



585-215-112

Call Management Systems (CMS)

V1 Installation and Maintenance

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Introduction

1

General Information

This document was written for AT&T service personnel who install, set up, and maintain the AT&T WGS computers that will be running *Release 3.0* of the Call Management System software application.

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

⇒ NOTE:

The factory hardware/software installation procedures can be found in Appendix E, "Factory Hardware/Software Installation Requirements."

This document is used primarily as a guide by Tier 1 technicians to do the following on-site tasks for the Release 3.0 CMS software:

- Verify that all the prerequisite hardware/software has been installed on the AT&T 6386 WGS computer.
- Connect and set up the terminals and printers.
- Connect and set up the peripherals associated with the Remote Management Package. These peripherals include:
 - Remote Console
 - Uninterruptible Power Supply

— Silent Knight Autodialer* (optional).

- Install the hardware connection between the WGS computer and an AT&T switch.

This document is also used by a Release 3.0 CMS trained engineer located at the Technical Support Center (TSC) to do the following remote tasks:

- Set up the Release 3.0 CMS software on a WGS computer (this is done in conjunction with the on-site technician)
- Install the Release 3.0 CMS-related software packages (Vectoring, Forecasting, and Graphics) on a WGS computer
- Test the Release 3.0 CMS software for acceptance
- Upgrade the Release 3.0 CMS software
- Maintain the Release 3.0 CMS software
- Troubleshoot the Release 3.0 CMS software.

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How the Release 3.0 Call Management System Works

The Release 3.0 Call Management System (Release 3.0 CMS) is a software application that has been designed to run on the AT&T WGS (80386 based) computers.

The Release 3.0 CMS software is used by business customers who have an AT&T telecommunications switch and who receive a large volume of telephone calls that are processed through the Automatic Call Distribution (ACD) feature of the switch. The Release 3.0 CMS software and the AT&T switch communicate through a hardware link that allows the switch to transfer ACD information to the Release 3.0 CMS host computer system.

* Registered trademark of Silent Knight Security Systems.

The Release 3.0 CMS software compiles, formats, and stores the information received from the ACD into a database that can be viewed on-line by the customer. The customer can monitor the real-time ACD activities via the CMS host computer and the Release 3.0 software to determine if the ACD should be reconfigured to provide the most efficient service possible for the calling public.

In a Release 3.0 CMS environment, the CMS host computer can be connected to the following AT&T telecommunications switches:

- AT&T DEFINITY* Communications System Generic 3r
- AT&T DEFINITY Communications System Generic 3i
- AT&T DEFINITY Communications System Generic 2, Issue 2.1
- AT&T DEFINITY Communications System Generic 2, Issue 2.2
- AT&T System 85, R2V4, Issue 1.0 or later
- AT&T DEFINITY Communications System Generic 1, Issue 1.1.

How the Release 3.0 CMS Software Application Is Installed

To simplify the installation process, the prerequisite hardware/software should have already been installed at the factory before the computer was shipped to the customer. The remaining tasks required to install the Release 3.0 CMS software application have been divided into on-site tasks and remote tasks.

The on-site tasks are performed by a Tier 1 technician at the customer's location while the remote tasks are performed by an engineer located at the Technical Support Center (TSC).

⇒ NOTE:

Although this document points out the different installation tasks performed by the on-site and remote site technicians, it can be used to do both the on-site and remote tasks at the customer's location.

* Registered trademark of AT&T.

Performing the On-Site Tasks

After unpacking and setting up the AT&T 6386 WGS computer, the on-site technician is also responsible for doing the following additional tasks:

- Verifying that the prerequisite hardware boards have been properly installed
- Verifying that the prerequisite software packages (UNIX* System V Operating System, X.25 Network Interface software, INFORMIX† SQL database software, and the Remote Management Utilities) have been installed
- Connecting the peripheral equipment (display terminals and printers)
- Installing the hardware connection (link connection) between the CMS host computer and the switch

⇒ NOTE:

A switch technician should be on-site to connect the link from the CMS host computer to the switch and to administer the switch, if necessary.

- Connecting the CMS host computer to the Technical Support Center
- Programming the Silent Knight Autodialer
- Turning the system over to the TSC

These on-site tasks must be completed *before* an engineer located at the TSC can set up the Release 3.0 CMS software.

* Registered trademark of AT&T.

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

Performing the Remote Tasks

After the on-site technician has completed the on-site tasks, the technician at the TSC will be responsible for doing the following Release 3.0 CMS installation tasks:

- Setting up the Release 3.0 CMS software (See Chapter 3)
- Installing the Release 3.0 CMS-related software packages (See Chapter 3)
- Turning the Release 3.0 CMS over to the customer (See Chapter 5, "Turning CMS Over to the Customer").

⇒ NOTE:

An on-site technician will be required at the customer's location to install and remove (as needed) cartridge tapes and floppy disks during a remote setup of the Release 3.0 CMS software.

⇒ NOTE:

After the on-site technician has done the on-site tasks, the remote engineer can set up the Release 3.0 CMS software from the TSC by logging into the customer's console port via the Remote Management Package (Remote Maintenance Card) and doing the Release 3.0 CMS software setup procedures, which are documented in the "Setting Up the CMS Software" section of Chapter 3.

Escalating a Problem

This section contains the escalation procedures that an AT&T service technician should use when a problem arises during or after the Release 3.0 CMS installation. Escalation procedures that should be followed by the customer are also included.

How a Technician Escalates a Problem During or After the Installation

If you encounter a hardware or software problem during or after the Release 3.0 CMS installation while you are at the customer's location, you should do the following:

1. Try to fix the problem immediately.
2. If you find that you cannot solve the problem, escalate the problem by calling the Technical Support Center (TSC) at 1-800-248-1234.
3. Provide the technical support personnel at the TSC with the customer's name, the password for the *root* login ID on the customer's CMS host computer, the phone number of the customer's dial-in port, and a description of the problem.

If the technicians at the TSC cannot solve the customer's problem, they will escalate the problem to a Tier 4 technician in the Field Support Organization of the AT&T Bell Laboratories.

How the Customer Escalates a Problem After Installation

After the installation, the customer can escalate an ACD switch feature, WGS hardware, or Release 3.0 CMS software problem **by calling the AT&T ACD/CMS Helpline at 1-800-344-9670.**

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

⇒ NOTE:

The customer will be prompted to identify the type of problem (ACD, 6386 WGS hardware, or Release 3.0 CMS) and will be connected to the appropriate service organization.

If a customer feels that the problem is not being resolved in a timely manner, the customer should contact the Systems Consultant (SC) who will then escalate the problem through the Marketing Branch Office (MBO) or the Services Organization.

Understanding Terminal Dialog

While doing some of the procedures in this document, you will have to use a terminal to enter a command or a response to a computer message. The information that you enter on the terminal and receive from the computer is known as *terminal dialog*. When terminal dialog is used, it will usually be set apart from the surrounding text like this:

```
# vi <filename>
```

Angle brackets are used to show parts of the dialog that are customer dependent or session dependent. For example, to execute the **vi** editor command on a file called *junk*, you could replace *<filename>* with *junk* as follows:

```
# vi junk
```

Always terminate a response to a computer message by pressing the **RETURN** key.

Other Documents You May Need

You may need to reference the following documents while installing the Release 3.0 CMS software application:

- *AT&T 6386/25 Work Group System SCSI User's Guide* (562-200-103, Issue 2)
- *AT&T 6386E/33 Work Group System Model S Technical Reference Manual Operational and Service Related Tasks Volume 2* (305-915, Issue 1)
- *UNIX System V/386 Release 3.2.3 Operations/System Administration Guide*

-
- *UNIX System V/386 FACE User's/Administrator's Guide*
 - *AT&T 3B2 Computer and 6386 Work Group System SCSI Installation Manual (305-011)*
 - *AT&T DEFINITY Communications System Generic 3r Implementation (555-230-651, Issue 1)*
 - *AT&T DEFINITY Communications System Generic 3r Maintenance (555-230-105, Issue 1)*
 - *AT&T DEFINITY Communications System Generic 3r Upgrades and Additions (555-230-106, Issue 1)*
 - *AT&T DEFINITY Communications System Generic 3r Wiring (555-204-XXX, Issue 1)*
 - *AT&T DEFINITY Communications System Generic 3i Implementation (555-230-650, Issue 1)*
 - *AT&T DEFINITY Communications System Generic 2 Administration of Features and Hardware (555-104-507, Issue 1)*
 - *AT&T System 85 Feature Translations Service Manual Release 2, Version 4 (555-103-107, Issue 1)*
 - *AT&T DEFINITY Communications System Generic 1 and Generic 3i Wiring (555-204-111)*
 - *AT&T DEFINITY Communications System Generic 1 and Generic 3i Installation and Test (555-204-104, Issue 2)*
 - *AT&T DEFINITY Communications System Generic 1 and Generic 3i Maintenance (555-204-105, Issue 4)*
 - *AT&T DEFINITY Communications System Generic 1 Implementation Manual (555-204-654, Issue 1)*
 - *AT&T DEFINITY Communications System Generic 1 Wiring Manual (555-204-111)*
 - *AT&T DEFINITY Communications System Generic 1 Installation and Test (555-204-104)*
 - *AT&T DEFINITY Communications System Generic 1 Maintenance (555-204-105)*

The *CMS Administration* (585-215-511) document contains detailed information on how to administer and use the Release 3.0 CMS software application. After the CMS software has been installed and the system has been turned over to the customer, the customer's CMS administrator should use the *CMS Administration* document to administer the Release 3.0 CMS software application.

Connecting the Hardware — 6386 WGS to Switch

2

General Information

After the 6386 WGS computer and the AT&T switch have been installed, follow the procedures in this chapter to:

- Connect the 705MT (console) terminal to the 6386 WGS
- Verify that the prerequisite software has been installed by the factory
- Connect additional terminals/printers to the 6386 WGS
- Connect the 6386 WGS computer to the AT&T switch
- Connect the 6386 WGS computer to the Remote Maintenance Center
- Program the Silent Knight Autodialer.

If you find that you do not have the parts required to complete any of the procedures in this chapter, refer to Tables 2-1 through 2-4 for a complete listing of the hardware and software Price Element Codes (PECs) associated with the Release 3.0 CMS for the WGS computer.

Table 2-1. Price Element Codes for 6386 WGS CMS

EQUIPMENT	PEC/ATTRIBUTE	COMMENTS
WGS 6386 25 SCSI Server	6950-DB4	
WGS 6386 33 SCSI Server	6950-DC2	
R3 CMS Software	1208-311/MSF13	1 to 100 agents
	1208-312/MSF13	1 to 200 agents
	1208-313/MSF13	1 to 300 agents
	1208-314/MSF13	1 to 400 agents
	1208-315/MSF13	1 to MAX agents
R3 CMS Vectoring	1208-3CV	
R3 CMS Forecasting	1208-3FC	
R3 CMS Graphics	1208-3GR	
UNIX System V	6950-BH5	Release 3.2.3
UNIX System V ISV/VAR Toolkit (Korn Shell)	1331-004	
INFORMIX SQL Software	1071-L10	Release 2.10.03J
X.25 Software	1274-XB0	Release 1.2.1
Upgrade 3B2 to 6386	1208-331	CMS Upgrade from R2 to R3

Table 2-2. Price Element Codes for 6386 WGS CMS (Contd)

EQUIPMENT	PEC/ATTRIBUTE	COMMENTS
GPSC-AT/E X.25 Kit	6950-CA4	
GPSC-AT/E RS-232 Cable	69627	Two port cable
Math Coprocessor	69575 69593	6386/25 MHz 6386/33 MHz
SCSI Host Adapter		
SCSI Connection Kit		
SCSI 1000 MB HDU	69626	Internal
SXM/1000 MB HDU	37982	External
2 MB SIMMS Memory Kit	69581	
4/16 MB Memory Expansion Board	69582	
IPC 1600 Ports Card	69617	
IPC 1600 Ports Cabinet	69618	
Remote Management Pkg	69601	
2400 FDX EC Modem	2224-CE0	
Uninterruptible Power Supply (UPS)	2403-036	360 VA
	2403-050	500 VA
	2403-201	1 KVA
	2403-204	2 KVA
	2403-203	3 KVA
	2403-203	5 KVA
Adapter (UPS)	69624	360 or 500 VA
	69604	1 KVA
	69612	3, 5, or 10 KVA
10 Pin In-line Connector	69628	

Table 2-3. Price Element Codes for 6386 WGS CMS (Contd)

EQUIPMENT	PEC/ATTRIBUTE	COMMENTS
D6AP-87 Cord	2725-06N	14 Feet
	2726-06S	25 Feet
M4AS Cable	2721-03G	7 Feet
	2721-03S	25 Feet
M4AU Cable	2721-04G	7 Feet
	2721-04S	25 Feet
Data Service Unit	2225-96B	Single modem
DATAPHONE* II Modem Stand-Alone Housing	2201-96C	9600 bps
	22631	For DATAPHONE II Modem
MPDM	2161-PDM	Modular Processor Data Module (MPDM)
RS-232 Interface Stand-Alone Housing	21611	For MPDM
	21702	For MPDM
MTDM	2162-TDM	Modular Trunk Data Module (MTDM)
RS-232 Interface Stand-Alone Housing	21621	For MTDM
	21702	For MTDM
ED-1E434-11, GR304	65254A/CCT01	Includes ED-1E434-11, GR13
ED-1E434-11, GR304	65254A/CCT02	Includes ED-1E434-11, GR13 and ED-1E434-11, GR342
ED-1E434-11, GR309	2726-03L	RS-232C 12 Feet
	2726-03S	RS-232C 25 Feet
	2726-03V	RS-232C 50 Feet
ED-1E367-11, GR971	64625-CBL03	RS-449 16 Feet Includes ED-1E367-11, GR970
ED-1E367-11, GR972	64625-CBL04	RS-449 29 Feet Includes ED-1E367-11, GR970
ED-1E367-11, GR973	64625-CBL05	RS-449 49 Feet Includes ED-1E367-11, GR970
ED-1E367-11, GR974	64626-CBL06	RS-449 7 Feet Includes ED-1E367-11, GR970 and ED-1E367-11, GR978
H600-362		RS-232 to RS-449 for IDI installation on Generic 1 & Generic 3i

Registered trademark of AT&T.

Table 2-4. Price Element Codes for 6386 WGS CMS (Contd)

EQUIPMENT	PEC/ATTRIBUTE	COMMENTS
ED-1E367-11, GR975	64626-CBL07	RS-449 20 Feet Includes ED-1E367-11, GR970 and ED-1E367-11, GR978
ED-1E367-11, GR976	64626-CBL08	RS-449 40 Feet Includes ED-1E367-11, GR970 and ED-1E367-11, GR978
IDI	65399A 65399A/CCT01 65399A/CCT01 65399A/CCN06	Single Common Control Dupl. Common Control Transition Cable
Switch to IDI Cable	65399A/LNG21 65399A/LNG10 65399A/LNG11 65399A/LNG12 65399A/LNG13 65399A/LNG15 65399A/LNG16 65399A/LNG17 70308/LNG50	25 Feet 35 Feet 50 Feet 75 Feet 100 Feet 150 Feet 175 Feet 200 Feet For EIA Connection to Generic 3i and Generic 1
B25A Cable	2720-01E 2720-01K 2720-01P 2720-01R 2720-01T 2720-01W 2720-01Z	5 Feet 10 Feet 15 Feet 20 Feet 30 Feet 60 Feet 100 Feet
M25B Cable	2721-02A 2721-02D 2721-02K 2721-02S 2721-02V	1 Feet 4 Feet 10 Feet 25 Feet 50 Feet

Connecting the Console Terminal to the 6386 WGS

The 705 MT Terminal is the default console terminal. To properly set up the terminal, you may need to change some of the options on the Terminal Setup screen.

Refer to the *AT&T 705 Multitasking Terminal User's Guide* (999-300-733, Issue 2) for further instructions on how to change the options and operate the terminal.

Install the AT&T 705 MT as the console terminal. The 705 MT options should be set to the settings outlined in the following windows.

⇒ NOTE:

If additional information is needed, refer to the *AT&T 705 Multitasking Terminal User's Guide* (999-300-733, Issue 2).

User Preferences Window

The recommended user preference options are as follows:

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

Communications Options Window

The recommended communications options are as follows:

COMMUNICATIONS OPTIONS		
MAIN		AUX
port 1	Port Mapping	port 2
host	Port Service	printer
9600	Speed	9600
1 bit	Stop Bits	1 bit
7 bits	Data Bits	7 bits
space	Send Parity	space
no	Check Parity	no
off	Local Echo	-
off	Encoding	-
XON/XOFF	Generate Flow	XON/XOFF
XON/XOFF	Receive Flow	XON/XOFF
240	XOFF at	240
no	Transmit Limit	-
no	Answerback on Connect	-
Main	Clear Communication Port	Aux

General Options Window

The recommended general options are as follows:

GENERAL OPTIONS		
PRIMARY/WINDOW 1		WINDOW 2
705	Emulation	705
705	Terminal ID	705
no	Newline on LF	no
7 bits	Transmit Controls	7 bits
normal	Backspace Mode	normal
unlocked	User Features	locked
no	Conceal Answerback	no
(blank)	Answerback	(blank)

Display Options Window

The recommended display options are as follows:

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

Connecting the Console Terminal

The 705 MultiTasking terminal is used as the console terminal for the 6386 WGS running the Release 3.0 Call Management System software application.

To connect the 705 MT (as a console terminal) to the 6386 WGS, do the following (refer to Figure 2-1):

1. Connect the AT&T Straight Thru Adapter to the 9-pin serial interface port (Connection B - COM2) on the 6386 WGS.
2. Connect one end of the modular cable to the back of the AT&T Straight Thru Adapter.
3. Connect the other end of the modular cable to Port 1 on the 705 MT.

 **NOTE:**

If the 705 MT does not have a modular connection for port 1, the alternate console adapter must be used. See Figure 2-1.

To run diagnostic tests, the keyboard must be plugged into the system module keyboard connection.

Additional terminals and printers are connected to the Intelligent Ports Card (IPC) board and are administered using the UNIX FACE Administration tool. To connect (cable) additional terminals and printers, see the “Connecting Additional Terminals/Printers to the 6386 WGS” section in this chapter. To administer the associated ports on the IPC-1600 board, see the “Administering a New Terminal” or the “Administering a New Printer” section(s) of Chapter 6.

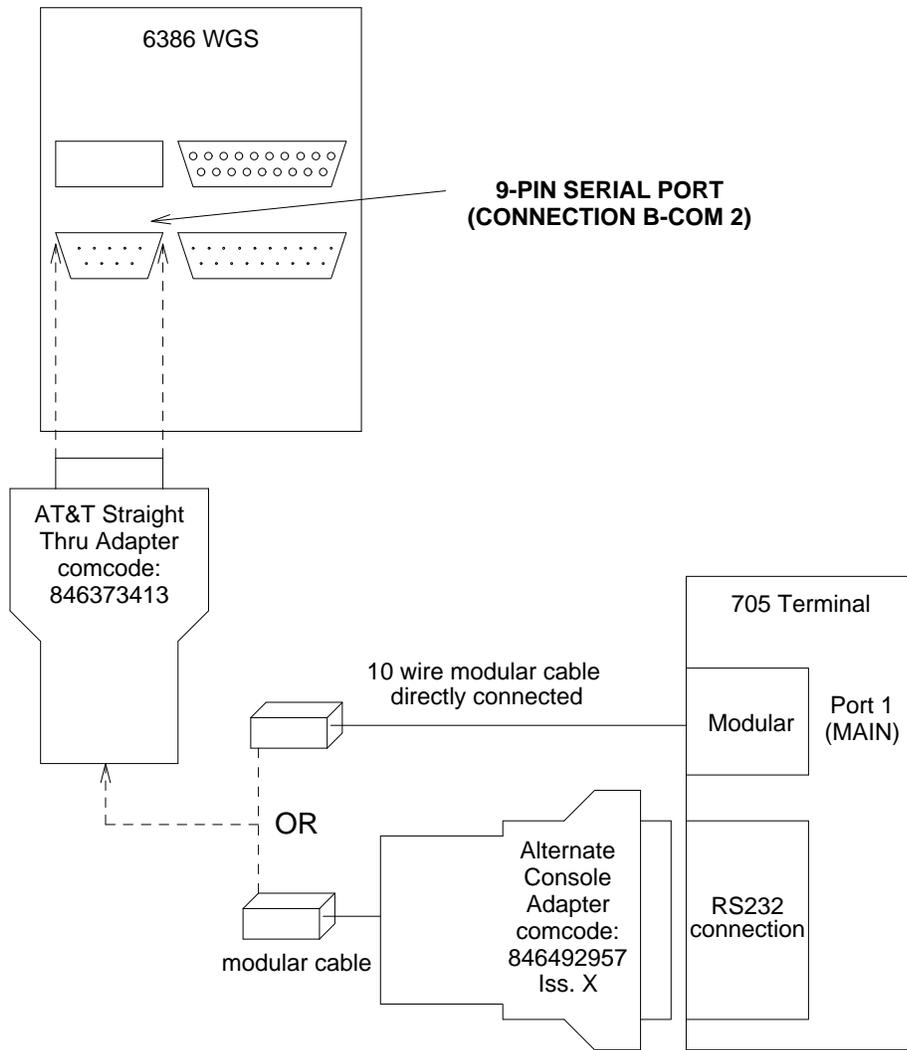


Figure 2-1. 705 MT Connections (as the CMS Console Terminal)

Verifying Software Package Installation

Once the console terminal has been installed, you can verify which software packages are installed on the 6386 computer. First, log in as *root* at the console terminal. Then, enter the **displaypkg** command. You should see a list of packages similar to the following:

```
    The following software packages have been installed:

Call Management System (3.X.Y)
Editing Package Version 2.1
FACE HELP Version 1.2
FACE Version 1.2.2
FMLI Version 1.2
INFORMIX-SQL
IPC-1600, Intelligent Ports Card - Version 1.0
KornShell Version 06/03/86a 386 Release 1.1
Network Support Utilities Package (1.2) Version 2.1
Remote Management Package (RMP) Version 1.0
SCSI Support Package - Version 2.0
Remote Terminal Package Version 2.1
UNIX System V/386 Release 3.2.3 2 to 16 User License Package
UNIX System V/386 Release 3.2.3 16 to Unlimited User Package
UNIX System V/386 Release 3.2 Version 2.3 Maintenance Disk #1
X25 Network Interface - Version 1.2.1 SL1.51.1.25
```

If you do not see a package that should be installed, go to the appropriate section Appendix E, "Factory Hardware/Software Installation Requirements" and install it.

Connecting Additional Terminals/Printers to the 6386 WGS

To enhance the functionality of the Release 3.0 CMS software application, additional terminals and/or printers may be connected to the IPC-1600 fanout module.

⇒ NOTE:

In order for the terminal/printer to communicate properly, the IPC-1600 port (that the terminal/printer is connected to) must be properly administered using the UNIX FACE utility. See the *Administering a New Terminal* or *Administering a New Printer* section of Chapter 6.

The type of cabling used to connect the peripherals to the computer depend on the type of cabling that may already be in place.

In some cases, the customer is upgrading from an R2 CMS (3B2 computer) to an R3 CMS (6386 WGS computer). If this is the case, they may want to leave their existing terminal/printer configuration as it is. This would require that existing terminal/printer cabling (8-wire) be connected to the R3 CMS machine. See the *Connecting Terminals/Printers to the 6386 WGS - 8-Wire Cabling* section of this chapter.

⇒ NOTE:

If the system is being upgraded and connected to an existing printer/terminal configuration, the old terminal/printer adapters must be discarded and replaced with the PDS Terminal/Printer Adapter (comcode 846362739.)

Connecting Terminals/Printers to the 6386 WGS - 10-Wire Cabling

In some cases, the customer configuration will connect terminals/printers to an R3 CMS (6386 WGS computer) using 10-wire modular cables. If this is the case, the customer will need the following for each terminal or printer being connected to the IPC-1600 fanout module:

- One 10-wire modular cable
- One PDS terminal/printer adapter.

To connect a terminal/printer to an R3 CMS (IPC-1600 fanout module), do the following (refer to Figure 2-2):

1. Connect one other end of the 10-wire modular cable to the appropriate port on the IPC-1600 fanout module.
2. Connect the other end of the 10-wire modular cord to the PDS terminal/printer adapter.
3. On the terminal/printer, connect the PDS terminal/printer adapter (comcode 846362739).

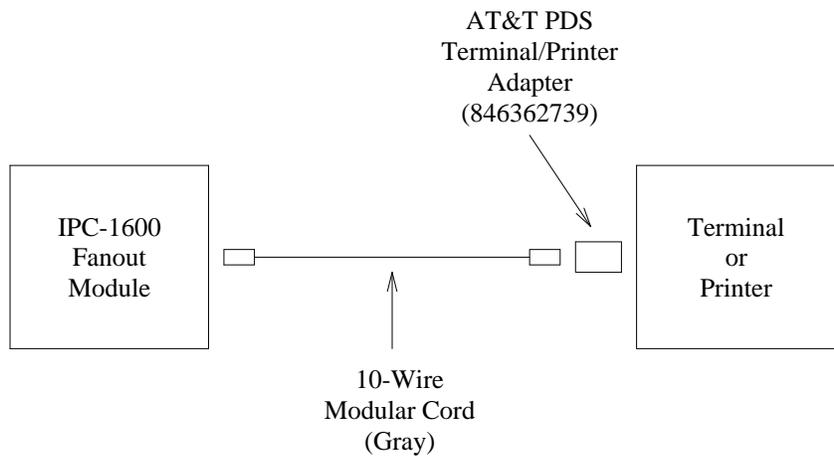


Figure 2-2. Terminal/Printer to the 6386 WGS Connection - 10-Wire Cabling

Connecting Terminals/Printers to the 6386 WGS - 8-Wire Cabling

In some cases, the customer configuration will connect terminals/printers to an R3 CMS (6386 WGS computer) using 8-wire modular cables. If this is the case, the customer will need the following for each terminal or printer being connected to the IPC-1600 fanout module:

- Two 8-wire modular cables
- One 10-pin in-line extender
- One PDS terminal/printer adapter.

To connect a terminal/printer to an R3 CMS (IPC-1600 fanout module), do the following (refer to Figure 2-3):

1. Connect one end of an 8-wire modular cord to the appropriate port on the IPC-1600 fanout module
2. Connect the other end of an 8-wire modular cord to one end of the 10 pin in-line extender (comcode 846362804)
3. Connect the other end of the 10 pin in-line extender (comcode 846362804) to another 8-wire modular cord.
4. Connect the other end of the 8-wire modular cord to the PDS terminal/printer adapter (comcode 846362739)
5. Connect the PDS terminal/printer adapter to the back of the terminal/printer.

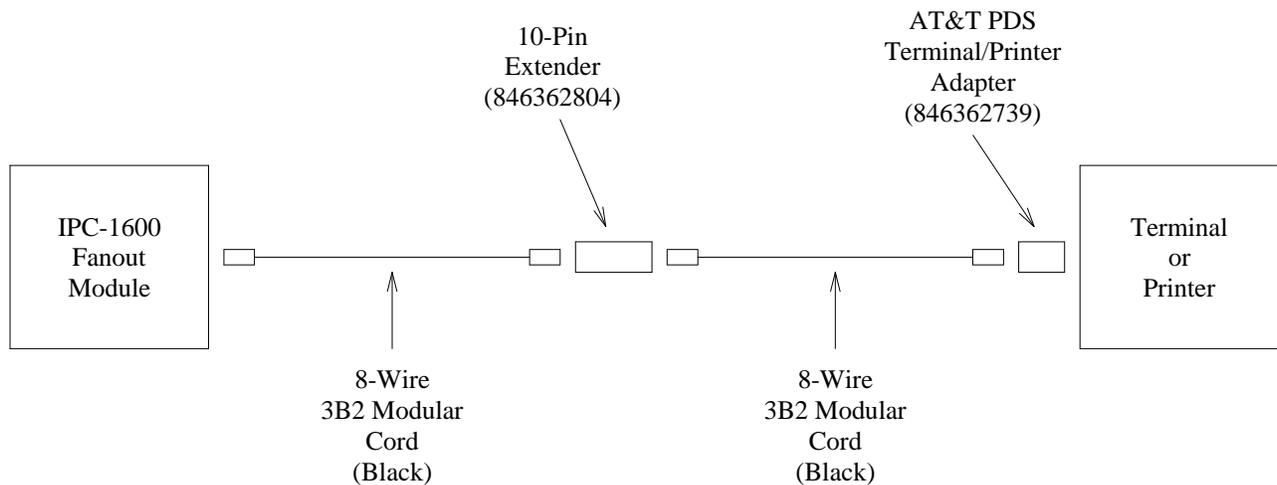


Figure 2-3. Terminal/Printer to the 6386 WGS Connection - 8-Wire Cabling

Connecting the 6386 WGS Computer to an AT&T Switch

In order for the CMS software to work properly, the customer's 6386 WGS computer and AT&T switch must be connected together to allow them to communicate with each other. This chapter describes how to connect a 6386 WGS computer to the following AT&T telecommunications switches:

- DEFINITY Communications System Generic 3r
- DEFINITY Communications System Generic 3i
- DEFINITY Communications System Generic 2
- System 85, Release 2 Version 4 (R2V4)
- DEFINITY Communications System Generic 1.

The 6386 WGS computer connects to these AT&T switches by using a General Purpose Synchronous Controller (GPSC-AT/E).

The 6386 WGS computers are connected to the switches as follows:

-
- A GPSC–AT/E port connection from the 6386 WGS computer to a Packet Gateway (TN577 circuit pack) port on the Generic 3r switch.
 - A GPSC–AT/E port connection from the 6386 WGS computer to a Data Communications Interface Unit (DCIU) port on the Generic 2 or System 85 switch
 - A GPSC–AT/E port connection from the 6386 WGS computer to a Digital Port on the Generic 3i or Generic 1.

⇒ NOTE:

In addition to a Digital Port, the Generic 3i and Generic 1, require a Processor Interface.

- A GPSC–AT/E port connection from the 6386 WGS computer to the EIA connector of a Processor Interface on the Generic 3i or Generic 1.

⇒ NOTE:

If the EIA connector on the Processor Interface is not used, a Digital Port will be required on the Generic 3i or Generic 1.

Turn to the appropriate section in the following list for step-by-step instructions on how to connect the customer's 6386 WGS computer and switch:

- *Connecting the 6386 WGS Computer to the Generic 3r Switch*
- *Connecting the 6386 WGS Computer to the Generic 2 or System 85 Switch*
- *Connecting the 6386 WGS Computer to the Generic 3i or Generic 1 Switch.*

A switch technician should be on site to make the final connection from the 6386 WGS computer to the switch and, if necessary, to administer the switch for the ACD/CMS feature.

⇒ NOTE:

The 6386 WGS CMS software, which is installed later, will not be able to communicate with the switch if the ACD/CMS feature and the PGATE/DCIU/PI hardware on the switch have not been administered properly.

If the ACD/CMS feature and the PGATE/DCIU/PI hardware have not been administered properly, an experienced switch technician should use the appropriate document in the following list as a guide, if needed, to administer the switch:

- *AT&T DEFINITY Communications System Generic 3r Implementation (555-230-651)*
- *AT&T DEFINITY Communications System Generic 2 Administration of Features and Hardware (555-104-507, Issue 1)*
- *AT&T System 85 Feature Translations Service Manual Release 2, Version 3 Issue 2 (555-102-107)*
- *AT&T System 85 Feature Translations Service Manual Release 2, Version 4 Issue 1 (555-103-107)*
- *AT&T DEFINITY Communications System Generic 1 Implementation Manual (555-204-654, Issue 1).*

To administer the PGATE/DCIU/PI hardware on the switch that connects to the 6386 WGS computer, an experienced switch technician can also refer to one of the following appendices in this document:

- **Appendix A**—contains reference material about the link administration for the Generic 3i and Generic 1 switches.
- **Appendix B**—contains reference material about the 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.

Connecting the 6386 WGS Computer to the Generic 3r Switch

Use the procedures in this section to connect a port (RS-232C connection) from the GPSC-AT/E board in the 6386 WGS computer to a Packet Gateway board on the Generic 3r switch.

You can connect the 6386 WGS computer to the Generic 3r switch by using one of the following methods:

- *Using the Isolating Data Interface*

If this method is used, the maximum allowable distance between the 6386 WGS computer and the Generic 3r switch is 200 feet.

- *Using a Modular Processor Data Module*

If this method is used, the maximum allowable distance between the 6386 WGS computer and the Modular Processor Data Module (MPDM) is 50 feet. The maximum allowable distance between the MPDM and the Generic 3r is 5000 feet with 24 gauge wire and 4000 feet with 26 gauge wire.

- *Using a Private Line.*

This method uses two DATAPHONE II modems in addition to the MPDM and is required when the MPDM distance limitations have been exceeded.

Using the Isolating Data Interface

This section describes the hardware and cables required to connect a GPSC-AT/E RS-232C port on the 6386 WGS computer to the Packet Gateway board on the Generic 3r via an Isolating Data Interface (IDI).

If this method is used, the maximum allowable distance between the 6386 WGS computer and the Generic 3r switch is 200 feet.

⇒ NOTE:

If the Generic 3r switch and the 6386 WGS computer are over 200 feet apart, refer to the section *Connecting the 6386 WGS Computer to the Generic 3r* for the proper cabling configuration.

Before you begin, obtain the following parts:

- GPSC-AT/E Fanout Cable
- H600-210, Group 1 (RS-232C to RS-449) cable
- Isolating Data Interface
- 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. The Group numbers associated with cable lengths are as follows:

- 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

To connect the 6386 WGS computer to the Packet Gateway of a Generic 3r switch via an IDI, do the following (refer to Figure 2-4):

1. Connect the “**Port A**” or “**Port B**” plug end of the GPSC-AT/E fanout cable to the female end of an H600-210, Group 1 cable.

⇒ NOTE:

The female end of the GPSC-AT/E fanout cable should have been connected to the GPSC-AT/E board when it was installed on the 6386 WGS computer.

2. Connect the male end of the H600-210, Group 1 cable to the “**Out**” connector on the Isolating Data Interface unit.

3. Connect the male end of the H600-210, Group 1 cable to the "In" connector on the Isolating Data Interface unit.
4. Connect the female end of the H600-210, Group 1 cable to the male end of the H600-347, Group 1 cable.

⇒ NOTE:

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

5. Connect the male end of the H600-347, Group 1 cable to the Packet Gateway board.
6. Tell the switch technician to verify that the ACD/CMS feature on the switch has been administered.

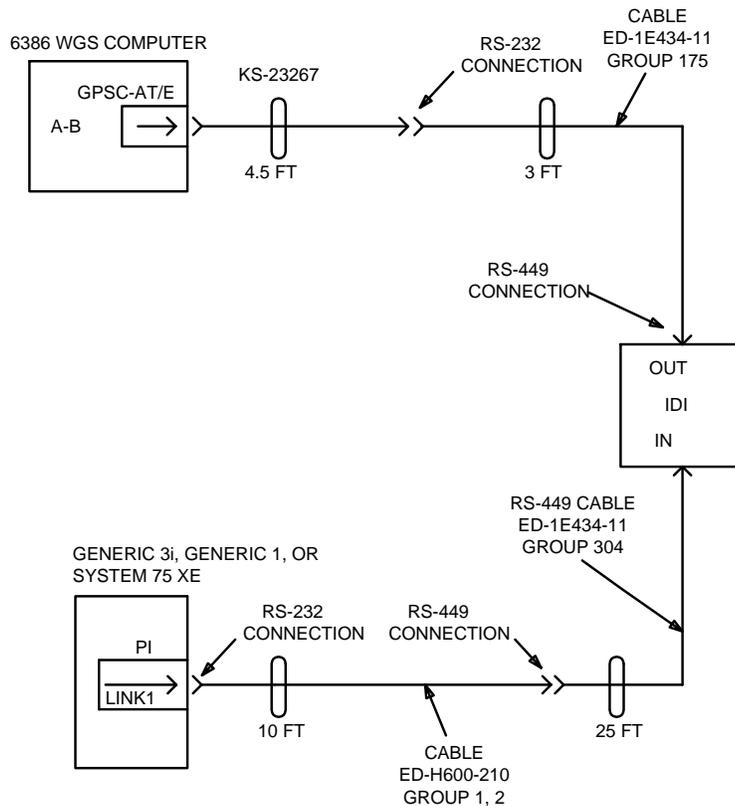


Figure 2-4. 6386 WGS Computer to Generic 3r Cabling Via the IDI

Using a Modular Processor Data Module

If this method is used, the maximum allowable distance between the 6386 WGS computer and the Modular Processor Data Module (MPDM) is 50 feet. The maximum allowable distance between the MPDM and the Generic 3r is 5000 feet with 24 gauge wire and 4000 feet with 26 gauge wire.

Before you begin, obtain the following parts:

- GPSC-AT/E cable



NOTE:

If the GPSC-AT/E fanout cable is not long enough to reach the MPDM, obtain an ED-1E434-11, Group 309 (RS-232C) cable to make the connection between the GPSC-AT/E fanout cable and the MPDM.

- Two Modular Processor Data Modules (MPDMs) with a stand-alone housing
- Two D8W-87 modular plug telephone cord (7 feet) (included with the stand-alone housing).
- H600-347, Group 1 (RS-232C) cable
- M25A (RS-232C) cable
- Three B25A (RS-232C) cables.

To connect the 6386 WGS computer to a Packet Gateway board on the Generic 3r switch, do the following (refer to Figure 2-5):

1. Connect the male end of the H600-347, Group 1 cable to the Packet Gateway. (Record the connector number on the cable for later use.)
2. Connect the other male end of the H600-347, Group 1 cable to the female end of the M25A cable.
3. Connect the male end of the M25A cable to the RS-232 connector on the MPDM.
4. Set all switches on the MPDM to the OFF position except for the following:
 - SPEED to 9600 bps
 - SYNC
 - INT
 - SIGLS
 - AANS.

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

⇒ NOTE:

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

7. Plug the MPDM into a 120 volt ac power source.

⇒ NOTE:

In the next step, the switch technician should make the final connection to the Digital Port.

8. 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.
9. 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.
10. Connect one end of the D8W-87 cord to the Generic 3r cross-connect.
11. Connect the other end of a D8W-87 modular plug telephone cord into the modular telephone cord jack of the MPDM.

⇒ NOTE:

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

12. Set all switches on the MPDM to the OFF position except for the following:
 - SPEED to 9600 bps
 - SYNC
 - INT
 - SIGLS
 - AANS.
13. Plug the MPDM into a 120 volt ac power source.
14. Connect the male end of the B25A cable to the RS-232 connector on the MPDM.

- Connect the female end of the B25A cable to “Port A” or “Port B” of the GPSC-AT/E fanout cable.

⇒ NOTE:

The female end of the GPSC-AT/E fanout cable should have been connected to the GPSC-AT/E board when it was installed on the 6386 WGS computer.

- Tell the switch technician to verify that the ACD/CMS feature on the switch has been administered.

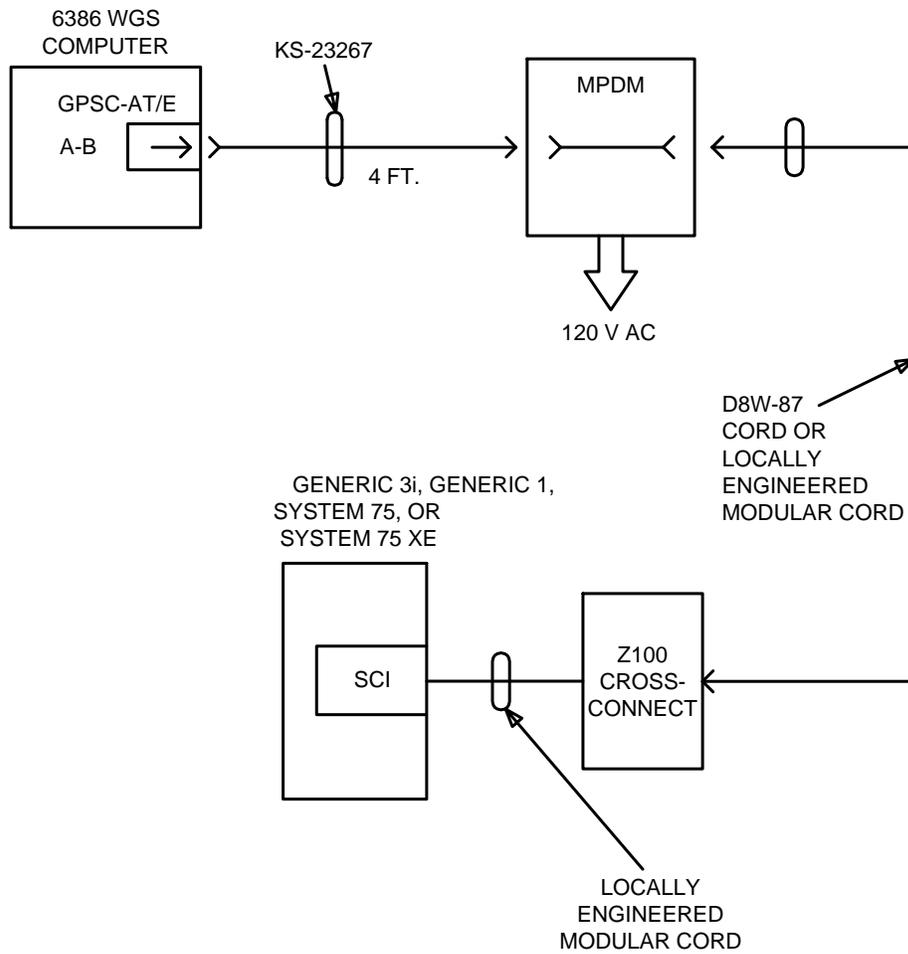


Figure 2-5. 6386 WGS Computer to Generic 3r Cabling With an MPDM

Using a Private Line

This method uses two DATAPHONE II modems in addition to the MPDM and is required when the MPDM distance limitations have been exceeded.

This section describes how to connect the Generic 3r to a private line that connects to a 6386 WGS computer.

Before you begin, obtain the following parts to connect the 6386 WGS 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. This unit must be ordered through the Custom Systems organization via the Custom Systems Automation Program (CSAP).

- M25A cable
- One 2096C DATAPHONE II Modem.

Also, obtain the following 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. This unit must be ordered through the Custom Systems organization via the Custom Systems Automation Program (CSAP).

- M25A cable
- One 2096C DATAPHONE II Modem.

How to Connect the 6386 WGS Computer to a Private Line

To connect the 6386 WGS computer to a private line, do the following (refer to Figure 2-6):

1. Connect the “**Port A**” or “**Port B**” plug end of the GPSC-AT/E fanout cable to the female end of the M25A cable.

⇒ NOTE:

The female plug end of the GPSC-AT/E fanout cable should have been connected to the GPSC-AT/E board when it was installed on the 6386 WGS computer.

2. Connect male end of the M25A cable to the *EIA Customer Connector* receptacle on the DATAPHONE II modem.
3. Connect male end of the B25A cable to the *CIU/DBU Connector* receptacle on the DATAPHONE II modem.
4. Connect the other end of the B25A cable to the *P1* receptacle on the 829 channel interface unit.
5. Plug the DATAPHONE II modem into a 120 volt ac power source.
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 to the cross-connect hardware.

Figure 2-6. 6386 WGS Computer Cabling to a Private Line

How to Connect the Generic 3r to a Private Line

To connect the Generic 3r to a private line, do the following (refer to Figure 2-7):

1. Connect the tip and ring from the 829 channel interface to the cross-connect hardware.
2. Plug the 829 channel interface unit into a 120 volt 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 a 120 volt 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. Tell the switch technician to verify that the ACD/CMS feature on the switch has been administered.

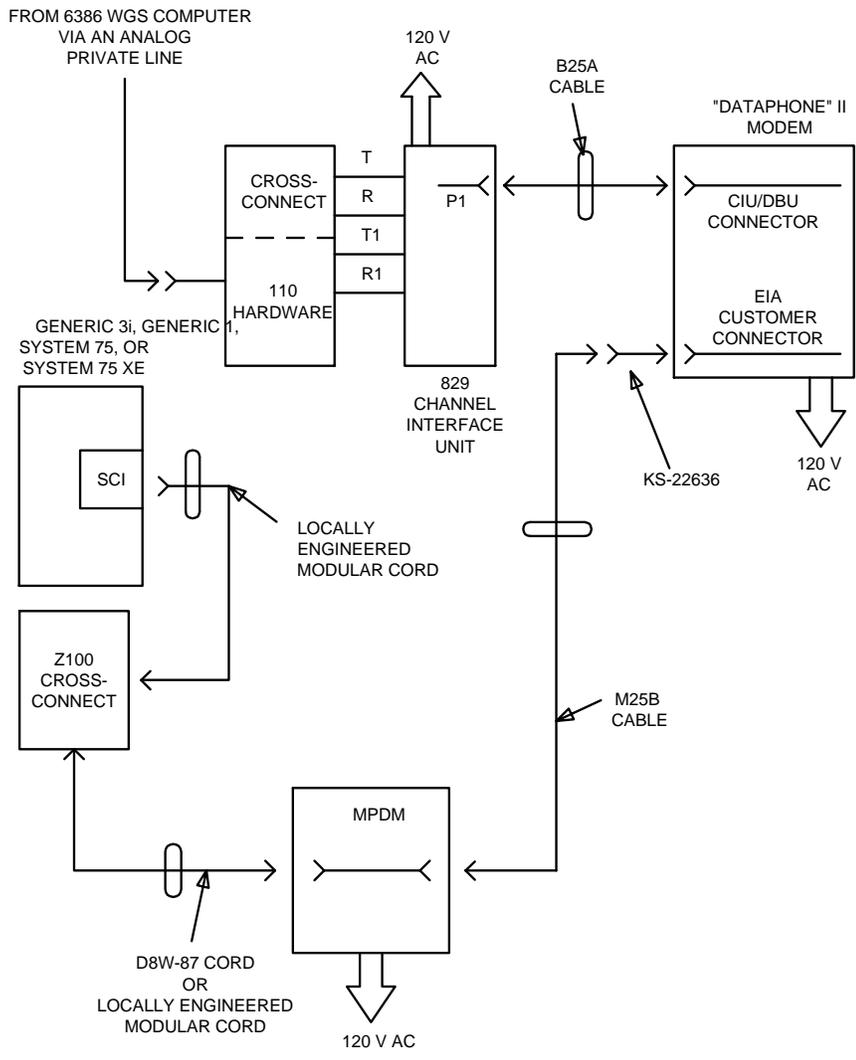


Figure 2-7. Generic 3r Cabling to a Private Line

Connecting the 6386 WGS Computer to the Generic 2 or System 85 Switch

Use the procedures in this section to connect a GPSC-AT/E port (RS-232C connection) on the 6386 WGS computer to the Data Communications Interface Unit (DCIU) on the Generic 2 or System 85 switch.

You can connect the 6386 WGS computer to the Generic 2 or System 85 switch by using one of the following methods:

- *Using the Isolating Data Interface*

For this method, the maximum allowable distance between the 6386 WGS computer and Generic 2 or System 85 switch is 400 feet.

- *Using Local Data Service Units (DSUs)*

For this method, the maximum allowable distance between the 6386 WGS computer and the Generic 2 or System 85 switch is 100 feet.

- *Using Remote Data Service Units (DSUs)*

Use this method when the distance between the 6386 WGS computer and the Generic 2 or System 85 switch 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 (LADC).

- *Using an Analog Private Line.*

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

To determine which method to use, check the equipment and parts that were delivered to the customer's site.

Using the Isolating Data Interface

For this method, the maximum allowable distance between the 6386 WGS computer and Generic 2 or System 85 switch is 400 feet.

Before you begin, obtain the following parts:

- GPSC-AT/E Fanout Cable
- ED-1E434-11, Group 175 cable (RS-232C to RS-449 transition cable)
- Isolating Data Interface (IDI)
- 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.

To connect the 6386 WGS computer to the DCIU on the Generic 2 or System 85 via an IDI, do the following (refer to Figure 2-8):

1. Connect the “**Port A**” or “**Port B**” plug end of the GPSC-AT/E fanout cable to the receptacle end of an ED-1E434-11, Group 175 cable. (Record the plug end of the GPSC-AT/E fanout cable that you use.) Next, connect the plug end of the ED-1E434-11, Group 175 cable to the **Port A (OUT)** connector on the IDI.

⇒ **NOTE:**

The single plug end of the GPSC-AT/E fanout cable should have been connected to the GPSC-AT/E board when it was installed on the 6386 WGS computer.

⇒ **NOTE:**

The IDI must be within 10 feet of the 6386 WGS computer.

2. Connect the plug end of the ED-1E434-11, Group 304 cable to the **IN** connector on the IDI.

⇒ **NOTE:**

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

-
3. 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.

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. 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.

4. Tell the switch technician to verify that the ACD/CMS feature on the switch has been administered.

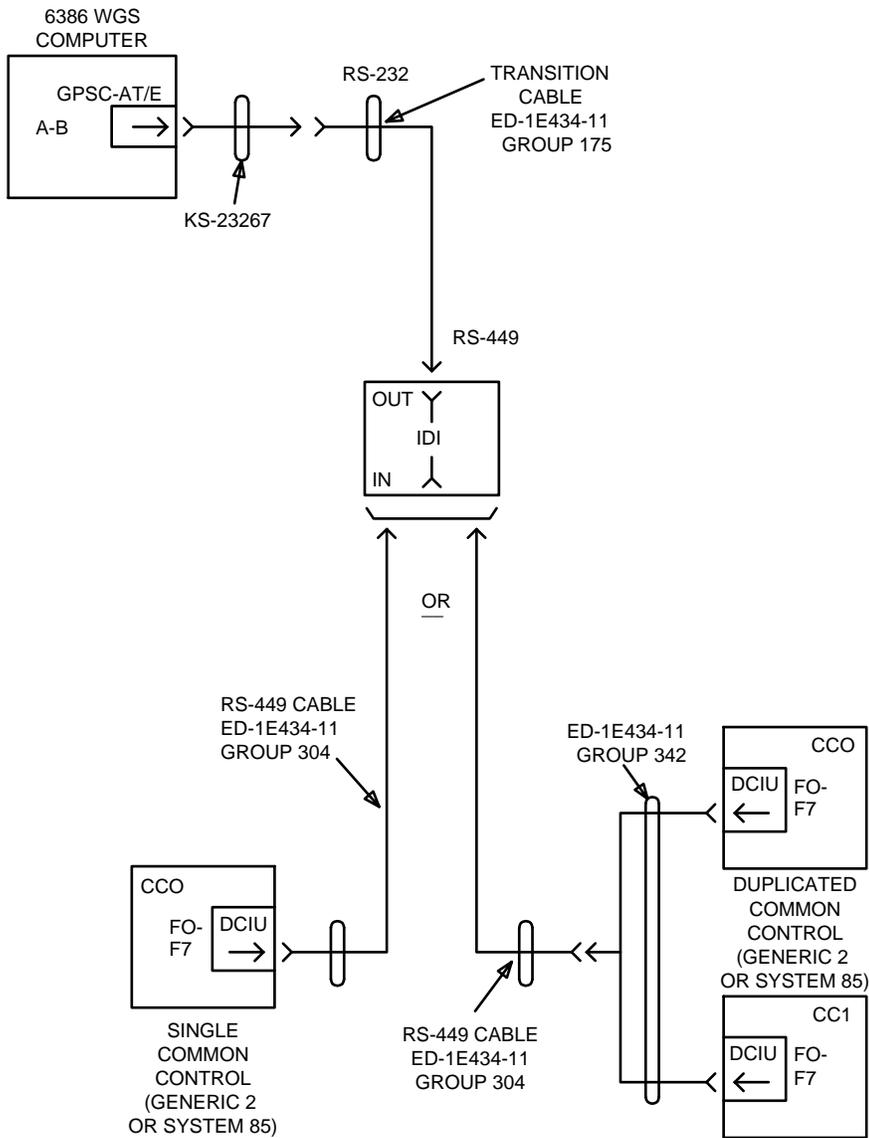


Figure 2-8. 6386 WGS Computer to Generic 2 or System 85 Cabling Via the IDI

Using Local Data Service Units

For this method, the maximum allowable distance between the 6386 WGS computer and the Generic 2 or System 85 switch is 100 feet.

Before you begin, obtain the following parts:

- GPSC-AT/E Fanout Cable

⇒ NOTE:

If the GPSC-AT/E fanout cable is not long enough to reach the DSU, obtain an ED-1E434-11, Group 309 cable to make the connection between the GPSC-AT/E fanout cable and the DSU.

- 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 and to test and troubleshoot the DSUs, if necessary. One DSU must be set for "internal" timing, and the other DSU must be set for "slave" timing. You can also use this document as a reference when doing the installation steps in this section.

To connect the 6386 WGS computer to the DCIU on the Generic 2 or System 85, do the following (refer to Figure 2-9):

1. Connect the "**Port A**" or "**Port B**" plug end of the GPSC-AT/E fanout cable to the receptacle labeled **DTE** on the back of the DSU. (Record the plug end of the GPSC-AT/E fanout cable that you use.)

⇒ NOTE:

If the GPSC-AT/E fanout cable is not long enough to reach the DSU, obtain an ED-1E434-11, Group 309 cable to make the connection between the GPSC-AT/E fanout cable and the DSU.

⇒ NOTE:

The single plug end of the GPSC-AT/E fanout cable should have been connected to the GPSC-AT/E board when it was installed on the 6386 WGS computer.

-
2. 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.
 3. Connect each DSU to a 120 volt power source by using the DSU Power Packs.
 4. 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. Then connect the receptacle end of the Group 13 transition cable to the plug end of the ED-1E434-11, Group 304 cable.

 **NOTE:**

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

5. 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 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.

6. Tell the switch technician to verify that the ACD/CMS feature on the switch has been administered.

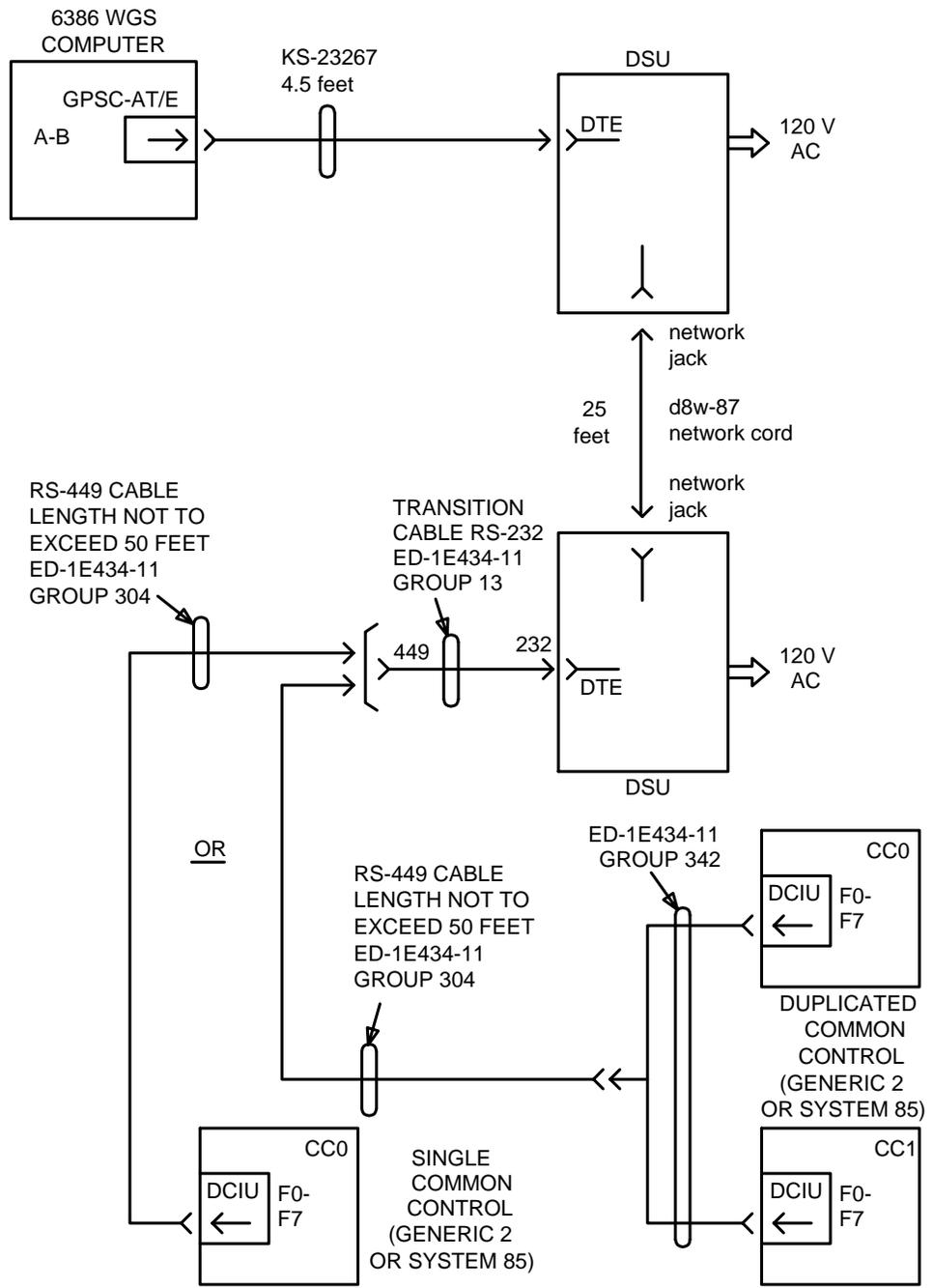


Figure 2-9. 6386 WGS Computer to Generic 2 or System 85 Cabling With Local DSUs

Using Remote Data Service Units

Use this method when the distance between the 6386 WGS computer and the Generic 2 or System 85 switch is over 100 feet.

Before you begin, obtain the following parts:

- GPSC-AT/E Fanout Cable

⇒ **NOTE:**

If the GPSC-AT/E fanout cable is not long enough to reach the DSU, obtain an ED-1E434-11, Group 309 cable to make the connection between the GPSC-AT/E fanout cable and the DSU.

- Two Data Service Units (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) (lengths as needed).

Table 2-5 shows the maximum allowable distances between the DSUs based on various wire sizes and a speed of 9.6 kbps.

Table 2-5. LADC Ranges

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 and to test and troubleshoot the DSUs, if necessary. One DSU must be set for "internal" timing, and the other DSU must be set for "slave" timing. You can also use this document as a reference when doing the installation steps in this section.

To connect the 6386 WGS computer to the DCIU on the Generic 2 or System 85, do the following (refer to Figure 2-10):

1. Connect the "**Port A**" or "**Port B**" plug end of the GPSC-AT/E fanout cable to the receptacle labeled **DTE** on the back of the DSU. (Record the plug end of the GPSC-AT/E fanout cable that you use.)

⇒ NOTE:

If the GPSC-AT/E fanout cable is not long enough to reach the DSU, obtain an ED-1E434-11, Group 309 cable to make the connection between the GPSC-AT/E fanout cable and the DSU.

⇒ NOTE:

The single plug end of the GPSC-AT/E fanout cable should have been connected to the GPSC-AT/E board when it was installed on the 6386 WGS computer.

2. Connect one end of a D8W-87 Network Cord to the Network Jack on the DSU.
3. Connect the other end of the D8W-87 Network Cord to the receptacle end of a Network Interface Adapter.
4. Punch down the spade-tipped leads of the Network Interface Adapter to the 6386 WGS computer's cross-connect hardware.
5. Use 4-wire nonloaded metallic lines (LADC equivalent) to interconnect the cross-connect hardware.
6. Obtain another Network Interface Adapter.
7. Punch down the spade-tipped leads of the Network Interface Adapter to the switch's cross-connect hardware.
8. Connect the receptacle of the Network Interface Adapter to one end of another D8W-87 Network Cord.
9. Connect the other end of a D8W-87 Network Cord to the Network Jack on the DSU that will be connected to the switch.
10. Connect each DSU to a 120 volt power source by using the DSU Power Packs.

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

 **NOTE:**

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

12. 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 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.

13. Tell the switch technician to verify that the ACD/CMS feature on the switch has been administered.

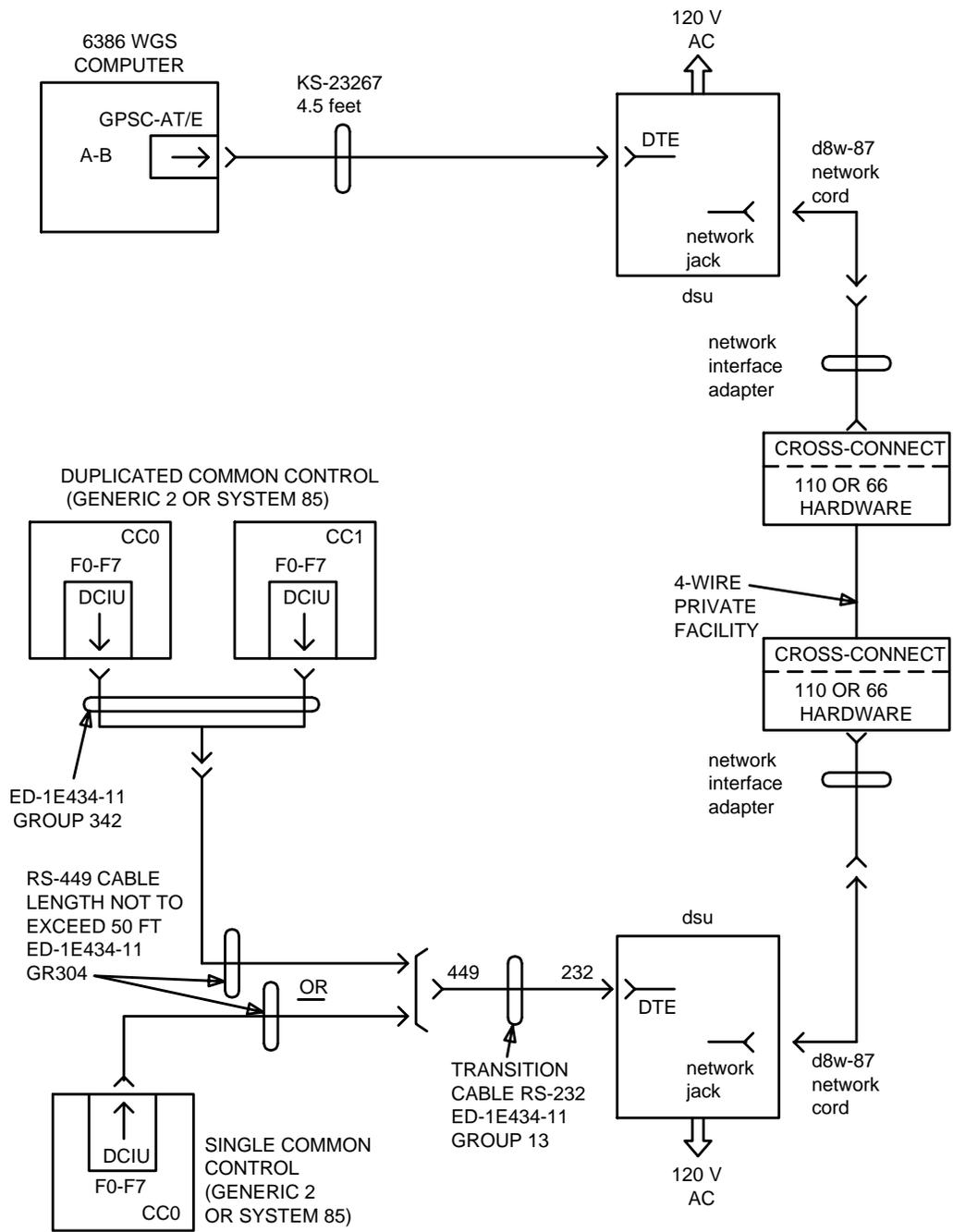


Figure 2-10. 6386 WGS Computer to Generic 2 or System 85 Cabling With Remote DSUs

Using an Analog Private Line

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

⇒ NOTE:

To connect the 6386 WGS computer to an analog private line, refer to the previous section in this chapter entitled *How to Connect the 6386 WGS Computer to an Analog Private Line*.

Before you begin, obtain the following parts to connect the System 85 to an analog private line:

- ED-1E434-11, Group 304 (RS-232C) cable (50 feet) — for single and duplicated common controls
- 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. This unit must be ordered through the Custom Systems organization via the Custom Systems Automation Program (CSAP).

To connect the Generic 2 or System 85 to an analog private line, do the following (refer to Figure 2-11):

1. Connect the tip and ring from the 829 channel interface 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.

⇒ NOTE:

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. Tell the switch technician to verify that the ACD/CMS feature on the switch has been administered.

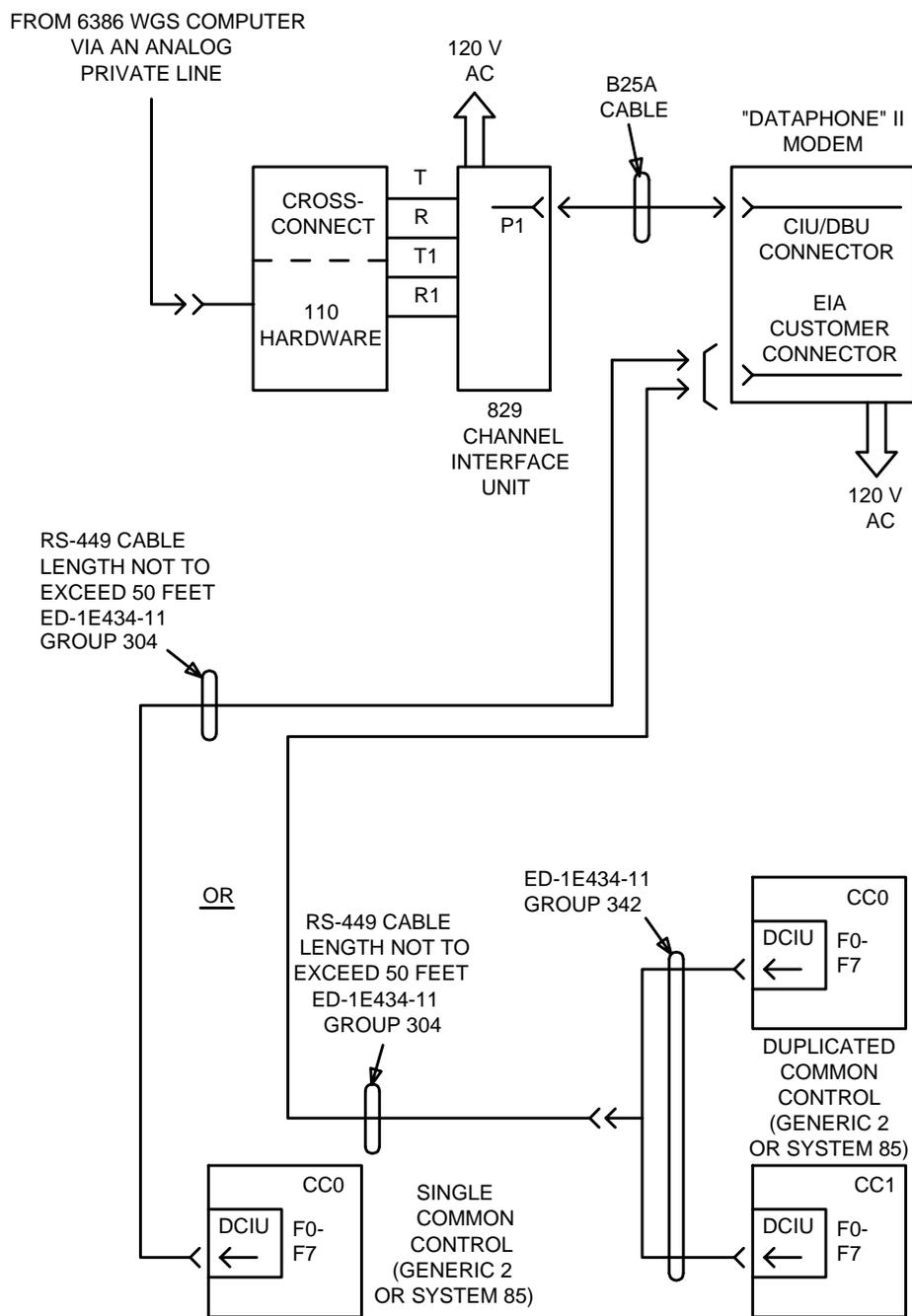


Figure 2-11. Generic 2 or System 85 Cabling to an Analog Private Line

Connecting the 6386 WGS Computer to the Generic 3i or Generic 1 Switch

Use the procedures in this section to connect a port (RS-232C connection) from the GPSC-AT/E board in the 6386 WGS computer to a Digital Port on the Generic 3i or Generic 1 switch.

You can connect the 6386 WGS computer to the Generic 3i or Generic 1 switch by using one of the following methods:

- *Using the EIA Connector on the Processor Interface*

If this method is used, the maximum allowable distance between the 6386 WGS computer and the Generic 3i or Generic 1 switch is 50 feet.

- *Using a Modular Processor Data Module*

If this method is used, the maximum allowable distance between the 6386 WGS computer and the Modular Processor Data Module (MPDM) is 50 feet. The maximum allowable distance between the MPDM and the Generic 3i or Generic 1 is 5000 feet with 24 gauge wire and 4000 feet with 26 gauge wire.

- *Using an Analog Private Line.*

This method uses two DATAPHONE II modems in addition to the MPDM and is required when the MPDM distance limitations have been exceeded.

Using the EIA Connector on the Processor Interface

This section describes the hardware and cables required to connect a GPSC-AT/E RS-232C port on the 6386 WGS computer to the EIA connector of a Processor Interface on the Generic 3i or Generic 1.

⇒ NOTE:

If the Generic 3i or Generic 1 has duplicated common controls, the EIA port on the Processor Interface cannot be used.

If this method is used, the maximum allowable distance between the 6386 WGS computer and the Generic 3i or Generic 1 switch is 50 feet.

⇒ NOTE:

If the Generic 3i or Generic 1 switch and the 6386 WGS computer are over 50 feet apart, refer to the section *Connecting the 6386 WGS Computer to the Generic 3i or Generic 1* for the proper cabling configuration.

Before you begin, obtain the following parts:

- GPSC-AT/E Fanout Cable
- 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. The Group numbers associated with cable lengths are as follows:

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

To connect the 6386 WGS computer to the Processor Interface of a Generic 3i or Generic 1 switch, do the following (refer to Figure 2-12):

1. Connect the “**Port A**” or “**Port B**” plug end of the GPSC-AT/E fanout cable to the female end of an ED-1E434-11, Group 175 cable.

⇒ NOTE:

The female plug end of the GPSC-AT/E fanout cable should have been connected to the GPSC-AT/E board when it was installed on the 6386 WGS computer.

2. Connect the male end of the ED-1E434-11, Group 175 cable to the “**Out**” connector on the Isolating Data Interface unit.
3. Connect the male end of the ED-1E434-11, Group 304 cable to the “**In**” connector on the Isolating Data Interface unit.
4. Connect the female end of the ED-1E434-11, Group 304 cable to the male end of the ED-H600-362 cable.

⇒ NOTE:

In the next step, the switch technician should make the final connection to Link 1 (EIA connector) of the Processor Interface.

5. Connect the female end of the ED-H600-362 cable to Link 1 (EIA connector) of the Processor Interface.
6. Tell the switch technician to verify that the ACD/CMS feature on the switch has been administered.

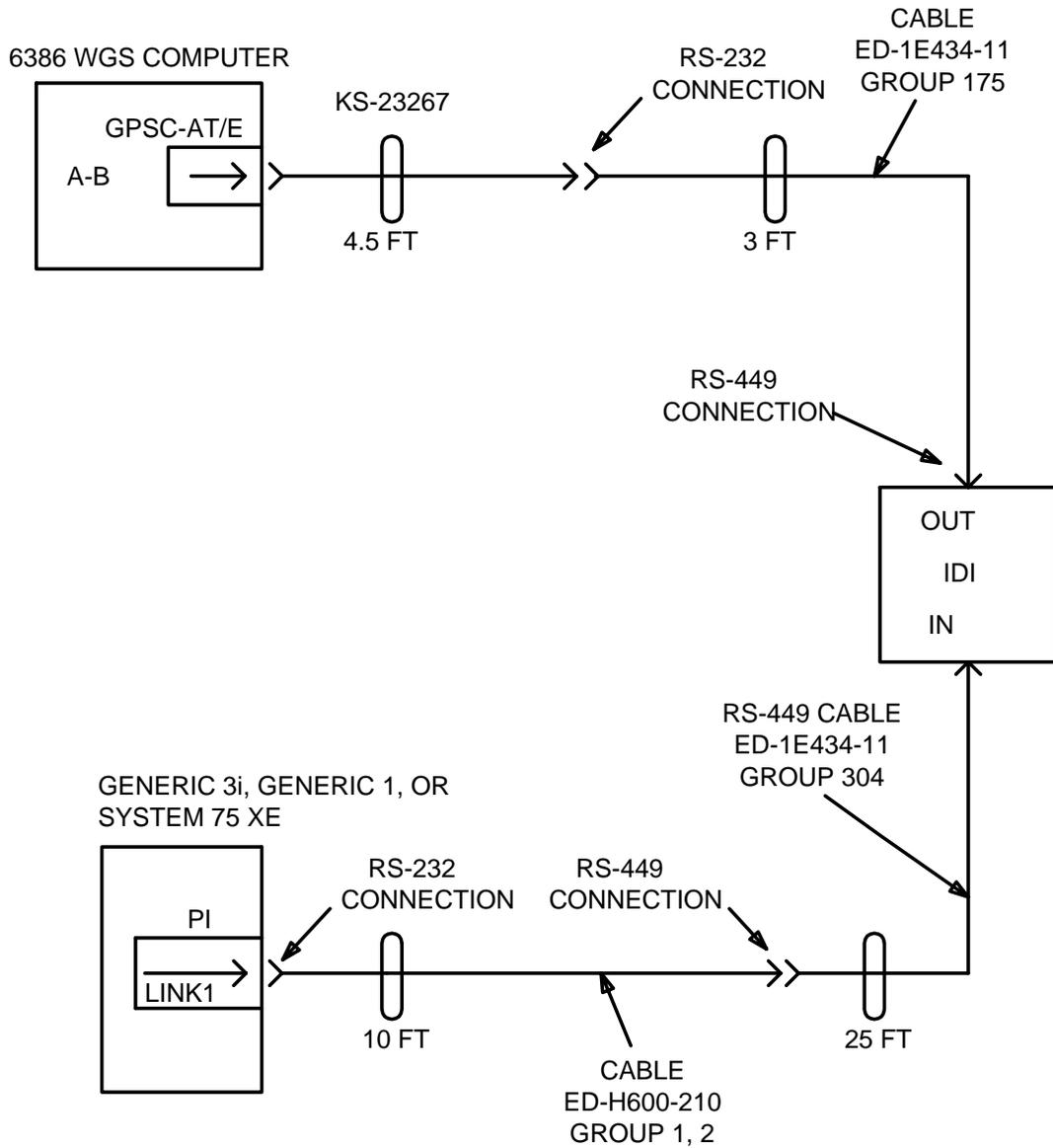


Figure 2-12. 6386 WGS Computer to Generic 3i or Generic 1 Cabling Via the IDI

Using a Modular Processor Data Module

If this method is used, the maximum allowable distance between the 6386 WGS computer and the Modular Processor Data Module (MPDM) is 50 feet, and the maximum allowable distance between the MPDM and the Generic 3i or Generic 1 is 5000 feet with 24 gauge wire and 4000 feet with 26 gauge wire.

Before you begin, obtain the following parts:

- GPSC-AT/E Fanout Cable



NOTE:

If the GPSC-AT/E fanout cable is not long enough to reach the MPDM, obtain an ED-1E434-11, Group 309 (RS-232C) cable to make the connection between the GPSC-AT/E fanout cable and the MPDM.

- Modular Processor Data Module (MPDM) with a stand-alone housing
- D8W-87 modular plug telephone cord (7 feet) (included with the stand-alone housing).

To connect the 6386 WGS computer to a Digital Port on the Generic 3i or Generic 1 switch, do the following (refer to Figure 2-13):

1. Connect the “**Port A**” or “**Port B**” plug end of the GPSC-AT/E fanout cable to the RS-232 connector on the MPDM. (Record the plug end of the GPSC-AT/E fanout cable that you use for later use.)

⇒ **NOTE:**

If the GPSC-AT/E fanout cable is not long enough to reach the MPDM, obtain an ED-1E434-11, Group 309 cable to make the connection between the GPSC-AT/E fanout cable and the MPDM.

⇒ **NOTE:**

The female plug end of the GPSC-AT/E fanout cable should have been connected to the GPSC-AT/E board when it was installed on the 6386 WGS computer.

2. Set all switches on the MPDM to the OFF position except for the following:
 - SPEED to 9600 bps
 - SYNC
 - INT
 - SIGLS
 - AANS.
3. Connect one end of a D8W-87 modular plug telephone cord to the modular telephone cord jack of the MPDM.

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 MPDM and the cross-connect (Z100). This cable must have a modular plug on each end.

4. Plug the MPDM into a 120 volt ac power source.

⇒ NOTE:

In the next step, the switch technician should make the final connection to the Digital Port.

5. 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.
6. Tell the switch technician to verify that the ACD/CMS feature on the switch has been administered.

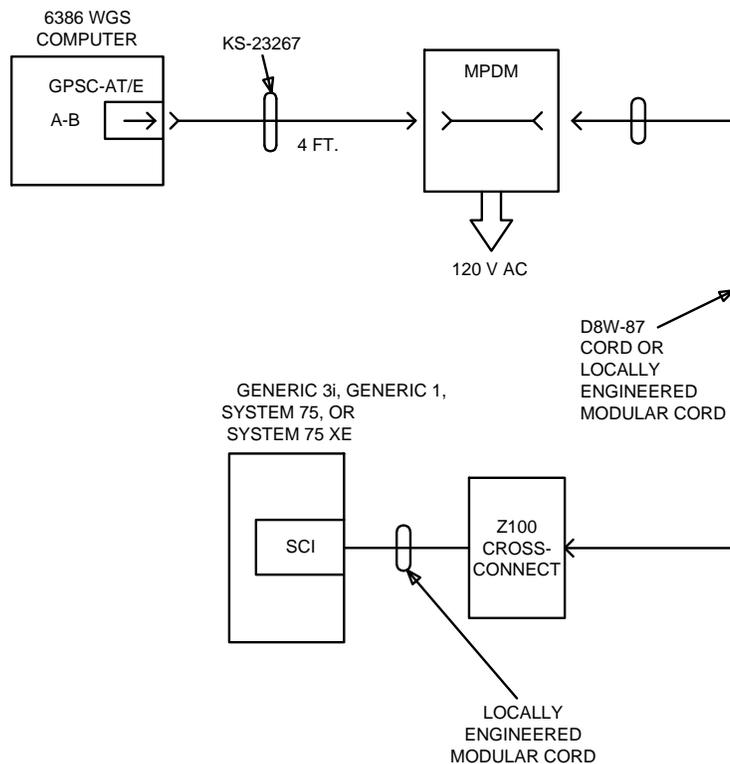


Figure 2-13. 6386 WGS Computer to Generic 3i or Generic 1 Cabling With an MPDM

Using an Analog Private Line

This method uses two DATAPHONE II modems in addition to the MPDM and is required when the MPDM distance limitations have been exceeded.

This section describes how to connect the Generic 3i or Generic 1 to an analog private line that connects to a 6386 WGS computer.

Before you begin, obtain the following parts to connect the 6386 WGS computer to an analog private line:

- GPSC-AT/E Fanout Cable

⇒ **NOTE:**

If the GPSC-AT/E fanout cable is not long enough to reach the DATAPHONE II modem, obtain a 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. This unit must be ordered 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 on the customer's premises, order PEC 9200-030, which is a stand-alone replacement unit. This unit must be ordered through the Custom Systems organization via the Custom Systems Automation Program (CSAP).

- B25A cable
- One 2096C DATAPHONE II Modem
- RS-232C cable

-
- One MPDM
 - D8W-87 cord.

How to Connect the 6386 WGS Computer to an Analog Private Line

To connect the 6386 WGS computer to an analog private line, do the following (refer to Figure 2-14):

1. Connect the “**Port A**” or “**Port B**” plug end of the GPSC-AT/E fanout cable to the receptacle end of the M25A cable. Next, connect the plug end of the M25A cable to the *EIA Customer Connector* receptacle on the DATAPHONE II modem. (Record the plug end of the GPSC-AT/E fanout cable that you use.)

⇒ NOTE:

If the GPSC-AT/E fanout cable is not long enough to reach the DATAPHONE II modem, obtain an ED-1E434-11, Group 309 cable and make the connection.

⇒ NOTE:

The female plug end of the GPSC-AT/E fanout cable should have been connected to the GPSC-AT/E board when it was installed on the 6386 WGS computer.

2. Plug the DATAPHONE II modem 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 829 channel interface unit into a 120 volt ac power source.
5. Connect the tip and ring from the 829 channel interface to the cross-connect hardware.

Figure 2-14. 6386 WGS Computer Cabling to an Analog Private Line

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

To connect the Generic 3i or Generic 1 to an analog private line, do the following (refer to Figure 2–15):

1. Connect the tip and ring from the 829 channel interface 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 MTDM.
7. Set all switches on the MTDM to the OFF position except for the following:
 - SPEED to 9600 bps
 - SYNC
 - INT
 - SIGLS
 - AANS.
8. Connect one end of the D8W-87 modular plug telephone cord into the modular telephone cord jack on the MTDM.
9. 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 MTDM and the cross-connect (Z100). This cable must have a modular plug on each end.

10. Plug the MTDM into a 120 volt ac power source.

⇒ NOTE:

In the next step, the switch technician should make the final connection to the Digital Port.

11. Run a locally engineered cable from the Z100 cross-connect to the Digital Port on the Generic 3i or Generic 1. This cable also requires a modular plug on each end.

- Tell the switch technician to verify that the ACD/CMS feature on the switch has been administered.

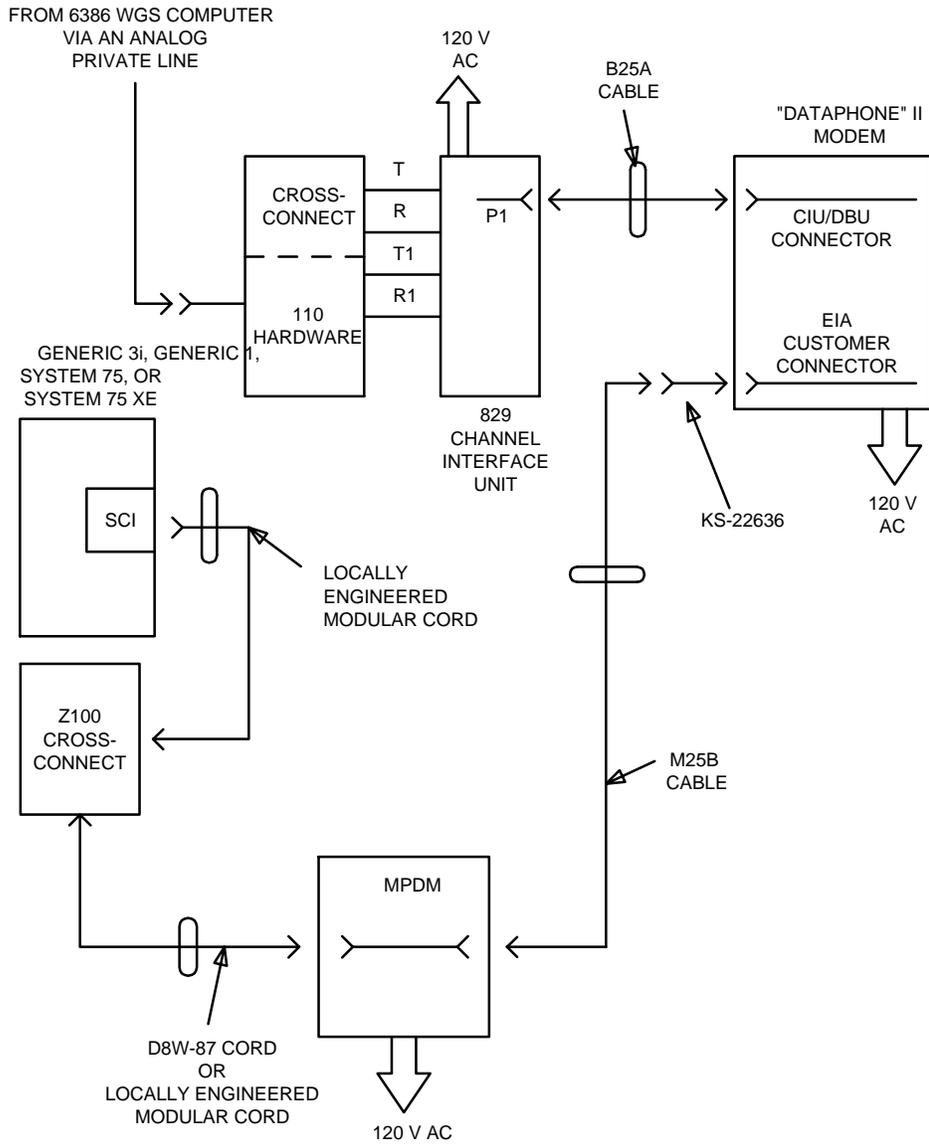


Figure 2-15. Generic 3i or Generic 1 Cabling to an Analog Private Line

Connecting the 6386 WGS Computer to the Technical Support Center

The Remote Management feature provided by the Remote Management Circuit (RMC) provides 2-way communication between the 6386 WGS CMS at the customer site and the TSC. Communication takes place on a dedicated phone line provided by the customer.

⇒ NOTE:

This phone line is paid for by the customer.

From the TSC, skilled technicians can install, upgrade, maintain, and troubleshoot the 6386 WGS CMS software at the customer site. During remote installations and upgrades of the software, an on-site technician must be present to install the physical medium (floppy disk or tape) that contains the software.

The RMC also senses when a hardware or software alarm has been generated. If the optional Silent Knight Autodialer is installed, it is used to report the alarms to the TSC.

Connecting the Remote Console to the 6386 WGS

The Remote Console connection needs to be set up before a technician at the TSC can do any remote maintenance on the R3 CMS software. Use the procedures in this section to connect the Remote Console to the 6386 WGS computer or StarServer S computer and administer the modem.

Before you do the procedures in this section, obtain the following parts to connect the 6386 WGS computer to the TSC:

- One ACU/Modem Adapter (PEC 69611)
- One Remote Console Adapter (PEC 69612)
- One 10-conductor cable
 - 10-conductor cable, 10 feet (PEC 37776)
 - 10-conductor cable, 25 feet (PEC 69606)
 - 10-conductor cable, 50 feet (PEC 69607)
- One Modem
 - 2224-CE0 Modem (PEC 2224-CE0)
 - AT&T 2400 (Hayes)
 - 4024 Modem.

To connect the 6386 WGS computer to the TSC (via the Remote Console), do the following (refer to Figure 2-16).

1. Power down the 6386 WGS computer. (For instructions, refer to the *Owner/Operator Manual* that came with the computer.)
2. Set the modem options by doing the following:

⇒ NOTE:

For additional information on administering the modem, refer to the documentation received with the modem.

- For the 2224-CE0 modem:
 - a. Connect a dumb terminal to the 25-pin connector located on the back of the 2224-CE0 modem. For information on connecting the terminal to the modem, refer to the user documentation that came with the modem.

⇒ NOTE:

If you are using an 8- or 10-wire modular cord to connect the terminal to the modem, you will need two ACU/Modem Adapters.

The terminal speed will need to be set to 1200 baud.

- b. Set all switches on the modem to the DOWN position except for Switch 6, and press the reset button.
- c. At the dumb terminal, enter the following:

```
o12=y  
o33=y  
o34=0  
o41=0  
o42=n  
o45=y
```

⇒ NOTE:

The colon (:) prompt must appear on the screen before entering any of the previous commands.

- d. Set all switches on the modem to the DOWN position except for Switches 1, 3, 6, and 7 which must be in the UP position. Press the reset button.

— For the AT&T 2400 modem:

- a. Connect a dumb terminal to the 25-pin connector located on the back of the modem. For information on connecting the terminal to the modem, refer to the user documentation that came with the modem.

⇒ NOTE:

The dumb terminal speed must be set to 1200 baud.

- b. At the dumb terminal, enter the following soft options:

```
AT&F (use only zeros and numerical ones in the commands) |
ATN0 |
ATS37=5 |
ATS0=1 |
AT&K0 (disable local flow control) |
AT&C1 |
AT&D3 |
AT&Q0 |
AT&T5 |
ATE0Q1&W0&Y0 (turns off local echoing) |
AT&V (check your work) |
```

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

Also, it may be difficult to connect to the modem from a Remote Console if the computer is running POST. |

— For the 4024 modem:

- a. Connect a dumb terminal to the 25-pin connector located on the back of the 4024 modem.

b. At the dumb terminal, enter the following:

```
o12=y  
o33=y
```

c. Set all switches on the modem to the DOWN position except for Switches 1, 3, 6, and 7 which must be in the UP position.

3. Connect the ACU/Modem Adapter to the Serial Connector A port on the 6386 WGS.
4. Connect one end of a 10-conductor cable to the ACU/Modem Adapter previously connected to the 6386 WGS. Connect the other end of the 10-conductor cable to the Remote Console Adapter.
5. Connect the Remote Console Adapter to the 25-pin connector on the modem.
6. Connect the modem to the RMATS telephone line.
7. Turn the power to the 6386 WGS computer to ON.

Administer the modem used in the Remote Console configuration by doing the following:

1. Login as *root* at the system console.
2. Execute the following command to set the console flags:

```
/etc/conflgs -r1 -b1200
```

The system responds with:

```
UNIX system console: second serial port

static console message flag:  1
dynamic console message flag: 1

static remote console message flag:  0
dynamic remote console message flag: 0

static console message flag:  1
dynamic console baud rate:     1200

alternate console enable flag: 1
alternate console baud rate:  1200
```

3. Execute the following command to set the RCMF tunable parameter:

```
/etc/conf/bin/idtune RCMF 1
```

- Execute the following command to access the FACE program:

```
# face
```

The system responds by displaying the FACE menu.

- From the FACE menu, select the **System Administration** menu.
- From the System Administration menu, select the **Peripherals Setup** menu.
- From the Peripherals Setup menu, select the **Serial Ports Setup** menu.

The system will respond by requesting additional information about the port being administered. The appropriate port information will need to be entered for the following fields:

- **Serial Port Number:** Enter the port number that the modem will be connected to. The valid entries for this field can be seen by pressing the “Choices” function key. Select port **tty00**.
- **Device Type:** Enter the type of device you will be connecting to the port. Options include: **Modem**, Terminal, Computer, Other, or None.
- **Device Speed:** Enter the baud rate (speed) of the device being connected to the port. Options include: 300, **1200**, 2400, 4800, 9600, and 19200.
- **Flow Control:** Enter the appropriate flow control protocol. Options include: Software, Hardware, and **Generic**.

After setting the options on the **Serial Ports Setup**, the system will respond by requesting additional information about the modem being administered. The appropriate modem information will need to be entered for the following fields:

- **Modem Name:** Enter the name of the modem that is being used. The valid entries for this field can be seen by pressing the “Choices” function key.

⇒ NOTE:

Administer the AT&T 2400 modem as **Hayes Smartm 2400**.

- **Device Connection:** Enter the type of connection the modem will be using. Options include: **Incoming calls only**, Outgoing calls only, and Both outgoing and incoming calls. The valid entries for

this field can be seen and selected by pressing the “Choices” function key and selecting a valid option.

8. Edit the `/etc/conf/init.d/ua_tty00` file and change 1200 to 1200NP. Close and save the file.
9. Execute the following command to initialize the port and implement the previous changes:

```
init q
```

The Remote Console configuration is now set up.

To verify that the Remote Console has been configured correctly, the TSC should get the remote dial-up port and be able to dial in to the customer's machine.

Connecting the Uninterruptible Power Supply to the 6386 WGS

The Uninterruptible Power Supply (UPS) provides a temporary electrical supply to the 6386 WGS computer for about 15 minutes. Use the procedures in this section to connect the UPS to the 6386 WGS computer.

Before you do the procedures in this section, obtain the following parts to connect the 6386 WGS computer to the AT&T UPS:

⇒ NOTE:

These procedures apply to AT&T UPS. If another UPS is used, refer to the procedures outlined in the documentation received with the UPS.

- One 10-conductor cable
 - 10-conductor cable, 10 feet (PEC 37776)
 - 10-conductor cable, 25 feet (PEC 37778)
 - 10-conductor cable, 50 feet (PEC 37780)
- One UPS Adapter
 - For the 360VA or 500VA UPS - Male Adapter (PEC 69624).
 - For the 1KVA or 2KVA UPS - Male Adapter (PEC 69604).
 - For the 3KVA or 5KVA UPS - Spade Lug Adapter (PEC 69612).
- One UPS
 - 360 VA UPS (PEC 2403-036)
 - 500 VA UPS (PEC 2403-050)
 - 1KVA UPS (PEC 2403-201)
 - 2KVA UPS (PEC 2403-204)
 - 3KVA UPS (PEC 2403-203)
 - 5KVA UPS (PEC 2403-203).

To connect the 6386 WGS computer to the UPS, do the following (refer to Figure 2-16).

1. Power down the 6386 WGS computer. (For instructions, refer to the *Owner/Operator Manual* that came with the computer.)

-
2. Connect one end of a 10-conductor cable to the UPS port located on the Remote Maintenance Card (RMC) faceplate. Connect the other end of the cable to one of the following UPS adapters:
 - Male adapter (PEC 69624) for the 360VA or 500 VA UPS
 - Male adapter (PEC 69604) for the 1KVA or 2KVA UPS
 - Spade/lug adapter (PEC 69612) for the 3KVA or 5KVA UPS.
 3. Connect the adapter to the UPS as outlined in the UPS documentation.
 4. Plug the power cord of the 6386 WGS computer into the UPS. Plug the power cord of the UPS into a 120 V ac outlet. Turn the power to the UPS to ON.
 5. Turn the power to the 6386 WGS computer to ON.
 6. Enter the following command to set the RIDEOUT parameter to 900 seconds:

```
/etc/conf/bin/idtune RIDEOUT 900
```

7. Enter the following command to rebuild the UNIX kernel:

```
/etc/conf/bin/idbuild
```

8. Execute the following command to shut down the system:

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

The UPS is connected to the CMS host computer and the appropriate UNIX system parameters have been set.

Connecting the Silent Knight Autodialer to the 6386 WGS

If the Silent Knight Autodialer is part of the hardware configuration, you will have to program it with the following:

- An alarm reporting phone number
- A customer account number.

To get these numbers, call the Technical Support Center (TSC) at 1-800-248-1111 and request an alarm-reporting phone number and an account number for your installation. If you have any problems getting the phone number and account number, contact the System Consultant for your location.

Before you do the procedures in this section, obtain the following parts to connect the 6386 WGS computer to the Silent Knight Autodialer:

- Silent Knight Autodialer (PEC 94273) — Optional.

If the 6386 WGS computer has an optional Silent Knight Autodialer, obtain the following additional parts:

- One 10-conductor cable
 - 10-conductor cable, 10 feet (PEC 37776)
 - 10-conductor cable, 25 feet (PEC 37778)
 - 10-conductor cable, 50 feet (PEC 37780)
- One Spade/Lug Adapter (PEC 69612).

To connect the 6386 WGS computer to the Silent Knight Autodialer, do the following (refer to Figure 2-16).

NOTE:

The Silent Knight Autodialer is optional. If this unit is not included in the hardware configuration, skip the appropriate steps or instructions as necessary.

1. Power down the 6386 WGS computer. (For instructions, refer to the *Owner/Operator Manual* that came with the computer for instructions.)
2. Connect one end of a 10-conductor cable to the ALRM port located on the Remote Maintenance Card (RMC) faceplate. Connect the other end of the cable to the Spade/Lug Adapter.

-
3. Connect the other end of the Spade/Lug Adapter to the Silent Knight Autodialer by doing the following:
 - a. Unlock and open the lid to the Silent Knight Autodialer.
 - b. At the other end of the cable, connect the BL2W wire (pin 8) to Terminal 15 (ring) on the Silent Knight Autodialer circuit board, and connect the BL1W wire (pin 7) to Terminal 16 (tip).

⇒ NOTE:

If the Silent Knight Autodialer is not present, connect BL2W to ring and BL1W to tip.

- c. Connect Terminal 13 (ring) and Terminal 14 (tip) on the Silent Knight Autodialer circuit board to the incoming telephone line. When a phone number is assigned at the central office to the incoming telephone line, report the phone number to the TSC.
- d. Connect the red (positive) and black (negative) leads from the circuit board to the 6-volt battery.
- e. On the Silent Knight Autodialer circuit board:
 - Terminal 3 should be jumped to Terminal 4 with a Group 32 wire (shorting wire)
 - Terminal 6 should be connected to Terminal 11 with a 15K ohm resistor
 - Terminal 9 should be jumped to Terminal 10 with a Group 32 wire (shorting wire)
 - The transformer that comes with the Silent Knight Autodialer should be connected to Terminals 1 and 2
 - Cut jumper 4.
- f. While the Silent Knight Autodialer circuit board is exposed, go ahead and program it with the alarm-reporting phone number, assigned by the TSC, and with the customer's account number. If you need instructions, refer to the next section, *Programming the Silent Knight Autodialer*.
- g. Plug the transformer into a 120 V ac outlet.

-
- h. To test the Silent Knight Autodialer, temporarily place a jumper wire across Terminals 5 and 11. The autodialer will then dial the TSC and report alarm code 9 (Alarm Test). If the battery is low, alarm code 8 (Low Battery) will also be reported.

⇒ NOTE:

If the battery is dead or not connected, the autodialer will not work.

- i. Close the lid to the Silent Knight Autodialer and lock it. Remove the autodialer key and have the CMS administrator store it in a safe place.
4. Turn on the power to the 6386 WGS computer.

Figure 2-16. 6386 WGS Computer Connection to the TSC

Programming the Silent Knight Autodialer

If the Silent Knight Autodialer is installed, program it with the telephone number assigned by the TSC and the customer's account number, by doing the following:

1. Remove dc power from the circuit board by unplugging the unit from its ac power source.
2. With the autodialer key in the lock, unlock and open the Silent Knight Autodialer. Notice the programming screws on the board. Figure 2-17 illustrates how these screws are positioned on the board.
3. Reposition the 16 programming screws so they properly encode the desired telephone number and customer account number. Figure 2-17 also illustrates how the screw positions are related to digits.

 **NOTE:**

Important: The telephone number must contain no less than three and no more than 13 digits. When it contains more than seven digits, you must start with the first digit in column A. Use row S to denote unused digits. Each screw in row S provides a 0.8-second delay during dialing. Turn the screws until their heads rest securely against the surface of the board.

4. Close the lid to the Silent Knight Autodialer and lock it.
5. Restore power by plugging the unit back into its ac power source.
6. Remove the autodialer key and tell the CMS administrator to store it in a safe place.

Setting Up CMS and Installing Additional Feature Packages

3

General Information

Once you have completed the hardware connections in Chapter 2, you need to set up the CMS package to work with the customer's configuration. If the customer ordered additional feature packages, you need to install them as well.

Use the procedures in this chapter to do the following tasks:

- Set up the Data Storage parameters
- Set up the CMS feature package
- Install the Vectoring, Graphics, or Forecasting feature packages
- Turn the CMS software application on or off
- Turn the system over to the customer.

Things to Do Before You Start

Before you start the procedures in this chapter, check that the following tasks are done:

- If the customer's CMS historical data is migrating from one host computer to another, the TSC has processed the data from the current host computer and has returned the tapes that contain the data.

-
- The console terminal has been connected to the 6386 computer.
 - The additional terminals and printers have been connected to the 6386 computer.
 - The hardware connection between the 6386 computer and the switch has been installed.



CAUTION:

If the PGATE/DCIU/PI link and the ACD/CMS feature have not been properly administered, the CMS software will not be able to communicate with the switch. Refer to Appendix A, B, or C for the appropriate switch administration information.

- The 6386 computer has been connected to the TSC's Remote Maintenance Center.
- The Silent Knight Autodialer (optional) has been programmed with the phone number of the Remote Maintenance Center (TSC) and the customer's account number.

Important Information About Setting Up CMS and Installing Additional Packages

- Throughout the setup, you will be prompted to enter values specific to the system being installed. For each question, an appropriate range is displayed in the format of (XX-XX.) The individual values represented by XX specify the limits of each range.
- The CMS feature package must be installed before you can install the Forecasting, Vectoring, or Graphics feature packages.

Setting Up the Data Storage Parameters

Before the R3.0 CMS software can operate properly, specific data storage parameters must be modified on the computer. These data storage parameters are located in the *storage.def* and *vector.def* files.

The *storage.def* and *vector.def* files already contain default values. These values may not correspond to the system being installed. Use the values that were determined by the Account Executive, System Consultant, and Design Center based on the customer configuration.

To set up the appropriate data storage parameters for the */cms/install/cms_install/storage.def* and the */cms/install/vec_install/vector.def* files, do the following:

1. Execute the following command to move to the appropriate directory:

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

⇒ NOTE:

If the *storage.def* or *vector.def* files are destroyed, copies of these files (*storage.sk1* and *vector.sk1*) can be found in the same directories.

-
2. Edit the *storage.def* file and enter the appropriate values for each question. The answer to each question is placed on the line immediately below the question itself. The *storage.def* file looks like the following screens:

```
# Intrahour interval (15, 30, 60 minutes)?
30
# Week start day (Sunday, Monday, Tuesday, Wednesday,
# Thursday, Friday, Saturday)?
Sunday
# Week end day (Sunday, Monday, Tuesday, Wednesday,
# Thursday, Friday, Saturday)?
Saturday
# Daily start time (regular time)?
12:00 AM
# Daily stop time (data will be collected for seconds
# of last minute)?
11:59 PM
# Number of total call records?
0
# Number of total agent trace records?
10000
# Number of total exceptions records (1-2000)?
500
# Number of times each agent logs out per day:
4
```

⇒ NOTE:

The data storage values listed are the default values and may not be correct for the customer's configuration. Use the values that were determined by the Account Executive, System Consultant, and Design Center based on the customer configuration.

```
# ACD 1
# Days of intrahour for splits (1-62)?
31
# Days of daily splits (1-1825)?
387
# Weeks of weekly splits (1-520)?
0
# Months of monthly splits (1-120)?
0
# Days of intrahour for agents (1-62)?
31
# Days of daily agents (1-1825)?
387
# Weeks of weekly agents (1-520)?
0
# Months of monthly agents (1-120)?
0
# Days of intrahour for trunk groups (1-62)?
31
# Days of daily trunk groups (1-1825)?
387
# Weeks of weekly trunk groups (1-520)?
0
# Months of monthly trunk groups (1-120)?
0
# Days of intrahour for trunks (1-62)?
31
# Days of daily trunks (1-1825)?
387
# Weeks of weekly trunks (1-520)?
0
# Months of monthly trunks (1-120)?
0
# Days of intrahour for call work codes (1-62)?
0
# Days of daily call work codes (1-1825)?
0
# Weeks of weekly call work codes (1-520)?
0
# Months of monthly call work codes (1-120)?
0
```

- Execute the following command to move to the appropriate directory:

```
cd /cms/install/vec_install
```

⇒ NOTE:

If the *storage.def* or *vector.def* files are destroyed, copies of these files (*storage.skl* and *vector.skl*) can be found in the same directories.

- Edit the *vector.def* file and enter the appropriate values for each question. The answer to each question is placed on the line immediately below the question itself. The file looks like the following screen:

```
# Repeat for each ACD
# ACD1
# Days of intrahour for vector facilities (1-62)?
31
# Days of daily vector facilities (1-1825)?
387
# Weeks of weekly vector facilities (1-520)?
0
# Months of monthly vector facilities (1-120)?
0
# Days of intrahour for VDNs (1-62)?
31
# Days of daily VDNs (1-1825)?
387
# Weeks of weekly VDNs (1-520)?
0
# Months of monthly VDNs (1-120)?
0
```

⇒ NOTE:

The data storage values listed are the default values and may not be correct for the customer's configuration. Use the values that were determined by the Account Executive, System Consultant, and Design Center based on the customer configuration.

After the CMS software is running, the system administrator can modify the data storage parameters using the “Data Storage Parameters” window in the “System Setup” subsystem. See the *Call Management System Administration* (585-215-511) document, Chapter 11, for this information.

Setting Up the CMS Feature Package

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

The CMS feature package is set up by the engineer at the TSC with the help of the on-site technician. The on-site technician needs to call the engineer at the TSC to coordinate this process.

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

- a. **Interactively from Terminal** — Using the interactive option, the program prompts you for the information necessary to properly set up the CMS feature package (e.g. system type, number of agents, trunks, vectors, VDNs, etc.).

To set up the CMS feature package using this option, see the “Setting Up CMS Interactively From Terminal” section in this chapter.

- b. **UNIX Flat File** — Using the flat file option, you need to edit a UNIX flat file which contains the information (e.g. system type, number of agents, trunks, vectors, VDNs, etc.) necessary to properly set up the CMS feature package. When the program is executed, it runs in the background and uses the UNIX flat file data to set up the CMS feature package.

To set up the CMS feature package using this option, see the “Setting Up CMS Using a UNIX Flat File” section in this chapter.

Setting Up CMS Interactively From the Terminal

To set up CMS interactively from the terminal, complete the following steps:

1. Enter the following command to display the CMS Administration menu:

```
# cmsadm
```

The program prints the following menu:

```
                                CALL MANAGEMENT SYSTEM ADMINISTRATION

1 add_agent      Increase max. number of agents allowed by CMS
2 backup         Filesystem backup
3 pkg_display    Display installed feature packages
4 pkg_install    Install a feature package
5 pkg_remove     Remove a feature package
6 run_cms        Turn CMS On or Off
7 setup          Setup the initial CMS configuration
8 swinfo         Display switch information
9 swsetup        Change switch information
10 update_mgmt   Commands for managing software updates

Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, q to QUIT:
```

2. Enter 7 to select the setup option.

The program responds:

Enter a name for this UNIX system: (default: XXXXXX)

3. Enter a name that corresponds to the name of the customer's company.

The program responds:

```
Select the type of backup device you are using:
 1) SCSI cartridge tape
 2) Floppy disk
Enter the choice (1-2):
```

4. Enter 1 to specify the cartridge tape as the backup device.

The program responds:

```
Enter the default backup device path:
      (default: /dev/scsi/qtape1)
```

5. Press the **RETURN** key to select the default.

The program responds:

```
Select the number of agents that you want to administer
 1) 1-100
 2) 101-200
 3) 201-300
 4) 301-400
 5) over 400
Enter the choice (1-5):
```

6. Enter the number corresponding to the number of agents that the customer has purchased for this system.

If the number you entered represents more than 100 agents, the program responds:

```
Password:
```

7. Enter the appropriate password.

The program responds:

```
Enter ACD1 switch name (Up to 20 characters):
```

8. Enter the name you have chosen for the switch connected to ACD1. Include "R3" in the name to indicate R3 CMS.

The program responds:

```
Select the model of switch for ACD1:
```

- 1) System85-R2V4
- 2) Definity-G1.1
- 3) Definity-G2.1
- 4) Definity-G2.2
- 5) Definity-G3i
- 6) Definity-G3r

```
Enter the choice (1-6):
```

9. Enter the number corresponding to the switch model the ACD is connected to.

The program responds:

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

10. Enter the local port or channel number on the switch.

The program responds:

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

11. Enter the remote port or channel number on the switch.

The program responds:

```
Enter link number (0-9):
```

The link number represents the port on the GPSC-AT/E board which is connected to the switch.

⇒ NOTE:

The **Port A** cable on the GPSC-AT/E Connector Cable corresponds to link 0, and the **Port B** cable corresponds to link 1. If the WGS computer has two GPSC-AT/E cards installed, the GPSC-AT/E card with the lowest slot number has links 0 and 1. The GPSC-AT/E card with the highest slot number has links 2 and 3.

12. Enter the link number.

The program responds:

ACD1 time zone offset (-23 to +23):

13. Enter 0 if the WGS computer and the switch are in the same time zone. If the WGS computer and the switch are in different time zones, use the computer as the reference and determine the plus or minus hours difference that the switch is away from the computer. Enter the number of hours difference.

The program responds:

Number of splits (0-XX):

14. Enter the number of splits in this ACD.

The program responds:

Total split members, summed over all splits (0-XXX):

15. Enter the maximum number of agents that can be logged in simultaneously.

The program responds:

Number of shifts (1-4):

16. Enter the number of shifts.

The program responds:

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

17. Enter the start time of shift 1. For example, 08:00AM.

The program responds:

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

18. Enter the stop time of shift 1. For example, 04:00PM.

The program responds:

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

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

⇒ NOTE:

The previous three questions will repeat for the number of shifts entered. For example, if three shifts were selected, the three previous questions would be repeated for each shift.

The program responds:

Number of trunk groups (0-XX):

20. Enter the number of trunk groups associated with this ACD.

The program responds:

Number of trunks (0-XX):

21. Enter the number of trunks associated with this ACD.

The program responds:

Number of unmeasured facilities (0-XX):

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

⇒ NOTE:

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

The program responds:

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

```
Approximate space requirements:
```

```
Splits: XXXX
Agents: XXXX
Trunk groups: XXXX
Trunks: XXXX
Call records: XX
Agent trace records: XXX
Exceptions records: XX
```

```
File systems/space available:
```

```
/cms      XXXXXX
/cms1     XXXXXX
```

After the program computes the space requirements and file system space availability, the program prompts you to input the file system for the items listed as follows:

```
File system for:
```

```
Splits:
Agents:
Trunk groups:
Trunks:
Call records:
Agent trace records:
Exceptions records:
```

-
23. Depending on the recommended configuration, enter /cms or /cms1 for each item.

The program continues:

```
Creating CMS tables
```

```
.....
```

The dots (periods) continue to appear as long as the program is creating the CMS tables. After the CMS tables have been completed, the following messages appear:

```
Initializing CMS database tables
```

```
*** Database tables successfully initialized ***
```

```
Press the RETURN key to see the cmsadm menu [?, q]:
```

24. Enter q to return to the system prompt.

25. The setup.log file provides a record of what happened during the setup.

To verify the installation completed successfully, execute the following command:

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

The CMS software is successfully setup when you see this message:

```
.  
. .  
*** Database tables successfully initialized ***  
Setup successfully completed <date and time>
```

⇒ NOTE:

If additional information is needed from this log file, move to the appropriate directory and edit the file.

If you need to install additional CMS related feature packages (Vectoring, Graphics, or Forecasting), go to the appropriate section in this chapter, and follow the outlined procedures.

You can now start the CMS software by following the procedures outlined in the “Turning CMS On or Off” section of this chapter.

Setting Up CMS Using a UNIX Flat File

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

1. Change to the following directory by entering this command:

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

2. Copy the cms.inst.skl file by entering the following command:

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

3. Edit the cms.install (flat) file by entering one of the following commands:

```
# vi cms.install  
  
OR  
  
# ed cms.install
```

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

-
4. Enter the appropriate values for your configuration. A sample flat file with values entered might look like the following:

```

# Enter a name for this UNIX system:
R3_COOPER_1
# Select the type of backup device you are using:
# 1) SCSI cartridge tape
# 2) Floppy disk
# Enter choice (1-2):
1
# Default backup device paths based on device type:
# Device                Default backup path
# SCSI cartridge tape /dev/scsi/qtapel
# Floppy disk          /dev/rdisk/f0
# Enter the default backup device path:
/dev/scsi/qtapel
# Select the number of agents that you want to administer:
# 1) 1-100
# 2) 101-200
# 3) 201-300
# 4) 301-400
# 5) over 400
# Enter choice (1-5):
4
# The following information is required per ACD.
# Enter ACD1 switch name (Up to 20 characters):
G3r_Gateway
# Select the model of switch for this ACD
# 1) System85-R2V4
# 2) Definity-G1.1
# 3) Definity-G2.1
# 4) Definity-G2.2
# 5) Definity-G3i
# 6) Definity-G3r
# Enter choice (1-6):
6
# Enter the local port assigned to switch (1-64):
1
# Enter the remote port assigned to switch (1-64):
1
# Enter link number (0-9):
0
# ACD1 time zone offset (-23 to +23):
0
# Maximum number of splits based on switch type:
# Release(s)                                Value
# System85-R2V4/Definity-G2.1/Definity-G2.2  60
# Definity-G1.1/Definity-G3i/Definity-G3r    99
# Number of splits (0-Maximum):
72

```

```

# Total split members, summed over all splits (0-1023):
900
# Number of shifts (0-4):
3
# Enter the start time for shift 1 (hh:mmXM):
08:00am
# Enter the stop time for shift 1 (hh:mmXM):
04:00pm
# Number of agents logged into all splits during
#                               shift 1 (1-Maximum):
350
# Enter the start time for shift 2 (hh:mmXM):
04:00pm
# Enter the stop time for shift 2 (hh:mmXM):
12:00midnight
# Number of agents logged into all splits during
#                               shift 2 (1-Maximum):
125
# Enter the start time for shift 3 (hh:mmXM):
12:00midnight
# Enter the stop time for shift 3 (hh:mmXM):
08:00am
# Number of agents logged into all splits during
#                               shift 3 (1-Maximum):
50
# Enter the start time for shift 4 (hh:mmXM):

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

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

# Maximum number of trunk groups based on switch type:
# Release(s)                               Value
# Definity-G1.1/Definity-G3i                99
# System85-R2V4/Definity-G2.1/G2.2/G3r     255
# Number of trunk groups (0-Maximum):
200
# Number of trunks (0-2000):
1500
# Number of unmeasured facilities
#                               (0 to (2000-Number of trunks)):
300
# Minimum number of call work codes based on switch type:
# Release(s)                               Value
# System85-R2V4/Definity-G1.1/Definity-G2.1  0
# Definity-G2.2/Definity-G3i/Definity-G3r    1
# Maximum number of call work codes based on switch type:
# Release(s)                               Value
# System85-R2V4/Definity-G1.1/Definity-G2.1  0
# Definity-G2.2/Definity-G3i/Definity-G3r    1999
# Number of call work codes (Minimum-Maximum):
1400

```

5. After you have entered all the appropriate values, write and quit the file.
6. Enter the following command to change to the *root* directory:

```
# cd /
```

7. Enter the following command to display the CMS Administration menu:

```
# cmsadm
```

The program responds:

```
                                CALL MANAGEMENT SYSTEM ADMINISTRATION

1 add_agent      Increase max. number of agents allowed by CMS
2 backup         Filesystem backup
3 pkg_display    Display installed feature packages
4 pkg_install    Install a feature package
5 pkg_remove     Remove a feature package
6 run_cms        Turn CMS On or Off
7 setup          Setup the initial CMS configuration
8 swinfo         Display switch information
9 swsetup        Change switch information
10 update_mgmt   Commands for managing software updates

Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, q to QUIT:
```

8. Enter 7 to select the setup option.

The program responds:

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

9. Enter 2 to specify that the installation will use the flat file.

The program responds:

```
Password:
```

10. Enter the appropriate password.

The program responds:

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

```
Approximate space requirements:
```

```
Splits: XXXX
Agents: XXXX
Trunk groups: XXXX
Trunks: XXXX
Call records: XX
Agent trace records: XXX
Exceptions records: XX
```

```
File systems/space available:
```

```
/cms      XXXXXX
/cms1     XXXXXX
```

After the program computes the space requirements and file system space availability, the program prompts you to input the file system for the items listed as follows.

```
File system for:  
Splits:  
Agents:  
Trunk groups:  
Trunks:  
Call records:  
Agent trace records:  
Exceptions records:  
Call work codes:
```

11. Depending on the recommended configuration, enter /cms or /cms1 for each item.

After you enter /cms (or /cms1) for the last item, the program responds:

```
The rest of the installation is running in the background  
Press the RETURN key to see the cmsadm menu [?, q]:
```

12. Enter q to return to the system prompt.

Running the installation in the background takes several minutes. You cannot install any other feature packages until these background processes are finished.

The setup.log file provides a record of what happened during the setup.

To verify the installation completed successfully, execute the following command:

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

The CMS software is successfully setup when you see this message:

```
.  
. .  
*** Database tables successfully initialized ***  
Setup successfully completed <date and time>
```

⇒ NOTE:

If additional information is needed from this log file, move to the appropriate directory and edit the file.

If you need to install additional CMS related feature packages (Vectoring, Graphics, or Forecasting), go to the appropriate section in this chapter, and follow the outlined procedures.

You can now start the CMS software by following the procedures outlined in the “Turning CMS On or Off” section of this chapter.

Installing the Vectoring Feature Package

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

To install the Vectoring feature package, complete the following:

1. Enter the following command to display the CMS Administration menu:

```
# cmsadm
```

The program responds:

```
                                CALL MANAGEMENT SYSTEM ADMINISTRATION

1 add_agent      Increase max. number of agents allowed by CMS
2 backup         Filesystem backup
3 pkg_display    Display installed feature packages
4 pkg_install    Install a feature package
5 pkg_remove     Remove a feature package
6 run_cms       Turn CMS On or Off
7 setup         Setup the initial CMS configuration
8 swinfo       Display switch information
9 swsetup      Change switch information
10 update_mgmt Commands for managing software updates

Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, q to QUIT:
```

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

The program responds:

```
The CMS Features that can be installed are:
```

- 1) Vectoring
- 2) Graphics
- 3) Forecast

```
Enter the feature choice (1, 2 or 3) or q to quit:
```

⇒ NOTE:

The above list may change if any packages are already installed.

3. Enter the number corresponding to the Vectoring feature package.

The program responds:

```
Password:
```

4. Enter the appropriate password.

The program responds:

```
Enter the number of vectors (0-XX):
```

5. Enter the number of vectors on this system.

The program continues:

```
Enter the number of VDNs (0-XX):
```

6. Enter the number of VDNs on this system.

The program continues:

```
Approximate space requirements:
```

```
Vectors: XXXX
```

```
VDNs: XXXX
```

```
File systems/space available:
```

```
/cms      XXXXXX
```

```
/cms1     XXXXXX
```

```
Enter file system for vector data:
```

7. Enter /cms or /cms1 depending on the recommended configuration.

The program responds:

```
Enter file system for VDN data:
```

8. Enter /cms or /cms1 depending on the recommended configuration.

The program responds:

```
Creating call vectoring tables  
.....
```

The dots (periods) continue to appear as the program sets up the call vectoring tables.

After the vectoring tables are completed, the following messages appear:

```
*** Successfully installed 'Vectoring' package ***  
  
Press the RETURN key to see the cmsadm menu [?, q]:
```

9. Enter q to return to the system prompt.

-
10. The pkg.log file provides a record of what happened during the Vectoring package installation.

To verify the installation completed successfully, execute the following command:

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

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

```
.  
. .  
.  
Successfully turning on call vectoring for each ACD(s).  
*** Successfully installed 'Vectoring' package ***
```

⇒ NOTE:

If additional information is needed from this log file, move to the appropriate directory and edit the file.

If additional CMS-related feature packages (Graphics or Forecasting) are to be installed at this time, go to the appropriate section of this chapter and follow the outlined procedures.

Installing the Graphics Feature Package

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

To install the Graphics feature package, complete the following:

1. Enter the following command to display the CMS Administration menu:

```
# cmsadm
```

The program responds:

```
                                CALL MANAGEMENT SYSTEM ADMINISTRATION

1 add_agent   Increase max. number of agents allowed by CMS
2 backup     Filesystem backup
3 pkg_display Display installed feature packages
4 pkg_install Install a feature package
5 pkg_remove  Remove a feature package
6 run_cms    Turn CMS On or Off
7 setup      Setup the initial CMS configuration
8 swinfo     Display switch information
9 swsetup    Change switch information
10 update_mgmt Commands for managing software updates

Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, q to QUIT:
```

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

The program responds:

```
The CMS Features that can be installed are:
```

- 1) Vectoring
- 2) Graphics
- 3) Forecast

```
Enter the feature choice (1, 2 or 3) or q to quit:
```

⇒ NOTE:

The above list changes as the packages are installed.

3. Enter the number corresponding to the Graphics feature package.

The program responds:

```
Password:
```

4. Enter the appropriate password.

The program responds:

```
*** Successfully installed 'Graphics' package ***  
Press the RETURN key to see the cmsadm menu [?, q]:
```

5. Enter q to return to the system prompt.

-
6. The pkg.log file provides a record of what happened during the Graphics package installation.

To verify the installation completed successfully, execute the following command:

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

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

```
.  
. .  
. .  
*** Successfully installed 'Graphics' package ***
```

⇒ NOTE:

If additional information is needed from this log file, move to the appropriate directory and edit the file.

If additional CMS-related feature packages (Vectoring or Forecasting) are to be installed at this time, go to the appropriate section of this chapter and follow the outlined procedures.

Installing the Forecasting Feature Package

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

To install the Forecasting feature package, complete the following:

1. Enter the following command to display the CMS Administration menu:

```
# cmsadm
```

The program responds:

```
                                CALL MANAGEMENT SYSTEM ADMINISTRATION

1 add_agent      Increase max. number of agents allowed by CMS
2 backup         Filesystem backup
3 pkg_display    Display installed feature packages
4 pkg_install    Install a feature package
5 pkg_remove     Remove a feature package
6 run_cms        Turn CMS On or Off
7 setup          Setup the initial CMS configuration
8 swinfo         Display switch information
9 swsetup        Change switch information
10 update_mgmt   Commands for managing software updates

Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, q to QUIT:
```

2. Enter 4 to select the pkg_install option.

The program responds:

```
The CMS Features that can be installed are:
```

- 1) Vectoring
- 2) Graphics
- 3) Forecast

```
Enter the feature choice (1, 2 or 3) or q to quit:
```

⇒ NOTE:

The above list changes as the packages are installed.

3. Enter the number corresponding to the Forecast feature package.

The program responds:

```
Password:
```

4. Enter the appropriate password.

The program responds:

```
Approximate space requirements:
```

```
Forecasting: XXXXX
```

```
File systems/space available:
```

```
/cms XXXXXX
```

```
/cms1 XXXXXX
```

```
Enter file system for forecasting:
```

5. Enter /cms or /cms1 depending on the recommended configuration.

The program responds:

```
Creating forecast tables  
.....
```

The dots (periods) continue to appear as the program sets up the forecasting tables. After the forecasting tables are completed, the following messages appear:

```
*** Successfully installed 'Forecasting' package ***  
Press the RETURN key to see the cmsadm menu [?, q]:
```

6. Enter q to return to the system prompt.

-
7. The pkg.log file provides a record of what happened during the Forecasting package installation.

To verify the installation completed successfully, execute the following command:

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

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

```
.  
. .  
. .  
*** Successfully installed 'Forecast' package ***
```

⇒ NOTE:

If additional information is needed from this log file, move to the appropriate directory and edit the file.

If additional CMS-related feature packages (Graphics or Vectoring) are to be installed at this time, go to the appropriate section of this chapter and follow the outlined procedures.

Turning CMS On or Off

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

After the CMS software is installed, you need to turn on CMS to allow it to begin

collecting data. Turning on CMS initializes the communications link between the CMS software and the telecommunications switch.

You need to stop CMS to upgrade or update the CMS feature package.

Use these steps to start or stop CMS:

1. Enter the following command to display the CMS Administration menu:

```
# cmsadm
```

The program responds:

```
CALL MANAGEMENT SYSTEM ADMINISTRATION

1 add_agent      Increase max. number of agents allowed by CMS
2 backup         Filesystem backup
3 pkg_display    Display installed feature packages
4 pkg_install    Install a feature package
5 pkg_remove     Remove a feature package
6 run_cms        Turn CMS On or Off
7 setup          Setup the initial CMS configuration
8 swinfo         Display switch information
9 swsetup        Change switch information
10 update_mgmt   Commands for managing software updates

Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, q to QUIT:
```

2. Enter 6 to select the run_cms option.

The program responds:

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

3. Enter the appropriate number to turn CMS on or off.
 - a. If you turned CMS on, the program responds:

```
Checking the System Tunables for correct CMS values.
Please wait for initialization
. .
```

The program takes a few minutes to initialize the system parameters and then responds:

```
*** CMS is now up ***

Press the RETURN key to see the cmsadm menu [?, q]:
```

-
- b. If you turned CMS off, the program responds:

```
*** Turning off CMS, Please wait ***  
.....  
*** CMS is now off ***  
  
Press the RETURN key to see the cmsadm menu [?, q]:
```

4. Press **RETURN** to display the cmsadm menu or enter q to **return to the system prompt**.

Turning the System Over to the Customer

Complete the test procedures located in Chapter 5, “Turning CMS Over to the Customer” and the backup procedures located in Chapter 6, “Maintenance” before you turn the system over to the customer.

The customer’s CMS administrator will need to know the information outlined on the next page.

⇒ NOTE:

For system security, **passwords should not be written down**. If they are written down, they should be stored in a secured place.

The password for the <i>root</i> login ID. (Also passwords for the system login IDs if they were assigned.)	1.	_____
The CMS administrator login ID and password. (This login ID is <i>cms</i> .)	2.	_____
Additional CMS-administrator login IDs and passwords	3.	_____

The default CMS printer name	4.	_____
Additional system printer names	5.	_____

How many splits were assigned?	6.	_____
How many agents were assigned?	7.	_____
How many trunk groups were assigned?	8.	_____
How many trunks were assigned?	9.	_____
How many VDNs were assigned?	10.	_____

The customer's CMS administrator will also need the printed output from the **df -t** command which contains disk partitioning information.

CMS Software Maintenance Procedures

4

General Information

Use the procedures in this chapter to maintain the R3 CMS software on a 6386 computer.

The procedures for maintaining the R3 CMS software are divided into five categories:

- Upgrading the CMS Software
- Updating the CMS Software
- Displaying Installed Feature Packages
- Removing a CMS Related Feature Package.
- Changing Switch Parameters

⇒ NOTE:

You should confer with the customer's CMS administrator to determine whether or not the software maintenance is to take place after regular working hours.

Before Upgrading to a New Base Load or Installing a Field Update

Before you upgrade a system to a new base load or install a Field Update, do the following:

- Back up the */* and */usr* file systems and the CMS file system(s) from the UNIX system environment. For instructions, refer to Chapter 6, "Maintenance."

⇒ **NOTE:**

If you are upgrading the system to include the Mirrored Disk capabilities, follow the procedures outlined in UNIX documentation.

- Make sure you have the cartridge tape that contains the new base load or the Field Update software.

⇒ **NOTE:**

A letter should accompany the software. Read the instructions in the letter before you start the procedures in this chapter.

Upgrading the CMS Software

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

The upgrade software package will automatically use the following procedures to upgrade your system:

- Remove the Current Base Load
- Download the New Base Load
- Reinstall the CMS Feature Package.

To install the CMS upgrade, do the following steps:

1. Insert the CMS upgrade cartridge tape into the tape drive.
2. Enter the following command to start the upgrade procedure:

```
# installpkg
```

-
3. The **installpkg** program responds with the following message:

Confirm

Please indicate the installation medium you intend to use.

Strike "C" to install from CARTRIDGE TAPE
or "F" to install from FLOPPY DISKETTE.

Strike ESC to stop.

4. Press c to select the cartridge tape.

The program responds:

Confirm

Please insert the cartridge tape into the tape drive.

Strike ENTER when ready
or ESC to stop.

5. Press **RETURN**.

The program continues:

Confirm

It is recommended that you re-tension the tape before attempting the installation, to ensure that the tape is read without any errors.

If you strike ENTER the tape will be re-tensioned.

Strike ENTER when ready
or ESC to stop.

6. Press **RETURN**.

The program continues:

Retensioning the tape media.

This will take approximately 3 minutes.

After the tape has re-tensioned, the program responds:

You will now be prompted to select the packages that you wish to install from this tape.

You may select one or more packages from the menu by entering the number listed alongside the package name.

Enter each package number one at a time, pressing ENTER after each selection. The package numbers may be entered in any order.

To install all the packages, type the number indicated at the end of the package list.

When you have made all the selections required, Strike ESC.

To skip this step or cancel any selections made, type the number as indicated in the package list.

Strike ENTER when ready.

7. Press **RETURN**.

The program responds:

Packages available for installation:

1. X.25 Network Interface - Version 1.2.1
2. UNIX System V/386 R3.2 V2.3 Maintenance Disk #1
3. KornShell Version 11/16/88d 386 Release 2.0
4. Call Management System (3.X)

5. Install ALL packages shown above
6. Exit, do not install any packages

Please enter the next package number(s) to install,
followed by ENTER.

Press ESC when all selections have been made.

Enter Package Number:

8. Enter the number corresponding to the Call Management System package.
9. Press **ESC**. The program responds:

You have made the following selections:

3. Call Management System (3.X)

Confirm

Strike ENTER to confirm and continue with the installation
or ESC to re-display the menu and re-select.

Strike ENTER when ready
or ESC to stop.

10. Press **RETURN**.

The program continues:

REMINDER!

Depending on the packages you are installing, you may be required to provide some input to the installation utility to configure the software for your system.

Strike ENTER when ready.

11. Press **RETURN**.

The program continues:

```
Installation in progress -- Do not remove the cartridge tape

Installing the Call Management System (3.X).
Copyright (c) 1991 AT&T
All Rights Reserved.

Editing Package Version 2.1 verified.
Remote Terminal Package Version 2.1 verified.
KornShell Version 11/16/88d 386 Release 2.0 verified.
X25 Network Interface - Version 1.2.1_DEMO verified.
SCSI Support Package - Version 2.0 verified.
UNIX System V/386 R3.2 V2.3 Maintenance Disk #1 verified.
INFORMIX-SQL Version 2.10.03J <date and time> verified.
Remote Management Package (RMP) Version 1.0 verified.

CMS is already installed on this machine...
Removing old CMS software... CMS data will be preserved

Removing Call Management System (3.X).

All file systems should be backed up before continuing.
See the Maintenance chapter in the i386 CMS Installation
and Maintenance Manual for instructions.

Have you backed up the file systems? (y/n):
```

If you have backed up your file systems, enter **y**. **If you have not backed up your file systems, enter n** and complete the procedures in the "Backing Up the File Systems From the UNIX System Environment" section of chapter 6.

If you answer y, the program responds with the following message:

```
Stopping UNIX log ... done
>> Retaining customer data.
/etc/conf/init.d/ilog
/etc/conf/node.d/osm
/etc/logit
/usr/bin/cms
/usr/bin/cmsadm
. . . .
. . . .
. . . .
```

The program takes about ten minutes to remove the files associated with the previous version of CMS. When all the appropriate files have been removed, the program responds:

```
Removal of Call Management System (3.X) is complete

## Installing files from cartridge tape
. . . . .
. . . . .
. . . . .
. . . . .
```

The program takes about 10-20 minutes to download the R3 CMS software from the cartridge tape to the hard disk. As the software is downloaded, several rows of periods (.....) are displayed to let you know the program is still running. When the download of files finishes, the following message appears:

```
## Auditing package installation
```

Several minutes are required to audit the package installation.

If the audit is successful, the following messages are displayed:

```
>> No errors detected during audit.  
## Upgrading Customer CMS data ...
```

The program takes a few minutes to upgrade (reformat) the customer data. The program continues:

```
Customer CMS data successfully upgraded.  
  
Setting UNIX system tunable parameters for CMS.  
This will take approximately three minutes to complete.  
No changes to tunable parameters were required.  
  
The installation of the Call Management System (3.X)  
package is now complete.  
  
#
```

⇒ NOTE:

If the tunable parameters **were** changed, the program prompts you to reboot. In this case, press **ESC** and then execute the shutdown **-i6 -g0 -y command**.

12. After the tape has finished rewinding (tape drive light is not lit), remove the cartridge tape.

The CMS software has been successfully upgraded.

13. Do a system backup by completing the procedures in the “Backing Up the File Systems From the UNIX System Environment” section of chapter 6.

Updating the CMS Software

Updating the CMS software is a two part process. The first part of the process is saving (downloading) the CMS update files from cartridge tape to hard disk. This allows the update to be stored on the hard disk until a convenient time to do the update. Downloading the CMS update files requires an on-site technician to insert the CMS update tape into the tape drive.

The second part of the process is installing the update from the hard disk files. This part of the process can be done remotely. Since CMS must be off to update from disk files, you should do the update at a time when customer service will not be interrupted (i.e., after regular working hours, weekends, etc.)

Saving the CMS Update to Disk Files

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

To save the CMS software update to disk files, do the following steps:

1. Insert the CMS upgrade cartridge tape into the tape drive.
2. Execute the following command to start the update procedure:

```
# cmsadm
```

The CMS Administration menu displays:

```
CALL MANAGEMENT SYSTEM ADMINISTRATION

1 add_agent   Increase max. number of agents allowed by CMS
2 backup      Filesystem backup
3 pkg_display Display installed feature packages
4 pkg_install Install a feature package
5 pkg_remove  Remove a feature package
6 run_cms     Turn CMS On or Off
7 setup       Setup the initial CMS configuration
8 swinfo      Display switch information
9 swsetup     Change switch information
10 update_mgmt Commands for managing software updates
```

```
Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, q to QUIT:
```

3. Enter 10 to select the update_mgmt option.

The program responds:

```
Select operation:
1) Backout the currently installed update
2) Install update from disk files
3) Save update on disk for later installation
Enter choice (1-3):
```

4. Enter 3.

The program responds:

```
Insert cartridge tape, then press ENTER:
```

5. Insert the CMS update tape into the tape drive and press **RETURN**.

The program begins downloading the CMS update files onto the hard disk as indicated by these messages:

```
looking for cms package ....
install.1
install.1/INSTALL
install.1/pkgname
install.1/i_data
install.1/UNINSTALL
install.1/SETtunes
install.1/adm_func
install.1/audit
install.1/auditmap
install.1/autoconfig
install.1/pkgauditmap
install.1/auditmap.1
install
install/INSTALL
install/pkgname
install/i_data
install/UNINSTALL
install/SETtunes
install/adm_func
install/audit
install/auditmap
install/autoconfig
install/pkgauditmap
install/auditmap.1
578 blocks
200+0 records in
200+0 records out
Software saved in /cms/cms_updates/3.X for
                                later installation.

Press the RETURN key to see the cmsadm menu [?, q]:
```

where X is the update release, for example: 3.1m4.1a.

⇒ NOTE:

The numbers of blocks, records, and filenames you see on your screen may differ depending on the size of the update release.

6. Enter q.

The system prompt (#) should return to your screen.

The update files are now downloaded from cartridge tape to hard disk.

Installing the CMS Update From Disk Files

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

The CMS software allows an update from disk files which have been previously created. You created these files in the "Saving the CMS Update to Disk Files" section of this chapter. Installing an update from disk files can be done from a remote location.

To install the CMS software update from disk files, do the following steps:

1. Enter the CMS Administration command:

```
# cmsadm
```

The CMS Administration menu displays:

```
CALL MANAGEMENT SYSTEM ADMINISTRATION

1 add_agent      Increase max. number of agents allowed by CMS
2 backup         Filesystem backup
3 pkg_display    Display installed feature packages
4 pkg_install    Install a feature package
5 pkg_remove     Remove a feature package
6 run_cms       Turn CMS On or Off
7 setup         Setup the initial CMS configuration
8 swinfo       Display switch information
9 swsetup      Change switch information
10 update_mgmt  Commands for managing software updates

Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, q to QUIT:
```

Enter 6 to select the `run_cms` option.

The program responds:

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

2. Enter 2 to turn CMS off.

The program responds:

```
*** Turning off CMS, Please wait ***
*** CMS is now off ***
Press the RETURN key to see the cmsadm menu [?, q]:
```

3. Press .

The CMS Administration menu displays:

```
CALL MANAGEMENT SYSTEM ADMINISTRATION

1 add_agent   Increase max. number of agents allowed by CMS
2 backup      Filesystem backup
3 pkg_display Display installed feature packages
4 pkg_install Install a feature package
5 pkg_remove  Remove a feature package
6 run_cms     Turn CMS On or Off
7 setup       Setup the initial CMS configuration
8 swinfo      Display switch information
9 swsetup     Change switch information
10 update_mgmt Commands for managing software updates
```

```
Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, q to QUIT:
```

4. Enter 10 to select the update_mgmt option.

The program responds:

```
Select operation:
 1) Backout the currently installed update
 2) Install update from disk files
 3) Save update on disk for later installation
Enter choice (1-3):
```

5. Enter 2.

The program responds:

Select update to install:

1) 3.X

Enter choice (1-1):

6. Enter 1.

The program responds:

578 blocks

Installing the Call Management System (3.X).
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All Rights Reserved.

Call Management System (3.X) verified.
Editing Package Version 2.1 verified.
KornShell Version 11/16/88d 386 Release 2.0 verified.
X25 Network Interface: Release 1.2.1 1.51.1.7 verified.
SCSI Support Package - Version 2.0 verified.
UNIX System V/386 Release 3.2 Version 2.3 Maintenance
Disk #1 verified.
INFORMIX-SQL Version 2.10.03J 01/27/89 16:43 verified.
Remote Management Package (RMP) Version 1.0 verified.

Making backup copies of old files ...
/cms/install/update/file_bkup/cms/bin/gsearch
/cms/install/update/file_bkup/cms/db/scrdef/d_search
/cms/install/update/file_bkup/cms/install/auditmap
/cms/install/update/file_bkup/cms/install/autoconfig
342 blocks

Installing files from /cms/cms_updates/3.1m4.1a
1820 blocks

Installing AUDITMAP in
/usr/admin/menu/packagemgmt/auditmaps

Auditing package installation

Several minutes are required to audit the package installation.

If the audit is successful, the following message is displayed:

```
>> No errors detected during audit.

Setting UNIX system tunable parameters for CMS.
This will take approximately three minutes to complete.
No changes to tunable parameters were required.

The installation of the Call Management System (3.X)
                                                is complete.
Update installation completed successfully

Remove saved disk files in /cms/cms_updates/3.X? (y/n):
```

7. Enter y.

⇒ NOTE:

If the tunable parameters **were** changed, the program prompts you to reboot. In this case, execute the shutdown -i6 -g0 -y **command**.

The program responds:

```
Press the RETURN key to see the cmsadm menu [?, q]:
```

8. Press .

The CMS administration screen displays:

```
CALL MANAGEMENT SYSTEM ADMINISTRATION

1 add_agent   Increase max. number of agents allowed by CMS
2 backup      Filesystem backup
3 pkg_display Display installed feature packages
4 pkg_install Install a feature package
5 pkg_remove  Remove a feature package
6 run_cms     Turn CMS On or Off
7 setup       Setup the initial CMS configuration
8 swinfo      Display switch information
9 swsetup     Change switch information
10 update_mgmt Commands for managing software updates
```

```
Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, q to QUIT:
```

9. Enter 56fP to select the run_cms option.

The program responds:

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

10. Enter 1 to turn on CMS.

The program responds:

```
Please wait for initialization
.
*** CMS is now up ***
Press the RETURN key to see the cms_mgmt menu [?, q]:
```

11. Enter q to quit.

The system prompt (#) should return to your screen. The CMS update is now complete.

Backing Out the Currently Installed Update

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

The CMS software provides a function that can remove the currently installed CMS software update and restore the CMS software to the previous base load. This procedure is referred to as 'backing out the software.'

To back out the CMS update currently installed on the system, do the following steps:

1. Enter the following command to access the CMS management menu:

```
# cmsadm
```

The program responds:

```
                                CALL MANAGEMENT SYSTEM ADMINISTRATION

1 add_agent      Increase max. number of agents allowed by CMS
2 backup         Filesystem backup
3 pkg_display    Display installed feature packages
4 pkg_install    Install a feature package
5 pkg_remove     Remove a feature package
6 run_cms        Turn CMS On or Off
7 setup          Setup the initial CMS configuration
8 swinfo         Display switch information
9 swsetup        Change switch information
10 update_mgmt   Commands for managing software updates

Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, q to QUIT:
```

2. Enter 10 to select the `update_mgmt` option.

The program responds:

```
Select operation:
 1) Backout the currently installed update
 2) Install update from disk files
 3) Save update on disk for later installation
Enter choice (1-3):
```

3. Enter 1.

The program responds with a list of files that will be changed due to the backout of the update.

```
. . . . .
. . . . .
. . . . .
/cms/install/auditmap
/cms/install/autoconfig

Press the RETURN key to see the cms_mgmt menu [?, q]:
```

4. Enter q to quit and return to the system prompt.

The update has been successfully backed out of the CMS software. You can now start the CMS software by following the procedures outlined in the "Turning CMS On of Off" section of Chapter 3.

Increasing Agent Capacity in CMS

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

This section describes the procedure to increase the number of agents that can be logged into CMS at a given time.

1. Enter the following command to access the CMS management menu:

```
# cmsadm
```

The program responds:

```
                                CALL MANAGEMENT SYSTEM ADMINISTRATION

1 add_agent      Increase max. number of agents allowed by CMS
2 backup         Filesystem backup
3 pkg_display    Display installed feature packages
4 pkg_install    Install a feature package
5 pkg_remove     Remove a feature package
6 run_cms        Turn CMS On or Off
7 setup          Setup the initial CMS configuration
8 swinfo         Display switch information
9 swsetup        Change switch information
10 update_mgmt   Commands for managing software updates

Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, q to QUIT:
```

2. Enter 1 to select the `add_agent` option.

The program responds:

```
Password:
```

3. Enter the appropriate password.

The program responds:

```
Maximum number of agents currently allowed is: XXX
```

```
Increase max. number of agents by:
```

- 1) 100
- 2) 200
- 3) 300
- 4) XXX

```
Enter the choice (1-5):
```

4. Enter the number corresponding to the number of additional agents you want to add to your system.

The program responds:

```
*** The maximum number of agents was increased by XXX. ***
```

```
Press the RETURN key to see the cmsadm menu [?, q]:
```

5. Enter q to quit and return to the system prompt.

Displaying Installed Feature Packages (CMS-Related)

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

This section describes the procedure used to display the CMS-related feature package(s) currently installed on the computer.

1. Enter the following command to access the CMS management menu:

```
# cmsadm
```

The program responds:

```
                                CALL MANAGEMENT SYSTEM ADMINISTRATION

1 add_agent      Increase max. number of agents allowed by CMS
2 backup         Filesystem backup
3 pkg_display    Display installed feature packages
4 pkg_install    Install a feature package
5 pkg_remove     Remove a feature package
6 run_cms       Turn CMS On or Off
7 setup         Setup the initial CMS configuration
8 swinfo        Display switch information
9 swsetup       Change switch information
10 update_mgmt  Commands for managing software updates

Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, q to QUIT:
```

2. Enter 3 to select the `pkg_display` option.

The program responds:

```
The following feature packages have been installed:
```

```
Vectoring  
Graphics  
Forecast
```

```
Press the RETURN key to see the cmsadm menu [?, q]:
```

⇒ NOTE:

Your screen may look different depending on what packages are installed.

3. Enter q to quit and return to the system prompt.

Removing a CMS Related Feature Package

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

This section describes the procedure to remove a CMS-related feature package. This procedure also removes all files and database tables associated with the feature package.



CAUTION:

Care should be taken when removing a package as all features and data associated with that package will be lost.

To remove a CMS-related feature package, do the following steps:

1. Enter the following command to access the CMS management menu:

```
# cmsadm
```

The program responds:

```
                                CALL MANAGEMENT SYSTEM ADMINISTRATION

1 add_agent   Increase max. number of agents allowed by CMS
2 backup      Filesystem backup
3 pkg_display Display installed feature packages
4 pkg_install Install a feature package
5 pkg_remove  Remove a feature package
6 run_cms     Turn CMS On or Off
7 setup       Setup the initial CMS configuration
8 swinfo      Display switch information
9 swsetup     Change switch information
10 update_mgmt Commands for managing software updates
```

```
Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, q to QUIT:
```

2. Enter 5 to select the pkg_remove option.

The program responds:

```
The CMS features that can be removed are:
```

1. Graphics
2. Forecast

```
Enter the Feature choice (1 or 2) or q to quit:
```

3. Enter the number corresponding to the feature package that is being removed.

If the Graphics feature is selected, the following appears

Graphics package successfully removed

If the Forecast feature is selected, the following appears

.
Forecast package successfully removed

Press the RETURN key to see the cmsadm menu [?, q]:

4. Enter q to quit and return to the system prompt.

Changing Switch Parameters

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

This section describes the procedure to change the switch parameters.

To change switch parameters, do the following steps:

1. Enter the following command to access the CMS management menu:

```
# cmsadm
```

The program responds:

```
                                CALL MANAGEMENT SYSTEM ADMINISTRATION

1 add_agent   Increase max. number of agents allowed by CMS
2 backup      Filesystem backup
3 pkg_display Display installed feature packages
4 pkg_install Install a feature package
5 pkg_remove  Remove a feature package
6 run_cms     Turn CMS On or Off
7 setup       Setup the initial CMS configuration
8 swinfo      Display switch information
9 swsetup     Change switch information
10 update_mgmt Commands for managing software updates

Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, q to QUIT:
```

2. Enter 9 to select the swsetup option.

The program responds:

```
Enter ACD1 switch name (Up to 20 characters):
```

3. Enter the name you have chosen for the switch which will be connected to ACD1.

The program responds:

```
Select the model of switch for this ACD:
```

- 1) System85-R2V4
- 2) Definity-G1.1
- 3) Definity-G2.1
- 4) Definity-G2.2
- 5) Definity-G3i
- 6) Definity-G3r

```
Enter the choice (1-6):
```

4. Enter the number corresponding to the switch model to which the ACD will be connected.

The program responds:

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

5. Enter the port number (local port number on the switch).

The program responds:

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

6. Enter the port number (remote port number on the switch).

The program responds:

```
Enter link number (0-9):
```

7. Enter the link number. The link number represents the port on the GPSC-AT/E board which is connected to the switch.

⇒ NOTE:

The **Port A** cable on the Serial Port Connector Cable corresponds to link 0, and the **Port B** cable corresponds to link 1. If the WGS computer has two GPSC-AT/E cards installed, the GPSC-AT/E card with the lowest slot number has link 0 and 1. The GPSC-AT/E card with the highest slot number has link 2 and 3.

The program responds:

```
ACD1 time zone offset (-23 to +23):
```

8. Enter 0 if the WGS computer and the switch are in the same time zone. If the WGS computer and the switch are in different time zones, use the computer as the reference, and determine the plus or minus hours difference that the switch is away from the computer. Enter the number of hours difference.

```
Press the RETURN key to see the cmsadm menu [?, q]:
```

9. Enter q to quit and return to the system prompt.

Displaying Switch Parameters

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

This section describes the procedure to display the switch parameters.

To display switch parameters, do the following steps:

1. Enter the following command to access the CMS management menu:

```
# cmsadm
```

The program responds:

```
                                CALL MANAGEMENT SYSTEM ADMINISTRATION

1 add_agent      Increase max. number of agents allowed by CMS
2 backup         Filesystem backup
3 pkg_display    Display installed feature packages
4 pkg_install    Install a feature package
5 pkg_remove     Remove a feature package
6 run_cms        Turn CMS On or Off
7 setup          Setup the initial CMS configuration
8 swinfo         Display switch information
9 swsetup        Change switch information
10 update_mgmt   Commands for managing software updates

Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, q to QUIT:
```

2. Enter 8 to select the swinfo option.

The program responds:

```
Current switch administration for acd 1:  
Switch name: XXXXXXXXXXX  
Switch model: XXXXXXXXXXX  
Local port: X  
Remote port: X  
Time zone offset: X  
Press the RETURN key to see the cmsadm menu [?, q]:
```

3. Enter q to quit and return to the system prompt.

Turning the System Over to the Customer

5

General Information

This chapter contains the test procedures that you must do before you turn the Release 3.0 CMS software application over to the customer. These test procedures should be done after:

- The R3 CMS software package has been installed, upgraded, or updated
- The CMS host computer has been connected to the switch
- The telecommunications switch has been translated correctly with the CMS feature enabled and the link active.

By doing the procedures in this chapter, you will be able to verify that the CMS software has been installed or upgraded correctly and is working properly.

Do the procedures in this chapter to test the following:

- The operating system parameters
- The connection between the customer's R3 CMS host computer and the Technical Support Center (TSC)

⇒ NOTE:

This test should be done after the R3 CMS software has been initially installed and does not have to be done after a new base load or Field Update has been installed.

-
- The sanity of the CMS feature package

⇒ **NOTE:**

This sanity test should be done after the R3 CMS software has been initially installed or upgraded.

- The sanity of any CMS-related feature packages (Vectoring, Graphics, and Forecasting)

⇒ **NOTE:**

This sanity test should be done after the R3 CMS software has been initially installed or upgraded.

- The link configuration between the R3 CMS host computer and the telecommunications switch.

If you encounter a problem that you cannot solve, escalate the problem through normal procedures.

Verifying the UNIX System Date and Time

The information in this section is used to verify that the UNIX system time is the same as the current local time. If the UNIX system time is not correct, the procedures for setting the time are outlined in the *Setting the UNIX System Date and Time* section located in this chapter.

Checking the UNIX System Date and Time

To verify that the system time is correct, execute the following command:

```
# date
```

If the system time is correct, go to the section *Testing the Security of the System* in this chapter.

If the UNIX system time is incorrect, go to the section *Setting the UNIX System Date and Time* in this chapter.

Setting the UNIX System Date and Time

Set the UNIX system time by doing the following:

1. Execute the following command to access the FACE program:

```
# face
```

The system responds by displaying the FACE menu.

2. From the FACE menu, select the **System Administration** menu.
3. From the System Administration menu, select the **Date and Time** menu.

The system will respond by displaying the fields which require information to be added about the system date and time. The appropriate date and time information will need to be entered for the following fields:

- **Date:** Enter the appropriate system date. The system date consists of three components: Month, Day, and Year. The options for each component can be displayed by placing the cursor on the component and pressing the “Choices” key.
- **Time:** Enter the appropriate system time. The hour component is first selected and then the minute component is selected. The options for each component can be displayed by placing the cursor on the component and pressing the “Choices” key.
- **AM/PM:** Enter the appropriate response for the time entered in the previous field. Options include: AM or PM.
- **Time Zone:** Enter the appropriate time zone. Options include: Eastern, Central, Mountain, Pacific, and GMT.

⇒ NOTE:

Be sure to take the customer’s time zone into consideration when changing the UNIX system time from a remote location.

-
- **Is Daylight Savings time ever used?** Enter the appropriate answer for whether daylight savings time is ever used. Options include: Yes and **No**.

⇒ **NOTE:**

When setting the time in the UNIX system, the Daylight Savings time option should be set to **No** for the R3 CMS software application to properly work.

4. Use the “Save” and “Cont” function keys to enable the changes.
5. Logout of UNIX and log in again as *root*.
6. Execute the following command to verify that the date and time is correct:

```
# date
```

If the date and/or time is incorrect, repeat the procedures outlined in this section.

Testing the Connection to the Technical Support Center

The information in this section is used to verify that the TSC is properly connected to the CMS host computer. This connection allows the TSC to do remote maintenance and to be notified of UNIX system alarms.

Testing the Remote Console

Use the information in this section to verify that the TSC can dial in remotely and perform routine maintenance procedures.

To test the connection between the TSC and the remote console, do the following:

-
1. From a remote console terminal, log into the customer's CMS host computer and superuse to *root*.
 2. Execute the following command to start the remote diagnostics:

```
# rmcmgmt -r
```

3. Execute the following command to change the active partition to DOS and reboot the machine:

```
# rmtdgn
```

-
4. At the DOS prompt (C>), execute the following command to run the diagnostics menu:

```
C> DGMON /A
```

5. Select option #4, I/O Diagnostics, from the Diagnostics menu.
6. Select option #9, RMC Board Diagnostics, from the I/O Diagnostics menu.
7. Execute test 11 and answer **n** to all the questions.
8. Execute test 4 and answer **y** to all the questions.

The system should automatically reboot after completing test 4.

9. After exiting the Diagnostics test, change the active partition to UNIX.

⇒ NOTE:

An "ESC" from an ASCII terminal is "ESC" pressed twice.

10. Reboot UNIX twice. The first time you should see an error message as to what caused the last system reset. The second time you should not see any error messages.

Testing the System Alarms

Use the information in this section to verify that the system alarms and notification procedures are operating correctly.

⇒ NOTE:

The Silent Knight Autodialer is optional. If it is not part of the hardware configuration, skip this section.

The Silent Knight Autodialer is used to report UNIX System alarms to the TSC. You can dial into the R3 CMS host computer on the same line that is used to report the alarms.

⇒ NOTE:

The phone number for the TSC should have been programmed earlier by the on-site technician. If the Silent Knight Autodialer has not been programmed, the on-site technician must program it before you can continue.

To test the Silent Knight Autodialer, do the following:

1. Tell the on-site technician to jump terminals 5 and 11 on the autodialer with a piece of wire. This will dial the TSC and report a minor alarm.
2. Verify that the TSC (or destination phone number) received the alarm call.

To test the GPSC–AT/E board and the Silent Knight Autodialer, do the following:

1. From a remote console terminal, log into the customer's CMS host computer as *root*.
2. Enter the following command:

```
# /etc/rmcmgmt
```



NOTE:

See Appendix D, "RMC Manual Pages" for more information on the **rmcmgmt** program.

When the prompt (>) appears, enter the following option:

```
> rmcmgmt -js
```

- A major alarm is generated.
- The Silent Knight Autodialer places a call to the programmed number.

3. After verifying that the test worked, enter the following option:

```
> rmcmgmt -jc
```

- The major alarm is turned off.

4. To exit from the **rmcmgmt** program, enter **q**.

If the test was not successful, tell the on-site technician to do the following steps before you try again:

1. There are nine jumper wires on the autodialer unit. Verify that jumper number 4 is cut, and the remaining jumpers are intact.
2. Verify that the autodialer transformer is plugged into a 120 volts ac source. This transformer cuts the voltage down to 12 volts ac. Verify that this power source connects to terminals 1 and 2 on the Silent Knight Autodialer.
3. Check the battery connection.
4. Verify that the Silent Knight Autodialer is programmed correctly. See Chapter 2, "Connecting the Hardware - 6386 WGS to Switch" in this document.

If the test is still unsuccessful, the on-site technician should verify the cabling of the Autodialer before you retry the test again.

⇒ NOTE:

For more information on how to test the Remote Management Package, refer to the *Remote Management Package Manual* (305-455).

Testing the Security of the System

This section outlines the procedures needed to verify that the system is secure. The system is secure when the system administrator can verify that all logins are valid and have passwords assigned to them.

To verify that all logins are valid and have a password assigned to them, do the following:

1. Print the `/etc/passwd` file by executing the following command:

```
lp /etc/passwd
```

2. Check the printout of the `/etc/passwd` file and make sure there is a password associated with each login. The password is listed in the second field of each line (login id). The fields are separated by a colon (:). The following lines show an example of a login that has a password

assigned to it (first line) and an example of a login that does not have a password assigned to it (second line).

good:..KFtibTTE,M0dF:292:440:PerfectIM(XX4142)412

bad::2944:440:WatchIT(XX3825)412

3. Print the /etc/shadow file by executing the following command:

```
lp /etc/shadow
```

-
4. Check the printout of the `/etc/shadow` file and make sure there is a password associated with each login. The password is listed in the second field of each line (login id). The fields are separated by a colon (:). The following lines show an example of a login that has a password assigned to it (first line) and an example of a login that does not have a password assigned to it (second line).

```
good:..KFtibTTE,M0dF:292:440:PerfectIM(XX4142)412 ....  
bad:NONE:2944:440:WatchIT(XX3825)412 .....
```

5. Compare the printout of the `/etc/passwd` file and the `/etc/shadow` and make sure there is an entry for each login in both files.
6. If a login does not have a password associated with it, use the `FACE` utility and assign the login a password. If a login does not have an entry in each file, use the `FACE` utility to verify that the login has been administered correctly.

Testing the R3 CMS Software

The following procedure should be done by the on-site technician after the R3 CMS software has been installed or upgraded to verify the sanity of R3 CMS software:

1. At a console terminal, log into the system by using a CMS administrator's login ID (*cms*). Supply the correct password when prompted to do so.
2. Access the R3 CMS main menu by typing `cms` and entering the correct terminal type.
3. Test the Real-time Reports subsystem by doing the following from the MAIN MENU:
 - a. Select the **Reports** option.
 - b. Select the **Real-time** option.
 - c. Select the **Split** option.
 - d. Select the **Status** option.
 - e. Verify that the **Split Status Report Input** window appears.
 - f. Enter a valid split number in the **Split:** field.
 - g. Select the **Run** action list item and run the report.
 - h. Verify that the **Split Status Report** window appears.
 - i. Press the SLK.

-
- j. Select the **Print window** option to send the report to the printer.
 - k. Look at the message line near the bottom of the window and verify that there is a confirmation message about sending your report to the printer.
 - l. Verify that the report was printed by checking the printed report.
 - m. Return to the MAIN MENU screen by pressing the **EXIT** SLK twice.
4. Test the Historical Reports subsystem by doing the following from the MAIN MENU:
 - a. Select the **Reports** option.
 - b. Select the **Historical** option.
 - c. Select the **Split** option.
 - d. Select the **Status** option.
 - e. Verify that the **Split Status Report Input** window appears.
 - f. Enter a valid split number in the **Split:** field.
 - g. Enter -1 in the **Date:** field.
 - h. Select the **Run** action list item and run the report.
 - i. Verify that the report window appears and information is displayed in the appropriate fields.

⇒ NOTE:

If no historical data exists, the fields in the screen should be blank.

- j. Return to the MAIN MENU by pressing the **EXIT** SLK twice.
5. Test the Dictionary subsystem by doing the following from the MAIN MENU:
 - a. Select the **Dictionary** option.
 - b. Select the **Login Identifications** option.
 - c. Enter an * in the **Login ID:** field.
 - d. Select the **List All** action list item to list all the log IDs.
 - e. Verify that the logins are displayed.
 - f. Return to the MAIN MENU by pressing the **EXIT** SLK twice.
 6. Test the Exceptions subsystem by doing the following from the MAIN MENU:

-
- a. Select the **Exceptions** option.
 - b. Select the **Real-time Exception Log** option.
 - c. Verify that the window is accessible.

 **NOTE:**

For a new installation, this window may be blank.

- d. Return to the MAIN MENU screen by pressing the **EXIT** SLK once.
7. Test the ACD Administration subsystem by doing the following from the MAIN MENU:
 - a. Select the **ACD Administration** option.
 - b. Select the **Move Extensions Between Splits** option.
 - c. Press the **RETURN** key.
 - d. Select the **List All** action list item and list all the extensions currently assigned to the split.
 - e. Verify that the displayed information is correct.
 - f. Return to the MAIN MENU by pressing the **EXIT** SLK.
 8. Test the Custom Reports subsystem by doing the following from the MAIN MENU:
 - a. Select the **Custom Reports** option.
 - b. Select the **Real-time** option.
 - c. Verify that the names of existing custom reports are listed.
 - d. Return to the MAIN MENU screen by pressing the **EXIT** SLK once.
 9. Test the User Permissions subsystem by doing the following from the MAIN MENU:
 - a. Select the **User Permissions** option.
 - b. Select the **User Data** option.
 - c. Verify that the User Data input window appears.
 - d. Return to the MAIN MENU screen by pressing the **EXIT** SLK once.
 10. Test the System Setup subsystem by doing the following from the MAIN MENU:
 - a. Select the **System Setup** option.
 - b. Select the **CMS State** option.

-
- c. Verify that CMS is operating in the **Multi-user mode**.
 - d. Return to the MAIN MENU screen by pressing the **EXIT** SLK once.
11. Test the Maintenance subsystem by doing the following from the MAIN MENU:
 - a. Select the **Maintenance** option.
 - b. Select the **Printer Administration** option.
 - c. Enter a valid printer name in the **CMS Printer name:** field.
 - d. Select the **List All** action list item and list the printer parameters.
 - e. Verify that the printer has been administered correctly.
 - f. Return to the MAIN MENU screen by pressing the **EXIT** SLK twice.
 12. Test the Graphics subsystem by doing the following from the MAIN MENU:
 - a. Select the **Graphics** option.
 - b. Verify that a Real-time Graphics screen can be accessed.
 - c. Return to the MAIN MENU screen by pressing the **EXIT** SLK once.
 13. At each CMS terminal, log in as *cms* and choose the correct terminal to verify that the terminals are working properly. After the MAIN MENU screen appears, press the **LOGOUT** SLK to log out of CMS. Return to the system login prompt by pressing **CTRL** **D** at the same time.

If you were able to complete each of the steps in the test successfully, edit the `/etc/ignore` and the `/etc/backup` files in preparation to back up the file systems. Edit the `/etc/backup` file by removing all the lines in the file and then adding the line `/*`. Edit the `/etc/ignore` file by removing all the lines in the file and then adding the line `/unix`. After editing the files, do a System Backup before you turn the R3 CMS application over to the customer.

⇒ NOTE:

If any of the steps in the test failed, refer to *Chapter 7, Troubleshooting*, and try to solve the problem associated with the step that failed. If you encounter a problem that you cannot solve, escalate the problem through normal procedures.

To complete the test, do the following:

1. If you have not already done so, back up the file systems by following the procedures outlined in the section, *Backing Up the File Systems From the UNIX System Environment*, in *Chapter 6*.

-
2. If you have not already done so, back up the customer's historical data by doing a **Backup-Data** by following the procedures outlined in the section, *Backing Up CMS Historical Data From the CMS Environment*, in *Chapter 6*.
 3. Log in at the console terminal. When the MAIN MENU appears, look at the upper right side of the screen. The time displayed should be current, and the link should be **UP**. Press the SLK to log off.

This completes the test. You can now turn the R3 CMS application over to the customer.

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