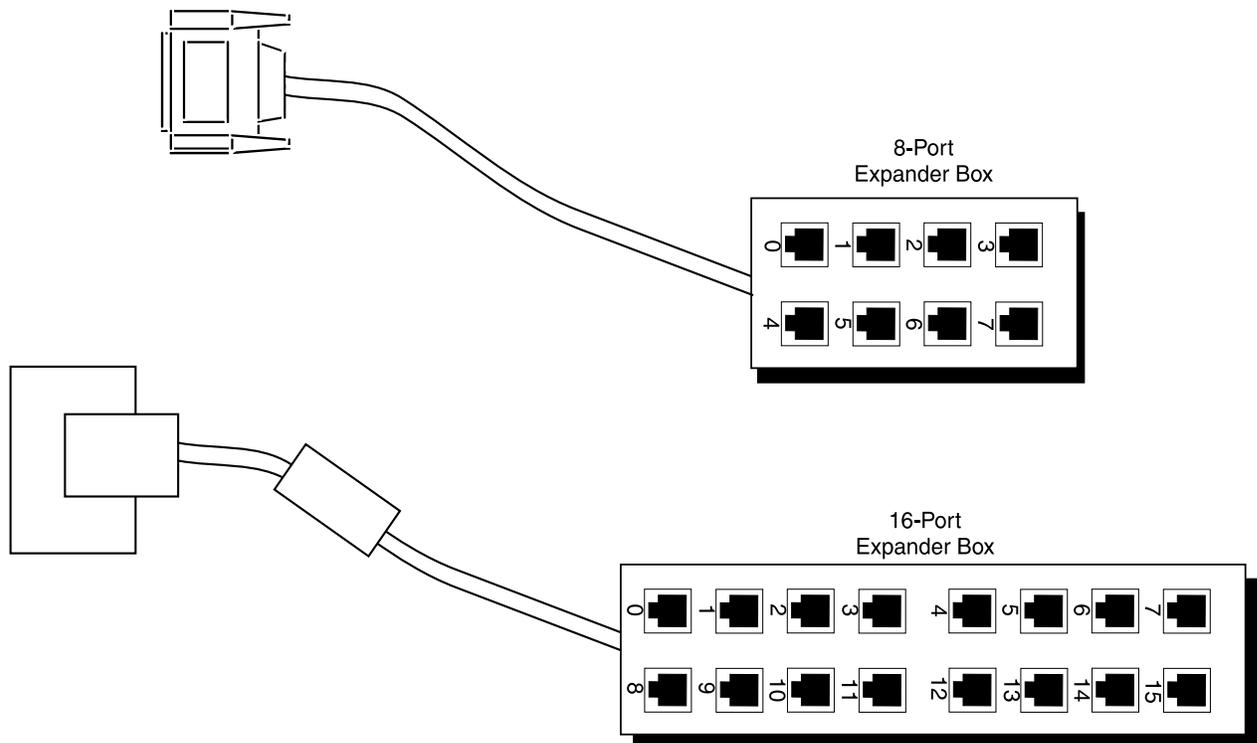
Install the Aurora SBus *Multiport* Card

Overview

The Aurora SBus *Multiport* card is used to connect terminals, printers, and modems to your *Sun SPARCserver* computer. In order to connect the 8- and 16-port expander box to the *Sun SPARCserver* computer, you must first install the SBus *Multiport* card. See the “Install SBus Cards” section in this chapter to do so.

Connect the 8- or 16-Port Expander Box

Each SBus *Multiport* card is shipped with an expander box that attaches to the *Multiport* card and breaks out the new ports (see the figure below).



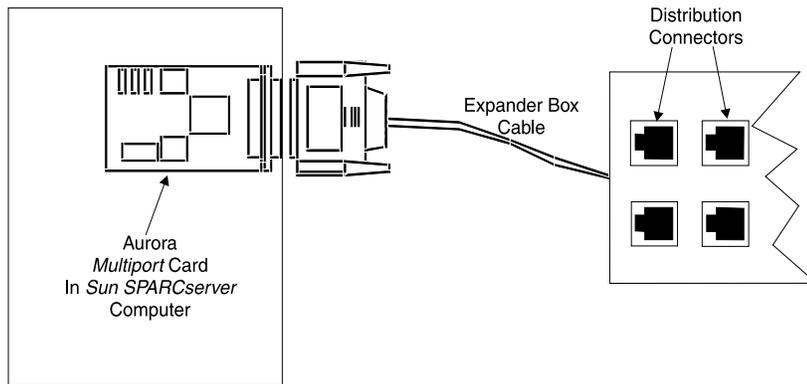
⇒ NOTE:

Ports 12-15 on the 16-port expander box cannot be used to connect modems.

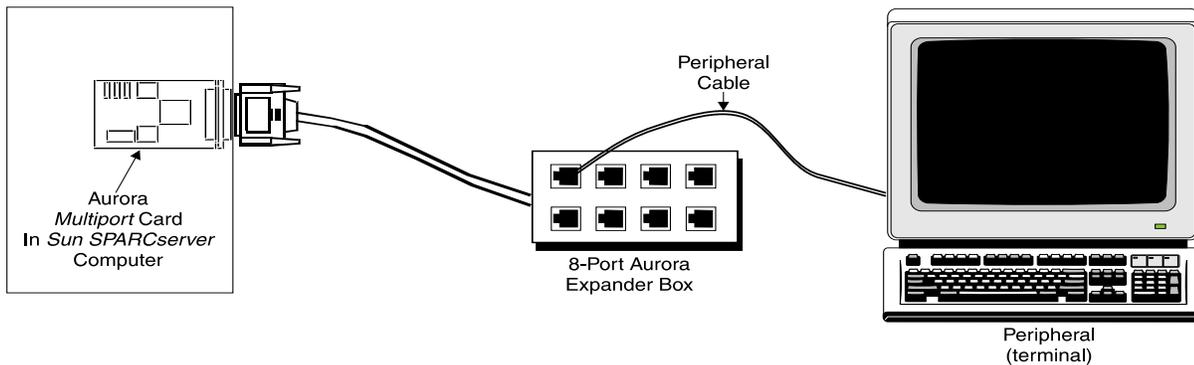
Procedure

To connect a peripheral device to the expander box, do the following:

1. Attach the expander box cable to the SBus *Multiport* card. Tighten the thumbscrews securely. See the figure below.



2. Choose the correct peripheral cable.
3. Attach one end of the cable to the peripheral, and the other end to one of the expander box connectors (see the figure below).



4. Record the slot number of the SBus *Multiport* card and the port number the peripheral is connected to. The breakout connectors are numbered to match the device names that will be created when the driver software is installed. You will need to know which port the peripheral was connected to when you set up port services for it.

 **NOTE:**

If you have more than one expander box installed on your system, the port numbers connecting peripherals will follow a specific ordering sequence defined by the Aurora software. See the Maintenance and Upgrades manual, “Identifying Device Entry Names for Ports on the Aurora Expander Box” for details on ordering sequence.

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.

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

†*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 10^9 bytes (1,000,000,000).

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> system 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.
<i>INFORMIX</i>*	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> system 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 10^6 bytes (1,000,000).
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> systems 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 1 and 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 System V Release 4</i> . CMS requires <i>Solaris</i> to run on the <i>Sun SPARCserver</i> computer or <i>Sun Enterprise 3000</i> system.
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> system 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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