

Lucent Technologies
Bell Labs Innovations



DEFINITY[®] ECS

CallVisor[®] ASAI PC LAN over MAPD

Installation, Administration, and Maintenance

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About This Document

This book covers the CallVisor[®] ASAI PC LAN (CV/LAN) application release 5.0 over Multi-Application Platform (MAPD), for DEFINITY[®] Enterprise Communications Server (ECS) switch. CV/LAN allows client applications to access ASAI functionality on the MAPD. The MAPD allows CV/LAN to offer Adjunct Switch Application Interface (ASAI) functionality over an Ethernet transport. This book explains the tasks involved in the installation, administration, and maintenance of the CV/LAN application on the MAPD.

⇒ NOTE:

This book covers the CallVisor ASAI PC LAN (CV/LAN) application release 5.0 over MAPD board. If you also have DEFINITY LAN Gateway R1 (TN2208/TN2170 Multi Function Board sandwiches), consult *DEFINITY Enterprise Communications Server Installation, Administration, and Maintenance of CallVisor ASAI over the DEFINITY LAN Gateway*, 555-230-223, as well as this book. If you are running DEFINITY LAN Gateway R2 application also, refer to *DEFINITY ECS CallVisor ASAI DEFINITY LAN Gateway over MAPD Installation, Administration, and Maintenance*, 555-230-114.

Intended Audience

This book is aimed at the following personnel:

- System administrators
- Telecommunications managers
- Management Information System (MIS) managers
- Local Area Network (LAN) managers
- Lucent Technologies services personnel

This book is also helpful to any individual who needs to understand how CallVisor ASAI over the MAPD operates.

Prerequisite Knowledge

Anyone administering CV/LAN over the MAPD should possess basic knowledge of DEFINITY ECS system administration. (It is assumed that the user of this guide can administer ASAI links.) In addition, some knowledge of Transport Connection Protocol/Internet Protocol (TCP/IP) is recommended.

How this Book is Organized

This book has the following chapters and appendices:

Chapter 1 provides an overview of the CallVisor ASAI PC LAN (CV/LAN) over the MAPD as well as helpful information for using the system.

Chapter 2 contains the tasks involved in installing the system.

Chapter 3 provides all the screens used to administer and maintain the system.

Chapter 4 describes the required activities for keeping the system operational.

Appendix A contains planning information for installing the system.

Appendix B contains helpful information for choosing peripheral equipment and setting terminal options.

Appendix C contains information for ordering system components.

Appendix D contains problem-solving procedures related to Chapter 4, Maintenance.

Appendix E contains sample configurations and Customer Configuration instructions for administering them.

Appendix F provides instructions for returning the MAPD to its Original State in case of a system crash.

Appendix G contains a worksheet necessary for system installation.

Appendix H provides instructions for upgrading the MAPD Software.

Abbreviations defines the abbreviations and acronyms used in this book.

Glossary defines the technical terms used in this book.

Index provides help in locating the information in this book quickly and easily.

Documentation Conventions

The following conventions are used in this document:

- The full title of the product described in this document is CallVisor ASAI PC LAN over MAPD. It is sometimes shortened to CV/LAN in this book and CallVisor ASAI DEFINITY LAN Gateway over MAPD product is shortened to DLG
- Terminal keys that you press are shown in curved-edge boxes. For example, an instruction to press the return, carriage return, or equivalent key is shown in this document as:

Press `RETURN`

Function keys appearing on the bottom of the screens are also shown in curved-edge boxes in the text.

- Information that is displayed on your terminal screen — including screen displays, field names, and prompts — is shown in the following typeface:

The **Password:** prompt will appear

- Information that you enter from your keyboard is shown in the following typeface:

Type `Yes` or `No` at the prompt

Related Documents

Adjunct/Switch Application Interface Specification (ASAI), 555-025-203

The ASAI specification document provides a detailed description of the ASAI Reference Model. The Reference Model contains all the capabilities available with ASAI.

DEFINITY Enterprise Communications Server Release 5 CallVisor ASAI Overview, 555-230-225

The Overview provides a general description of CallVisor Adjunct Switch Application Interface (ASAI) and its applications. This document also describes the functions and services that can be provided with this interface.

DEFINITY Enterprise Communications Server Release 5 CallVisor ASAI Protocol Reference, 555-230-221

This document provides detailed protocol information regarding the DEFINITY Enterprise Communications Server Release 5 CallVisor Adjunct/Switch Application Interface (ASAI). This document is the companion to the *ASAI Technical Reference* (555-230-220) which is described next:

DEFINITY Enterprise Communications Server Release 5 CallVisor ASAI Technical Reference, 555-230-220

This document provides a detailed functional description of CallVisor ASAI for Release 5. This issue also describes the TCP/IP protocol used for transporting messages in CallVisor ASAI.

DEFINITY Enterprise Communications Server Release 5 CallVisor PC ASAI Installation and Reference, 555-230-227

This document is the installation, administration, programming, testing, and troubleshooting guide for CallVisor PC.

DEFINITY ECS R6 Administration and Feature Description, Issue 2, 555-230-522

This document is an overall reference for the different stages of planning, implementation, operation, and administration for Release 5.

DEFINITY Enterprise Communications Server Release 5 Implementation, 555-230-302

This document describes the implementation for Release 5.

DEFINITY Communications System Generic 3 Management Applications Station Provisioning, 555-229-202

This document describes the installation instructions for connecting a PC as a MAPD System administration/maintenance terminal.

DEFINITY Enterprise Communications Server Installation, Administration, and Maintenance of CallVisor ASAI over the DEFINITY LAN Gateway, Issue 2, 555-230-223

This document describes the implementation of DEFINITY LAN Gateway R1 with the MFB boards.

DEFINITY ECS CallVisor ASAI DEFINITY LAN Gateway over MAPD Installation, Administration, and Maintenance, 555-230-114

This document describes the implementation of the DLG application R2 on the MAPD board.

CallVisor ASAI CD Document Set, Issue 2, 585-246-801

This CD ROM contains 6 CallVisor ASAI Release 5 documents. It includes CallVisor ASAI Technical reference, CallVisor ASAI Protocol Reference, CallVisor ASAI Overview, CallVisor PC ASAI, CallVisor ASAI PC LAN over MAPD, and CallVisor ASAI DEFINITY LAN Gateway over MAPD.

**Overview of CallVisor ASAI PC LAN
over the MAPD**

CallVisor ASAI PC LAN (CV/LAN) system is composed of a system assembly, (1273-MPD), and a software application (1273-CVL). The system assembly consists of a TN801 board with a Pentium processor card. This system assembly is inserted into a DEFINITY ECS carrier. The software application extends the CallVisor ASAI API to the LAN environment in a Client/Server arrangement over TCP/IP. The CV/LAN server resides on the MAPD board in the DEFINITY ECS switch. It extends the ASAI API between the PBX and the CV/LAN clients on the LAN.

CV/LAN facilitates client application development with its encapsulated network connectivity software that supports the transfer of messages between the server and the clients. CV/LAN on the MAPD board is a multithreaded software application capable of handling up to 60 simultaneous TCP socket connections, and a maximum of 8 ASAI links. See Figure 1-1 for an overview of MAPD system in DEFINITY ECS switch.

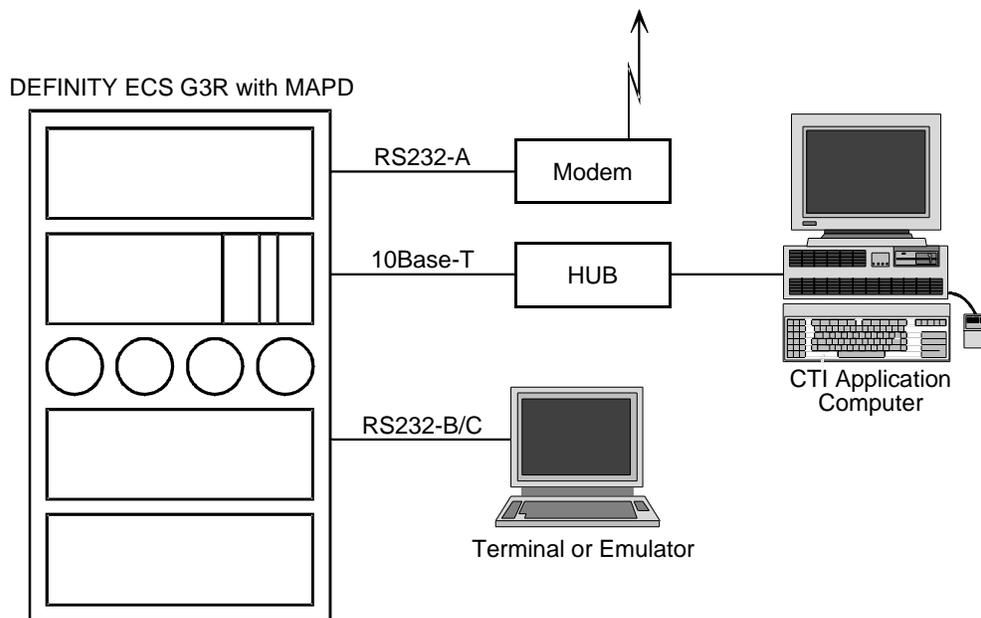


Figure 1-1. MAPD System in the DEFINITY ECS Switch

⇒ NOTE:

The CV/LAN application is integrated on the switch and therefore it eliminates the need for an adjunct PC.

The CV/LAN clients must be authenticated. For a client to be valid, its IP address or Host Name must be administered. See Chapter 3, Screen 3-19, "CV/LAN Administration," for further information.

Since the MAPD system requires its own administrative information (not found on the DEFINITY ECS), it is necessary to administer the system assembly as well as the DEFINITY ECS. For the system assembly to work with the LAN, the proper TCP/IP parameters must be set up, and information about the clients who will use the ASAI-Ethernet service must be administered on the system assembly.

⇒ NOTE:

On the MAPD system 240 messages per second can be processed in full duplex mode. This is equivalent to the bandwidth of 8 BRI ASAI links. This is the MAPD TN801 board limit and these messages will be distributed amongst all the links on the board in any fashion, with the exception that a single link can have at the most 170 messages per second full duplex. There is also a DEFINITY ECS System limit. Refer to the DEFINITY ECS document, System Description Pocket Reference, Issue 2, 555-230-211.

The DEFINITY ECS System limitation must be considered regardless of the number of MAPD, MFB, or BRI ASAI links.

CV/LAN over the MAPD is provided with a default set of administered parameters, but customers can also administer the MAPD parameters and client information to conform to their networks.

⇒ NOTE:

Lucent Technologies support services for the MAPD system will not troubleshoot a customer LAN. If the customer LAN is experiencing difficulties, customers should follow the escalation path supplied by their LAN provider.

⇒ NOTE:

DEFINITY ECS administration of ASAI does not change when using CV/LAN over the MAPD.

Depending on the system setup desired, customers can configure and administer the MAPD system in several ways:

- Using telnet over TCP/IP
- Using a dumb terminal dedicated to the MAPD circuit pack
- Using the RS-232 port of a PC or host attached to the MAPD circuit pack.

A menu-driven interface offers ease of administration, and help screens are available if assistance is needed. In addition, security features explained in the section, "Security Considerations," in this chapter will help in guarding against unauthorized access.

System Hardware

The MAPD system assembly is supported by a “sandwich” of two boards mentioned previously, the TN801 MAPD board and a Pentium processor card. Figure 1-2 shows the MAPD system assembly.

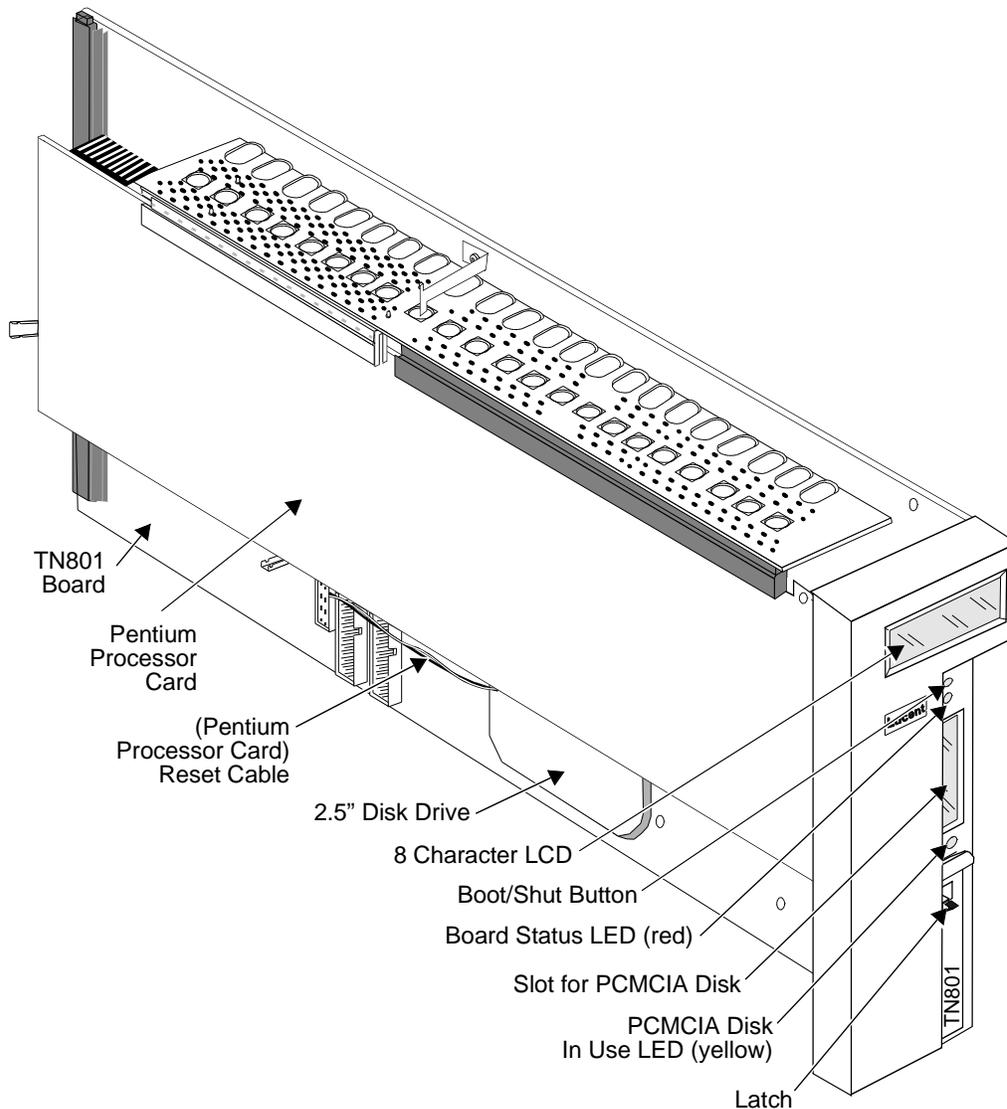


Figure 1-2. MAPD System Assembly (J58890MA)

The TN801 circuit pack supports a hard disk, Ethernet controller, and PCMCIA interface. It supports a local serial port (Admin/Port B), an additional serial port (Maint/Port A) for modem connection, and a synchronous packet adjunct serial port (DCIU, reserved for future use).

The TN801 board interfaces with the Pentium processor over industry standard PCI and ISA busses. The Pentium processor is configured with 32 Megabytes of (socketed) Dynamic Random Access Memory (DRAM). The TN801 supports a Liquid Crystal Display (LCD) panel. Naturally, it also has an interface to DEFINITY ECS call control and switching fabric.

System Software

The CV/LAN application software has two components. The first component comes preloaded on the system when it is shipped from the factory. In addition to providing CallVisor ASAI PC functionality on the MAPD, this software component contains the CV/LAN server software that continuously listens for incoming client connections on the LAN. The client software provides the second component of the CV/LAN application that allows a client application to use ASAI functionality and connect to the server over TCP/IP.

Upgrading Your Existing System

If you want to upgrade your system with the MAPD system to a non-supported DEFINITY ECS, you must first upgrade it with a field maintenance release of R6.1 or later software. This software can be configured in either V5 or V6 mode on the Customer Options Systems Parameters Administration Form. If you upgrade from a G3V4 DEFINITY ECS or earlier releases, this will be a hardware as well as a software upgrade. Contact the Technical Service Center at 1 800 248-1234 for more information. (You will be prompted for your Social Security Number and 4-digit PIN.)



CAUTION:

When installing or removing the MAPD system assembly, follow these precautions.

To prevent damage to the MAPD system assembly, make sure that you have connected the system assembly adapter cable to the port connector on the back of the switch (see Step 2 in the section, "Installation Steps," in Chapter 2) before you insert the system assembly in the switch carrier.

You can install the system assembly in the switch when the switch is powered on or off. When the assembly is inserted in the slots of the switch carrier, it will automatically power up, run diagnostics, and boot. To avoid a disk crash, never remove the assembly without first completing the shutdown procedure to shut down the MAPD system (and allowing the disk to completely spin down).

For the same reason, do not cycle the power on the switch (for example, during switch acceptance tests) once the system assembly is inserted unless you have first shut down the MAPD system. Refer to the screens in Chapter 3, "System Administration", for the shutdown procedure.

Security Considerations

Toll fraud is an unauthorized use of a company's telecommunications system by an unauthorized third party. The MAPD system offers the following security features to help prevent toll fraud and protect against unauthorized users gaining access to the system and learning the contents of the calls:

- Password protection — The system requires administrators to provide a password before access is granted. Also, when the system is installed, default passwords are changed to help guard against unauthorized access.
- Audit trail — The MAPD system provides selective logging of an audit trail of operations carried across the interface. Users can view a set of Security Logs to learn such information as failed login attempts, unauthorized client access attempts, time of the MAPD system resets, and commands executed from Administration/Maintenance screens.

This system does not support an encrypted/secured protocol. Therefore:

- It is possible for a criminal hacker to "spoof" the system by reverse engineering the protocol and then "impersonating" a valid client.
- Telnet transmissions of logins, passwords, and administrative information cannot be guaranteed to be secure.

This is more likely to happen if the hacker has physical access to the Ethernet LAN or to a system attached to the Ethernet LAN that supports the MAPD system. The customers are encouraged to help protect the system and reduce the possibility of toll fraud by attaching the system assembly and its clients to an isolated, physically secure Ethernet (not connected to any other Ethernet).

This chapter consists of three sections:

- Prerequisites
- Hardware Installation
- Initial Administration

⇒ NOTE:

This chapter is for Lucent Technologies services personnel. Normally, Lucent Technologies installs the MAPD system. However, the customer is responsible for the DEFINITY ECS administration during installation. The customers may want to read this chapter to understand what Lucent Technologies services personnel will be doing during installation to facilitate a productive visit.

If the system is already installed, proceed to Chapter 3, "System Administration."

Prerequisites

This section provides prerequisites for installing a MAPD system. These include:

- Task 1: Verify the selected site
- Task 2: Gather required tools
- Task 3: Review safety considerations
- Task 4: Verify components and connectivity

- Humidity range of 20 percent to 80 percent noncondensing. In addition, make sure that the site is secure and provides protection from excessive sunlight, heat, cold, chemicals, static electricity, magnetic fields, vibration, and grime.



NOTE:

ASAI must be enabled on the DEFINITY ECS Customer Options Form for the system to be fully operational.

Task 2: Gather Required Tools

To install a MAPD system, you need the following tools:

- Narrow width, flat-blade screwdriver
- Antistatic grounded wrist strap
- Punch-down tool

Task 3: Review Safety Considerations



WARNING:

Electronic equipment can be damaged by electrostatic discharge. Do not touch any electronic component unless you are properly grounded.



DANGER:

Do not touch the switch backplane while installing the MAPD system. The backplane contains dangerous voltage and current.

To prevent damage to the equipment and yourself, adhere to the following:

- Make sure you are familiar with the procedures necessary to prevent electrostatic damage to the equipment.
- Properly ground a wrist strap.
- Place the grounded wrist strap on your bare wrist. (The wrist strap must contact your bare skin directly — do not wear it over your clothes.)
- Do not remove the system assembly from the polyethylene bag until:
 - Your wrist strap is on your wrist and properly grounded.
 - You have made room in the switch carrier and you are ready to insert the system assembly in the carrier.
 - The system assembly adapter cable is appropriately connected to the back of the switch (see Task 5, Step 2 in the section, “Installation Steps,” in this chapter).

- If you need to work on the system assembly — that is, disassemble it — place the assembly on a grounded antistatic work mat.

Task 4: Verify Components and Connectivity

Study Figure 2-2, “MAPD External Connections,” to gain a general understanding of how the system assembly is to be connected. Some customer-furnished LAN equipment is included within the dotted lines in this figure. Helpful definitions for this equipment are as follows.

- **Balun (balanced/unbalanced)** — An impedance matching transformer. Baluns are small, passive devices that convert the impedance of coaxial cable so that its signal can run on twisted-pair wiring. They are used often so that IBM 3270-type terminals, which traditionally require coaxial cable connection to their host computer, can run off twisted-pair. Baluns work for some types of protocols only. There is often some performance degradation with baluns, and the signal cannot run as far on twisted wire as it can on coaxial cable.
- **10Base-T Hub** — An Ethernet LAN that works on twisted pair wiring which looks and feels like telephone cabling. 10Base-T Ethernet LANs work on home runs in which the wire from each workstation snakes directly to the 10Base-T Hub (like the wiring of a phone system). The advantages are twofold:—
 - First, if one machine crashes, it does not bring down the whole network.
 - Second, 10Base-T Hubs often come with sophisticated management software.

Link integrity must be enabled on the port on which the MAPD is to be connected.



WARNING:

The 10Base-T Ethernet connection is only intended for use within a building. To protect the system from lightning or other external disturbances, a router or LAN device that provides voltage suppression should be used.

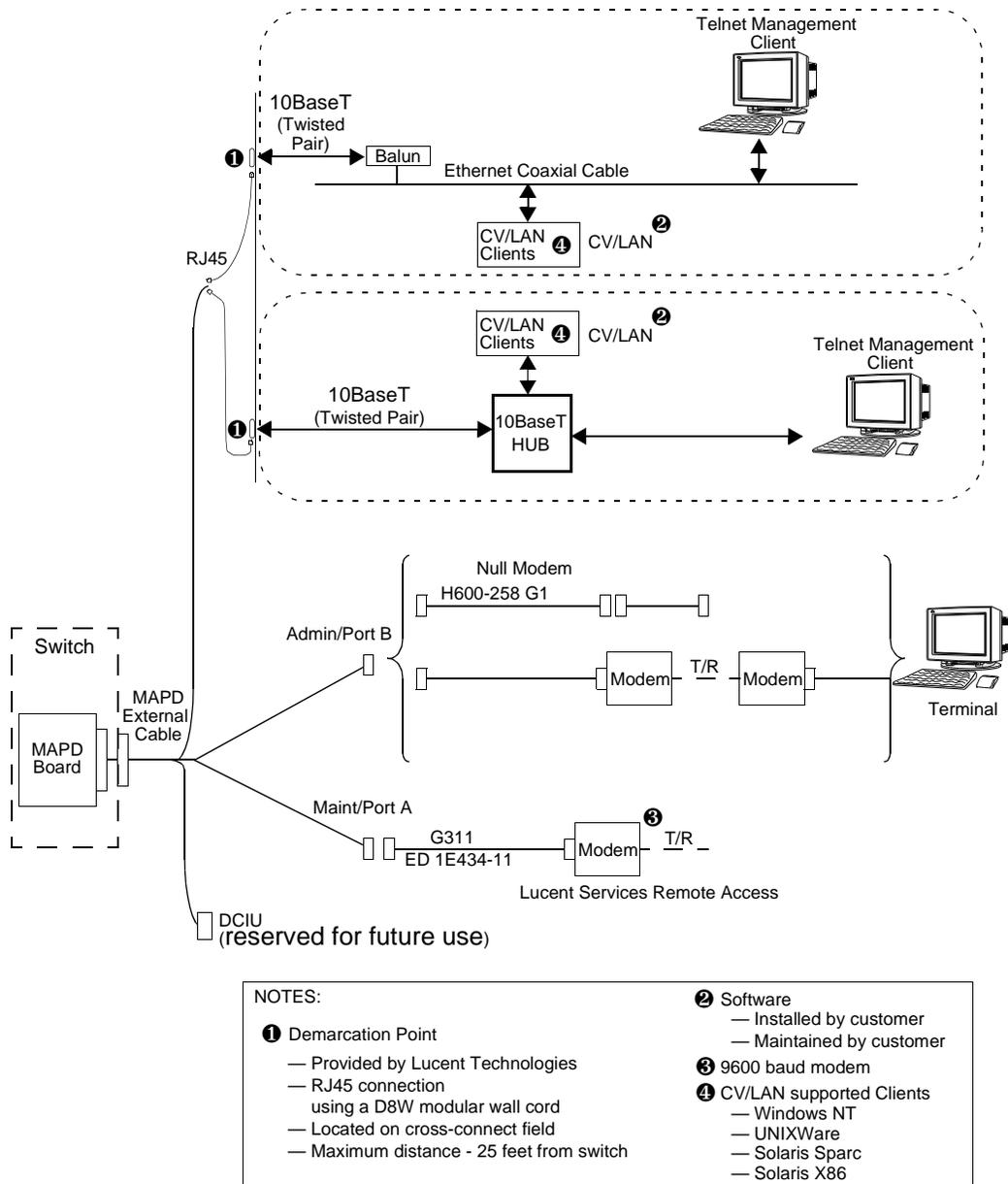


Figure 2-2. MAPD External Connections

Refer to the diagrams in Tasks, “Task 6: Connect to the LAN” and “Task 7: Install the Terminal (Optional)” in this chapter for additional connectivity details. Then compare the parts listed in Appendix C, “Ordering Information,” with the actual parts you received to make sure that all the required parts have been ordered and shipped correctly.

⇒ NOTE:

The components listed in Appendix C, “Ordering Information,” are not the only equipment that can be used with the MAPD system. Other terminals, PCs, and modems are also supported.

Hardware Installation

This section describes the tasks needed to install the MAPD system hardware and peripheral hardware.

The MAPD system installation tasks are the same for all switch types. These tasks include:

Task 5: Install the MAPD system assembly

Task 6: Connect to the LAN

Task 7: Install the terminal (optional)

Task 8: Connect the Maintenance modem

Task 9: Finalize and test the hardware

Before beginning these tasks, refer to the following worksheets:

Appendix A, "PBX Carrier Configuration Worksheets"

- "Worksheet A-1: Port Slot Assignments (Before Carrier Arrangement)"
- "Worksheet A-2: Port Assignments (for Carrier Rearrangement)"
- "Worksheet A-3: Port Slot Locations for the MAPD System Assembly"

Appendix B, "Terminal and Modem Option Settings"

- "Worksheet B-1: Terminals/Modems"

Task 5: Install the MAPD System Assembly

This task is required for all installation scenarios.

WARNING:

To prevent damage to the MAPD system assembly, make sure that you (or the factory, for new switches) have connected the system assembly adapter cable to the port connector on the back of the switch (as described in Task 5, Step 2, "Installation Steps") before you insert the system assembly in the switch carrier.

You can install the system assembly in the switch when the switch is powered on or off. When the assembly is inserted in the slots of the switch carrier, it will automatically power up, run diagnostics, and boot. To avoid a disk crash, never remove the assembly without first completing the shutdown procedure to shut down the MAPD system (and allowing the disk to completely spin down). For the same reason, do not cycle the power on the switch (for example, during switch acceptance tests) once the system assembly is inserted unless you have first shut down the MAPD system. Refer to the "Reset System (CV/LAN)" section in Chapter 3 for the shutdown procedure.

Slot and Carrier Restrictions

If rearrangement of circuit packs in the PBX is required to accommodate the system assembly, rearrange the packs as indicated on "Worksheet A-2: Port Assignments (for Carrier Rearrangement)" before proceeding.

Maximum three MAPD system assemblies per carrier are allowed. One per carrier is preferred if possible so that one carrier power supply failure will not take down multiple units. This assembly occupies three contiguous slots in the DEFINITY ECS Cabinet. The rightmost slot must be a port slot, (indicated by purple color). Placement in a DEFINITY ECS multi-carrier cabinet should be such that the MAPD system assemblies are not vertically aligned.

See Appendix A, "PBX Carrier Configuration Worksheets," for detailed information on the rearrangement of circuit packs and slot restrictions.

MAPD System Slots

The system assembly requires three contiguous port slots in the switch carrier. In this description, the three slots are referred to as the first, second, and third slots with the understanding that they can be any three contiguous port slots.

The slots are numbered from left to right on the front panel of the switch cabinet, and from right to left on the rear panel as shown in Figure 2-3, "Connecting the Adapter Cable, Rear-Panel View." The three port slots are occupied by the MAPD system assembly as follows:

- The first and second slots are covered by the Pentium processor card and PCI/ISA side plane and are not connected to the switch backplane or amphenol connectors.
- The third slot is connected to the TN801 MAPD Board

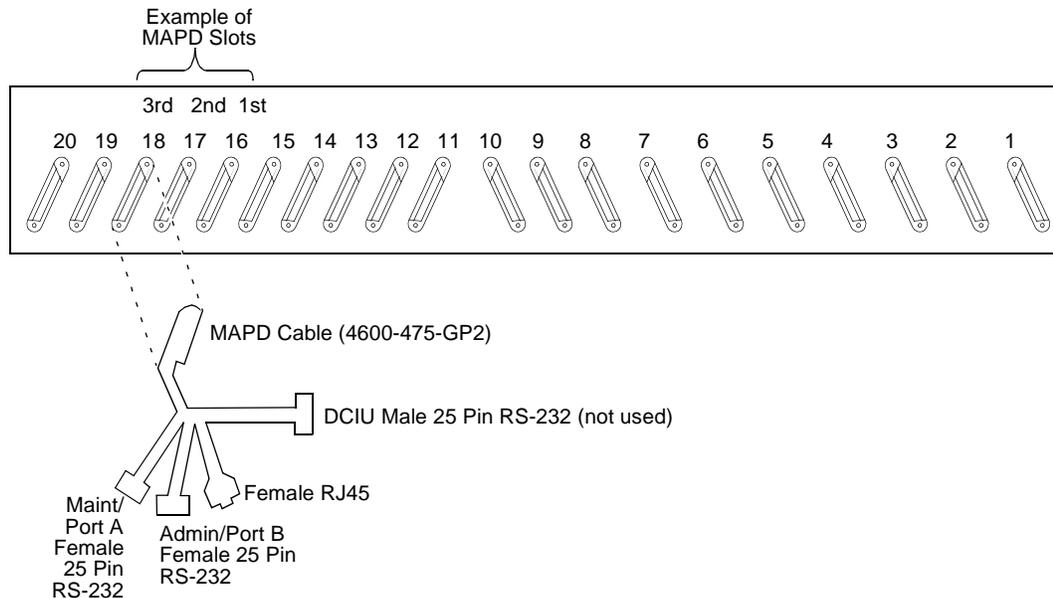


Figure 2-3. Connecting the Adapter Cable, Rear-Panel View

Installation Steps

Using Worksheet A-3, “Worksheet A-3: Port Slot Locations for the MAPD System Assembly,” follow the steps below to install the system assembly.

1. Remove any existing cables from the third slot of the three contiguous slots reserved for the MAPD system. For example, if you are going to install the MAPD system in slots 7 through 9 of carrier A in the switch, remove the I/O cables from slot 9. (This is the slot that provides connectivity to the TN801 MAPD circuit pack.)
2. Referring back to Figure 2-3, “Connecting the Adapter Cable, Rear-Panel View,” and the instructions that follow, connect the MAPD system assembly adapter cable to the port connector on the back of the switch.

Attach the male D-type amphenol connector on the MAPD Board cable (H600-475 G-2) to the MAPD Board (TN801), the third slot of the MAPD system slots.

NOTE:

You must connect this adapter cable directly to the port connector on the switch. If you install another cable between the switch and this cable, the MAPD system will not operate correctly (either now or in the future).



NOTE:

If you are installing the MAPD system in a DC-powered switch, perform the following steps to install the 116A isolating data interface. Otherwise, skip to Step 4.

3. Install the 116A isolating data interface
 - a. Attach the male end of a null modem (supplied with the MAPD system PEC) to the RS-232C connector on the MAPD external cable labeled Admin/Port B. Attach the male connector of a 116A to the other end of the null modem.
 - b. If you are attaching anything other than an isolated modem to the Maint/Port A connector on the MAPD cable, you must install an isolator on this interface also. Attach the male end of a null modem (supplied with the MAPD system PEC) to the RS-232C connector on the MAPD external cable labeled Maint/Port A. Attach the male connector of a 116A to the other end of the null modem.
4. Insert the SanDisk PCMCIA FlashDisk that came with the system in the rightmost PCMCIA slot in the faceplate of the TN801 board. The top of the disk should be facing left.
5. Insert the system assembly (see Figure 2-4, "MAPD System Assembly (J58890MA)") into the switch cabinet as follows:

Holding the system assembly by the top and bottom edges of the TN801 MAPD Board, line up the MAPD Board with the bottom guide of the right most of the 3 slots reserved for the MAPD system in the switch carrier.



CAUTION:

The faceplate of the MAPD system is designed to be easily removed. Do not lift the assembly with the faceplate alone.

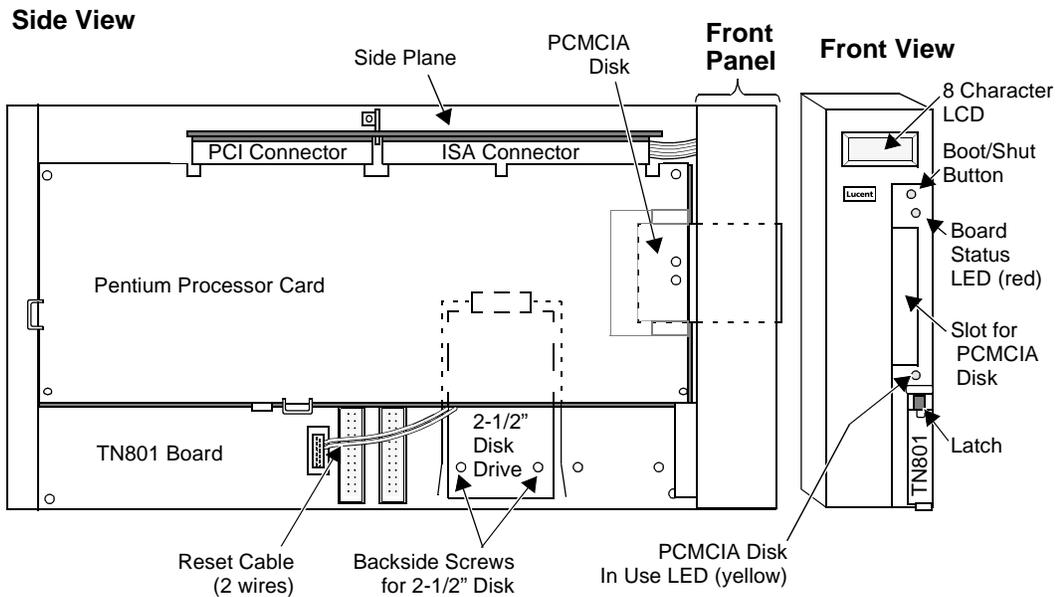


Figure 2-4. MAPD System Assembly (J58890MA)

⚠ WARNING:

The MAPD system will automatically boot when seated in the slots of a switch that is powered on. Damage to the disk could occur if the assembly is removed while booting. Therefore, try to avoid the need to adjust or reinsert the assembly after the first attempt to insert it; make sure that the assembly is properly aligned in the slot, and then insert it with a single firm push.

1. Insert the assembly and lock it in place by pushing up the securing latch. If the switch is powered on, the MAPD system will boot automatically.

⇒ NOTE:

If the switch is not powered on, wait until it is, and then proceed to Step 6.

2. As the MAPD system comes up, watch the Liquid Crystal Display (LCD) on the faceplate (see Figure 2-5). The LCD identifies the MAPD states and alarms.

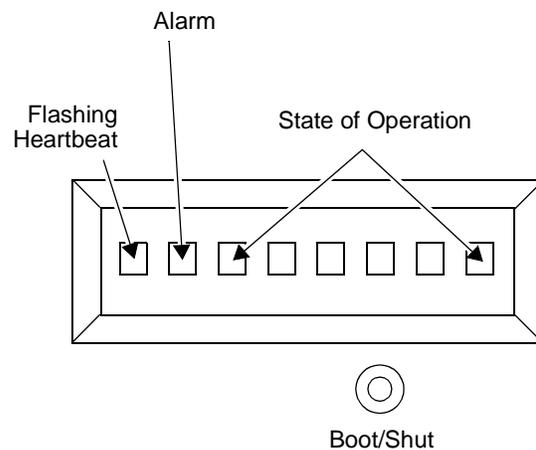


Figure 2-5. MAPD System LCD Display

The following list explains the positions of the LCD:

- Standing in front of the faceplate and reading from left to right, the first position contains the MAPD system heartbeat.
- The second position displays a letter indicating the following types of alarms: warnings (w), minor (m), major (M), and (C) for critical. This position is blank if there are no alarms.
- The remaining positions indicate the MAPD system states.

When the MAPD system is coming up, the LCD should display the following states (in order):

FWBOOT	Firmware board tests
PCBIOS	Pentium Processor Card Diagnostics
OSINIT	Operating System Initialization
PGMFW	Update MAPD Board FLASH PROMS, if necessary
AINIT	MAPD System Initialization
ASAI X	MAPD running with X established ASAI links.

If the system does not come up to the AINIT state within 10 minutes (4 to 7 minutes is average), contact the Technical Service Center (TSC) for assistance.

Task 6: Connect to the LAN

The MAPD Board cable has four connectors available for outside connections:

- Local Area Network (LAN)
- Admin/Port B, RS-232 (Local administration port)
- Maint/Port A, RS-232 (Remote Maintenance Port)
- DCIU, RS-232 (Reserved for future use)

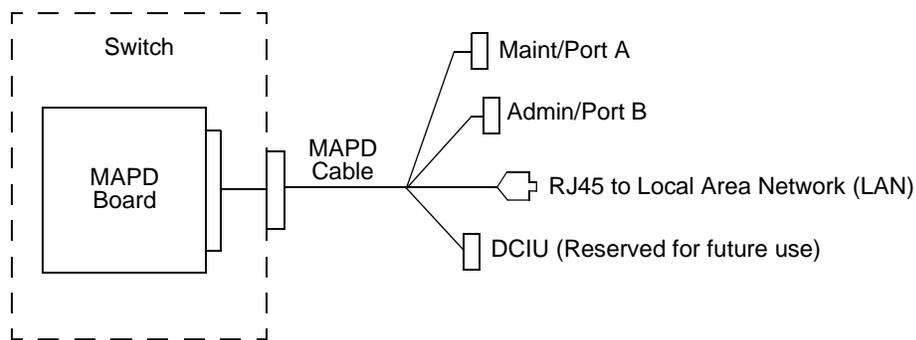


Figure 2-6. MAPD Board Cable Connections

LAN Connection

Make the following connections:

- A 10Base-T twisted pair cable with a male RJ-45 connector must be present at the wall field, no further than 25 feet from the back of the switch where MAPD resides. The customer is responsible for this LAN connection.
- A 104A connecting block will be mounted on the wall within reach of this connector. This can be supplied by Lucent Technologies. Eight wires must be hard-connected across the two mounting blocks inside the 104A prior to mounting it to the wall, as shown in Figure 2-7, "104A Connecting Block." The ends of each wire are stripped of insulation. A punch-down tool is used to press the ends of these eight wires into the mounting blocks. Four protector caps snap over the top of the mounting blocks.



NOTE:

Lucent Technologies service technicians dispatched for MAPD system installation and maintenance will not troubleshoot the customer LAN. The demarcation point for the MAPD LAN is the point of connection into the connecting block where the cord plugs in. The customer is responsible for the following: the LAN cable, the

connector at the end of the cable for connection into the MAPD system, and LAN administration not performed by Lucent Technologies on the MAPD system. After cutover, the customer is also responsible for maintaining the TCP/IP addresses, and administration on the MAPD system unless otherwise specified by contract.

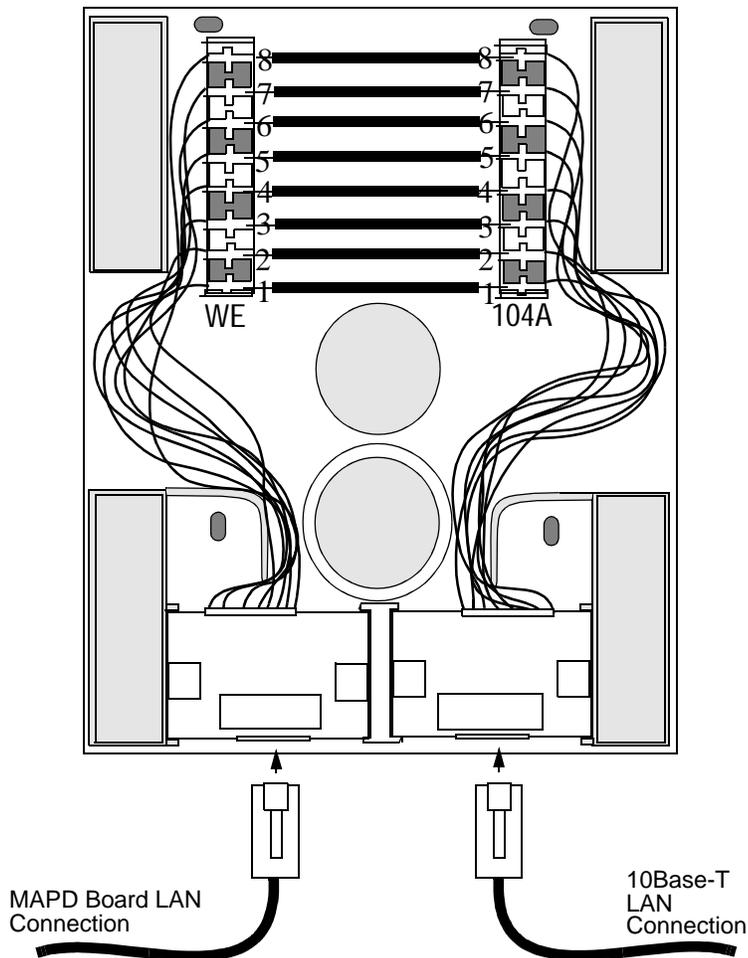


Figure 2-7. 104A Connecting Block

- A D8W modular wall cord (up to 25 feet long) is used to connect the MAPD Board RJ45 connector to the 104A connecting block.

Task 7: Install the Terminal (Optional)

This task is optional, but the temporary installation described below is recommended to facilitate initial administration of the MAPD system.

You can install a terminal or a terminal emulator device, such as a PC or laptop, to perform administration and maintenance operations. The terminal may be permanently installed, or may be temporarily installed when direct administration or maintenance is desired. The connection for a directly attached terminal is always available for Lucent Technologies services personnel. This terminal is usually connected via a direct cable to Admin/Port B, but can be connected remotely if desired.

⇒ NOTE:

Once initial administration is completed, the directly connected terminal may be disconnected and further administration and maintenance may be accomplished over the LAN with a terminal emulator that supports Telnet access.

The terminal can be connected to Admin/Port B in two ways:

- Via a direct connection
- Via modems

The connectivity for all supported terminals is similar. Therefore, the subtasks for this task are the same for all supported terminals. See Appendix B, "Terminal and Modem Option Settings," for a list of supported terminals and modems.

If you are connecting a PC using G3-MA software (formerly SAT-PC) as a MAPD administration/maintenance terminal, see *DEFINITY Communications System Generic 3 Management Applications Station Provisioning*, 555-229-202, for installation instructions.

If you are connecting a generic PC with a terminal emulation package, you must ensure that the terminal emulation package is set to support a terminal type listed in Appendix B, "Terminal and Modem Option Settings."

Keep in mind that the MAPD system Admin/Port B is configured as a (DTE), data terminal equipment. Therefore, you may need to install a null modem to complete the DTE/DCE pair when connecting the Admin/Port B to a terminal.

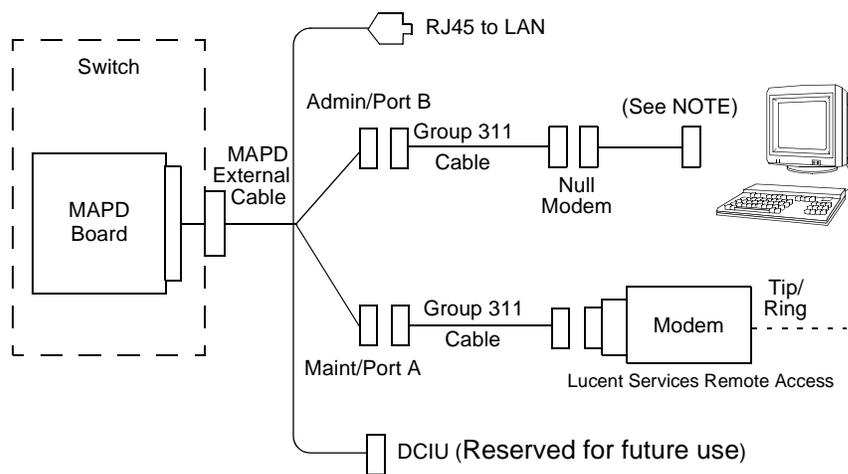
MAPD Port Usage

The MAPD external cable has three RS-232C connectors labeled Maint/Port A, Admin/Port B and DCIU (reserved for future use). The administration and maintenance terminal should be connected to Admin/Port B. Some system diagnostic messages, created only when the system is initializing, are sent to Maint/Port A. These additional messages are not useful during normal operation of the system.

Perform one of the Subtasks (7A or 7B, depending on the connection type) to connect a system-access terminal to Admin/Port B. Use "Worksheet B-1: Terminals/Modems," to determine which tasks to complete.

Task 7A: Install a Terminal via a Direct Connection

Refer to Figures 2-8, "Installing a Terminal Via Direct Connection," and 2-9, "Installing a Terminal via Direct Connection (DC Switch Only)," while performing this task.



NOTE: Null modem is required when connecting to 715 BCT DTE port. It is not required if connecting to a DCE port.

Figure 2-8. Installing a Terminal Via Direct Connection

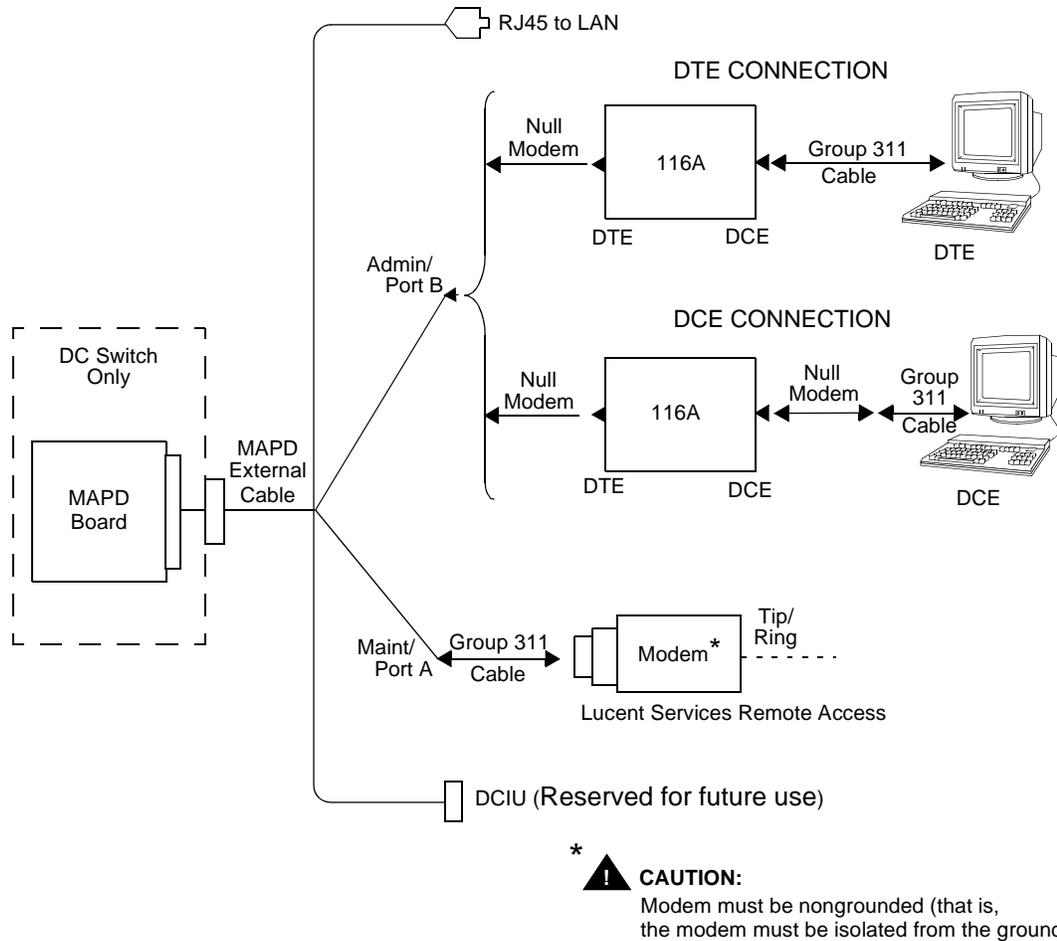


Figure 2-9. Installing a Terminal via Direct Connection (DC Switch Only)

1. If you are installing a new terminal, unpack it according to the instructions supplied with the terminal.
2. Place the terminal on a suitable table within 15 feet of the switch cabinet if you have a 20-foot ED1E434-11G311 cable, or within 45 feet if you have a 50-foot ED1E434-11G311 cable, and connect the keyboard.
3. Connect the terminal to the MAPD system. Follow the appropriate steps below for either an AC DEFINITY ECS, or for a DC DEFINITY ECS switch.

AC Switch only:

- a. Attach one end of an ED1E434-11G311 cable (supplied with the MAPD system PEC) to the RS-232 connector labeled Admin/Port B on the MAPD external cable.

- b. If connecting to a DCE port, attach the other end of the cable to the RS-232 connector on the back of the terminal. Then go to Step 4.
- c. If connecting to a DTE port, attach the male end of an H600-258 G-1 null modem to the RS-232 connector on the back of the terminal. Then go to Step 4.

DC Switch only:

- a. If you have not already connected a null modem and 116A isolator to the Admin/Port B connector on the MAPD cable as shown in Task 5, Step 3 "Installation Steps," go back and complete that step.
 - b. If connecting to a DCE port, attach one end of an ED1E434-11G311 cable (supplied with the MAPD system PEC) to the female connector on 116A isolator. Attach the other end of the cable to the RS-232 connector on the back of the terminal. Then go to step 4.
 - c. If connecting to a DTE port, attach the male end of another H600-258 G-1 null modem to the female connector on the 116A isolator.
 - d. For a 715 BCT, attach the other end of the ED1E434-11G311 cable to the DCE connector on the back of the terminal. Then go to step 4.
For a 513 or equivalent BCT, attach the other end to the female connector on an H600-258 G-1 null modem.
 - e. Attach one end of an ED1E434-11G311 cable (supplied with the MAPD system PEC) to the female end of the null modem. Then connect the other end of the G311 cable to the RS-232 connector on the back of the terminal. Go to next step.
- 4. Plug the terminal power cord into a wall outlet and power on the terminal.
 - 5. Set the terminal options. See Appendix B, "Terminal Option Settings," for a complete list of option settings for supported terminals.

 **NOTE:**

When installing a serial printer on all but a 610 or 615 BCT, set the options on the printer as described in the manual supplied with the printer, then set the corresponding options on the terminal to match. On the 610/615, set the terminal options first, then set the printer options.

If the terminal is installed correctly (and the MAPD system is in either the AINIT or ASAI state), the screen displays the login prompt.

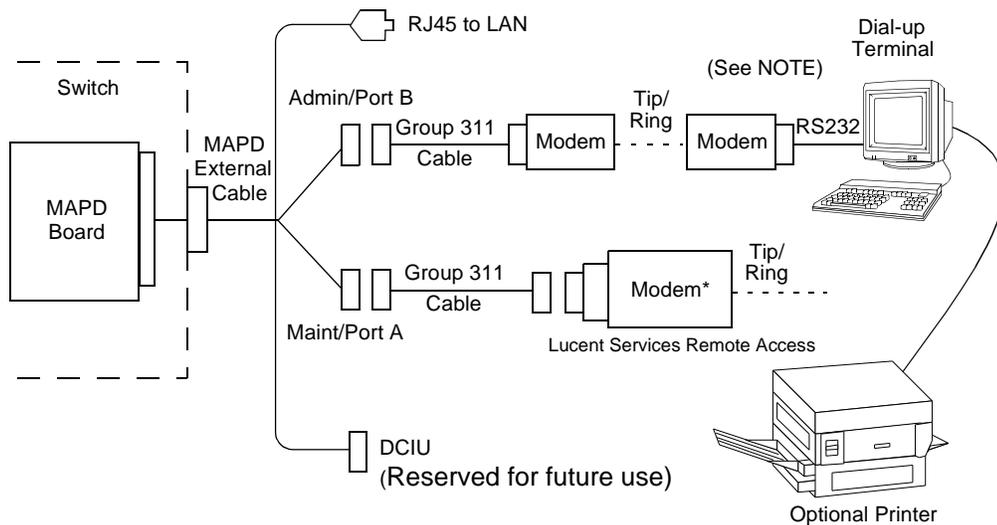
If the terminal does not display the login prompt when the MAPD system is in the above state, try pressing (RETURN) a few times. If the login prompt still does not appear, write down the state displayed on the LCD and then see the troubleshooting procedure for terminal connections in Appendix D, "Troubleshooting Procedure."

Task 7B: Install a Terminal via Modems

This task describes how to connect a terminal via a modem to Admin/Port B of the MAPD. (This task can also be used for remote connection to the Maint/Port A.)

To make sure the modems that you are installing are on the list of supported peripherals, see Appendix B, "Worksheet B-1: Terminals/Modems."

Refer to Figure 2-10, "Connecting a terminal to the MAPD via Modem," when performing this task.



NOTE: Null modem is required when connecting to 715 BCT DTE port.

* **CAUTION:**
Modem must be nongrounded (that is, the modem must be isolated from the ground).

Figure 2-10. Connecting a terminal to the MAPD via Modem

1. In the room where the switch and MAPD system are located, place one modem between the MAPD system and a telephone jack close enough so that the cables can easily reach. Also make sure the modem is within reach of a power outlet.
2. Connect the modem to Admin/Port B of the MAPD system MAPD Board as follows:
 - a. Attach one end of the ED1E434-11G311 cable to the RS-232 connector labeled Admin/Port B on the MAPD cable. Attach the other end to the female 25-pin connector on the modem.

- b. Attach the connector on one end of a modular cord to the modem, and attach the other connector to a telephone outlet.
 - c. Plug the modem power cord into a wall outlet and power on the modem.
 - d. Set the modem options, refer to Appendix B, "Terminal and Modem Option Settings," for a list of option settings for supported modems and terminals.
3. Connect a modem to the terminal (locally or remotely) as follows:
- a. If you are installing a new terminal, unpack it according to the instructions supplied with the terminal.
 - b. Place the terminal on a suitable table and connect the keyboard.
 - c. Attach one end of an RS-232 cable to a serial RS-232 port on the terminal (the DTE port on a 715 BCT), and attach the other end to the modem (if it is not already connected).

⇒ NOTE:

If you connect the modem to the DCE port on a 715 BCT, you must also connect a null modem cable between the modem and the 715 BCT.

- d. Attach the connector on one end of a modular cord to the modem, and attach the other end to a telephone outlet.
- e. Plug the modem power cord into a wall outlet.
- f. Plug the terminal power cord into a wall outlet.
- g. Power on the terminal and modem.
- h. Set the options on the terminal and modem. Refer to Appendix B, "Terminal and Modem Option Settings," for a list of option settings for all supported terminals and modems.

⇒ NOTE:

When installing a serial printer on all but a 610 or 615 BCT, set the options on the printer as described in the manual supplied with the printer, then set the corresponding options on the terminal to match. On the 610/615, set the terminal options first, and then set the printer options.

- i. At the terminal, enter `AT`. If the modem is installed correctly, it responds with "OK" (written on the terminal screen).
- j. Enter `ATDT` and the telephone number of the modem connected to the MAPD system Admin port (listed in Appendix B).

If the terminal is installed correctly (and the MAPD system is in either ASAI or AINIT state), the screen displays the login prompt.

If the terminal does not display the login prompt when the MAPD system is in one of the above states, try pressing `(RETURN)` a few times. If the login prompt still does not appear, write down the state displayed on the LCD, and then see the procedure for terminal connections in Appendix D, "Troubleshooting Procedure."

- k. Log in to the MAPD system (see Chapter 3, "System Administration"). If you can log in successfully, the modem and terminal options are set correctly.

Task 8: Connect the Maintenance Modem

For this task, make sure you have the correct ED1E434-11G311 cable (in a length between 5 and 50 feet).

1. Physically connect one end of the cable to the modem and the other end to the MAPD maintenance port (Maint/Port A).
2. Set the modem options as per "Modem Option Settings" in Appendix B, and if necessary, connect the modem to a phone jack and power on.
3. Use the Steps in "Task 7B: Install a Terminal via Modems" in this chapter to establish communication with the modem connected to Maint/Port A.
4. After you have connected to the modem, record the telephone number. You will call the TSC and give them the telephone number of the modem in a later procedure.

Task 9: Finalize and Test the Hardware

This task is required for all installation scenarios.

1. Verify that the MAPD system hardware and software components are installed properly. At the DEFINITY G3-MT, enter `list configuration board <loc>`. The screen that appears should display **MAPD Board** in the **Board Type** field. (See Screen 2-2, "List Configuration," in this chapter for an example.)
2. Verify that the system is in the ASAI state.

The LCD should display ASAI X, where X is the number of established ASAI links.
3. Log in to the MAPD system (see Chapter 3, "System Administration") at the terminal to verify that the terminal and modems (if applicable) are connected and set up correctly.
 - a. At the login prompt, type `craft` and press `(RETURN)`. (If the login prompt is not displayed, press `(RETURN)` once or twice.)

 **NOTE:**

To send the information to the MAPD system, press **RETURN** (located on the right side of your keyboard) after you type a command, or a response to a prompt. On some keyboards, this key is labeled **ENTER** instead of **RETURN**. If your keyboard has both **RETURN** and **ENTER** (as on the 513 and 615 keyboards), use **RETURN**.

System response: **Password**

- b. Enter the default password for the craft login.

System response: **Terminal Type (513, 715, 4410, 4425, vt100, vt220, ...): [xterm]**

- c. Enter one of the following:
 - 513 for a 513 BCT or 715 BCT; enter 513 also for a 610/615 BCT or a PC with a 513 emulation package. (Since 513 is the default, just press **RETURN** to select it.)
 - 4410 for a 4410 or 5410 terminal; enter 4410 also for a 610/615 BCT or a PC with a 4410 emulation package.
 - 4425 for a 4425 or 5425 terminal
 - 5420 for a 5420 or 4415 terminal
 - g3-ma for a G3-MA terminal
 - vt220 (or other terminal listed in Appendix B, "Worksheet B-1: Terminals/Modems")

If the terminal and modems (if applicable) are connected properly and the options are set correctly, the system responds with the MAPD Main Menu.

4. Place the labels supplied with the MAPD system hardware as follows:
 - a. Place the label containing the MAPD system shutdown warning next to the cabinet power switch.
 - b. Place the maintenance log label near the system assembly.

Initial Administration

This section describes the tasks required to initially administer the MAPD system. It is expected that these procedures will be performed by Lucent Technologies services personnel upon completion of the hardware installation.

Before installation, the Project Manager should complete the form located in Appendix G, "Project Manager Worksheet." After the system is installed, the Project Manager has to call the TSC to register the system.

The tasks for initializing the system are as follows:

Task 10: Perform initial switch administration

Task 11: Perform initial MAPD administration

Task 12: Reboot MAPD

Task 13: Test MAPD/LAN connectivity (optional)

Task 14: Register/back up the system

Task 10: Perform Initial Switch Administration

Initial system administration may involve the customer administering the MAPD circuit pack on the system with the DEFINITY ECS **change circuit-packs** command. Follow the steps listed below.

⇒ NOTE:

ASAI must be enabled on the DEFINITY ECS Customer Options Form for the system to be fully operational. For more information on switch administration, see *DEFINITY Enterprise Communications Server Release 6 Administration and Feature Description*, Issue 2, 555-230-522.

1. Issue the **change circuit-packs** command for the carrier that housed the MAPD. A screen similar to Screen 2-1, "Change Circuit-Packs," appears. This screen shows the MAPD board entered in slot 6. If no circuit pack conflict is displayed on the screen, then MAPD is fully recognized by the system.

```

change circuit-packs 1                                     Page 1 of 5
-----

                                CARRIER 1A

Slot Code      Name                Slot Code      Name
01: _____ 11: _____
02: _____ 12: _____
03: _____ 13: _____
04: ASAIM1      RESERVED-LANGATE 14: _____
05: ASAIM1      RESERVED-LANGATE
06: TN801       MAPD BOARD
07: _____
08: _____
09: _____
10: _____
'#' indicates circuit pack conflict

* Use slots A01-A14 with
* J58890G-1 control carrier.
* Use slots A01-A10 with J58890L-1
* or J58890M-1 control cabinet.
* Use slots A01-A09 with J58890AH
* or J58890AJ control carrier.

```

Screen 2-1. Change Circuit-Packs

2. Use the **list config** command for a hardware system configuration report such as the one shown below. This report shows the MAPD Board (TN801 circuit pack) when you enter either list configuration all, port-network, carrier, or board (station) commands.

```

list configuration all

Page 1

-----
                        SYSTEM CONFIGURATION

Board
Number      Board Type      Code      Vintage      Assigned Ports
1A01  EXPANSION INTF      TN776      000001
1A02  EXPANSION INTF      TN776      000001
1A03
1A04  RESERVED LGATE      TN801      MAPD          u u u u u u u u
1A05  RESERVED LGATE      TN801      MAPD          u u u u u u u u
1A06  MAPD BOARD          TN801      000001      01 u u u u u u u u
                                           u u u u u u u u
                                           u u u u u u u u
                                           u u u u u u u u

```

Screen 2-2. List Configuration

The MAPD logically occupies three slots on a port carrier. The screen fields for these three slots are described as follows.

- **Board Number:** Slot location in the switch
 - **Board type:** For the TN801 circuit pack, “**MAPD BOARD**” is displayed for the physical location of the board. “**RESERVED-LANGATE**” is displayed for the board’s associated reserved (virtual) slots.
 - **Code:** “**TN801**” is displayed for the slot on which it is administered. For the reserved slots, the string “**TN801**” is displayed.
 - **Vintage:** If a TN801 circuit pack is installed, the rows corresponding to the reserved slots contain the words “**mapd**” under Vintage, and for the MAPD Board slot, the vintage of the TN801.
 - **Assigned Ports:** The assigned ports are displayed if there are ports administered on the TN801 circuit pack. There can be eight of these. The reserved slots show a ‘u’ for all ports.
3. Use the **add station** command to add a station¹. The following values should be implemented on the **add station** screen:
- **Extension:** Enter an available extension on the switch.

1. For more information on switch administration, see DEFINITY Enterprise Communications Server Release 5 Implementation, 555-230-302.

- **Type:** ASAI must be entered for this field and must also be administered on the individual LAN Gate ports on the MAPD.
- **Port:** Set this field to one of the twelve LAN Gate ports.
- **XID:** Enter n in this field.
- **Fixed TEI:** Enter y in this field.
- **MIM Support:** Enter n in this field.
- **CRV Length:** Enter 2 in this field.

All other fields on the **add station** screen use the default values.

```
add station 1008                                     Page 1 of 2   SPE A
-----
                                STATION

Extension: 1008
Type: ASAI____
Port: 2a1701____
Name: _____
                                Hunt-to Station: ____

STATION OPTIONS

BRI OPTIONS
      XID? n      Fixed TEI? y  TEI: 1_
MIM Support? n
      CRV Length: 1

-----
```

Screen 2-3. Add Station: Page 1 of 2

```
add station next                                     Page 2 of 2  SPE A
-----
                                         STATION
FEATURE OPTIONS
  Event Minimization? n
```

Screen 2-4. Add Station: Page 2 of 2

Task 11: Perform Initial MAPD Administration

This task is required for all installation scenarios. There are two parts to this task:

Task 11A: Set the MAPD Clock

Task 11B: Assign the MAPD Machine ID (Optional)

Task 11A: Set the MAPD Clock

⇒ NOTE:

If you previously logged in, skip to Step 5 in this task.

1. At the login prompt, enter `craft`

System response: `Password`

2. Enter the default password for the `craft` login.

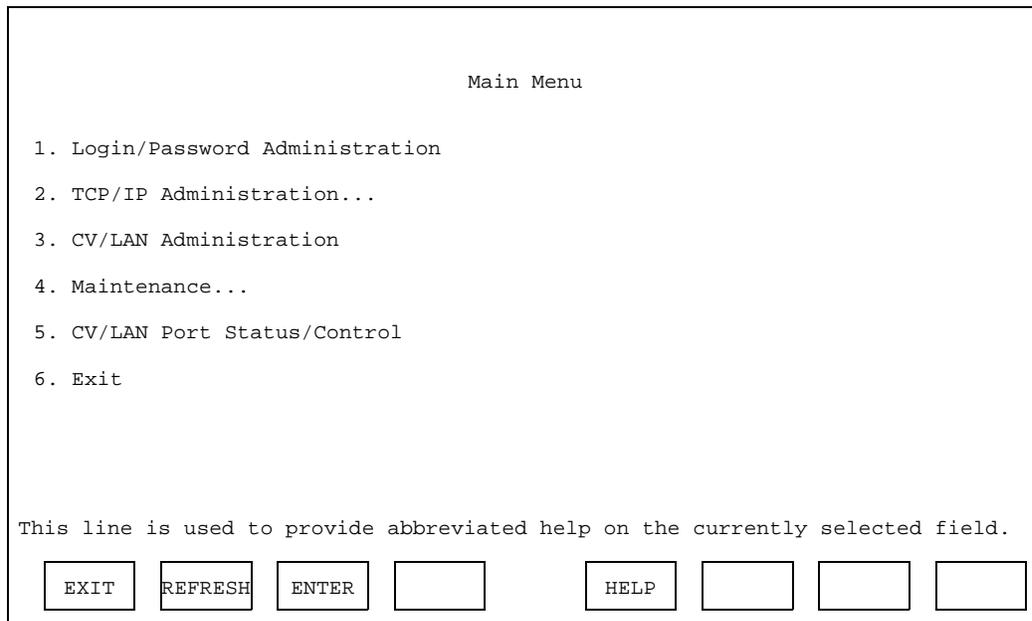
System response: `Terminal Type (513, 715, 4410, 4425, vt100, vt220,...): [xterm]`

3. Enter one of the following:

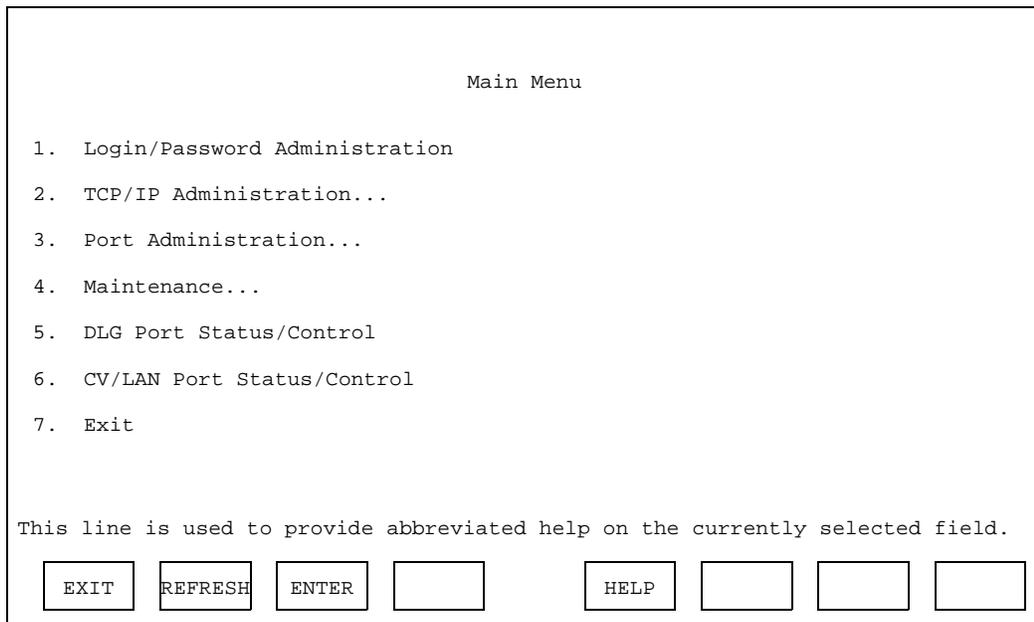
- 513 for a 513 BCT or 715 BCT; enter 513 also for a 610/615 BCT or a PC with a 513 emulation package. (Since 513 is the default, you can just press `(RETURN)` to select it.)

- 4410 for a 4410 or 5410 terminal; enter 4410 also for a 610/615 BCT or a PC with a 4410 emulation package.
- 4425 for a 4425 or 5425 terminal
- 5420 for a 5420 or 4415 terminal
- g3-ma for a G3-MA
- vt220 (or other terminal listed in Appendix B, "Terminal and Modem Option Settings.")

4. The system displays the Main Menu.



Screen 2-5. Main Menu CV/LAN



Screen 2-6. Main Menu (DLG and CV/LAN)

⇒ NOTE:

This screen will appear only if DLG is also installed.

5. Select Maintenance and then Set System Time and Date. Follow the instructions for setting System Time and Date in Screen, “Set System Time and Date,” in Chapter 3, “System Administration.”

Task 11B: Assign the MAPD Machine ID (Optional)

This subtask is only necessary if the customer is attaching the MAPD system to an existing TCP/IP LAN.

⇒ NOTE:

Lucent Technologies support services for the MAPD system will not troubleshoot a customer LAN. If the customer LAN is experiencing difficulties, customers should follow the escalation path supplied by their LAN provider.

1. Make sure the MAPD Main Menu is displayed. (See “Task 11A: Set the MAPD Clock.”) Select TCP/IP Administration and then This Host. The following screen appears:

TCP/IP Administration
This Host

Host Name: _____

Host IP Address: _____

Subnet Mask: _____

This line is used to provide abbreviated help on the currently selected field.

CANCEL	REFRESH	ENTER	CLEAR	HELP			
--------	---------	-------	-------	------	--	--	--

Screen 2-7. This Host

2. If a different host name from the default (definity) is desired, in the `Host Name` field type the new name to be assigned to this MAPD system. The machine name must be from 1 to 20 characters in length.
3. If an IP address other than the default (192.168.25.10) is desired, type the new IP address in the `Host IP Address` field.
4. If a subnet mask is desired, type the subnet mask name in the `Subnet Mask` field.
5. Press `ENTER` to save the changes.

Task 12: Reboot MAPD

This task is performed to verify that the system can be rebooted.

⇒ NOTE:

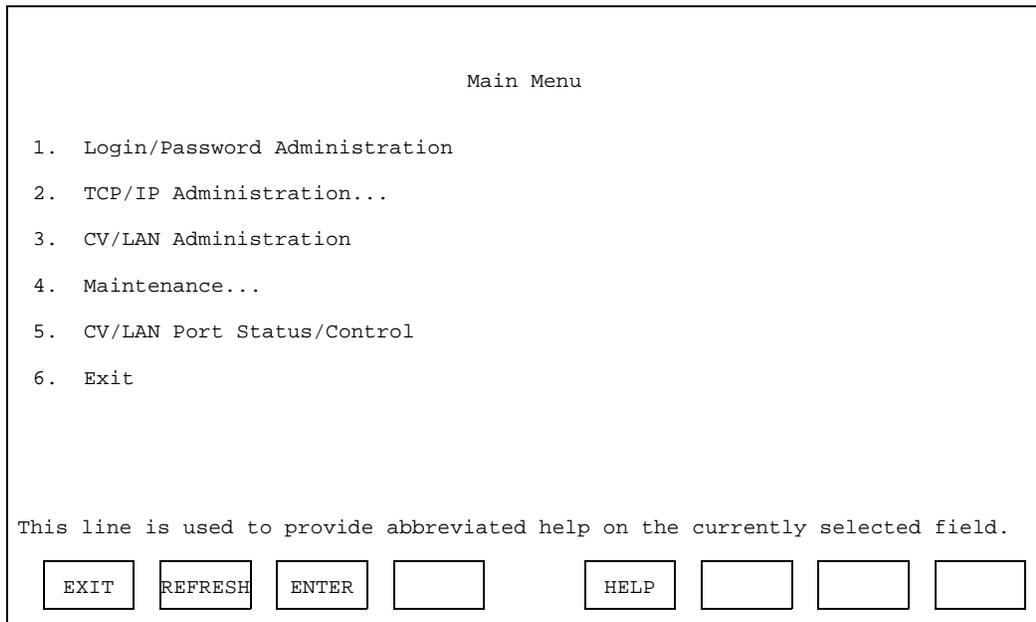
If you previously logged in, then the Main Menu should be displayed. Proceed to Step 5 in this task.

1. At the login prompt, enter `craft`. The system displays the **Password** prompt.
2. Enter the default password for the `craft` login. The system displays **Terminal Type (513, 715, 4410, 4425,vt100, vt220,...):**
[xterm]

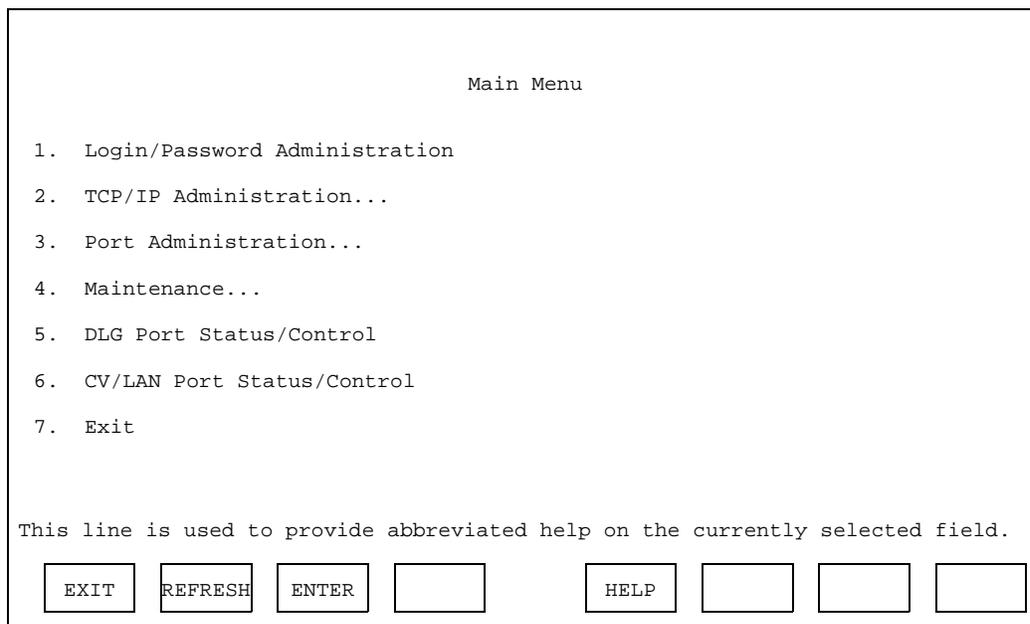
3. Enter one of the following:

- 513 for a 513 BCT or 715 BCT; enter 513 also for a 610/615 BCT or a PC with a 513 emulation package. (Since 513 is the default, you can just press `RETURN` to select it.)
- 4410 for a 4410 or 5410 terminal; enter 4410 also for a 610/615 BCT or a PC with a 4410 emulation package.
- 4425 for a 4425 or 5425 terminal
- 5420 for a 5420 or 4415 terminal
- g3-ma for a G3-MA
- vt220 (for other terminals, see Appendix B, "Terminal and Modem Option Settings")

4. The system displays the Main Menu.



Screen 2-8. Main Menu (CV/LAN)



Screen 2-9. Main Menu (DLG and CV/LAN)

⇒ NOTE:

This screen will appear only if DLG is also installed.

5. From the Main Menu select "Maintenance", then "Reset System (CV/LAN)," and then `Reboot system`. (See the information for these screens in Chapter 3, "System Administration.")

Task 13: Test MAPD/LAN Connectivity (Optional)

Task 13 is performed to test the TCP/IP connection to ensure that connectivity exists between the MAPD and the customer's LAN, as well as between the MAPD and a client. This testing should be done jointly with the customer's LAN administrator.

⇒ NOTE:

Connectivity to the MAPD system from a subscriber PC is not part of the acceptance testing for this feature. Customers are responsible for verifying that their LAN is communicating with the subscriber PCs.

Requirements

Login	craft
Suggested Materials	Configuration diagram (see Appendix E, "Sample Customer Configurations.")
Special Condition	The MAPD TCP/IP has been administered and the system has been rebooted

1. The preferred option is to have the customer's LAN administrator perform a standard LAN ping test into the MAPD using the addressing information provided in "Task 10: Perform Initial Switch Administration" in this chapter. If the customer is unavailable to perform this test, go to next step.
2. Perform the following steps **only** if the customer is unavailable for acceptance testing. (However, Step 1 above, Joint Testing, is the preferred testing method.)
 - a. Access the MAPD Screen 2-5, "Main Menu CV/LAN." Select Maintenance, Diagnostics, and then Ping Host. The screen "Ping Host" follows.

Maintenance
Diagnostics
Ping Host

Host Name or IP Address: _____

Packet count: ___

Packet size: ___

This line is used to provide abbreviated help on the currently selected field.

CANCEL
REFRESH
ENTER
CLEAR
HELP

Screen 2-10. Ping Host

- b. Fill in the Host Name or IP address of the MAPD system assembly. This example uses 192.168.25.10 as the IP address. Also enter a packet count of 20 (recommended), and a packet size of 64 (recommended).

In this step, the MAPD is sending packet messages (20 in this example) to itself, and listening for responses.

Output similar to the following will appear:

```
The messages which follow are the result of your last request.
At the <EOF> : prompt press return to continue.

64 bytes from 192.168.25.10: icmp_seq*0, time=0. xx
64 bytes from 192.168.25.10: icmp_seq*1, time=0. xx
64 bytes from 192.168.25.10: icmp_seq*2, time=0. xx
64 bytes from 192.168.25.10: icmp_seq*3, time=0. xx
64 bytes from 192.168.25.10: icmp_seq*4, time=0. xx
64 bytes from 192.168.25.10: icmp_seq*5, time=0. xx
64 bytes from 192.168.25.10: icmp_seq*6, time=0. xx
64 bytes from 192.168.25.10: icmp_seq*7, time=0. xx
64 bytes from 192.168.25.10: icmp_seq*8, time=0. xx
64 bytes from 192.168.25.10: icmp_seq*9, time=0. xx

----192.168.25.10 PING statistics----
20 packets submitted, 20 packets received. 0 percent packet loss
round-trip (ms) min/avg/max =x/x/x
<EOF>:
```

Screen 2-11. Results of Pinging the MAPD

- c. Examine the test results that are displayed at the bottom of the screen:

```
----(address) PING statistics----
x packets submitted, y packets received. z percent
packet loss
round-trip (ms) min/avg/max =aa/bb/cc
```

The results displayed in the packet loss field (z) will be either 0 percent or 100 percent. Since this test is internal to the MAPD system, this test does not access the customer's LAN.

If the test reports 0 percent packet loss, the test was successful. Continue with the next step in this procedure.

If the test reports 100 percent packet loss, the test failed. If it failed, verify that you did use the correct address for the MAPD system assembly. If you did, then contact your remote maintenance center. After the problem has been resolved, repeat the test and then continue with the following steps.

- d. Now access the `Ping Host` screen again, as you did in step 2a, to test connectivity to the client. Use the same data, except in this example, enter `192.168.25.20` as the IP address (if you choose to enter IP Address instead of Name and if this is the IP address of the client).

In this step, the MAPD system is sending packet messages (20 in this example) to the client, and listening for responses.

Output similar to the following will appear:

```
The messages which follow are the result of your last request.
At the <EOF> : prompt press return to continue.

64 bytes from 192.168.25.20: icmp_seq*0,  time=0. xx
64 bytes from 192.168.25.20: icmp_seq*1,  time=0. xx
64 bytes from 192.168.25.20: icmp_seq*2,  time=0. xx
64 bytes from 192.168.25.20: icmp_seq*3,  time=0. xx
64 bytes from 192.168.25.20: icmp_seq*4,  time=0. xx
64 bytes from 192.168.25.20: icmp_seq*5,  time=0. xx
64 bytes from 192.168.25.20: icmp_seq*6,  time=0. xx
64 bytes from 192.168.25.20: icmp_seq*7,  time=0. xx
64 bytes from 192.168.25.20: icmp_seq*8,  time=0. xx
64 bytes from 192.168.25.10: icmp_seq*9,  time=0. xx

----192.168.25.20 PING statistics----
20 packets submitted, 20 packets received. 0 percent packet loss
round-trip (ms) min/avg/max =0/0/0
<EOF>:
```

Screen 2-12. Results of Pinging the Client

- e. Examine the test results that are displayed at the bottom of the screen:

```
----(address) PING statistics----
x packets submitted, y packets received. z percent packet
loss
round-trip (ms) min/avg/max =aa/bb/cc
```

The results displayed in the packet loss field (z) will range from 0 percent to 100 percent. The number of packets that are "lost" (need to be retransmitted), will vary from LAN to LAN. For some LANs, 0 percent packet loss is normal, while for others, 10 percent or 20 percent loss is normal. The degree of packet transmission over a LAN depends upon the distance between machines, the number of users on the LAN, and the number of machines on the LAN.

See the following sections for information about the various test results.

0 to 49 Percent Loss

Consider this test successful if the MAPD system reports a packet loss percentage in the range from 0 to 49 percent. Contact the customer LAN or system administrator, however, if the packet loss is from 10 to 49 percent. The customer administrator should be advised that the send and receive packets test (PING test) showed the loss. A loss in this range may cause the MAPD system to experience slow response time. Possible causes for this type of loss include network congestion, or a faulty device on the network.

Packets out-of-sequence

For a successful test (0 to 49 percent), also examine the `icmp_seq = field`. If one or two of the packets appear out of sequence, then the condition is acceptable. If, however, more than two packets are out of sequence (for example, 0, 2, 5, 3, 1...), then inform the customer administrator. Out-of-sequence packets may indicate network congestion or misrouting.

50 to 99 Percent Loss

Consider this test a failure if the packet loss value is in the range of 50 to 99 percent. In this range, the MAPD will be extremely slow, or will completely fail to communicate even though it has made a connection to the LAN. If you have a system that is reporting a 50 percent to 99 percent packet loss, cancel and refer to the troubleshooting procedure for a TCP/IP connection in Appendix D, "Troubleshooting Procedure."

If this test has completely failed and the system reports a 100 percent packet loss, verify that you used the correct address. The test does not report if the test failure is due to sending the packets to an incorrect or nonexistent machine. A 100 percent packet loss indicates that the MAPD system has not established communication over the LAN to the test machine address.

If you entered the right address, cancel and refer to the troubleshooting procedure for a TCP/IP connection in Appendix D, "Troubleshooting Procedure."

Task 14: Register/Back Up the System

⇒ NOTE:

Registration needs to be done only once for MAPD system for tasks 14A and 14B.

These are the final three steps that the Lucent Technologies service technician performs to install the MAPD system:

Task 14A: Register the System

Task 14B: Deactivate/Activate Logins

Task 14C: Perform a backup to the Removable Medium

Task 14A: Register the System

Lucent Technologies Services personnel should call the TSC at 1 800 248-1111 to register the system. Expect the TSC to collect information such as the remote access port number, customer name, installation location, order number, and so forth.

Task 14B: Deactivate/Activate Logins

After the system has been registered, the service technician should log out of the system.

⇒ NOTE:

At this point the technician should ask the customer to call the TSC to activate customer login.

Once the customer login is enabled, the customer is required to enter a password the first time he or she logs in. **Lucent Technologies Services will have no knowledge of this password.**

⇒ NOTE:

The customer must be present for the customer login activation. If the customer cannot be present, the service technician should leave a message for the customer to call 1 800 248-1111 to reach the TSC.

Customers should see the screen “Change Passwords” in Chapter 3, “System Administration,” to change accessible passwords.

⇒ NOTE:

Task 14B renders the craft login inactive. Subsequent need for the services login requires coordination with the TSC through the TSC dispatch process.

Task 14C: Perform a Backup of the Removable Medium

The customer should have received a blank SanDisk PCMCIA FlashDisk as part of the MAPD system order. (See Appendix C, “Ordering Information.”) Using this disk, the Lucent Technologies service technician assists the TSC in performing a backup of the system. This disk should already have been inserted as described in “Task 5: Install the MAPD System Assembly”.

⇒ NOTE:

The craft login has been deactivated at this point.

The TSC accesses the screen, “Removable Media Operations” in Chapter 3, and performs `Save Configuration Data to Removable Media`.



NOTE:

When the backup is done, the field technician should label and date this disk as the backup disk.

This chapter presents the screens used to administer and maintain the CV/LAN system. See Appendix E for “Sample Customer Configurations.”

Getting Started

This section provides detailed information about the screens, procedures for logging on, and procedures for moving among screens.

Screen/System Conventions

The screen and system conventions are listed below.

NOTE:

The top right corner of all the screens is reserved for a “***HARDWARE ALARMS***” message. If this message is displayed on any screen, contact the TSC¹.

- Not all the function keys apply to all the screens.
- Information in read-only fields is static. It reflects conditions present at the time the screen is displayed, and is not updated in real-time as conditions change.
- A selected field is the one where the cursor currently resides.

1. All the alarms associated with the MAPD system are not automatically transmitted to TSC.

- If you make a mistake while typing data on a line, backspace and overwrite the characters or use (CLEAR) to clear the field. If you have already passed the line that has the mistake, use (TAB) or the arrow keys to return to the field, and type over the characters.
- Menu items followed by three dots (...) have submenus.
- When data is added on a screen, after you press (ENTER), the previous screen reappears with the cursor positioned at the beginning of the new entry. (The new data is in alphabetical or numerical sequence, depending on how the data is organized for that screen.)
- When the prompt: **Are you sure?** appears, the user must press (RETURN) after entering Y or N.
- In this document DLG stands for DEFINITY LAN Gateway application and CV/LAN stands for CallVisor PC LAN application.

Logging On

1. At the login prompt, enter your login and press (RETURN).

The password prompt (PASSWORD:) appears.

⇒ NOTE:

If a login prompt is not displayed, press (RETURN) a few times. If it still does not appear, see the section, “Bringing up the MAPD System” in Appendix D.

2. Enter your password and press (RETURN). You are prompted for your terminal type as follows:

```
Terminal Type (513, 715, 4410, 4425,vt100, vt220,...):  
[xterm]
```

The default is 513.

3. Enter your terminal type and press (RETURN)

The Main Menu appears. For information about this menu, see the section, “Field Names and Descriptions” in this chapter.

Moving Around the System

The methods for moving around the screens on the MAPD are as follows:

1. You can use the **function keys** on the bottom of the screen (NXTPG), (PRVPG), (NXTDAY), and (PRVDAY) to move around screens, as applicable.

⇒ NOTE:

An alternate method of using function keys is to press the (CTRL) key, and while holding it down, press (F). Then release both keys and press the number corresponding to the function key. For example, function key 3 is (EXIT). You may press (CTRL) (F) 3 instead, in the manner just explained.

This method is helpful if the keyboard does not properly send or have function keys and works for any terminal type.

See Table 3-1, "Function Keys," for an explanation of the function keys.

2. You can press the (TAB) key to move among fields.
3. You can use the **arrow keys** on your keyboard to move up, down, left, or right on the screen. On **menu screens**, you can place the cursor on the number to the left of a menu item on a menu screen and press the (ENTER) function key. This displays the first screen pertaining to that item.

Alternatively, you can type the number of your selection and this selects the menu

Using the Function Keys

Table 3-1. Function Keys

Pressing this key:	Does This:
<input type="button" value="ACTION"/>	Toggles to activate or deactivate CV/LAN ISDN alarm.
<input type="button" value="ADD"/>	Accesses new screen for adding data.
<input type="button" value="APPL"/>	Appears on Application Port Assignment screen. Toggles port assignment between DLG and CV/LAN applications.
<input type="button" value="ASSIGN"/>	Assigns port numbers to node IDs for CV/LAN.
<input type="button" value="CANCEL"/>	Aborts operation and returns you to previous menu or screen.
<input type="button" value="CHGPW"/>	Appears on the Login/Password Administration screen. Displays screen for changing passwords.
<input type="button" value="CLEAR"/>	Clears the field the cursor is located on.
<input type="button" value="CLIENT"/>	Displays a list of clients associated with a node ID.
<input type="button" value="DELETE"/>	Deletes data the cursor is on (either an item or a line depending on screen). Prompts: Are you sure? (Y/N) before deleting data.
<input type="button" value="DROP"/>	Drops connections to clients.
<input type="button" value="ENTER"/>	On menu screens, executes the selected action. On other screens, enters updates or additions typed and returns you to previous screen.
<input type="button" value="EXIT"/>	On menu screens, redisplay previous screen. Returns you to login prompt from Main Menu.
<input type="button" value="HELP"/>	Displays help screen for selected field. Then, when <input type="button" value="RETURN"/> is pressed, redisplay screen from which help was requested.
<input type="button" value="MSGPER"/>	On DLG and CV/LAN Port Status/Control screen, accesses Message Collection Period screen.
<input type="button" value="NXTDAY"/>	Accesses next day's data. On the last day, wraps to first day.
<input type="button" value="NXTPG"/>	Displays next page of a multi-page screen. On the last page, wraps to first page.
<input type="button" value="PORT"/>	Accesses screen to associate a port to a node ID.
<input type="button" value="PRVDAY"/>	Accesses previous day's data. On the first day, wraps to last day.

Continued on Next Page

Table 3-1. Function Keys — *Continued*

Pressing this key:	Does This:
PRVPG	Displays previous page of a multi-page screen. On the first page, wraps to last page.
REFRESH	Redraws the screen.
STATE	Alternates a fields' value.
UPDATE	Updates the screen with current information.

⇒ NOTE:

Any key appearing on this table that is mentioned in the chapter should be considered a function key and not a regular key on the keyboard.

List of Screens (DLG and CV/LAN)

A list of the system administration screens appears below. This list depicts the screen hierarchy and all the screens that will appear if both CV/LAN and DLG are installed.

Main Menu (DLG and CV/LAN)	page 3-11
Login/Password Administration	page 3-13
Add Logins	page 3-15
Change Passwords	page 3-17
TCP/IP Administration	page 3-19
This Host	page 3-20
Local Host Table	page 3-22
Add Host	page 3-24
Network Routing Information	page 3-26
Network Routing Daemon	page 3-27
Default Gateway	page 3-28
Network Routing Table	page 3-30
Add Routes	page 3-32
Port Administration	page 3-34
Application Port Assignment	page 3-35
DLG Administration	page 3-37
Add Client Link	page 3-39
CV/LAN Administration	page 3-41
Clients for Node ID signal XX	page 3-43
Add Client	page 3-45
Assign Port for Node ID signalXX	page 3-46
Maintenance	page 3-47
Removable Media Operations	page 3-48
Set System Time and Date	page 3-50
Reset System (DLG and CV/LAN)	page 3-54
System Logs	page 3-56
Security Logs	page 3-57
Login Attempt Log	page 3-58
Client Access Logs	page 3-59

System Reset Log	page 3-60
Command Logs	page 3-61
Diagnostics	page 3-62
Ping Host	page 3-63
Hardware Alarms	page 3-64
Hardware Status	page 3-65
Application Components	page 3-66
CV/LAN Utilities	page 3-67
ASAI Test	page 3-68
ASAI Trace	page 3-69
ISDN Trace	page 3-70
ISDN Alarm	page 3-71
DLG Port Status/Control	page 3-72
Message Collection Period (DLG)	page 3-76
CV/LAN Port Status/Control	page 3-78
Message Collection Period (CV/LAN)	page 3-81

List of Screens (CV/LAN)

A list of the system administration screens appears below. This list depicts the screen hierarchy that will appear if only CV/ LAN is installed.

Main Menu (CV/LAN)	page 3-10
Login/Password Administration	page 3-13
Add Logins	page 3-15
Change Passwords	page 3-17
TCP/IP Administration	page 3-19
This Host	page 3-20
Local Host Table	page 3-22
Add Host	page 3-24
Network Routing Information	page 3-26
Network Routing Daemon	page 3-27
Default Gateway	page 3-28
Network Routing Table	page 3-30
Add Routes	page 3-32
CV/LAN Administration	page 3-41
Clients for Node ID signalXX	page 3-43
Add Client	page 3-45
Assign Port for Node ID signalXX	page 3-46
Maintenance	page 3-47
Removable Media Operations	page 3-48
Set System Time and Date	page 3-50
Reset System (CV/LAN)	page 3-53
System Logs	page 3-56
Security Logs	page 3-57
Login Attempt Log	page 3-58
Client Access Logs	page 3-59
System Reset Log	page 3-60
Command Logs	page 3-61
Diagnostics	page 3-62
Ping Host	page 3-63
Hardware Alarms	page 3-64

Hardware Status	page 3-65
Application Components	page 3-66
CV/LAN Utilities	page 3-67
ASAI Test	page 3-68
ASAI Trace	page 3-69
ISDN Trace	page 3-70
ISDN Alarm	page 3-71
CV/LAN Port Status/Control	page 3-78
Message Collection Period	page 3-81

Field Names and Descriptions

Main Menu (CV/LAN)

```
Release 2.0, Issue x.y

                                Main Menu

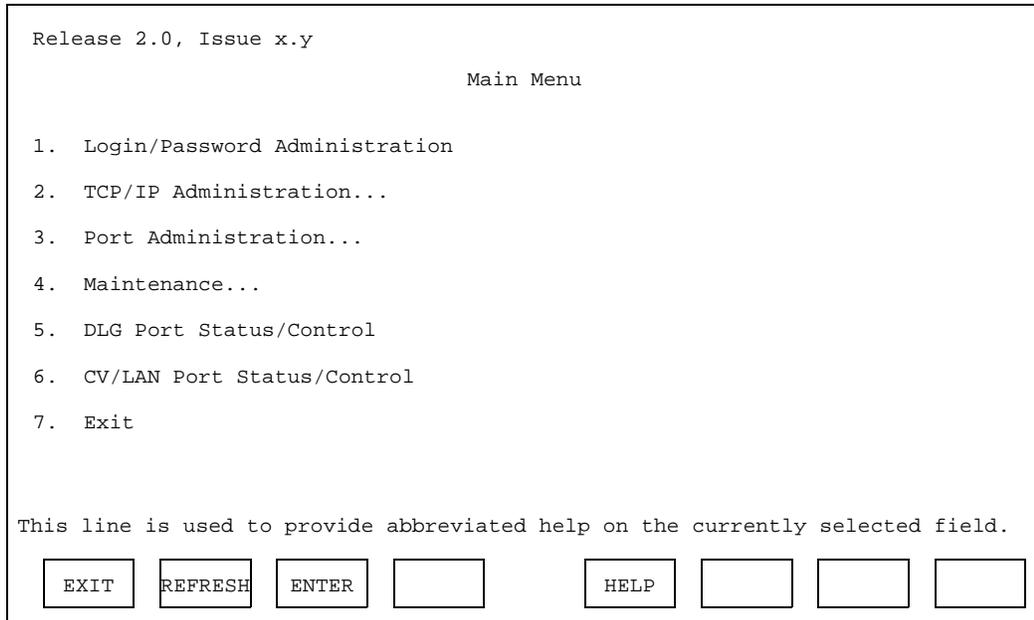
1. Login/Password Administration
2. TCP/IP Administration...
3. CV/LAN Administration
4. Maintenance...
5. CV/LAN Port Status/Control
6. Exit

This line is used to provide abbreviated help on the currently selected field.
```

EXIT	REFRESH	ENTER		HELP			
------	---------	-------	--	------	--	--	--

Screen 3-1. Main Menu (CV/LAN)

Main Menu (DLG and CV/LAN)



Screen 3-2. Main Menu (DLG and CV/LAN)



NOTE:

This screen will appear only if DLG is also installed.

Menu Item	Description
Login/Password Administration	Allows administrators to add and delete user logins. Allows administrators and users to modify passwords.
TCP/IP Administration	Provides access to all administrable network data: network name, IP address of the MAPD board the user is accessing, all locally known hosts, and all network routing information.
Port Administration	Provides access to administration of virtual BRI ports. Only applies to Screen 3-2.
CV/LAN Administration	Provides access to all administrable CV/LAN data. Applies only to Screen 3-1.
Maintenance	Provides access to maintenance functions: formatting media, saving and restoring configuration data, setting time and date, resetting the system, viewing system/security logs, and pinging other hosts.

Menu Item	Description
DLG Port Status/Control	Provides access to DLG port status and control data. Allows users to view status information and terminate client connections. Only applies to Screen 3-2.
CV/LAN Port Status/Control	Provides access to CV/LAN port status and control data. Allows users to view status information and terminate client connections.
Exit	Logs user out of the system

To use this menu, select the number of the task you wish to perform. (Press the number, or press **TAB** or use the arrow keys to move the cursor to the desired number, and press **ENTER**.)

Use this screen as follows:

- To delete a login:
 1. Press **(TAB)** or use the arrow keys to move to the login you want to delete, and then press **(DELETE)**.
 2. The following prompt appears: **Are you sure? (Y/N)**. Type **Y** and press **(RETURN)**. The screen reappears, minus the deleted login.
If you type **N** and press **(RETURN)** the cursor reappears at the beginning of the line, and the login is not deleted.
 3. Repeat steps 1 and 2 until you have deleted all desired logins. Then press **(EXIT)** and the Main Menu reappears.
- To change a login's password, press **(CHGPW)** to access the screen for changing passwords.
- To add a login, press **(ADD)** to access the **Add Logins** screen.

Add Logins



NOTE:

Only the primary administrator using the `asai_admin` login is allowed to add logins and passwords.



NOTE:

If the primary administrator attempts to add a login that already exists, an error message is displayed.

Login/Password Administration
Add Logins

Login: _____

This line is used to provide abbreviated help on the currently selected field.

CANCEL	REFRESH	ENTER	CLEAR	HELP			
--------	---------	-------	-------	------	--	--	--

Screen 3-4. Add Logins

When you add a login using this screen, after you press the `(ENTER)` function key the previous screen reappears with the cursor positioned at the beginning of the new entry.

Field Name	Description
Login	The login to be added. Maximum length is 15 characters.

Use this screen as follows:

1. Type the login you want to add to the system.
2. Press **(ENTER)** to submit the login.
3. The following prompt appears: **New password:**

Type the password to be associated with the login and press **(RETURN)**.

Passwords follow normal UNIX[®] naming conventions. These are:

- Each password must have at least 6 characters.
- Each password must contain at least two alphabetic characters and at least 1 numeric or special character. "Alphabetic" includes all uppercase and lowercase letters.
- Each password must differ from the user's login name and any reverse or circular shift of that login name. (Corresponding uppercase and lowercase letters are considered equivalent.)
- A new password must differ from the old one by at least three characters.



NOTE:

The `asai_admin` login that the primary administrator uses is not bound by these conventions when making up passwords.

4. The following prompt appears: **Re-enter password:**

Re-enter the password at the prompt and press **(RETURN)** again. If you entered the password the same way both times, the password is added and the **Login/Password Administration** screen reappears. Repeat this procedure for each login and password you want to add.

Change Passwords

⇒ NOTE:

Any user may change his or her password. However, the primary administrator uses the `asai_admin` login to change any user's password.

Type Old Password
Type New Password
Re-Type New Password

Screen 3-5. Change Passwords

This screen is used to change user passwords. Passwords should be hard to guess and should not contain the following:

- all the same characters (for example, 1111, xxxx)
- sequential characters (for example, 1234, abcd)
- character strings that can be associated with you or your business, such as your name, birthday, business name, phone number, or social security number
- actual words and commonly-used names

Passwords should use as great a variety of characters as possible. For example, if both numbers and letters are permitted, the password should contain both. Passwords should be changed regularly, at least on a quarterly basis. Recycling old passwords is not recommended.

Field Name	Description
Old Password	The existing password. It appears on the screen only for logins other than the primary administrator.
New Password	The password you want to change the existing password to.

Use this screen as follows:

1. Logins other than the primary administrator:

Type the old password and press **(RETURN)**. If you entered it correctly, the following prompt appears: **New Password**

2. All logins:

Type the new password and press **(RETURN)**.

The following prompt appears: **Re-Type New Password**

3. Re-type the new password and press **(RETURN)**.

If you entered the new password the same way both times, the password is changed. The screen you were on previously (**Login/Password Administration**) reappears.

TCP/IP Administration

TCP/IP Administration

1. This Host
2. Local Host Table
3. Networking Routing Information...
4. Exit

This line is used to provide abbreviated help on the currently selected field.

EXIT

REFRESH

ENTER

HELP

Screen 3-6. TCP/IP Administration

Menu Item	Description
This Host	Provides access to data identifying this circuit pack on the network, including machine's host name, IP address, and subnet mask.
Local Host Table	Provides access to screens for viewing, adding, or deleting all locally known client hosts.
Network Routing Information...	Provides access to Network Routing Information, including state of the network routing daemon, default gateway data, and other network routes. Accesses screens for viewing, deleting, or adding information.
Exit	Returns you to previous menu.

To use this menu, select the number of the task you wish to perform. (Press the number, or press **TAB** or use the arrow keys to move the cursor to the desired number, and press **ENTER**.)

This Host

TCP/IP Administration
This Host

Host Name: _____

Host IP Address: _____

Subnet Mask: _____

This line is used to provide abbreviated help on the currently selected field.

CANCEL
REFRESH
ENTER
CLEAR
HELP

Screen 3-7. This Host

This screen is used to assign a host name to the MAPD Board. The name must be unique in the domain to which the board is attached.

⇒ NOTE:

For changes to be implemented, you must reboot the system. See the Screens, “Reset System (CV/LAN)” and “Reset System (DLG and CV/LAN)” in this chapter.

Field Name	Description	R ¹
Host Name	Host name of this circuit pack. Default = definity. Maximum field size = 20 characters.	R
Host IP Address	IP address of this circuit pack. Default = 192.168.25.10 Maximum field size = 15 characters.	R
Subnet Mask	Subnet Mask used by this circuit pack. Change only if alternate network subnetting is desired. Value = x.x.x.x, where x is a number between 0 and 255, depending on first 2 digits of Host IP address. Default = blank. Maximum field size = 15 characters.	O

-
1. R = Required field

Use this screen as follows:

1. Type the host name, IP address, and, optionally, the subnet mask. Press **TAB** or use the arrow keys to move from field to field.

(If you want to clear the Subnet Mask, move to that field, press **CLEAR** and then press **ENTER**.)
2. Press **CANCEL** if you decide not to enter the data, or, when you have finished typing data, press **ENTER** to submit the host data. The **TCP/IP Administration** menu reappears.

Use this screen as follows:

- Press `(NXTPG)` or `(PRVPG)` to access other hosts.
- To delete a host entry:
 1. Press `(TAB)` or use the arrow keys to move the cursor to the line you want to delete, and then press `(DELETE)`.
 2. The following prompt appears: **Are you sure? (Y/N)**. Type `Y` and press `(RETURN)`. When the screen reappears, the host is removed.
- To add a host, press `(ADD)` to access the **Add Host** screen.

Local Host Table — Add Host

TCP/IP Administration
Local Host Table
Add Host

IP Address	Host Name	Aliases

This line is used to provide abbreviated help on the currently selected field.

CANCEL	REFRESH	ENTER	CLEAR	HELP			
--------	---------	-------	-------	------	--	--	--

Screen 3-9. Add Host

This screen is used to add hosts. When you add a host using this screen, after you press the **(ENTER)** function key, the previous screen reappears with the cursor positioned at the beginning of the new entry.

Field Name	Description
IP Address	IP address of locally known host. Maximum field size = 15 characters.
Host Name	Name of locally known host. Maximum field size = 20 characters.
Aliases	Additional names associated with this host. Maximum field size = 35 characters. Multiple aliases are separated by spaces. Entries starting with a “#” sign are comments. A “#” may be placed anywhere in the field, but anything following the “#” is considered a comment and ignored.

Use this screen as follows:

1. Type the IP address, host name, and any aliases. Type all aliases on one line, but leave a space between each alias.
2. Press the `(ENTER)` function key to submit the data.
3. Access the **Add Hosts** screen again and repeat Steps 1 and 2 for each new host to be added.

Network Routing Information

TCP/IP Administration
Network Routing Information

1. Network Routing Daemon
2. Default Gateway
3. Network Routing Table
4. Exit

This line is used to provide abbreviated help on the currently selected field.

EXIT

REFRESH

ENTER

HELP

Screen 3-10. Network Routing Information

Menu Item	Description
Network Routing Daemon	Allows the user to enable or disable the automatic network routing daemon.
Default Gateway	Allows the user to administer a default gateway.
Network Routing Table	Provides access to all information about other network routes.
Exit	Redisplays the TCP/IP Administration menu.

To use this menu, select the number of the task you wish to perform. (Press the number, or press **TAB** or use the arrow keys to move the cursor to the desired number, and press **ENTER**.)

Network Routing Information — Network Routing Daemon

```

TCP/IP Administration
Network Routing Information
Network Routing Daemon

Network routing daemon state: ____

This line is used to provide abbreviated help on the currently selected field.

CANCEL REFRESH [ ] [ ] HELP STATE [ ] [ ]
    
```

Screen 3-11. Network Routing Daemon

This screen is used to view and change the state of the network routing daemon. The `Network routing daemon state` field is filled in when the screen first appears.

Field Name	Description
Network routing daemon state	Either <code>on</code> or <code>off</code> . When <code>on</code> , the network routing daemon can automatically find routes to other networks. Default = on.

Use this screen as follows:

- If you do not want to change the network routing daemon state, press `CANCEL` to exit the screen.
- If you want to change the network routing daemon state, press `STATE` to change the state.
The following prompt appears: **Are you sure? (Y/N)**. Type `Y` and press `RETURN`. The screen reappears with the new state displayed.
If you type `N` and press `RETURN`, the state is not changed.
- When the desired state is displayed, press `CANCEL`. The **Network Routing Information** menu reappears.

Network Routing Information — Default Gateway

TCP/IP Administration
Network Routing Information
Default Gateway

Name or IP Address: _____ Status: _____

This line is used to provide abbreviated help on the currently selected field.

CANCEL	REFRESH	ENTER	CLEAR	HELP			
--------	---------	-------	-------	------	--	--	--

Screen 3-12. Default Gateway

A default gateway allows the MAPD to communicate with other hosts in other LANs. The Default Gateway screen is used to:

1. Initially identify the default gateway to the MAPD;
2. Change the Name or IP Address and check the Status, or;
3. Verify that the MAPD board is not communicating with another host because the Status of the Default Gateway is "down."

This screen is protected against multiple users making simultaneous changes as follows:

- If a user presses **ENTER**, the system checks to see if the information that was displayed upon entry to this screen has changed.
- If it has, the data is not entered and the user is apprised of the problem and exited from the screen. The previous screen (**TCP/IP Administration**) reappears.

Field Name	Description
Name or IP Address	Name or IP Address of the default gateway, the machine used to route all traffic destined for other networks, for which a specific route is not known. Maximum field size = 20 characters.
Status	Either <code>up</code> or <code>down</code> . If <code>down</code> , the gateway is not willing to route traffic for the MAPD.

Use this screen as follows:

- To enter data the first time, or to change data:
 1. Type the name or IP Address of the gateway to be added.
 2. Press `CANCEL` if you do not want to add the Name or IP Address you typed, or press `ENTER` to submit the name or IP address.

The TCP/IP Administration — Network Routing Information menu reappears. The next time the `Default Gateway` screen is displayed, the data that was entered or changed will be filled in.

- To remove the default gateway that appears in the field, press `CLEAR` and then `ENTER`.
- If you are only viewing the screen, press `CANCEL` to return to the **TCP/IP Administration — Network Routing Information** menu.

Field Name	Description
Destination	Name or IP address of a host, or a partial IP address of a network. Maximum field size = 20 characters.
Type	The type of destination, either <code>host</code> or <code>network</code> . (Most routes are to network destinations.)
Gateway	Name or IP address of the gateway, the machine used to route all traffic to the given destination. Maximum field size = 20 characters.
Status	Either <code>up</code> or <code>down</code> . If <code>down</code> , the gateway is not willing to route any traffic.

Use this screen as follows:

- Use `NXTPG` and `PRVPG` to step through the pages.
- To delete route entries:
 1. Press `TAB` or use the arrow keys to move the cursor to the line you want to delete, and then press `DELETE`. (This deletes the entire line.)
 2. The following prompt appears: **Are you sure? (Y/N)**. Type `Y` and press `RETURN`.

If you type `N` and press `RETURN`, the cursor reappears at the beginning of the line and the line is not deleted.
 3. Repeat steps 1 and 2 until you have deleted all desired routes. Then press `CANCEL` and the **Network Routing Information** menu reappears.
- To add routes, press `ADD` to access the **Add Routes** screen.

Network Routing Table — Add Routes

TCP/IP Administration
 Network Routing Information
 Network Routing Table
 Add Routes

Destination	Type	Gateway

This line is used to provide abbreviated help on the currently selected field.

CANCEL
REFRESH
ENTER
CLEAR
HELP

Screen 3-14. Add Routes

This screen is used to add network routes. A maximum of 65 routes may be added.

When you add a route, after you press the **ENTER** function key, the previous screen reappears with the cursor positioned at the beginning of the new entry.

Field Name	Description
Destination	Name or IP address of a host, or a partial IP address of a network. Maximum field size = 20 characters.
Type	The type of destination, either <i>host</i> or <i>network</i> . (Most routes are to network destination.)
Gateway	Name or IP address of the gateway, the machine used to route all traffic to the given destination. Maximum field size = 20 characters.

Use this screen as follows:

1. Type the destination, type, and gateway of the route to be added. Press **(TAB)** or use the arrow keys to move from field to field.
2. Press **(CANCEL)** if you do not want to add what you just typed, or press **(ENTER)** to enter the data. The **Network Routing Information — Network Routing Table** screen reappears.
3. Access this screen again and repeat Steps 1 and 2 for each new route to be added.

Port Administration

Port Administration

1. Application Port Assignment
2. DLG Administration
3. CV/LAN Administration
4. Exit

This line is used to provide abbreviated help on the currently selected field.

EXIT

REFRESH

ENTER

HELP

Screen 3-15. Port Administration

⇒ NOTE:

This screen will appear only if DLG is also installed.

Menu Item	Description
Application Port Assignment	Provides access to screens for assigning the DEFINITY BRI ports to either the DLG or CV/LAN applications.
DLG Administration	Provides access to a screen for viewing, adding, and deleting DLG Clients.
CV/LAN Administration	Provides access to all administrable CV/LAN data.
Exit	Returns you to preceding menu.

To use this menu, select the number of the task you wish to perform. (Press the number, or press **(RETURN)** or use the arrow keys to move the cursor to the desired number, and press **(ENTER)**.)

Application Port Assignment

Port Administration
Application Port Assignment

Port	Application
01	_____
02	_____
03	_____
04	_____
05	_____
06	_____
07	_____
08	_____
09	_____
10	_____
11	_____
12	_____

This line is used to provide abbreviated help on the currently selected field.

CANCEL
REFRESH
ENTER

HELP
APPL

Screen 3-16. Application Port Assignment



NOTE:

This screen will appear only if DLG is also installed.

Field Name	Description
Application	This field has 3 possible settings: DLG , CV/LAN , or blank. The APPL function key is used to step through these choices.

Use this screen as follows:

- To change the application assigned to a port:
 1. Press **(TAB)** or use the arrow keys to move the cursor to the line you want to change, and then press **(APPL)** until the desired application is shown.
 2. Repeat Step 1 until you have changed all desired ports and then press **(ENTER)** to submit the changes. The previous screen will appear.
 3. If you do not want any of the changes press **(CANCEL)**. The previous screen will appear.

DLG Administration

DLG Administration			
Port	Client Name or IP Address	Client Link	Client Status
—	_____	—	_____
—	_____	—	_____
—	_____	—	_____
—	_____	—	_____
—	_____	—	_____
—	_____	—	_____
—	_____	—	_____
—	_____	—	_____

This line is used to provide abbreviated help on the currently selected field.

CANCEL	REFRESH	ADD	DELETE	HELP		UPDATE	
--------	---------	-----	--------	------	--	--------	--

Screen 3-17. DLG Administration**⇒ NOTE:**

This screen will appear only if DLG is also installed.

This screen is used to associate clients with ASAI ports on the DEFINITY Enterprise Communication Server (ECS). Links appear in numerical sequence by port number. A maximum of eight links may be administered, but depending on your system and the number of ASAI links you have purchased, you may not be able to make use of all eight entries. One default entry appears on the screen until it is changed: Port = 1, Client Name = client, Client Link = 1. The IP address of client is 192.168.25.20.

This screen is protected against multiple users making simultaneous changes as follows: If a user presses **ADD** or **DELETE**, the system checks whether the information that was displayed upon entry to this screen has changed. If it has, the ADD or DELETE is not performed and the user is apprised of the problem and exited from the screen.

Field Name	Description
Port	Port number used on the DEFINITY ECS. Valid range is 1 to 12. Each port can only be assigned once.
Client Name or IP Address	Host name or IP address of the client machine authorized to connect to this port. (Network name of the adjunct.) Must be resolvable by the local host table, or be an IP address. Maximum field size = 20 characters.
Client Link	Link number from 1 to 8, used by client when connecting to this port, if client has more than 1 logical link into the DLG. Default = 1.
Client Status	Read-only. Either in use or idle . Idle client states may be modified or deleted. If you attempt to delete a port which is in use, the ASAI link associated with that port is disconnected.

Use this screen as follows:

- To delete a port:
 1. Press **(TAB)** or use the arrow keys to move the cursor to the line you want to delete, and then press **(DELETE)**. (This deletes the entire line.)
 2. The following prompt appears: **Are you sure? (Y/N)**. Type **Y** and press **(RETURN)**.
If you type **N** and press **(RETURN)**, the cursor reappears at the beginning of the line and the line is not deleted.
 3. Repeat Steps 1 and 2 until you have deleted all desired ports. Then press **(CANCEL)** and the Main Menu reappears.
- To add a port, press **(ADD)** to access the **Add Client Link** screen.
- To update the screen with current information, press **(UPDATE)**.

DLG Administration — Add Client Link

DLG Administration
Add Client Links

Port	Client Name or IP Address	Client Link
—	_____	—

This line is used to provide abbreviated help on the currently selected field.

CANCEL
REFRESH
ENTER
CLEAR
HELP

Screen 3-18. Add Client Link

⇒ NOTE:

This screen will appear only if DLG is also installed.

This screen is used to add client links. When you add a client link, after you press the **ENTER** function key, the previous screen (**DLG Administration**) appears with the cursor at the beginning of the new entry.

This screen is protected against multiple users making simultaneous changes as follows: If a user presses **ENTER**, the system checks whether the information that was displayed upon entry to this screen has changed. If it has, the data is not entered and the user is apprised of the problem and exited from the screen.

Field Name	Description
Port	Port number used on the DEFINITY ECS. Valid range is 1 to 12. Each port can only be assigned once.
Client Name or IP Address	Host name or IP address of the client machine authorized to connect to this port. (Network name of the adjunct.) Must be resolvable by the local host table, or be an IP address. Maximum field size = 20 characters.
Client Link	Link number from 1 to 8, used by client when connecting to this port if client has more than 1 logical link into the DLG. Default = 1.

Use this screen as follows:

1. Type the port, client name, and number of the first client link you want to add. Press **(TAB)** or use the arrow keys to move from field to field.
2. Press **(CANCEL)** if you do not want to add what you just typed, or press **(ENTER)** to enter the data. The previous screen reappears.
3. Access the **Add Client Link** screen again and repeat Steps 1 and 2 for each client link to be added.

CV/LAN Administration

CV/LAN Administration			
Node ID	Port	Heartbeat State	Number of Clients
signal01	—	—	—
signal02	—	—	—
signal03	—	—	—
signal04	—	—	—
signal05	—	—	—
signal06	—	—	—
signal07	—	—	—
signal08	—	—	—

This line is used to provide abbreviated help on the currently selected field.

CANCEL	REFRESH			HELP	STATE	CLIENT	PORT
--------	---------	--	--	------	-------	--------	------

Screen 3-19. CV/LAN Administration

Field Name	Description
Node ID	Read-only. Node ID used by CV/LAN clients.
Port	Port number used on the DEFINITY ECS. Valid range is 1 to 12. Each port can only be assigned once.
Heartbeat State	The state of the ASAI heartbeat sever for this node ID. Either ASAI on or off .
Number of Clients	The number of clients administered to use this node ID.

Use this screen as follows:

- To change the heartbeat state of a node ID:
 1. Press **(TAB)** or use the arrow keys to move the cursor to the line you want to change, and then press **(STATE)**.
 2. The following prompt appears: **Are you sure? (Y/N)**. Type **Y** and press **(RETURN)**.
If you type **N** and press **(RETURN)**, the cursor reappears at the beginning of the line and the state is not changed.

3. Repeat Steps 1 and 2 until you have changed the heartbeat state for all the desired node IDs. Then press **CANCEL** and the previous screen will appear.
- To view or modify the list of clients using a node ID, press **TAB** or use the arrow keys to move the cursor to the line you want to view or modify, and then press **CLIENT**. You will then be placed into the **CV/LAN Administration — Assign Port for Node ID signalXX** screen.
 - To modify the port number for a node ID, press **TAB** or use the arrow keys to move the cursor to the line you want to modify, and then press **PORT**. You will then be placed into the **CV/LAN Administration — Assign Port for Node ID signalXX** screen.

2. The following prompt appears: **Are you sure? (Y/N)**. Type **Y** and press **(RETURN)**.
If you type **N** the cursor reappears where it was and the connection is not dropped.
 3. Repeat Steps 1 and 2 until you have dropped all desired connections. Then press **(CANCEL)** and the previous screen will appear.
- To delete a client:
 1. Press **(TAB)** or use the arrow keys to move the cursor to the entry of the client you want to delete, and then press **(DELETE)**.
 2. The following prompt appears: **Are you sure? (Y/N)**. Type **Y** and press **(RETURN)**.
If you type **N** the cursor reappears where it was and the client is not deleted.
 3. Repeat Steps 1 and 2 until you have dropped all desired clients. Then press **(CANCEL)** and the previous screen will appear.
 - To add a client, press **(ADD)** to get to the **CV/LAN Administration — Add Client** screen.

Clients for Node ID signalXX — Add Client

CV/LAN Administration
 Clients For Node ID signalXX
 Add Clients

Client Name or IP Address

This line is used to provide abbreviated help on the currently selected field.

Screen 3-21. Add Client

This screen is used to add CV/LAN clients for a specific node ID. A maximum of 60 clients may be administered.

Field Name	Description
signalXX	Read-Only. Node ID number used by CV/LAN clients.
Client Name or IP Address	Host name or IP address of the client machine authorized to connect to this port. (Network name of the adjunct.) Must be resolvable by the local host table, or by an IP address. Maximum field size = 20 characters.

Use this screen as follows:

1. Type the client name or IP address you want to add.
2. Press if you do not want to add what you just typed, or press to submit the data. The previous screen will appear.
3. Access the Add Client screen again and repeat Steps 1 and 2 for each client to be added.

CV/LAN Administration — Assign Port for Node ID signalXX

```

CV/LAN Administration
Assign Port For Node ID signalXX

Currently Assigned to Port __

Available Ports
00 (unassign)
—
—
—
—
—
—
—
—
—
—
—

This line is used to provide abbreviated help on the currently selected field.

CANCEL  REFRESH  [ ]  [ ]  HELP  [ ]  [ ]  ASSIGN
    
```

Screen 3-22. Assign Port for Node ID signalXX

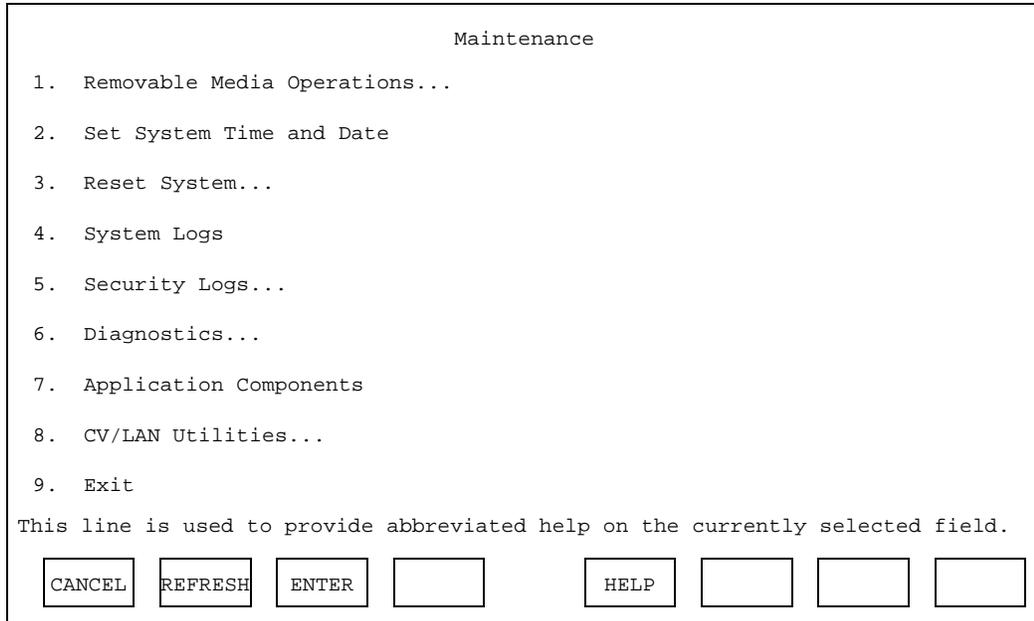
This screen is used to assign a DEFINITY ECS virtual BRI port number to a node ID number. Only port numbers which are assigned to the CV/LAN application and are not assigned to other node ID numbers, will appear in the list.

Field Name	Description
signalXX	Read-only. Node ID number used by CV/LAN clients.
Available Ports	Port number used on the DEFINITY ECS. Valid range is 1 to 12.

Use this screen as follows:

1. Press **(TAB)** or use the arrow keys to move the cursor to the port number you want to assign (port 00 is used to unassign the node ID), and then press **(ASSIGN)**.
2. The following prompt appears: **Are you sure? (Y/N)**. Type **Y** and press **(RETURN)**.
If you type **N** the cursor reappears where it was and the port number is not changed.
3. Then press **(CANCEL)** and the previous screen will appear.

Maintenance



Screen 3-23. Maintenance

Menu Item	Description
Removable Media Operations...	Provides access to the Removable Media Operations menu.
Set System Time and Date	Allows the user to set system time and date, including time zone.
Reset System...	Provides access to the Reset System menu.
System Logs	Provides access to System Logs.
Security Logs...	Provides access to Security Logs menu.
Diagnostics...	Provides access to the Diagnostics Menu.
Application Components	Provides access to identification information about each application.
CV/LAN Utilities	Provides access to a variety of CV/LAN utilities.
Exit	Returns the user to previous screen.

To use this menu, press the number of the screen you wish to access, or press **(TAB)** or use the arrow keys to move the cursor to the desired number, and press **(ENTER)**.

Removable Media Operations

Maintenance
Removable Media Operations

1. Format Removable Media
2. Save Configuration Data To Removable Media
3. Restore Configuration Data From Removable Media
4. Exit

This line is used to provide abbreviated help on the currently selected field.

CANCEL
REFRESH
ENTER

HELP

Screen 3-24. Removable Media Operations

Menu Item	Description
Format Removable Media	Instructs the system to format the removable media.
Save Configuration Data to Removable Media	Instructs the system to start a backup of all its configuration data.
Restore Configuration Data From Removable Media	Begins restoring configuration data from removable media. The system must be rebooted after performing a restore.
Exit	Returns you to previous screen.

Use this screen as follows:

1. Select the activity you want to perform. Press the corresponding number, or press **(TAB)** or use the arrow keys and press **(ENTER)**.
2. For each activity, the following prompt appears: **Are you sure? (Y/N)**. Type **Y** and press **(RETURN)**. The activity is shown on the screen in real time. If you type **N** and press **(RETURN)**, this screen reappears.
3. After the activity you select is completed, the **Maintenance** menu reappears.

Set System Time and Date

```

Maintenance
Set System Time and Date

Time: __:__      Month: __      Day: __      Year: ____

Standard Timezone Information
ST Name: _____
Offset Time:  __:__
Direction (E/W): _

Daylight Savings Timezone Information
DST Name:  _____

This line is used to provide abbreviated help on the currently selected field.

CANCEL  REFRESH  ENTER  CLEAR  HELP  [ ]  [ ]  [ ]
    
```

Screen 3-25. Set System Time and Date

This screen is used to set the system time, date, and time zone. Setting a second time zone is optional.

Field Name	Description
Time	Hours and minutes (xx:xx), plus a time zone name up to 10 characters (for example, EDT). The time zone to the right of the time field is the time zone currently in use and is display-only.
Month	Two digits (01-12)
Day	Two digits (01-31)
Year	Four digits (xxxx)
Standard Timezone Information Name:	The name or abbreviation of the standard time zone for your location. A list of standard abbreviations follows this table.

Field Name	Description
Offset Time:	The number of hours that vary from Universal Time (also known as Greenwich Mean Time). See Standard Time Zone.
Direction (E/W)	The direction your location is from the Universal Time zone, east (E) or west (W).
Daylight Savings Timezone Information Name	The name or abbreviation of a second, optional time zone. A list of standard abbreviations follows this table. If you enter any value, this time zone follows U.S. Daylight Savings rules. In the U.S., Daylight Savings begins on the first Sunday of April at 2 a.m. Standard Time begins on the last Sunday of October at 2 a.m. If this field is blank, then Daylight Savings does not apply.

Standard Time Zone Name	Standard Time Zone Abbreviation	Daylight Savings Abbreviation	Offset Time	(Offset) Direction
Greenwich	GMT	GDT	00:00	W
Atlantic	AST	ADT	04:00	W
Eastern	EST	EDT	05:00	W
Central	CST	CDT	06:00	W
Mountain	MST	MDT	07:00	W
Pacific	PST	PDT	08:00	W
Yukon	YST	YDT	08:00	W
Alaska	none (use full name)	none (use full name)	10:00	W
Hawaii	HST	HDT	10:00	W
Beijing	BST	BDT	11:00	W

To use this screen:

1. On the top line, type the time, month, day, and year. Press **(TAB)** or use the arrow keys to move from field to field.
2. Under **Standard Timezone Information**, type the name or abbreviation in the **name** field, the offset time, and the direction, as follows:
 - If you enter a name or abbreviation from the list in this section, then you do not have to enter offset time or direction.
 - If you leave this field blank, or if you clear the offset time or direction, they are supplied automatically from the preceding table.

- If you enter a name or abbreviation that is **not** in the table, then you must also enter offset time and direction.

⇒ NOTE:

The system determines the time zone that appears to the right of the **Time** field in the top line of the screen according to what is entered in these fields and the current date and time.

3. If you do not want to enter a second time zone, be sure **DST Name** is clear and then skip to Step 4.

If you do want to enter a second time zone that follows U.S. Daylight Savings rules, under **Daylight Savings Timezone Information**, type the name or abbreviation in the Name field as you did in Step 2. However, note the following conventions for this field:

- If you type **any** value in this field, then you are setting an alternate timezone that follows U.S. Daylight Savings rules.
 - If you want a second time zone but do not want U.S. Daylight Savings rules to apply, then make sure the field is blank and manually change the system clock on the appropriate date.
4. Press **ENTER** when you are done typing data. The **Maintenance** menu reappears.

Reset System (CV/LAN)

Maintenance Reset System							
1.	Shutdown						
2.	Reboot System						
3.	Restart CV/LAN						
4.	Exit						
This line is used to provide abbreviated help on the currently selected field.							
<input type="button" value="CANCEL"/>	<input type="button" value="REFRESH"/>	<input type="button" value="ENTER"/>	<input type="button" value=""/>	<input type="button" value="HELP"/>	<input type="button" value=""/>	<input type="button" value=""/>	<input type="button" value=""/>

Screen 3-26. Reset System (CV/LAN)

Reset System (DLG and CV/LAN)

Maintenance
Reset System

1. Shutdown
2. Reboot System
3. Restart DLG
4. Restart CV/LAN
5. Exit

This line is used to provide abbreviated help on the currently selected field.

CANCEL

REFRESH

ENTER

HELP

Screen 3-27. Reset System (DLG and CV/LAN)

⇒ NOTE:

This screen will appear only if DLG is also installed.

Menu Item	Description
Shutdown	Shuts down the entire system. Required before powering down the system or removing system assembly.
Reboot System	Reinitializes all hardware and software on the system assembly.
Restart DLG	Reinitializes the DLG application. Only applies to Screen 3-27.
Restart CV/LAN	Reinitializes the CallVisor PC CV/LAN Application.
Exit	Returns you to previous menu.

Use this screen as follows:

1. Select the activity you want to perform. Press the number or press **(TAB)** or use the arrow keys and press **(ENTER)**.
2. The following prompt appears: **Are you sure? (Y/N)**. Type **Y** and press **(RETURN)**.
If you type **N** and press **(RETURN)**, this screen reappears.
3. For **shutdown**:
It is advisable to run this from the system console.
4. For **Reboot System**:
The screen displays messages during the reboot. If you run this from the system console, the login prompt will appear when the procedure is complete. From a remote connection, you have to reconnect later (approximately 5 to 10 minutes).
5. For **Restart DLG** or **Restart CV/LAN**:
The application will be restarted. This may be done from either the system console or a remote connection.

System Logs

<Date>		Maintenance	Page XXXX of XXXX
System Logs			
Time	Type	Process	Description
_____	_____	_____	_____
This line is used to provide abbreviated help on the currently selected field.			
CANCEL	REFRESH	NXTDAY	PRVDAY
	HELP		
		NXTPG	PRVPG

Screen 3-28. System Logs

This screen displays up-to-the-minute information on system activity, including errors.

Field Name	Description
Date	Month, day and year (MM/DD/YYYY) changes as you move among dates. If an asterisk (*) follows the day, this indicates an overflow log for this date. This second log should be considered a separate day when moving through days.
Time	Time of the log entry (Hour:Minutes:Seconds)
Type	Severity of the log entry (FYI , WARNING , or CRITICAL)
Process	The process that created the log entry. Examples are oam_ui and Brouter .
Description	Description of the log entry

To use this screen, press **NXTDAY** and **PRVDAY** to move among days. Press **NXTPG** and **PRVPG** to step through multiple pages.

Security Logs

Maintenance
Security Logs

1. Login Attempt Log
2. Client Access Logs
3. System Reset Log
4. Command Logs
5. Exit

This line is used to provide abbreviated help on the currently selected field.

CANCEL
REFRESH
ENTER

HELP

Screen 3-29. Security Logs

Menu Item	Description
Login Attempt Log	Lists login attempts that failed after 5 or more attempts.
Client Access Logs	Provide access to all client connection attempts.
System Reset Log	Provides access to all system boot records.
Command Logs	List all commands executed from administration/maintenance screens, such as adding a new login. List all changes to parameters.

Use this screen as follows:

1. Select the item for which you would like to see the information. Press the number, or press **TAB** or use the arrow keys and press **ENTER**. The applicable screen appears.
2. When you are done viewing data, press **Exit** to return to the **Maintenance** menu.

Security Logs — Login Attempt Log

Maintenance		Page X of X
System Logs		
Login Attempt Log		
<u>Date and Time</u>	<u>User</u>	<u>Terminal Port</u>
CANCEL	REFRESH	
	HELP	
		NXTPG
		PRVPG

Screen 3-30. Login Attempt Log

Field Name	Description
Date and Time	Date and time of the invalid login attempt.
User	Login of the user who attempted to log in. After five failed login attempts occur, all are logged. If fewer than five are attempted, then none is logged.
Terminal Port	MAPD port through which the login attempt was made.

To view information on this screen, press and to step through multiple pages.

Security Logs — Client Access Log

Time	Type	Process	Description
<p>This line is used to provide abbreviated help on the currently selected field.</p> <p> <input type="button" value="CANCEL"/> <input type="button" value="REFRESH"/> <input type="button" value="NXTDAY"/> <input type="button" value="PRVDAY"/> <input type="button" value="HELP"/> <input type="button" value="NXTPG"/> <input type="button" value="PRVPG"/> </p>			

Screen 3-31. Client Access Log

Field Name	Description
Date	Month, day, and year (MM/DD/YYYY) changes as you move among dates. If an asterisk (*) follows the day, this indicates an overflow log for this date. This second log should be considered a separate day when moving through days.
Time	Time of the client access (Hour:Minutes:Seconds).
Type	Severity Indicator (FYI , WARNING , or CRITICAL).
Process	Process that created the log entry. Examples are <code>brouter</code> and <code>oam_ui</code> .
Description	Description of the client access activity. Example: <code>client/3520 TCP_Connect</code> .

To use this screen, press and to move among days. Press and to step through multiple pages.

Security Logs — Command Log

<Date>		Maintenance	Page XXXX of XXXX
		Security Logs	
		Command Logs	
Time	User	Description	
This line is used to provide abbreviated help on the currently selected field.			
<input type="button" value="CANCEL"/>	<input type="button" value="REFRESH"/>	<input type="button" value="NXTDAY"/>	<input type="button" value="PRVDAY"/>
		<input type="button" value="HELP"/>	<input type="button" value="NXTPG"/>
		<input type="button" value="PRVPG"/>	

Screen 3-33. Command Log

Field Name	Description
Date	Month, day, and year (MM/DD/YYYY) changes as you move among dates. If an asterisk (*) follows the day, this indicates an overflow log for this date. This second log should be considered a separate day when moving through days.
Time	Time of the client access (Hour:Minutes:Seconds).
User	The login_id of the user executing the command.
Description	Description of the command that was executed. Example: delete: route: 135.20.87 network asaimfb

This screen displays up-to-the-minute data for the current day. Most recent data is displayed first.

To use this screen, press and keys to move among days. Press and to step through multiple pages.

Diagnostics

Maintenance
 Diagnostics

1. Ping Host
2. Hardware Alarms
3. Hardware Status
4. Exit

This line is used to provide abbreviated help on the currently selected field.

CANCEL

REFRESH

ENTER

HELP

Screen 3-34. Diagnostics

This screen allows the user to test connections and check alarms and status for hardware.

Menu Item	Description
Ping Host	Provides access to the Ping Host Screen.
Hardware Alarms	Displays hardware alarms.
Hardware Status	Displays hardware status.
Exit	Returns you to the previous menu.

Use this screen as follows:

1. Select the item for which you would like to see the information. Press the number, or press **(TAB)** or use the arrow keys and press **(ENTER)**. The applicable screen appears.
2. When you are done viewing data, press **(EXIT)** to return to the **Maintenance** menu.

Diagnostics — Ping Host

Maintenance Diagnostics Ping Host
Host Name or IP Address: _____ Packet count: _____ Packet size: _____
This line is used to provide abbreviated help on the currently selected field.
<input type="button" value="CANCEL"/> <input type="button" value="REFRESH"/> <input type="button" value="ENTER"/> <input type="button" value="CLEAR"/> <input type="button" value="HELP"/> <input type="button"/> <input type="button"/> <input type="button"/>

Screen 3-35. Ping Host

This screen allows the user to test the connection between the MAPD and any host.

Field Name	Description
Host Name or IP Address	Name or IP address of the host you are trying to ping. Maximum field size = 20 characters.
Packet Count	The number of packets sent between the MAPD and the host. Valid range is 1-999. Default = 1.
Packet Size	The size of the packets sent between the MAPD and the host. Valid range is 64-999. Default = 64

Use this screen as follows:

1. Type the host name, IP Address, packet count, and packet size. Use or the arrow keys to move from field to field.
2. When you are done entering data, press to enter the data, or to return to the **Maintenance** menu. If you press , this displays the results and redisplay this screen. (You can do multiple pings.)

Diagnostics — Hardware Alarms

```

The messages which follow are the result of your last request.
At the (EOF): prompt press RETURN to continue.

TN Code/Vintage:
    TN801  V1
FW Version:
    BOOT=777      APPL=15000
RM Version:
    BOOT=0.1.444  APPL=0.1.4

Alarm Count: 2
    platform ambient temperature is high [WARNING]
    voltage out of range [MINOR]

(EOF):

```

Screen 3-36. Hardware Alarms

This is a read-only screen that displays any hardware alarms.

Field Name	Description
TN Code/Vintage	Displays the MAPD (TN801) board code and vintage as reported by the DEFINITY ECS.
FW Version	Displays the firmware versions.
RM Version	Displays the remote maintenance firmware versions.
Alarm Count	Displays the number of active alarms followed by a description of each alarm and its severity.

NOTE:

Contact the TSC if there are any alarms or if any of the tests fail.

Use this screen as follows:

- Press **RETURN** to return to the **Diagnostics** menu.

Diagnostics — Hardware Status

The messages which follow are the result of your last request.
At the (EOF): prompt press RETURN to continue.

```

TN Code/Vintage:
    TN801  V1
FW Version:
    BOOT=777      APPL=15000
RM Version:
    BOOT=0.1.444  APPL=0.1.4

Alarm Count: 2
    platform ambient temperature is high [WARNING]
    voltage out of range [MINOR]

Temperatures:
    actual          min          max
Temp1  99.71 deg F  75.00 deg F  104.00 deg F
Temp2  85.53 deg F  75.00 deg F  104.00 deg F

Voltages:
    actual          min          max
+VEE   +12.18V      +11.40V     +12.60V
-VEE   -12.12V      -12.60V     -11.40V
+VCC   +5.11V       +4.75V      +5.25V
-VCC   -5.19V       -5.25V      -4.75V
3.3V   +3.32V       +3.13V      +3.46V

(EOF):

```

Screen 3-37. Hardware Status

This is a read-only screen that displays hardware status.

Field Name	Description
TN Code/Vintage	Displays the MAPD (TN801) board code and vintage as reported by the DEFINITY ECS.
FW Version	Displays the firmware version.
RM Version	Displays the remote maintenance firmware version.
RM Version	Displays the remote maintenance firmware version.
Alarm count	Displays the number of active alarms followed by a description of each alarm and its severity.

⇒ NOTE:

Contact the TSC if any alarms exist or if any tests fail.

Use this screen as follows:

- Press **(RETURN)** to return to the **Diagnostics** menu.

Application Components

```
===== Application Packages =====
DLG          DLG application
              (MAPD) Release ESAI.1.0, Issue 3
cvasai       LUCENT CALLVISOR PC ASAI
              (MAPD) 5.0.1
cvisdn       LUCENT CALLVISOR PC ISDN
              (MAPD) 5.0.1
cvlansrv     LUCENT CV/LAN SERVER
              (MAPD) 5.0.1
cvmapd       LUCENT CALLVISOR PC OAM
              (MAPD) 5.0.1
klog         MAPD klog driver
              (MAPD) Release ESAI.1.0, Issue 3
mapd-ae      MAPD Application Environment
              (MAPD) Release ESAI.1.0, Issue 3
===== Platform Packages =====
angl         ANGEL DRIVER
              (ANGEL) 4.0-4/platforms/fid23
bri          BRI Driver
              (ANGEL) 4.0-4/platforms/fid23
maint        MAINT Driver
              (MAINT) 4.0-4/platforms/fid23
mapd         MAPD Driver
              (MAPD) 4.0-4/platforms/fid23
mapdmux      MAPD MULTIPLEXER Driver
              (MAPD) 4.0-4/platforms/fid23
rmb          RMB Driver
              (RMB) 4.0-4/platforms/fid23
```

Screen 3-38. Application Components

The above screen shows a sample output screen from the Application Components.

CV/LAN Utilities

Maintenance
CV/LAN Utilities

1. ASAI Test
2. ASAI Trace
3. ISDN Trace
4. ISDN Alarm
5. Exit

This line is used to provide abbreviated help on the currently selected field.

EXIT

REFRESH

ENTER

HELP

Screen 3-39. CV/LAN Utilities

Menu Item	Description
ASAI Test	Tests communication with the DEFINITY ECS for each node ID using ASAI heartbeats.
ASAI Trace	Decodes an ASAI message stream.
ISDN Trace	Traces messages through the kernel protocol stack. Used in debugging.
ISDN Alarm	Activates or deactivates ASAI maintenance alarming on the DEFINITY ECS.
Exit	Returns you to preceding menu.

To use this menu, select the number of the task you wish to perform. (Press the number, or press **TAB** or use the arrow keys to move the cursor to the desired number, and press **ENTER**.)

CV/LAN Utilities — ASAI Test

```
Heartbeat with switch for ASAI node signal01 was successful.  
  
Heatbeat with switch for ASAI node signal02 was successful.  
  
Unexpected capability = C_ABORT for ASAI node signal03 received.  
The capability expected was C_HB_CONF  
Primitive type response for ASAI node signal03 !=C_POS_ACK  
Primitive type response received = C_REQUEST  
Heartbeat test with switch for ASAI node signal03 failed.
```

Screen 3-40. ASAI Test

The above figure shows a sample output screen from the ASAI test CV/LAN utility.

CV/LAN Utilities — ASAI Trace

```
Wed Oct 16 12:16:00 1996

*****

<3P Domain Request> ADJ=>sw {0}crv=0006 sec=505.39
Domain: Extension      24051
*****

*****

SW->adj *0* crv=8006 sec=505.42

<Event Notif>  ADJ=>sw *0*crv=0008 sec=507.60
Domain: Vector Dir Number  24100
*****

*****

SW->adj *0* crv=8008 sec=507.67

<Event Report>  SW->adj *0*crv=8006 sec 508.42
```

Screen 3-41. ASAI Trace

The above figure shows a sample output screen from the ASAI trace CV/LAN utility.

CV/LAN Utilities — ISDN Trace

```
39302 CVBRI downlink message/12 MSG_TR[2]: 01 00 00 00 00 00 00 00 00 00 00 00
39302 CVBRI downlink message/0 MSG_TR[1]: 08 02 80 7f 5a 96 1c 0b 91 a1 08 02
39302 CVBRI downlink message/12 MSG_TR[1]: 01 00 00 00 00 00 00 00 00 00 00 00
39322 CVBRI uplink message/0 MSG_TR[4]: 86 04 00 7f 64 00 0c 00 13 00 08 02
39322 CVBRI uplink message/0 MSG_TR[5]: 86 05 00 7f 64 00 0c 00 01 00 00 00
39322 CVBRI downlink message/0 MSG_TR[4]: 08 02 80 7f 5a 96 1c 0b 91 a1 08 02
39322 CVBRI downlink message/12 MSG_TR[4]: 01 00 00 00 00 00 00 00 00 00 00 00
39322 CVBRI downlink message/0 MSG_TR[5]: 08 02 80 7f 5a 96 1c 0b 91 a1 08 02
39322 CVBRI downlink message/12 MSG_TR[5]: 01 00 00 00 00 00 00 00 00 00 00 00
51343 CVBRI uplink message/0 MSG_TR[1]: 86 01 00 7f 64 96 0c 00 91 a1 08 02
51344 CVBRI uplink message/0 MSG_TR[2]: 86 02 00 7f 64 00 0c 00 01 00 00 00
51344 CVBRI downlink message/0 MSG_TR[1]: 08 02 80 7f 5a 96 1c 0b 91 a1 08 02
51344 CVBRI downlink message/12 MSG_TR[1]: 01 00 00 00 00 00 00 00 00 00 00 00
51344 CVBRI downlink message/0 MSG_TR[2]: 08 02 80 7f 5a 96 1c 0b 91 a1 08 02
51344 CVBRI downlink message/12 MSG_TR[2]: 01 00 00 00 00 00 00 00 00 00 00 00
51363 CVBRI uplink message/0 MSG_TR[5]: 86 05 00 7f 64 00 0c 00 13 00 08 02
51364 CVBRI uplink message/0 MSG_TR[4]: 86 04 00 7f 64 00 0c 00 13 00 08 02
51364 CVBRI downlink message/0 MSG_TR[5]: 08 02 80 7f 5a 96 1c 0b 91 a1 08 02
51364 CVBRI downlink message/12 MSG_TR[5]: 01 00 00 00 00 00 00 00 00 00 00 00
51364 CVBRI downlink message/0 MSG_TR[4]: 08 02 80 7f 5a 96 1c 0b 91 a1 08 02
51364 CVBRI downlink message/12 MSG_TR[4]: 01 00 00 00 00 00 00 00 00 00 00 00
```

Screen 3-42. ISDN Trace

The above figure shows a sample output screen from the ISDN trace CV/LAN utility.

CV/LAN Utilities — ISDN Alarm

```

Maintenance
CV/LAN Utilities
ISDN Alarm

Node ID: __ Timeout: ____ Action: _____

This line is used to provide abbreviated help on the currently selected field.

CANCEL REFRESH ENTER [ ] HELP ACTION [ ] [ ]
    
```

Screen 3-43. ISDN Alarm

This screen can be used to activate or deactivate ASAI alarms on the DEFINITY ECS for a specific virtual BRI port.

Field Name	Description
Node ID	Node ID number used by CV/LAN clients.
Timeout	The maximum amount of time in seconds you are willing to wait for the DEFINITY ECS to respond to the activate/deactivate request.
Action	Read only. This field determines if an activate or deactivate message will be sent to the DEFINITY ECS.

Use this screen as follows:

- To activate or deactivate ASAI alarms on the DEFINITY ECS for a specific virtual BRI port, enter the port number, timeout and press **ACTION** until the desired action is displayed. Then press **ENTER**.

DLG Port Status/Control

DLG port Status/Control						
Port	DEFINITY Port State	TCP/IP Connection State	DLG Service State	Messages to DEFINITY	Messages from DEFINITY	Message Period (minutes)
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—

This line is used to provide abbreviated help on the currently selected field.

CANCEL	REFRESH		MSGPER	HELP	STATE	UPDATE	DROP
--------	---------	--	--------	------	-------	--------	------

Screen 3-44. DLG Port Status/Control**⇒ NOTE:**

This screen will appear only if DLG is also installed.

This screen can be used to change a port's service state or close a port's TCP connection. Changing the port's service state affects the port's other states as well.

Field Name	Description
Port	Port number (1-12) used by the DEFINITY ECS. To determine which client is associated with a particular port, see the Screen, "DLG Administration."
DEFINITY ECS Port State	<p>Read-only. Possible port states are as follows:</p> <ul style="list-style-type: none"> ■ NOT CONNECTED — The BRI port is not administered (or is busied out) on the DEFINITY ECS, or Layer 1 is down. ■ CONNECTED DOWN — The BRI port is administered on the DEFINITY ECS but Layer 2 is not established. ■ CONNECTED — The BRI port is administered on the DEFINITY ECS and Layer 2 is established.

Field Name	Description
DEFINITY ECS Port State (continued)	<ul style="list-style-type: none"> ■ BUSIEDOUT — The BRI Port is administered on the DEFINITY ECS but has been busied out in the BRI driver on the MAPD. ■ SW INTF DN — the DEFINITY ECS interface (angel) is down. ■ SW INTF DN BSY — the DEFINITY ECS interface (angel) is down and the BRI port has been busied out in the BRI driver on the MAPD.
TCP/IP Connection State	<p data-bbox="735 632 878 663">Read-only.</p> <ul style="list-style-type: none"> ■ REACHABLE — The client is responding to ICMP echo requests (host recognizes client but cannot communicate). ■ UNREACHABLE — The client is not responding to ICMP echo requests (host does not recognize client). ■ CLOSED — The TCP connection has been closed. ■ LISTEN — TCP is listening for incoming connections. ■ SYN SENT — TCP is actively trying to establish a connection. ■ SYN RECEIVED — Initial synchronization of the TCP connection is under way. ■ ESTABLISHED — The TCP connection has been established. This is the steady state when the client is connected. ■ CLOSE WAIT — The client has closed its TCP connection. The MAPD's TCP is waiting for a close. ■ FIN WAIT 1 — The MAPD's TCP connection is initiating a close. ■ CLOSING — The MAPD's TCP has notified the client's TCP of its intent to close. It is now awaiting acknowledgment. ■ LAST ACK — The client has closed its TCP connection. The MAPD has closed its TCP connection and is now awaiting acknowledgment. ■ FIN WAIT 2 — The MAPD's TCP connection has initiated a close and is now awaiting shutdown from the client's TCP.

Field Name	Description
TCP/IP Connection State (continued)	<ul style="list-style-type: none"> ■ TIME WAIT — The MAPD has closed its TCP connection and is waiting for retransmission of the shutdown from the client's TCP. ■ UNKNOWN — Self-explanatory. Contact the TSC.
DLG Service State	Either in service or busied out
Messages to the DEFINITY ECS	Read-only. The number of messages sent to the DEFINITY ECS in the last message collection period.
Messages from the DEFINITY ECS	Read-only. The number of messages sent by the DEFINITY ECS in the last message collection period.
Messages Period (minutes)	The time period (in minutes) during which messages are sent and received. This is a per-port number entered on the Message Collection Period screen. Default = 30.

Use this screen as follows:

- To change the port's service state:
 1. Press **(TAB)** or use the arrow keys to move to the desired port.
 2. Press **(STATE)** to toggle the service state:

⇒ NOTE:

Busying a port out causes that port's TCP connection (if one exists) to be closed. No new connections are permitted on that port until the port is placed back in service.

3. The following prompt appears: **Are you sure? (Y/N)**. Type **Y** and press **(RETURN)**. The **DLG Port Status/Control** screen reappears, showing the changed state.

If you type **N** and press **(RETURN)** the **DLG Port Status/Control** screen immediately reappears.

- To update the screen with current information, press **(UPDATE)**
- To close a port's TCP connection:
 1. Press **(TAB)** or use the arrow keys to move to the desired port.
 2. Press **(DROP)** to close the port's TCP connection.

 **NOTE:**

New connections are permitted on this port.

3. The following prompt appears: **Are you sure? (Y/N)**. Type **Y** and press **(RETURN)**. The **DLG Port Status/Control** screen reappears, showing the change.

If you type **N** and press **(RETURN)** the **DLG Port Status/Control** screen immediately reappears.

To set the Message Collection Period for a port, select the port and press **(MSGPER)**. The **Message Collection Period** screen appears. If no ports are administered, pressing **(MSGPER)** does nothing.

DLG Port Status/Control — Message Collection Period

DLG Port Status/Control
Message Collection Period

Port: XX Client: YY Link: ZZ

Period: _____

This line is used to provide abbreviated help on the currently selected field.

CANCEL	REFRESH	ENTER	CLEAR	HELP			
--------	---------	-------	-------	------	--	--	--

Screen 3-45. Message Collection Period (DLG)

⇒ NOTE:

This screen will appear only if DLG is also installed

This screen enables you to set the message collection period for a port. When the screen is first displayed, a port number (1 to 12) replaces **xx** in the **Port** field, the client's name or IP address replaces **yy** in the **Client** field, and the client's link replaces **zz** in the **Link** field. The port number comes from the previous screen (whatever port the cursor was on).

After you enter a value for **Period** on this screen and press **(ENTER)** the previous screen reappears with the cursor positioned at the beginning of the new entry. Changing the collection period clears the traffic counts (messages to the DEFINITY ECS and messages from the DEFINITY ECS) on the **DLG Port Status/Control** screen.

Field Name	Description
Port	The port for which messages are to be collected. Display-only.
Client	The client name or IP address for which messages are to be collected. Display-only.
Link	The client link for which messages are to be collected.
Period	The time period (in minutes) during which messages are to be collected. Range = 1-720. Default = 30.

Use this screen as follows:

1. Type the desired time period, in minutes, up to 12 hours.
2. When you are done entering the data, press **(ENTER)**. The screen you were on previously (**DLG Port Status/Control**) reappears.

CV/LAN Port Status/Control

CV/LAN Port Status/Control							
Port	Node ID	DEFINITY Port State	Number of Client Connections	CV/LAN Service State	Messages to DEFINITY	Messages from DEFINITY	Message Period (minutes)
---	---	-----	-----	-----	-----	-----	---
---	---	-----	-----	-----	-----	-----	---
---	---	-----	-----	-----	-----	-----	---
---	---	-----	-----	-----	-----	-----	---
---	---	-----	-----	-----	-----	-----	---
---	---	-----	-----	-----	-----	-----	---
---	---	-----	-----	-----	-----	-----	---
---	---	-----	-----	-----	-----	-----	---

Press STATE, DROP, or MSGPER to effect this entry

Screen 3-46. CV/LAN Port Status/Control

This screen can be used to view and/or change message traffic statistics.

Field Name	Description
Port	Port number (1-12) used by the DEFINITY ECS. See the CV/LAN Administration screen to determine which clients are associated with a particular port.
Node ID	Node ID used by CV/LAN clients.
DEFINITY Port State	<p>Read-only. Possible port states are as follows:</p> <ul style="list-style-type: none"> ■ NOT CONNECTED — The BRI port is not administered (or is busied out) on the DEFINITY ECS, or Layer 1 is down. ■ CONNECTED DOWN — The BRI port is administered on the DEFINITY ECS but Layer 2 is not established. ■ CONNECTED — The BRI port is administered on the DEFINITY ECS and Layer 2 is established.

Field Name	Description
DEFINITY Port State (continued)	<ul style="list-style-type: none"> ■ BUSIEDOUT — The BRI Port is administered on the DEFINITY ECS but has been busied out in the BRI driver on the MAPD. ■ SW INTF DN — The DEFINITY ECS interface (angel) is down. ■ SW INTF DN BSY — The DEFINITY ECS interface (angel) is down and the BRI Port has been busied out in the BRI driver on the MAPD.
Number of Client Connections	Read-only. Number of currently connected clients.
CV/LAN Service State	Either in service or out of service .
Messages to the DEFINITY	Read-only. The number of messages sent to the DEFINITY ECS in the last message collection period.
Messages from the DEFINITY	Read-only. The number of messages sent by the DEFINITY ECS in the last message collection period.
Message Period	The time period (in minutes) during which messages are sent and received. This is a per port number. Default = 30.

Use this screen as follows:

- To change the port's CV/LAN service state:
 1. Press **(TAB)** or use the arrow keys to move to the desired port.
 2. Press **(STATE)** to toggle the Service State.

⇒ NOTE:

Busying a port out causes all TCP connections on that port (if any exist) to be closed. No new connections are permitted on that port until the port is placed back in service.

3. The following prompt appears: **Are you sure? (Y/N)**. Type **Y** and press **(RETURN)**. The **CV/LAN Port Status/Control** screen reappears showing the changed state.

If you type **N** and press **(RETURN)**, the **CV/LAN Port Status/Control** screen immediately reappears.

- To drop all client connections for a specific port:
 1. Press **(TAB)** or use the arrow keys to move to the desired port.
 2. Press **(DROP)** to drop all client connections.

⇒ NOTE:

New connections are permitted on this port

3. The following prompt appears: **Are you sure? (Y/N)**. Type **Y** and press **(RETURN)**. The **CV/LAN Port Status/Control** screen reappears showing the change.

If you type **N** and press **(RETURN)**, the **CV/LAN Port Status/Control** screen will reappear.
- To set the Message Collection Period for a port, select the port and press **(MSGPER)**. The **Message Collection Period** screen appears. If no ports are administered, pressing **(MSGPER)** does nothing.

CV/LAN Port Status/Control — Message Collection Period (CV/LAN)

CV/LAN Port Status/Control
Message Collection Period

Node ID: signalXX Port: yy

Period: ____

This line is used to provide abbreviated help on the currently selected field.

CANCEL
REFRESH
ENTER
CLEAR
HELP

Screen 3-47. Message Collection Period (CV/LAN)

This screen enables you to set the message collection period for a port. When this screen is first displayed, a port number (1 to 12) replaces YY in the `port` field. The port number comes from the previous screen (whichever port the cursor was on).

After you enter a value for `Period` on this screen and press `ENTER` the previous screen reappears with the cursor positioned at the beginning of the new entry. Changing the collection period clears the traffic counts (messages to the DEFINITY ECS and messages from the DEFINITY ECS) on the **CV/LAN Port Status/Control** screen.

Field Name	Description
Port	The port for which messages are to be collected. Display-only.
Period	The time period (in minutes) during which messages are to be collected. Range = 1-720. Default = 30.

Use this screen as follows:

1. Type the desired time period, in minutes, up to 12 hours.

2. When you are done entering the data, press **ENTER**. The screen you were on previously (**CV/LAN Port Status/Control**) will reappear.

Maintenance

4

This chapter provides information for diagnosing, repairing, and maintaining the MAPD System. The maintenance screens used in these tasks are located in Chapter 3, "System Administration."

Repair Orientation

This section gives basic information about the MAPD System. This includes system capacities, a description of system components, system states, and maintenance connections, and finally, common maintenance procedures.

System Specifications

Table 4-1 defines the basic specifications of the MAPD System.

Table 4-1. System Capacities, Requirements, and Limitations

Physical Dimensions	<ul style="list-style-type: none"> ■ Weight: 2.9 pounds ■ Length: 14.75 inches ■ Height: 7.6 inches ■ Width: 2.2 inches
Power Requirements	<p>-48 VDC from the switch (Acceptance range: -54.0 VDC to -44.0 VDC).</p> <p>+5VDC from the switch</p> <p>-5VDC from the switch</p>
Capacities	<ul style="list-style-type: none"> ■ 8 ASAI links ■ 60 CV/LAN client connections ■ 5 login sessions
System Hardware Supported	<ul style="list-style-type: none"> ■ DEFINITY ECS R5/R6 vs, si, r ¹
Switch Software Supported	DEFINITY ECS R5 or R6 (provisioned with R6.1 or later software) in V5 or V6 mode
Temperature Requirements	<ul style="list-style-type: none"> ■ -40 to 150F (-19 to 71C) storage temperature ■ 60 to 85F (18 to 29C) operating temperature
Humidity Requirements	<p>10 to 80 percent (noncondensing)</p> <p>79F (26C) maximum wet-bulb temperature</p>
Altitude Limitations	<p>200 feet (60m) below sea level</p> <p>10,000 feet (3050m) above sea level</p>

1. vs requires the packet bus enabled version of the Compact Single Carrier Cabinet J588905 L8.

Physical Description

Refer to Figure 4-1, "MAPD System Assembly," when reading this section.

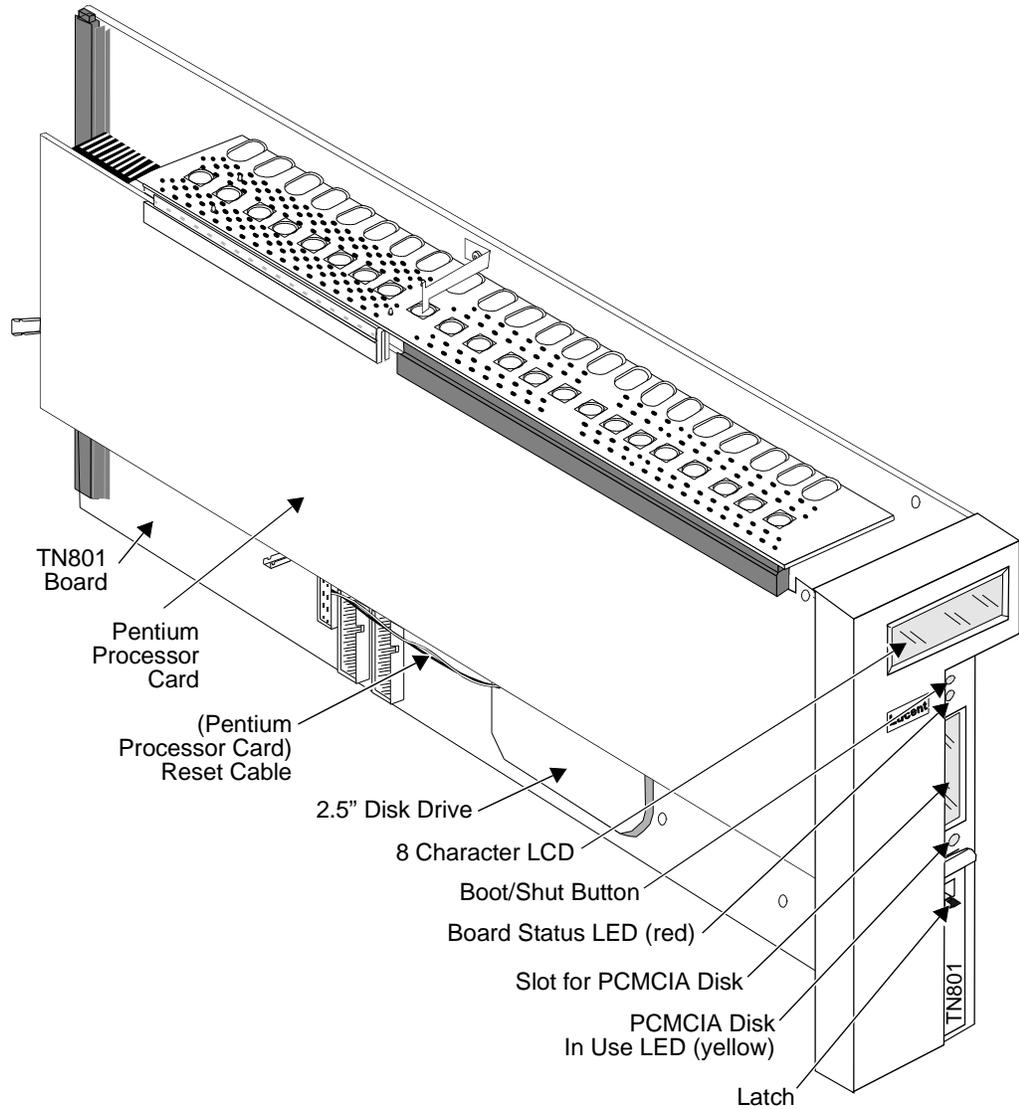


Figure 4-1. MAPD System Assembly (J58890MA)

Four main items make up the MAPD System hardware assembly shown in Figure 4-1. They are:

- The TN801 MAPD (Multi-Application Platform for the DEFINITY ECS) Board — The main circuit board that provides connectivity to the DEFINITY ECS system Busses, LAN connectivity, support for the IDE disk drive, PCMCIA interface, and ISA and PCI interfaces to the Pentium processor card.
- The Pentium Processor Card — Main processor that runs the LAN Gateway application under UNIX.
- The 2.5" Disk drive — Hard disk used to store the application, operating system, customer data, and log system error information.
- PCMCIA Disk — Used to store periodic backups of customer data, install new software releases, and remove core dumps and other maintenance information.

The system faceplate is made up of the following items:

- Red Light-Emitting Diode (LED) — Indicates the health of the MAPD. When flashing, it indicates a software problem. When it is steadily lit for more than 30 seconds, a hardware problem exists.
- Liquid Crystal Display (LCD) — An 8 character alphanumeric display that automatically shows the status of the MAPD including alarms.
- Boot/Shut button— A recessed button used to bring the entire system off-line to a Maintenance Shutdown state M_SHUT. In operational state, it closes all the files, stops file operations, and executes a spin-down of the disk drive. When pressed in the Maintenance Shutdown state M_SHUT, or in the error shutdown state E_SHUT, it reboots the system.



NOTE:

The button must be pressed and held for 2 seconds.

Cables include:

- LCD Cable — A flat 8 pin ribbon cable that provides connectivity between the TN801, MAPD Board and the faceplate LCD display.
- Reset Cable — A two wire cable that provides the TN801 MAPD Board with the ability to issue a reset to the Pentium processor card.
- External cable — The MAPD external cable connects the TN801 MAPD Board through the back of the switch. This cable provides an Ethernet connection to a LAN as well as administration and remote maintenance terminal connections. It has a reserved RS-232 connector also.

The MAPD System initializes, operates, shuts down, and is diagnosed and maintained in different states. These states are displayed on the faceplate panel LCD shown in Figure 4-2.

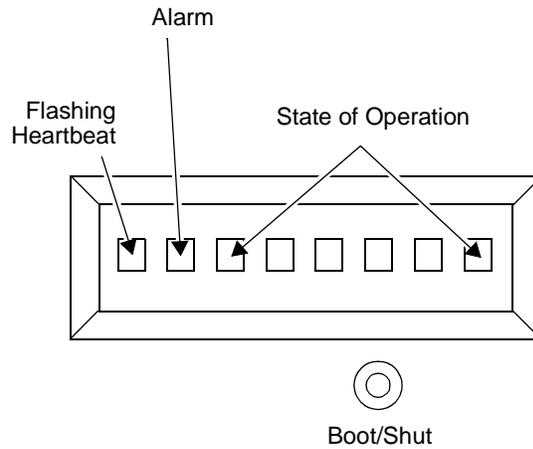


Figure 4-2. LCD Status Mode Display

Table 4-2 gives a description of the alarms, indications, and states of the MAPD System.

System States

Table 4-2. System States

Display	Definition
Heartbeat Indication	
	Flashing at a one-second on, half-second off rate, indicates that the application is running, and the MAPD Board and the processor card are communicating with each other.
Alarms	
	Minor alarm — Displays a problem that could disable part of a system function and noticeably degrade operation. Requires on site intervention.
	Major alarm — Displays a problem that could widely degrade system operation and seriously impact service. Requires intervention from the TSC.
	Warning — Displays a problem not severe enough to noticeably degrade operation. Requires on-site intervention.
	Critical — Displays a problem that could widely degrade system operation and seriously impact service. It could also cause physical damage to the system.
Initialization Status Messages	
	Board Test — Whenever the system is reset, this is displayed when flashware is performing a hardware initialization and test on the MAPD Board. If stuck in this state, a failure of hardware initialization tests is indicated.
	Displayed when the board test is complete and the Pentium processor card is released from reset and is performing its boot diagnostic tests. When in this state, the system can be removed from the switch safely.
	Operating System Initialization — Displayed as the UNIX Operating System is initializing.
	Brought up during OS initialization, while a check is done to see if the MAPD Board firmware is current. Only if the system determines that the F/W version is out of date, will the MAPD Board FLASH PROMS be reprogrammed
	ASAI Initialization — Displayed when the MAPD System software is operating, but no ASAI links are yet established.

Table 4-2. System States — Continued

Display	Definition
ASAI-X	ASAI-Ethernet State — Displayed when the MAPD System is fully initialized and it is providing service, or is ready to provide service. X indicates the number of established ASAI links.
<i>Shutdown States</i>	
ESHUT	<p>Error Shutdown — Flashes whenever the TN801 MAPD Board has lost communication with the processor card. This will usually indicate that the UNIX operating system has shut down for an unexpected reason.</p> <p>If it is in this state, the system can be rebooted by pressing and holding the Boot/Shut button for 2 seconds. The system can also be powered down and removed from the switch carrier for repair.</p>
MSHUT	<p>Maintenance Shutdown — Flashes (for 120 seconds) when a technician has directed Maintenance shutdown either by pressing the Boot/Shut button, and holding it in for 2 seconds, or through the SYSTEM SHUTDOWN command on a maintenance terminal. Flashware executes and the disk is spun down. Once the system is completely shut down, the display is steadily lit.</p> <p>If it is in the steadily lit state, the system can be rebooted by pressing and holding the Boot/Shut button for 2 seconds. The system can also be powered down and removed from the switch carrier for repair.</p>

Figure 4-3, “System Initialization and Shutdown Flow,” shows the steps the MAPD System automatically takes from a dead state to full operation. It also shows the states that can be entered whenever errors occur, or when the technician manually changes states using the faceplate panel, or with the maintenance screens located in Chapter 3, “System Administration.”

⇒ NOTE:

These states are shown as they appear on the faceplate panel LCD.

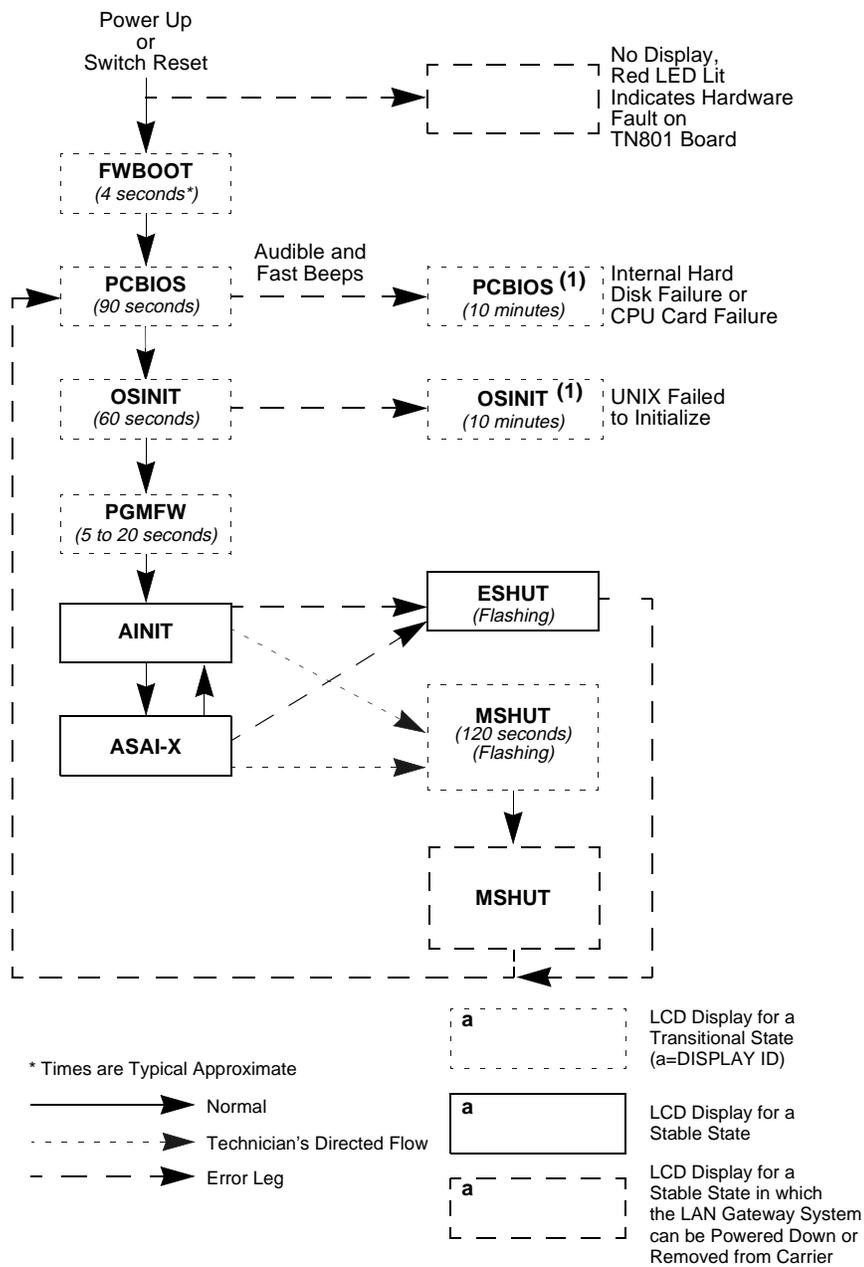


Figure 4-3. System Initialization and Shutdown Flow

Maintenance Connections

Common types of console terminals are used for both switch and local MAPD System maintenance, allowing the same baud rates and parity to be used. Although a local maintenance terminal is optional, it does need to be available for installation and troubleshooting. A remote maintenance terminal may also be used.

Figure 4-4, "Available Terminal Connections to a MAPD System," summarizes the terminal configurations available with the system.

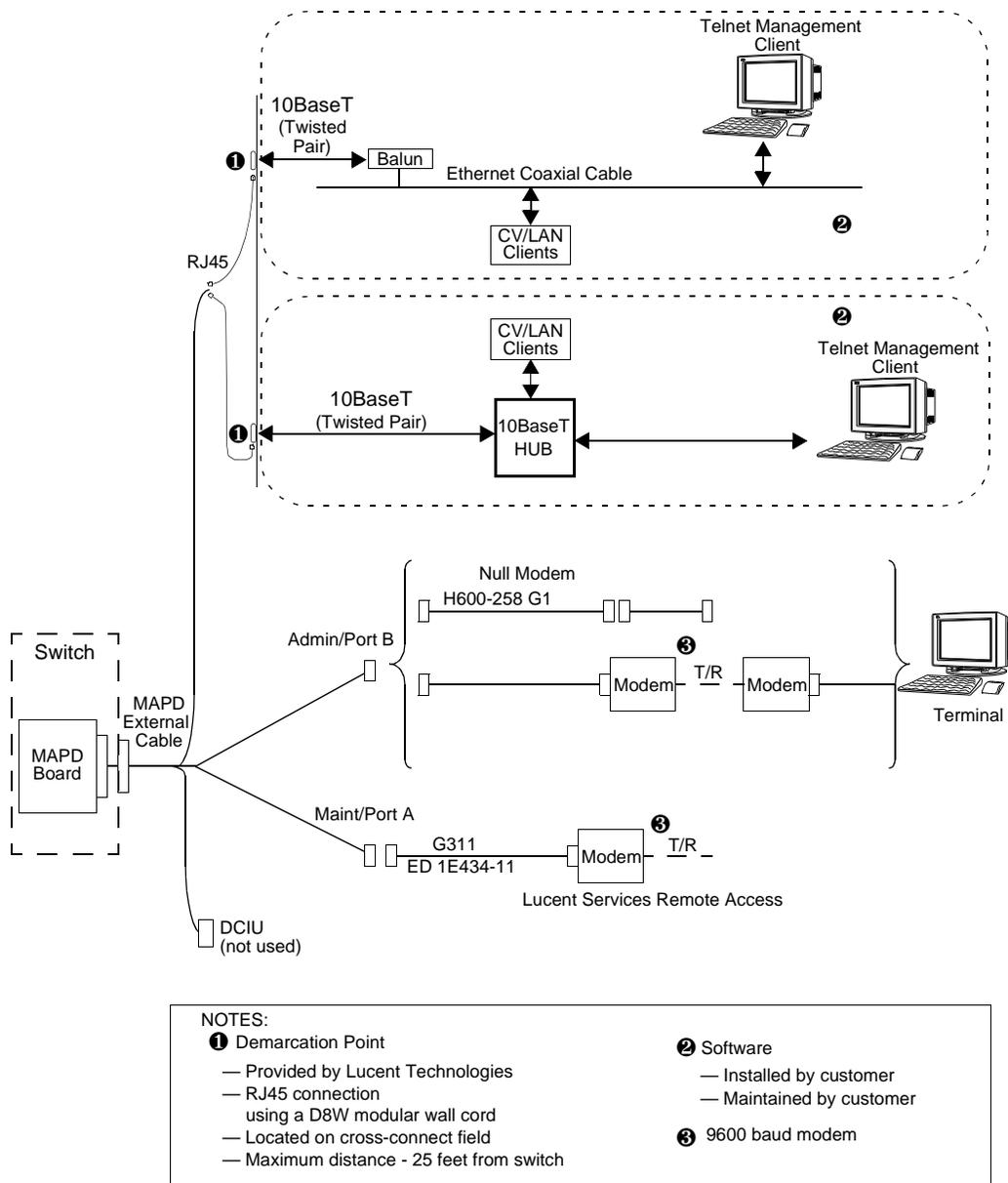


Figure 4-4. Available Terminal Connections to a MAPD System

Table 4-3, "Maintenance Terminal Hookups," lists the general requirements of terminals hooked up locally or remotely. Always refer to the terminal and printer manuals that accompany each machine to make cable connections, set up option settings, and program function keys.

Table 4-3. Maintenance Terminal Hookups

Local RS-232C Hookup (Admin/Port B, Direct Connection)	Remote RS-232C Hookup (Maint/Port A, through External Modem)
Baud Rate: <ul style="list-style-type: none"> ■ 9600 Option settings: (On all terminals) <ul style="list-style-type: none"> ■ Send Parity = space ■ Check Parity = no ■ RETURN key = CR ■ Newline on LF = no ■ ENTER key = ec [2a] (ec is ESCAPE key) ■ Flow Control = Xon/Xof Accesses: <ul style="list-style-type: none"> ■ MAPD screens ■ Operating system Shell 	Baud Rate: <ul style="list-style-type: none"> ■ 9600 Option settings: (On all terminals) <ul style="list-style-type: none"> ■ Send Parity = space ■ Check Parity = no ■ RETURN key = CR ■ Newline on LF = no ■ ENTER key = ec [2a] (ec is ESCAPE key) ■ Flow Control = Xon/Xof Accesses: <ul style="list-style-type: none"> ■ MAPD screens ■ Operating system Shell

Maintenance Login Procedure

Locally

1. See "Task 7A: Install a Terminal via a Direct Connection" in Chapter 2. At the login prompt, type the maintenance login and press **(RETURN)**. (If the login prompt is not displayed, press **(RETURN)** once or twice.)

System response: **password**

2. Enter the maintenance login password at the prompt.

System response: **Terminal Type (513, 715, 4410, 4425, vt100, vt220, ...): [xterm]**

3. Enter your terminal type. (See Appendix B, "Terminal and Modem Option Settings" for a list of supported terminals.) If the terminal is connected properly and its options are correctly set, the system responds with the Main Menu.

Remotely

1. See "Task 7B: Install a Terminal via Modems" in Chapter 2. At the terminal, enter **AT**. If the modem is installed correctly (see Appendix B, "Terminal and Modem Option Settings,") the system response, **OK** is displayed on the terminal screen.

2. At the terminal, enter **ATDT** and the telephone number of the modem attached to the Admin/Port B of the MAPD.

If the terminal and modems are installed correctly (and the MAPD System is in either ASAI or AINIT state), the terminal screen displays the login prompt.

3. At the login prompt, type the maintenance login and press **(RETURN)**. (If the login prompt is not displayed, press **(RETURN)** once or twice.)

System response: **Password**

4. Enter the maintenance login password at the prompt.

System response: **Terminal Type (513, 715, 4410, 4425, vt100, vt220, ...): [xterm]**

5. Enter your terminal type. (See Appendix B, "Terminal and Modem Option Settings," for a list of supported terminals.) If the terminal is connected properly and its options are correctly set, the system responds with the Main Menu.

Maintenance Procedures

Replacing the internal 2.5" Disk Drive

To remove the disk drive from the MAPD Board, follow the steps below.

 **WARNING:**

Static electricity can be destructive to system parts. Use an antistatic wrist strap whenever removing or installing a MAPD System. Also use an antistatic mat when taking the system apart to replace circuit packs or storage devices.

1. Make sure that the users know that you will be powering down the system and disrupting service.
2. If it is not already shutdown, bring the system to the MSHUT state. This is accomplished by depressing the Boot/Shut button that is recessed in the faceplate for approximately 2 seconds. The system will indicate that it is shutting down when the display begins blinking MSHUT. It will take approximately 2 minutes for the system to completely shut down, at this time the LCD will display a solid MSHUT.
3. Carefully slide the system from the switch carrier. Handle with care. The system weighs 2.9 pounds.

 **CAUTION:**

Do not lift the assembly by the faceplate cover. The cover is designed to be removed easily, and it cannot support the weight of the entire assembly.

4. On the backside of the TN801 board locate the 2 slotted screws that hold the 2.5" disk drive, and remove these screws with a slotted screwdriver.
5. On the front side of the TN801 board, grasp the disk drive on it's sides with your thumb and forefinger at the bottom edge of the board, and wiggle it free.

 **CAUTION:**

Do not put any pressure on the top surface of the drive as even the slightest pressure, (0.45 lbs.), may cause damage to the drive.

6. Insert the new drive between the guides, and carefully position it into place. Center the drive between the guides. The drive cannot be inserted offset in either direction. Position the drive approximately in the middle, and make sure that it is at level with the TN board and not raised at the back. It is

possible to insert the drive offset by an entire row of pins. Once you feel the connectors are connecting, push the drive inwards until it cannot be pushed any further.

7. Reinstall the 2 screws in the back side of the TN801 board that hold the disk drive.

Replacing the Pentium Processor Card

WARNING:

Static electricity can be destructive to system parts. Use an antistatic wrist strap whenever removing or installing a MAPD System. Also use an antistatic mat when taking the system apart to replace circuit packs or storage devices.

1. Make sure that the users know that you will be powering down the system and disrupting service.
2. If it is not already shutdown, bring the system to the MSHUT state. This is accomplished by depressing the Boot/shut button that is recessed in the faceplate for approximately 2 seconds. The system will indicate that it is shutting down when the display begins blinking MSHUT. It will take approximately 2 minutes for the system to completely shut down, at this time the LCD will display a solid MSHUT.
3. Carefully slide the system from the switch carrier. Handle with care. The system weighs 2.9 pounds.

CAUTION:

Do not lift the assembly by the faceplate cover. The cover is designed to be removed easily, and it cannot support the weight of the entire assembly.

4. Locate the 2 mounting brackets that hold the processor card to the TN card. There is one located near the middle of the TN edge connector, and another that is just above the light blue connector at the bottom of the board.
5. Remove the 2 mounting brackets by removing the screws that hold these to the TN801 board from the back side.
6. Remove the faceplate cover. The faceplate cover is designed to be easily removed. By simultaneously pulling up and forward on the top edge, and pulling out and forward on the left edge, the cover can be detached from the TN card.
7. Remove the screw that attaches the processor card bracket to the faceplate.

8. Unlatch the 2 wire cable (brown-white) that is connected to the blue connector on the TN card.
9. Remove the processor card by rocking it back and forth to disengage it from the edge card connectors.
10. Remove the 2 wire cable (brown-white) that is connected to the processor card, and transfer it to the new card.
11. Insert the processor card in the edge card connectors that are closest to the TN card.
12. Re-attach the 2 wire cable to the TN card, and ensure that the latches on the mounting connector have locked over the end of the cable connector.
13. Re-attach the screw that holds the processor card bracket to the faceplate.
14. Re-attach the 2 mounting brackets that hold the processor card to the TN card.
15. Snap on the faceplate cover.

Replacing the DRAM on the Processor Card

 **WARNING:**

Static electricity can be destructive to system parts. Use an antistatic wrist strap whenever removing or installing a MAPD System. Also use an antistatic mat when taking the system apart to replace circuit packs or storage devices.

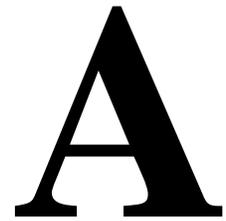
1. Make sure that the users know that you will be powering down the system and disrupting service.
2. If it is not already shutdown, bring the system to the MSHUT state. This is accomplished by depressing the Boot/shut button that is recessed in the faceplate for approximately 2 seconds. The system will indicate that it is shutting down when the display begins blinking MSHUT. It will take approximately 2 minutes for the system to completely shut down, at this time the LCD will display a solid MSHUT.
3. Carefully slide the system from the switch carrier. Handle with care. The system weighs 2.9 pounds.

 **CAUTION:**

Do not lift the assembly by the faceplate cover. The cover is designed to be removed easily, and it cannot support the weight of the entire assembly.

4. Locate the 2 mounting brackets that hold the processor card to the TN card. There is one located near the middle of the TN edge connector, and another that is just above the light blue connector at the bottom of the board.
5. Remove the 2 mounting brackets by removing the screws that hold these to the TN801 board from the back side.
6. Remove the faceplate cover. The faceplate cover is designed to be easily removed. By simultaneously pulling up and forward on the top edge, and pulling out and forward on the left edge, the cover can be detached from the TN card.
7. Remove the screw that attaches the processor card bracket to the faceplate.
8. Unlatch the 2 wire cable (brown-white) that is connected to the blue connector on the TN card.
9. Remove the processor card by rocking it back and forth to disengage it from the edge card connectors.
10. Remove the 2 wire cable (brown-white) that is connected to the processor card.
11. Remove the 2 existing 16 megabyte DRAM SIMMs from the processor card, and replace with the new 16 megabyte DRAM SIMMs. Be sure to place the new DRAM SIMMs in the same sockets as the old ones (the 2 sockets nearest the Pentium processor).
12. Re-insert the processor card in the edge card connectors that are closest to the TN card.
13. Re-attach the 2 wire cable to the TN card, and ensure that the latches on the mounting connector have locked over the end of the cable connector.
14. Re-attach the screw that holds the processor card bracket to the faceplate.
15. Re-attach the 2 mounting brackets that hold the processor card to the TN card.
16. Snap on the faceplate cover.

PBX Carrier Configuration Worksheets



This appendix contains worksheets helpful in installing the MAPD system. Worksheet A-1 is used to obtain an inventory of your present circuit pack arrangement in the PBX. Worksheet A-2 is for help in determining how to rearrange these circuit packs to “free up” three slots for the MAPD system assembly. Worksheet A-3 is for listing the slots that the system assembly will occupy.

Guidelines for using these worksheets are as follows:

1. Move as few circuit packs as possible.
2. Locate three contiguous slots in the DEFINITY ECS Cabinet. The right most slot must be a port slot, (indicated by purple color).
3. Three MAPD system assemblies per carrier are permitted. One per carrier is preferred so that one carrier power supply failure will not take down multiple units.
4. Start placement from the left side of the carrier.
5. Placement in a DEFINITY ECS Multi-Carrier Cabinet should be such that MAPD system assemblies are not vertically aligned. For example, in a standard reliability R6si system if the TN801 board in the assembly is placed in slot 7 of the J58890AH control carrier A, then the second TN801 board could be placed in slot 18 of the port carrier B, and the third in slot 12 of the port carrier C.

Worksheet A-1: Port Slot Assignments (Before Carrier Arrangement)

Date _____
 Prepared By _____
 Contact Telephone Number _____

Complete the following worksheet to indicate how circuit packs are currently arranged in the PBX carrier.

On this worksheet, the slots are numbered as seen from the *front* of the carrier, with slot 1 on the far left and slot 20 on the far right. It is not necessary to fill in the worksheet for all existing circuit packs; simply specify the circuit packs that must be moved (if any) in the carrier reconfiguration process.

Carrier Function	CARRIER A ¹	CARRIER B	CARRIER C	CARRIER D	CARRIER E
port slot 1					
port slot 2					
port slot 3					
port slot 4					
port slot 5					
port slot 6					
port slot 7					
port slot 8					
port slot 9					
port slot 10					
port slot 11					
port slot 12					
port slot 13					
port slot 14					
port slot 15					
port slot 16					
port slot 17					
port slot 18					
port slot 19					
port slot 20					

1. Occasionally there are control slots to the left of the port slots in these carriers.

Worksheet A-2: Port Assignments (for Carrier Rearrangement)

Date _____

Prepared By _____

Contact Telephone Number _____

Complete the following worksheet to indicate how circuit packs should be arranged in the PBX carrier before the MAPD system is installed. On the worksheet, the slots are numbered as seen from the front of the carrier, with slot 1 on the far left and slot 20 on the far right. It is not necessary to fill in the worksheet for all the existing circuit packs; simply specify the new positions or circuit packs that must be moved (if any) and then indicate the three slots the MAPD system is to occupy.

Use the information in this appendix to determine the carrier into which the MAPD system should be installed.

Carrier Function	CARRIER A	CARRIER B	CARRIER C	CARRIER D	CARRIER E
port slot 1					
port slot 2					
port slot 3					
port slot 4					
port slot 5					
port slot 6					
port slot 7					
port slot 8					
port slot 9					
port slot 10					
port slot 11					
port slot 12					
port slot 13					
port slot 14					
port slot 15					
port slot 16					
port slot 17					
port slot 18					
port slot 19					
port slot 20					

Worksheet A-3: Port Slot Locations for the MAPD System Assembly

Date _____
 Prepared By _____
 Contact Telephone Number _____

On the table below, specify the locations of the three contiguous slots into which the MAPD system assembly is to be installed.

Slot occupied by MAPD	Digital Port Equipment Location
first	
second	
third	

The three contiguous slots are administered with codes or left blank as shown below.

Switch	Slot 1	Slot 2	Slot 3
R5 and higher (provisioned with R6.1 or later software in V5 or V6 mode)	Reserved	Reserved	TN801

Terminal and Modem Option Settings

B

This appendix contains:

- A worksheet for use in determining what terminals and modems you will use with the MAPD system
- Information on option settings

Worksheet B-1: Terminals/Modems

Date _____

Prepared By _____

Contact Telephone Number _____

To the AE:

Complete this worksheet with the customer before configuring and ordering the MAPD system.

Options	Terminal 1	Terminal 2
<p>What type of terminal would you like to use? Options are: 715 BCT, 513 BCT, 4410, 4415, 4425, 5410, 5420, 5425, 610 and 615 (using 513, 4410, or 4425 emulation cartridge), or a PC with a 513 or 4410 emulation package or G3-MA. Also, the Cross-Talk software tool (via 513 emulation), or Telnet with an emulated terminal type vt100, vt220, vt320, vt950, ibm3101, ibm5051, hp2621, hp2624, ansi, wyse50, wyse60, or PC. (The 715 BCT terminal allows an administrator to toggle between the DEFINITY ECS administration screens and MAPD system screens.)</p>		
<p>How would you like the terminal connected to the MAPD system? You can implement any of the following:</p> <ul style="list-style-type: none"> ■ Directly via cables ■ Via modem <p>The standard modem will be the Sportster[®] External 33.6 fax modem from US Robotics. Instructions on how to properly setup this modem are provided in Section, "Setting up the US Robotics Sportster External 33.6 Fax Modem for the Local Console Port (Admin/Port B)" in this Appendix, and it can be ordered from Lucent Technologies. Other modems can also be used provided they are properly setup.</p>		
<p>What length cables would you like for the terminals? Default is 50 feet: other options are 10, 20, 30, or 40.</p>		

Terminal Option Settings

Set the options listed below to the corresponding setting for your terminal. Refer to the manual for your terminal for available options and the procedure to set them.

Table B-1. Terminal Option Settings

Option	Setting
Speed	9600
Duplex	full
Send parity	space
Check parity	no
Memory access	scroll
Clock	async
Return key	CR
Newline on LF	no
Autowrap	on
Cursor	steady
Key click	off
Margin bell	off
Transmission	char
Columns	80
Send from	cursor
Send edit seq	yes
Send graphics	no
Enter key	Esc-S-B
Block terminator	
Answerback	

Modem Option Settings

Specific information on how to set up the US Robotics Sportster external 33.6 fax modem is given below. This involves writing parameters to the modem's NVRAM (Non-Volatile Random Access Memory). Generic information is also given with which other modems may be configured. For these other modems, set the option(s) listed below on your modem, then save the software settings in the modem's NVRAM. Refer to the appropriate modem manual for available software options and the procedure for setting them.

NOTE:

The following step must be completed before connecting the US Robotics modem to the system.

Setting up the US Robotics Sportster External 33.6 Fax Modem for the Local Console Port (Admin/Port B)

- On the back of the modem, configure DIP switches 1, 3, 4, and 8 in the down or **On** position.
- On the back of the modem, configure DIP switches 2, 5, 6, and 7 in the Up or **Off** position.
- Attach one end of the server cable to your modem and the other end to your terminal or PC.
- Configure the terminal or communications software setup to 9600 Baud.
- Enter the terminal mode of the communications software if it is being used or on the terminal type the following:

AT

and press **RETURN** or control-M on the keyboard. The modem should respond "OK".

- Enter the following command:

AT&F&H2&I2&B0&W

and press **RETURN** or Control-M on the keyboard. The modem should respond "OK".

Setting up the US Robotics Sportster External 33.6 Fax Modem for the Maintenance Port (Maint/Port A)

No special setup is required, the factory default and configuration for the modem will work for this interface.

Setting up a Generic Modem for use with the Local Console Port (Admin/Port B)

The following parameters should be set for any modems that will be connected to the Admin/Port B. Refer to your particular modem documentation for information on storing these parameters in the modem's NVRAM.

- Auto Answer after 1 ring
- Ignore DTR
- Use XON/OFF flow control
- Suppress Local Echo
- DTE speed-floating

Ordering Information

C

This appendix contains a list of Price Element Codes (PECs) and comcodes for primary and optional components comprising the CV/LAN system.

Complete System

Table C-1. Identifiers for Complete System

Description	QTY	PEC
MAPD System	1	1273-MPD
CV/LAN SOFTWARE R5.0 and CLIENT SOFTWARE	1	1273-CVL
US Robotics external modem (33.6k)	1	2569-839

The CV/LAN System hardware, software and documentation included in these Price Element Codes is listed in Table C-2.

Primary Equipment

Table C-2. Identifiers for Primary Hardware and Software

Description	PEC	Comcode MANF. CODE	QTY	Attribute
MAPD CIRCUIT PACK TN801	1273-MPD	103557542	1	
MAPD PROCESOR CARD 120 MHZ		407624444	1	
32MB SIMM 2X16		407701747	1	
PCMCIA SanDisk hard drive 10mb (SanDisk PCMCIA FlashDisk)		407811199	1	
NULL MODEM		H600-258 G-1	2	
INTERNAL DEFINITY RESET CABLE		H600-455 G-1	1	
EXTERNAL CABLE ASSEMBLY Y		H600-475 G-2	1	
MAP D ASSEM KIT & DRAWING		J58890MA1 L-1	1	
D8W Cable		103786828	1	
IDE DISK DRIVE (LAN GW AND CV/LAN PG-5E165)		J58890TL1 L-1	1	
One of the following is selected by the customer:				
MODEM CA 50 FT ED1E434-11G311 (Default)		601001365	1	LNG11 (D)
MODEM CA 20 FT ED1E434-11G311		601087091	1	LNG25
MODEM CA 30 FT ED1E434-11G311		601087109	1	LNG27
MODEM CA 40 FT ED1E434-11G311		601087117	1	LNG28
MODEM CA 10 FT ED1E434-11G311		601087083	1	LNG50
One of the following is selected by the customer:				
116A ISOLATOR DC DEF ONLY		106005242	2	ISO01
NO MATL AC DEFINITY ONLY (Default)		011111111	1	ISO99 (D)
One of the following is selected by the customer:				
Will ship loose YES		011111111	1	WSL01
Will ship loose NO (Default)		011111111	1	WSL02 (D)
RTU-CV/LAN SOFTWARE	1273-CVL	J58890TL1 L-4		
CV/LAN Software Documentation DCMTN-555-230-113 ISSUE 1		107991085	1	
CV/LAN R5 UNIXWARE CLIENT SFTW		107958381	1	
CV/LAN R5 SOLARIS CLIENT SFTW		107958399	1	
CV/LAN R5 SPARC CLIENT SFTW		107958407	1	

Table C-2. Identifiers for Primary Hardware and Software — *Continued*

Description	PEC	Comcode MANF. CODE	QTY	Attribute
CV/LAN R5 WIN NT CLIENT SOFTWARE		108107012	1	
US Robotics external modem (33.6K)	2569-839	407-633-999	1	
104A Connecting Block		103 116 943	1	Must be ordered separately

Troubleshooting Procedure

D

This appendix contains the following procedures:

- Bringing up the MAPD System
- Solving Terminal Connection Problems
- Solving Connectivity Problems

Contact ASAI post implementation support group of the Technical Support Center (TSC) in the U.S. at 1 800 242-2121.

If these procedures do not solve the problem, contact the Technical Support Center (TSC) in the U.S. at 1 800 242-2121.

If you are a customer outside the U.S., please consult your Lucent Technologies vendor.

Bringing up the MAPD System

Use the procedure below if you cannot get a login prompt.

⇒ NOTE:

ASAI must be enabled on the DEFINITY Customer Options Form for the system to be fully operational.

1. First check the power, connections, cables, settings, and terminal and /or modem speed if you are connected via a modem. If the modem appears to be locked up, type * @; this may fix the remote access problem.
2. If you still cannot reach the MAPD system, make sure the terminal, cables and/or modem are working properly by testing them at another location (such as the switch SAT).

⇒ NOTE:

If the terminal cables and/or modem work correctly at this other location, but the login prompt for MAPD is still not displayed, it may be necessary to dispatch a technician to the site.

Solving Terminal Connection Problems

1. Check all the physical connections.
2. Make sure that the terminal is powered up.
3. Check the following if a modem is being used:
 - Physical connections of the modem
 - Speed settings and other dip switches of the modem
 - The modem is powered up
4. Check the terminal speed settings.
5. Test the terminal on an entirely different system.
6. Test the modem on an entirely different system.
7. If the terminal is still not working, it may be necessary to dispatch a technician to the site.

Solving Connectivity Problems

In general, link connectivity problems can be diagnosed fairly quickly. For clients' ASAI requests to complete successfully, the ISDN BRI link to the DEFINITY ECS must be up and the application must have TCP connectivity to the CV/LAN server on the MAPD. Release 5.0 of the CV/LAN client software allows the use of the "asai_test" command over the LAN. To test connectivity to the DEFINITY ECS through a MAPD with hostname or IP address XYZ over ASAI link "signal01," execute the following command:

```
asai_test XYZ 1
```

The command "asai_test" will be located under /usr/adm/cvlan/bin directory to avoid confusion with the /usr/bin/asai_test command that performs a similar test to the switch using the CallVisor ASAI API.

If the asai_test command cannot establish TCP connectivity to the CV/LAN server on the MAPD, the client running the command is probably not administered on the MAPD. A CV/LAN application must be able to readily identify an error via the asai_errval() client API call. If a client cannot connect to the CV/LAN server on the MAPD, the application will retrieve the C_INVALID_CLIENT cause. This shows that perhaps the client has not been administered on the MAPD and therefore failed authentication by the CV/LAN server. Contact the MAPD system administrator to add the client to the list of hosts that are allowed to access the system.

If the ISDN BRI link to the switch is down, asai_test cannot send heartbeat to the switch. The CV/LAN application on the MAPD offers a variety of utilities and status screens to diagnose the problem. The recommended procedure is as follows:

1. Log into the MAPD.
2. Access the Screen, "Main Menu (CV/LAN)" in Chapter 3, "System Administration."
3. Select the Screen, "Maintenance" in Chapter 3, "System Administration" and then the Screen "System Logs", and note pertinent errors on the link.
4. Select the Screen "CV/LAN Port Status/Control" in Chapter 3, "System Administration." Check both the CV/LAN service State and the DEFINITY ECS Port State. If the DEFINITY ECS Port State is other than CONNECTED, there is no ISDN connectivity to the switch. Try Busy/Release of the appropriate BRI port on the switch. Then press **UPDATE** button on the CV/LAN Port Status/Control screen.

5. If the DEFINITY ECS Port State does not change. Reset the link by pressing the button on the "CV/LAN Port Status/Control" Screen. This will reset the protocol stack associated with this particular link.
6. If the problem persists, escalate¹.

1. For additional Troubleshooting Techniques, consult the "CallVisor PC ASAI Installation and Reference." Lucent Technologies support services for the MAPD system will not troubleshoot a customer LAN. If the customer LAN is experiencing difficulties, customers should follow the escalation path supplied by their LAN provider.

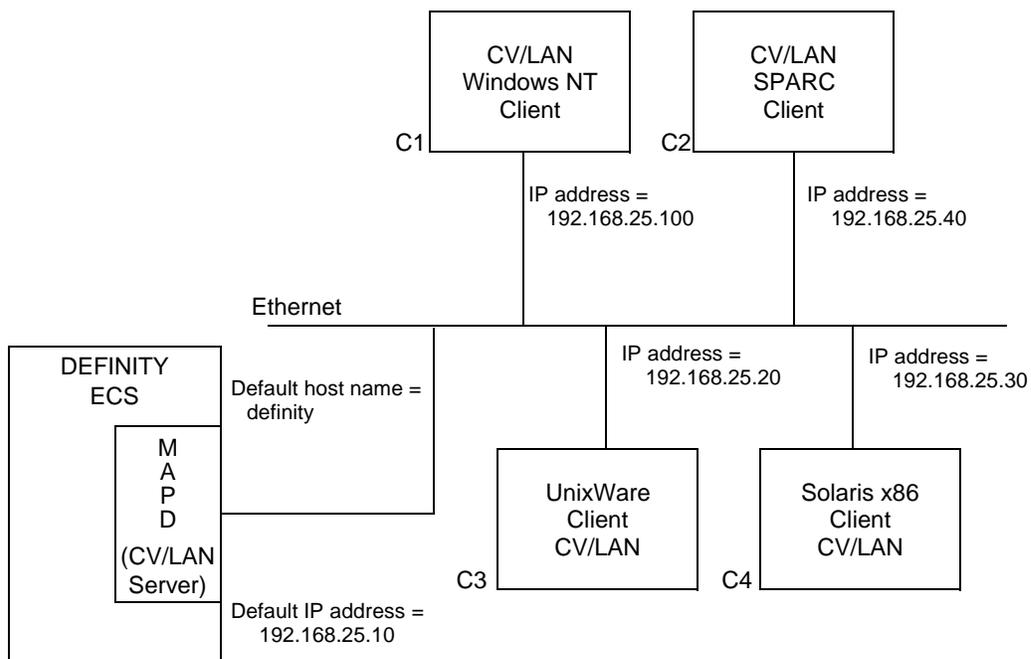
Sample Customer Configurations

E

This appendix contains two examples of how a customer might configure a system using CallVisor ASAI PC LAN over MAPD. It requires knowledge of TCP/IP networking. "Example 1. Secure LAN with Defaults," shows CV/LAN application already administered with default values and client/server requiring administration. "Example 2, Multiple Secure LANs," shows three different clients of the MAPD system assembly, each on a physically different network from the system assembly. Subnetting may also be used in this example.

A secure LAN is one in which only machines that are known to the network can connect to the network.

Example 1. Secure LAN with Defaults

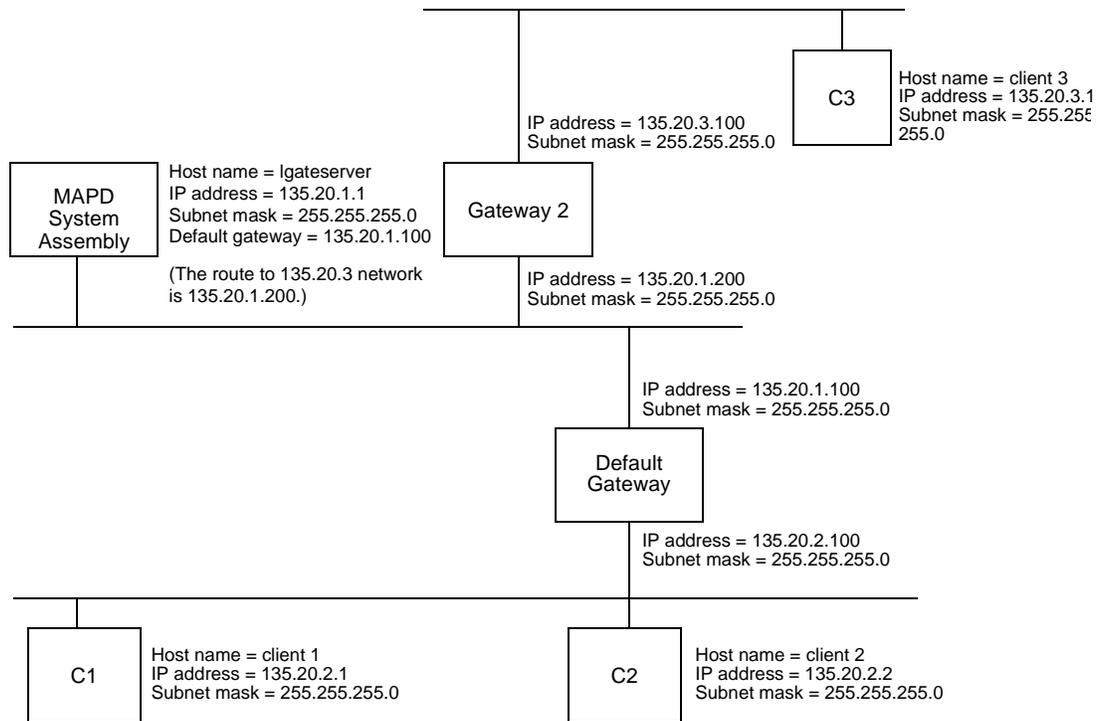


This sample configuration shows the CV/LAN application over MAPD shipped from the factory with defaults already administered (default hostname = *definity* and default IP address = *192.168.25.10*) with the CV/LAN running on the MAPD and four clients, C1, C2, C3, and C4 on the same subnet.

⇒ NOTE:

You should add the MAPD system assembly host name (*definity*) and IP address (*192.168.25.10*) to the address resolution mechanism.

Example 2. Multiple Secure LANs



This sample configuration shows the CV/LAN application with different clients on networks physically different from that of the MAPD system assembly. The default gateway leads to clients C1 and C2, and gateway 2 leads to client C3. This sample configuration requires that the CV/LAN application and the clients be administered, as follows:

- Administer the system assembly:
 1. From the Main Menu, choose TCP/IP Administration. Then choose This Host.
 - a. Change the host name to a name you have made up (*l gateserver* in this example).
 - b. Do the same for the host IP address (*1354.20.1.1* in this example) and, if subnetting is used, the subnet mask (*255.255.255.0* in this example).
 2. From The TCP/IP Administration Main Menu, choose Local Host Table.
 - a. Delete the default client.
 - b. Press **(ADD)** to access the Add Host Screen. Add the host name and IP address for client 1 (C1).

- c. Access the Add Host screen again and do the same for clients 2 and 3 (C2 and C3).
 - d. You will be on the Local Host Table screen when done. Exit the screen to return to the TCP/IP Administration Main Menu.
 3. Administer the CV/LAN as follows. On the Main Menu, select CV/LAN Administration.
 - a. Delete the default entry.
 - b. Press **(ADD)** to access the Add Client Link screen. Add an entry for client 1 on the appropriate port and client link.
 - c. Access the Add Client Link screen again and do the same for clients 2 and 3 (C2 and C3).
 - d. You will be on the CV/LAN Administration screen when done. Exit the screen to return to the Main Menu.
 4. Reboot the system as follows. On the Main Menu, select Maintenance. Then select Reset System. When the Reset System screen appears, select Reboot System.
 5. After the reboot, from the Main Menu, choose TCP/IP Administration. Next choose Network Routing Information, and then choose Network Routing Daemon.
 - Turn the routing daemon **On** if there is a router on the same network as *lgateserver*, which is broadcasting routes to all networks where clients reside.
 - Turn the routing daemon **Off** if there is no router or if manual routes are preferred.
 6. If the Network Routing Daemon is **On**, press **(CANCEL)** to exit from the screen. Exit twice more to return to the Main Menu.

If the Network Routing Daemon is **Off**, do the following:

- a. Administer the default gateway. Press **(CANCEL)** on the Network Routing Daemon screen to access the Network Routing Information Main Menu. Select Default Gateway. On this screen, enter the IP address of the default gateway (for this example, enter 135.20.1.100) and press **(ENTER)**. The Network Routing Information Main Menu reappears.
- b. Select Network Routing Table and then press **(ADD)** to access the Add Routes screen. Administer gateway 2 on this screen.

For this example, you would enter:

DESTINATION	TYPE	GATEWAY
135.20.3	NETWORK	135.20.1.200

When you press **(ENTER)**, the Network Routing Table screen reappears. Exit until you reach the Main Menu.

- Administration of Each Client (C1, C2, and C3):
 1. Administer the client name, IP address, and subnet mask (if not already done).
 2. Add the MAPD system assembly (*lgateserver* in this example) to the address resolution mechanism.
 3. Administer the routes for the clients to reach the MAPD system assembly.

Returning the MAPD System to its Original State

F

 **WARNING:**

This procedure should only be performed by a Lucent Technologies services technician.

After using this procedure, you must reconfigure the MAPD applications or restore the configuration parameters from the backup SanDisk PCMCIA FlashDisk.

This procedure describes how to return the MAPD (with its associated applications) to its original state if it should crash.

1. Make sure the administrative and/or maintenance terminal is physically connected (either directly or through a modem) to Maint/Port A on the TN801 board.
2. Power down the MAPD system assembly by disengaging it from the DEFINITY ECS carrier.
3. Insert the PCMCIA Installation disk into the TN801, and re-insert the MAPD system assembly.
4. When the system is coming up, the terminal screen displays a message similar to the following:

```
Lucent Technologies, Inc.  
  
Copyright (C) 1985-1989 Phoenix Technologies Ltd.  
Copyright (C) 1996 Texas Microsystems, Inc.  
All Rights Reserved  
  
The P5120C 120 MHz Industrial Computer BIOS, Version 4.28.MAP-D 1.4  
640K Base, 031744K Extended, 256K External Cache  
  
PCMCIA drive - Calluna Technology CT260MC 247Mb  
PCMCIA drive bootable...<CTRL-C> twice for PCMCIA boot.  
  
.  
.  
.
```

⇒ NOTE:

The PC memory test can be aborted by pressing the `SPACE` key while it is running.

5. Boot from the PCMCIA Disk by pressing `CTRL C` twice in quick succession when you see the *PCMCIA drive bootable...* line appear on the screen.

⚠ WARNING:

Once the PCMCIA boot drive bootable... line appears on the screen, you only have 5 seconds to enter the `CTRL C` sequence. If you fail to enter it in time, you must reset the system (either by power down, reboot, or through the remote maintenance interface) to attempt again.

At this point, the system will boot from the PCMCIA Disk, and a screen similar to the following appears.

```
Booting UnixWare...
UnixWare 2.1.2 for the Intel386(tm) Family

Copyright 1984-1995 Novell, Inc., 1996 The Santa Cruz Oepration, Inc.
All Rights Reserved.

TN800 driver (mapdmux) - Version 0.1
MAINT DRIVER INIT
RMB DRIVER INIT
0:0,7,0: HBA      : (ide,1) Generic ESDI/IDE/ATA
0,0,0: DISK      : Generic IDE/ESDI      1.00
1:0,7,0: HBA      : (ide,2) Generic ESDI/IDE/ATA
0,0,0: DISK      : Generic IDE/ESDI      1.00

      .
      .
      .
```

⇒ NOTE:

If the screen shows LynnSoft PC Card Software loaded, then you did not successfully boot from the PCMCIA Disk. In this case, you must reset (either by power down, reboot, or through the remote maintenance interface) and attempt again.

The login prompt appears when the system has finished rebooting.

⇒ NOTE:

When the system is rebooted, the console will be reset while the firmware is downloaded. The download process should take less then 30 seconds after the initial login prompt is displayed. Press the **RETURN** key to display the login prompt again.

```
Welcome to UnixWare 2.1.2
The system's name is definity.

Console Login:

TN800 MAPD Remote Maintenance Port
defaults are:
LCP: 9600 8N1   COM2: 9600 8N1
RMP: 9600 8N1   COM1: 9600 8N1

TN800 MAPD Remote Maintenance Port
defaults are:
LCP: 9600 8N1   COM2: 9600 8N1
RMP: 9600 8N1   COM1: 9600 8N1
```

6. Press **RETURN** to display the login prompt, and login as `root` with the default root password.
7. Type `installIDE` to recreate the IDE disk image. This process will take place approximately 8 to 10 minutes.

⇒ NOTE:

If the installation script detects the presence of UNIX already on the IDE disk, it will prompt you for confirmation before over-writing it. If you proceed, all of the original contents on the IDE disk will be lost.

8. Shutdown the system, by typing `shutdown -g0 -y`. A screen similar to the following will appear:

```
# shutdown -g0 -y
UX:shutdown: INFO:
Shutdown started.           Wed Sept 24 13:46:28 EST 1997

# UX:init: INFO: New run level: 0
UX:/sbin/rc0: INFO: The system is coming down. Please wait.
UX:K00ANNOUNCE: INFO: System services are now being stopped.

Press any key to reboot...
```

9. Remove the PCMCIA installation disk, and insert the customer's backup SanDisk PCMCIA FlashDisk.
10. Press any key to reboot the system, and boot from the internal IDE disk (for example, do **NOT** enter the **CTRL** **C** sequence this time).
11. At the login prompt, login as `root` with the default root password.
12. If the DEFINITY LAN Gateway application needs to be installed, type
`pkgadd -n DLGset`

⇒ NOTE:

Before loading the DEFINITY LAN Gateway application, verify that the customer has purchased it.

13. If the CV/LAN application needs to be installed, type
`pkgadd -n cvlan.`

⇒ NOTE:

Before loading the CV/LAN application, verify that the customer has purchased it.

14. Evoke the screens by typing `eth_oam`.
15. Restore the customer's system configuration from the backup SanDisk PCMCIA FlashDisk using the following menu steps:

- Select “Maintenance” from the Main Menu.
 - Select “Removable Media Operations” from the Maintenance Menu.
 - Select `Restore Configuration Data` from Removable Media Operations.
16. After the customer’s system configuration is restored, reboot the system:
- Return to the “Maintenance” Menu.
 - Select “Reset System (CV/LAN).”
 - Select `Reboot System`.

 **NOTE:**

If the CV/LAN application was installed, the UNIX kernel will be rebuilt when the system is shut down. This will take several minutes. In addition, when the system is coming up, a new kernel environment will be setup, which may also take a few minutes.

17. Following the reboot, have the customer log in at the login prompt.

Project Manager Worksheet

G

This appendix contains a worksheet for the Lucent Technologies Project Manager for providing assistance in the customer installation. The on-site system technician uses the networking information on this worksheet during installation.

Worksheet G-1 Gather Networking Information

Date _____
Prepared By _____
Contact Telephone Number _____

The basic LAN addressing information you supply here will be used by the on-site Lucent Technologies Service technician during installation.

Field	Default	Desired
TCP/IP Address		
Subnet Mask		
Default Gateway IP Address		

⇒ NOTE:

All three addresses appear in the form *nnn.nnn.nnn.nnn*, where each *nnn* can be a number between 0 and 255.

Upgrading the MAPD System



 WARNING:

This procedure should only be performed by a Lucent Technologies services technician.

This procedure describes how to upgrade the MAPD System (with its associated applications) with new software.

1. Make sure the administrative and/or maintenance terminal is physically connected (either directly or through a modem) to Maint/Port A on the TN801board.
2. Make sure the customer's backup SanDisk PCMCIA FlashDisk is inserted in the TN801board. If it is not, shut down the system, insert it, and reboot the system.
3. Log onto the MAPD System with the "services" login and evoke the screens by typing `eth_oam`.
4. Save the customer's system configuration on the backup SanDisk PCMCIA FlashDisk using the following menu steps:
 - Select "Maintenance" from the Main Menu
 - Select "Removable Media Operations" from the Maintenance Menu.
 - Finally, select `Save Configuration Data to Removable Media`.
5. After the configuration data is saved, shut down the system:
 - Return to "Maintenance" Menu.
 - Select "Reset System (CV/LAN)."

- Select Shutdown.

A screen similar to the following is displayed:

```
processing....

UX:init: INFO: New run level: 0
UX:/sbin/rc0: INFO: The system is coming down. Please wait.
UX:K00ANNOUNCE: INFO: System services are now being stopped.

Press any key to reboot...
```

6. Remove the customer's backup SanDisk PCMCIA FlashDisk and insert PCMCIA Installation disk into the TN801 board (the top of the disk should be facing left), and then press any key to reboot.
7. When the system is coming up, the terminal screen displays a message similar to the following:

```
Lucent Technologies, Inc.

Copyright (C) 1985-1989 Phoenix Technologies Ltd.
Copyright (C) 1996 Texas Microsystems, Inc.
All Rights Reserved

The P5120C 120 MHz Industrial Computer BIOS, Version 4.28.MAP-D 1.4
640K Base, 031744K Extended, 256K External Cache

PCMCIA drive - Calluna Technology CT260MC 247Mb
PCMCIA drive bootable...<CTRL-C> twice for PCMCIA boot.

.
.
.
```

 **NOTE:**

The PC memory test can be aborted by pressing the key while it is running.

8. Boot from the PCMCIA Disk by pressing twice in quick succession when you see the **PCMCIA drive bootable** line appear on the screen.

⚠ WARNING:

*Once the **PCMCIA drive bootable** line appears on the screen, you only have 5 seconds to enter the **CTRL C** sequence. If you fail to enter it in time, you must reset the system (either by power down, reboot, or through the remote maintenance interface) to attempt again.*

At this point, the system will boot from the PCMCIA Disk, and a screen similar to the following appears:

```
Booting UnixWare...
UnixWare 2.1.2 for the Intel386(tm) Family

Copyright 1984-1995 Novell, Inc., 1996 The Santa Cruz Oepration, Inc.
All Rights Reserved.

TN800 driver (mapdmux) - Version 0.1
MAINT DRIVER INIT
RMB DRIVER INIT
0:0,7,0: HBA          : (ide,1) Generic ESDI/IDE/ATA
   0,0,0: DISK       : Generic IDE/ESDI      1.00
1:0,7,0: HBA          : (ide,2) Generic ESDI/IDE/ATA
   0,0,0: DISK       : Generic IDE/ESDI      1.00

      .
      .
      .
```

⇒ NOTE:

If the screen shows LynnSoft PC Card Software loaded (see the following screen), then you did not successfully boot from the PCMCIA Disk. In this case, you must reset the system (either by power down, reboot, or through the remote maintenance interface) and attempt again.

The login prompt appears when the system has finished rebooting.

⇒ NOTE:

When the system is rebooted, the console will be reset while the firmware is downloaded. The download process should take less than 30 seconds after the initial login prompt is displayed. Press the **RETURN** key to display the login prompt again.

```
Welcome to UnixWare 2.1.2
The system's name is definity.

Console Login:

TN800 MAPD Remote Maintenance Port
defaults are:
LCP: 9600 8N1   COM2: 9600 8N1
RMP: 9600 8N1   COM1: 9600 8N1

TN800 MAPD Remote Maintenance Port
defaults are:
LCP: 9600 8N1   COM2: 9600 8N1
RMP: 9600 8N1   COM1: 9600 8N1
```

9. Press **(RETURN)** to display the login prompt and login as `root` with the default root password.
10. Type `installIDE` to recreate the IDE disk image. This process will take approximately 8 to 10 minutes.

⇒ NOTE:

If the installation script detects the presence of UNIX already on the IDE disk, it will prompt you for confirmation before over-writing it. If you proceed, all the original contents on the IDE disk will be lost.

11. Shut down the system by typing `shutdown -g0 -y`. A screen similar to the following will appear:

```
# shutdown -g0 -y
UX:shutdown: INFO:
Shutdown started.           Wed Sept 24 13:46:28 EST 1997

# UX:init: INFO: New run level: 0
UX:/sbin/rc0: INFO: The system is coming down. Please wait.
UX:K00ANNOUNCE: INFO: System services are now being stopped.

Press any key to reboot...
```

12. Remove the PCMCIA installation disk, and insert the customer's backup SanDisk PCMCIA FlashDisk.
13. Press any key to reboot the system, and boot from the internal IDE disk (do **NOT** enter the **(CTRL) (C)** sequence this time).

14. At the login prompt, login as `root` with the default root password.

15. To install the DEFINITY LAN Gateway application, type

```
pkgadd -n DLGset.
```

⇒ NOTE:

Before loading the CV/LAN application, verify that the customer has purchased it.

16. If the CV/LAN application needs to be installed, type

```
pkgadd -n cvlan.
```

⇒ NOTE:

Before loading the CV/LAN application, verify that the customer has purchased it.

17. Evoke the screens by typing `eth_oam`.

18. Restore the customer's system configuration from the backup SanDisk PCMCIA FlashDisk using the following menu steps:

- Select "Maintenance" from the Main Menu.
- Select "Removable Media Operations" from the Maintenance Menu.
- Select `Restore Configuration Data` from Removable Media.

19. After the customer's system configuration is restored, reboot the system.

- Return to the "Maintenance."
- Select "Reset System (CV/LAN)."
- Select `Reboot System`.

⇒ NOTE:

If the CV/LAN application was installed, the UNIX kernel will be rebuilt when the system is shut down. This will take several minutes. In addition, when the system is coming up, a new kernel environment will be setup which may also take a few minutes.

20. Following the reboot, have the customer log in at the login prompt.

Abbreviations

ABP

Alarm Board Processor

ADU

Asynchronous Data Unit

AINIT

ASAI Initialization

ALB

Alarm Board

API

Application Programming Interface

ASAI

Adjunct Switch Application Interface

AUDIX

Audio Information Exchange

BALUN

BALanced/UNbalanced

BEC

BIOS Extended Code

BCT

Business Communications Terminal

BIOS

Binary Input Output System

BIST

Built In Self Test

BRI

Basic Rate Interface

Router

Bridging Router

BTEST

Firmware Board Tests

CCMS

Control Channel Message Set

CHI

Concentration Highway Interface

CISPR

International Special Committee on Radio Interference

CLNS

Connection Less Network Service

Abbreviations

CODEC

COder-DECoder

CONS

Connection Oriented Network Service

COR

Class of Restriction

COS

Class of Service

CRV

Call Reference Value

CV/LAN

CallVisor LAN

DC

Direct Current

DCE

Data Communications Equipment

DCIU

Data Communications Interface Unit

DLG

DEFINITY LAN Gateway

DRAM

Dynamic Random Access Memory

DTE

Data Terminal Equipment

EIA

Electronic Industries Association

EMI

Electro-magnetic Interference

ESD

ElectroStatic Discharge

E_SHUT

Error shutdown

ESM

Extended Services Module

FCC

Federal Communications Commission

FEPRM

Flash Erasable Programmable Read Only Memory

G3-MT

Generic 3 Maintenance Terminal

Abbreviations

ICMP

Internet Control Message Protocol

IDE

Generic PC standard for interconnection of media devices to the PC motherboard

I/O

Input/Output

IP

Internet Protocol

ISA

Industry Standard Architecture

ISDN

Integrated Services Digital Network

LAN

Local Area Network

LAN Printing

Printing to a network print server or to a printer that exists as a network node

LCD

Liquid Crystal Display

LED

Light-Emitting Diode

LANGate

DEFINITY LAN Gateway

m

Minor warning

M

Major warning

MAPD

Multi-Application Platform for DEFINITY ECS

MCC

Multi-cabinet Carrier

MFB

Multifunction Board

MIS

Management Information System

MLP

Multi-Layered Protocol

M_SHUT

Maintenance Shutdown

NVRAM

Non-Volatile Random Access Memory

Abbreviations

OA&M

Operations, Administration and Maintenance

OS

Operating System

OSINIT

Operating System Initialization

PBX

Private Branch Exchange

PC

Personal Computer

PCI

Peripheral Component Interconnect

PCM

Pulse Code Modulation

PCMCIA Devices

Personal Computer Memory Card International Association Devices

PEC

Price Element Code

PING

Packet Internet Groper

RMB

Remote Maintenance Board

SAT

System Administration Terminal

SCC

Single Cabinet Carrier

SCSI

Small Computer Systems Interface

S_SHUT

System Shutdown

TCP/IP

Transmission Control Protocol/Internet Protocol

TSC

Technical Service Center

VDC

Voltage-Direct Current

w

Warning

Glossary

Numeric

10Base-T

A network baseband medium that uses twisted pair wire and operates at 10MB per second.

A

Adjunct

See **Application**.

Administration

The process of setting up a system (such as a switch so that it will function as desired. Options and defaults are normally set up (translated) by the system administrator or by remote services personnel.

Alarms

Hardware, software, or environmental problems that may affect system operation. These faults are classified as major, minor, warning, or critical. They are recorded into an alarm log which can be accessed either locally or remotely on a terminal connected to the system.

API

Application Programming Interface. A set of functions and data items that allow a programmer to define an application to a particular interface.

Application

A process on a client computer that requests and receives ASAI services and capabilities through a program library or network service. The terms *application* and *adjunct* are sometimes used interchangeably. *See also* **ASAI Application**.

Adjunct Switch Application Interface (ASAI)

1. The Lucent Technologies recommendation for Computer Telephony Integration (CTI) based on the CCITT Q.932 protocol.
2. An option on the DEFINITY Enterprise Communications Server (ECS) that enables the ASAI messaging interface. Also called CallVisor ASAI.

Adjunct Services Application Interface (ASAI).

A messaging interface between the switch and an Adjunct Processor (AP) that allows the AP to perform call monitoring and control functions.

ASAI application

An application running on an ASAI client computer written to request service of a library that provides direct access to ASAI messages. *See also* **Application**.

Adjunct Services Application Interface (ASAI) link

An ISDN BRI or Ethernet interface configured to support ASAI.

ASAI Port

A logically unique access for ASAI services from the DEFINITY ECS. This port is differentiated via an extension number and via a physical port number assignment.

B

Basic Rate Interface (BRI)

One of two interfaces within ISDN, the other being PRI. BRI provides two bearer B-channels at 64 KB per second and a data D-channel at 16 KB per second. The bearer B-channels are designed for PCM (pulse code modulation) voice, video conferencing, group 4 fax machines, etc., while the data D-channel function is to bring in information about incoming calls and take out information about outgoing calls.

Baun

On the DEFINITY LAN Gateway connection, the adapter needed to connect the twisted-pair breakout cable to the coaxial building wire distribution system.

BIOS

Basic Input Output System. Firmware resident in a PC system which maps a given hardware realization into a standardized software interface (interrupts, I/O addresses, etc.) and which also provides for diagnostic and testing functions for the hardware including testing of peripheral devices.

BIST

Built in Self Test. Functions available in some device designs which allow the said devices to self test.

Boot

The operation to start a computer system by loading programs from disk to main memory (booting is part of system initialization).

Bridge

A router that connects two or more networks and forwards packets among them. Usually, bridges operate at the physical network level, for example, an Ethernet bridge connects two physical Ethernet cables and forwards from one cable to the other exactly those packets that are not local. Bridges differ from repeaters because bridges store and forward complete packets while repeaters forward electrical signals. See **BRouter**.

Router

Bridge/Router. In local area networking, a device that combines the dynamic routing capability of an internetwork **router** with the ability of a **bridge** to interconnect dissimilar LANs. It has the ability to route one or more protocols and bridge all other traffic. The DEFINITY LAN Gateway application links ISDN and TCP/IP at both a physical and addressing level. See **bridge** and **router**.

Business Communications Terminal (BCT)

The recommended terminal for system maintenance and administration.

C

Call Reference Value (CRV)

An identifier present in ISDN messages that associates a related sequence of messages. In ASAI, the CRVs distinguish between associations.

Circuit Pack

A card on which electrical circuits are printed, and integrated circuit (IC) chips, and electrical components are installed. A circuit pack is installed in a switch carrier.

CISPR

International Special Committee on Radio Interference. Cross-European committee that specifies regulatory standards for its European member states.

Client

For the DEFINITY LAN Gateway, a computer which is a consumer of ASAI service. User of services provided by a server.

Configuration

The combination of hardware and software that defines a computer or telecommunications system and also determines how it will operate.

CPU card

Passive-bus self-contained PC subsystem (iX86 processors) derived from a third party vendor (for example, Radiuses or Texas Micro, Inc.) which includes DRAM sockets, industry standard 16-bit ISA and 32-bit PCI bus interfaces, serial and parallel port interfaces, IDE (and possibly SCSI) peripheral interfaces, and possibly 10Base-T interfaces in an industry standard PC expansion card form factor.

Craft login

The Lucent Technologies login used by Lucent Technologies technicians during the installation and initialization of ASAI over the DEFINITY LAN Gateway system.

CV/LAN

CallVisor ASAI PC Local Area Network.

D

Data Terminal Equipment (DTE)

Equipment consisting of the endpoints in a connection over a data circuit. For example, in a connection between a data terminal and a host, the terminal, the host, and their associated modems make up the DTE. DTE usually consists of the following functional units: control logic, buffer store, and one or more input or output devices or computers. DTE can contain error control, synchronization, and telephone-identification capabilities.

DCE

Data Communications Equipment.

DCIU

Data Communications Interface Unit. Generic term for X.25 & BX.25 data communications path between a Lucent Technologies DEFINITY or System 85PBX and an adjunct processor.

Default

An alternative value, attribute or option that is assumed by the system when none has been specified by the user.

DEFINITY LAN Gateway (DLG)

An application that currently resides on the MAPD and provides a function of tunneling ASAI messages into IP packets for transport between a customer's CTI server and the DEFINITY ECS.

Diagnostics

Programs that run on the computer part of the PBX to check for actual as well as potential faults and problems in the system. Diagnostics normally run automatically at pre-defined intervals.

Disk Drive

A mechanical device that stores data on and retrieves data from one or more disks.

DRAM

Dynamic Random Access Memory. Memory used on the Passive Bus CPU Card.

E

Electronics Industries Association (EIA)

A trade association of the electronics industry that establishes electrical and functional standards.

ESAI

Ethernet-Switch Application Interface. *Also see* Ethernet.

ESD

ElectroStatic Discharge. Discharge of electrons from foreign bodies (for example, service personnel) into a board for which board design must include protection measures to avoid damage on ESD discharges.

Ethernet

A local area network that connects computers, printers, workstations, terminals etc. within the same building. Ethernet operates over twisted wire and over coaxial cable at speeds up to 10 mbps. For LAN interconnections, Ethernet is a physical link and data link protocol.

F

FCC

Federal Communication Commission. U.S. regulatory body which dictates Part 15 (radiated emissions) and Part 68 (conducted emission) requirements on telephony equipment.

Firmware

Software stored in a ROM/PROM/EPROM/EEPROM FLASHROM to operate a control application.

FLASH Memory

Non-volatile memory used in the platform on the TN Parent Board and on the Passive Bus CPU card to preserve memory contents on loss of power. Contents alterable under software control.

Flashware

Software stored in a Flash PROM.

G

G3MT

G3 Management Terminal. It is also known as System Access Terminal (SAT). The primary craftsperson interface into a DEFINITY ECS system for administrative and maintenance functions.

H

HDD

Hard Disk Drive.

Heartbeat Indication

The status of the MAPD is indicated by two flashing buttons that appear on the faceplate panel LCD of the system assembly.

Host

A computer, connected to a network, that processes data from data-entry devices.

I

IDE

Generic PC standard for interconnection of media devices to the PC motherboard.

Initialization

The process of bringing a system to a predetermined operational state. The start-up procedure tests hardware and flashware; loads the boot file system programs, and locates, mounts, and opens other required file systems; and starts normal service.

Integrated Services Digital Network (ISDN)

A public or private network that provides end-to-end digital communications for all services to which users have access by a limited set of standard multipurpose user-network interfaces defined by the CCITT. Through internationally accepted standard interfaces, ISDN provides digital circuit-switched or packet-switched communications within the network and links to other ISDNs to provide national and international digital communications.

Internet Control Message Protocol (ICMP)

A standard that provides several diagnostic functions and can send error packets to hosts. ICMP uses the basic support of IP and is an integral part of IP.

Internet Protocol (IP)

IP is a part of the TCP/IP family of protocols that describes software that tracks the Internet address of nodes, routes outgoing messages, and recognizes incoming messages. In a gateway, IP connects networks at OSI network Level 3 and above.

I/O

Input/Output. Two contexts: I/O functions on processor busses, and for the MAPD platform, accesses to tip/ring type functions (for example, 10Base-T access) via the 50 pin designated space in port carrier hardware.

ISA

Industry Standard Architecture.

L

LAN Interface

In MAPD, an interface which conforms to all applicable IEEE standards for 10Base-T (10 Mb/sec Baseband Twisted Pair) LANs.

LAN printing

Printing to a network print server or to a printer that exists as a network node.

Light Emitting Diode (LED)

A red-light indicator on the panel of the system faceplate that shows the status of operations and possible fault conditions. An unlit LED indicates a healthy system. When flashing, the LED indicates a software problem. When the LED is steadily lit, a hardware problem exists.

Liquid Crystal Display (LCD)

The 10-character alphanumeric display on the faceplate panel of the DEFINITY LAN that automatically shows the status of the system including alarms.

Link

See **Adjunct Switch Application Interface link**.

Local Area Network (LAN)

A networking arrangement designed for a limited geographical area. Generally, a LAN is limited in range to a maximum of 6.2 miles and provides high-speed carrier service with low error rates.

Login

A unique code that identifies and authenticates a user to the system.

M

MAC

Media Access Control. Data-link layer protocol that governs access to transmission media.

MCU

Multi-Point Control Unit

MAPD

DEFINITY Multi-Application Platform is an open platform which allows direct integration of applications into the DEFINITY product line and which also provides integrated connectivity to 10Base-T legacy LANs. The platform is also known as the DEFINITY LAN Platform. The platform allows leveraging third party hardware and software for applications across BCS.

MFB

Multi-Function Board. A sandwich board, actually comprised of two circuit boards, TN 566 and TN2170. The MFB is used for DEFINITY AUDIX and DEFINITY LAN Gateway applications and can be viewed as the predecessor of the MAPD.

Modem

MOdulator-DEModulator. A device that converts digital signals to analog signals for transmission across telephone circuits. The analog signals are converted back to the original digital data signals by another modem at the other end of the circuit.

N

NVRAM

Non-Volatile Random Access Memory that retains data even when the power is lost.

O

Operating System

The set of programs that runs the hardware and interprets the software commands.

Operations, Administration, and Maintenance (OAM)

A state of system operation where the core processes of the multifunction board are accessed, including system initialization, resource configuration, forms interface, entry into the maintenance subsystem, and file system access.

P

PCI

Peripheral Component Interconnect. A local bus technology that allows SCSI host adapters, video cards, and other peripherals to send data directly to and receive data directly from the CPU.

PCMCIA Devices

Personal Computer Memory Card International Association Devices. These devices include FLASH memory, hard drives, tape drives, LAN interfaces, Modems, etc. which are available from third party vendors in standardized small form factors.

Ping

A program that is used to test and debug networks. It sends an ICMP Echo packet to a specified host and waits for a response. It reports on the success or failure of its operation as well as associated statistics that accompany the test.

R

Reboot

A system reboot clears major system problems (such as the corruption of program memory). It also runs automatically whenever the system is powered up.

Router

Any machine responsible for making decisions about which of the several paths the network (or Internet) traffic will follow. At the lowest level, a physical network bridge is a router because it

chooses whether to pass packets from one physical wire to another. Within a long haul network, each individual packet switch is a router because it chooses routes for individual packets. In the Internet, each IP gateway is a router because it uses IP destination addresses to choose routes. See **Router**.

S

SAT

System Access Terminal. The primary craftsperson interface into a DEFINITY System for administrative and maintenance functions.

Shutdown States

States of system operation where either a technician can shut down the system for maintenance, or where a critical error condition brings down the system. In either case, file systems are closed and the system can be powered down and removed from the carrier.

T

TCP/IP Port

Transmission Control Protocol/Internetworking Protocol. A numbered access "subaddress" for an IP address that usually indicates the service or application that is desired to engage in a communications session.

Technical Service Center

The Tier 3 services group who remotely maintains and diagnoses a MAPD system using a set of forms generated on a computer terminal.

Telnet

The TCP/IP protocol governing the exchange of character-oriented terminal data. Also, the process by which a person using one computer can sign on to a computer in another city, state, or country. With Telnet, a user can work from a PC as if it were a terminal attached to another machine by a hard-wired line.

V

Vintage

An internal code used to identify the release and/or version of a circuit pack.

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