Lucent Technologies
Bell Labs Innovations

DEFINITY® ECS
CallVisor® ASAI DEFINITY LAN Gateway over MAPD

Installation, Administration, and Maintenance

555-230-114
Comcode 108617028
Issue 3
December 1999

Notice

While reasonable efforts were made to ensure that the information in this document was complete and accurate at the time of printing, Lucent Technologies can assume no responsibility for any errors. Changes and corrections to the information contained in this document may be incorporated into future reissues.

Your Responsibility for Your System's Security

You are responsible for the security of your system. Lucent Technologies does not warrant that this product is immune from or will prevent unauthorized use of common-carrier telecommunication services or facilities accessed through or connected to it. Lucent Technologies will not be responsible for any charges that result from such unauthorized use. Product administration to prevent unauthorized use is your responsibility and your system administrator should read all documents provided with this product to fully understand the features available that may reduce your risk of incurring charges.

Federal Communications Commission Statements

Part 15: Class A Statement. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio-frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his or her own expense.

Part 68: Network Registration Number. This equipment is registered with the FCC in accordance with Part 68 of the FCC Rules. It is identified by FCC registration number AS593M-13283-MF-E.

Part 68: Answer-Supervision Signaling. Allowing this equipment to be operated in a manner that does not provide proper answer-supervision signaling is in violation of Part 68 rules. This equipment returns answer-supervision signals to the public-switched network when:

- Answered by the called station
- Answered by the attendant
- Routed to a recorded announcement that can be administered by the CPE user

This equipment returns answer-supervision signals on all DID calls forwarded back to the public-switched telephone network. Permissible exceptions are:

- A call is unanswered
- A busy tone is received
- A reorder tone is received

Trademarks

CallVisor is a registered trademark of Lucent Technologies.
DEFINITY is a registered trademark of Lucent Technologies in the USA and throughout the world.
Pentium is a registered trademark of Intel Corporation.
ProLogix is a trademark of Lucent Technologies.
SanDisk PCMCIA FlashDisk comes under the trademark of CompactFlash&trade Memory Cards of SanDisk Corporation.
Solaris is a trademark of Sun Microsystems, Inc. in the USA and other countries.
Sportster is a registered trademark of US Robotics.
UNIX is a registered trademark in the USA and other countries, licensed exclusively through X/Open Company Limited.
UnixWare is a registered trademark of the Santa Cruz Operation, Inc. in the USA and other countries.
Windows is a registered trademark of Microsoft Corporation.
Windows NT is a trademark of Microsoft Corporation.

Ordering Information

The ordering number for this document is 555-230-114. To order this document, call the BCS Publications Center at 1 800 457-1235 (international callers use 1 317 322-6411). For more information about Lucent Technologies documents, refer to *Business Communications Systems Publications Catalog,* 555-000-010.

You can be placed on a Standing Order list for this and other BCS documents you may need. Standing Order will enable you to automatically receive updated versions of individual documents or document sets, billed to account information that you provide. For more information on Standing Orders, or to be put on a list to receive future issues of this document, please contact the Lucent Technologies BCS Center.

To learn more about Lucent Technologies products and to order products, contact Lucent Direct, the direct-market organization of Lucent Technologies Business Communications Systems. Access their web site at www.lucentdirect.com. Or call the following numbers: customers 1 800 451-2100, account executives
1 800 778-1881 (fax) or 1 800 778-1880 (voice).

Lucent Technologies Fraud Intervention

If you suspect you are being victimized by toll fraud and you need technical support or assistance, call the BCS Technical Service Center Toll Fraud Intervention Hotline at 1 800 643-2353.

Comments

To comment on this document, return the comment card at the end of the document.

Acknowledgment
This document was prepared by the
GLS Information Development Group,
Lucent Technologies
Holmdel, NJ 07733-3030

Contents

About This Document

This document describes how to set up the CallVisor ASAI DEFINITY LAN Gateway (DLG) system in either a DEFINITY® ECS or a DEFINITY ProLogix™ cabinet. Setting up the DLG includes the following activities.

- Planning your installation (see Appendix A)
- Physically installing the CallVisor ASAI DEFINITY LAN Gateway system (or DLG) in either a DEFINITY ECS or a ProLogix cabinet (see Chapter 1)
- Administering the DLG (see Chapter 2)
- Maintaining the DLG (See Chapter 3)

Terminology

Here are a few tips for understanding the terms used in this document.

- In the interest of readability, some acronyms (such as ASAI and ECS) are not expanded. For more information, see the Abbreviations and Glossary sections of this document.
- DEFINITY System is a general term that refers to both DEFINITY ECS and DEFINITY ProLogix. Whenever a distinction must be made between DEFINITY ECS and DEFINITY ProLogix, this document uses the appropriate, specific term.

Scope of this Document

To understand the scope of this document, it helps to have a high-level knowledge of the DLG system components. Simply put, the DLG system consists of hardware and software. The primary software component is the DLG application, and the primary hardware components are the MAPD boards (also called the MAPD board complex).

The MAPD board complex can support various applications. That is, it can support more than one release of the same application (such as Release 1 and Release 2 of the DLG) and it can support more than one different application (such as the DLG application and the CallVisor PC/LAN application, which is typically referred to as the CV/LAN application).

How to Use this Document

Use these guidelines to determine if you need to use this document alone or with other documents.

- If your configuration supports Release 2 of the CallVisor DEFINITY LAN Gateway over MAPD only, this document serves as your primary reference.
- If your configuration supports additional applications or the previous product release, consult the following documents:
  - **If you are running the CV/LAN application**, refer to *DEFINITY ECS CallVisor ASAI PC LAN over MAPD Installation, Administration, and Maintenance*, 555-230-113. For **ProLogix**, consult *DEFINITY ProLogix Solutions Overview, (555-235-100).*
  - **If you are running DEFINITY LAN Gateway R1** (TN2208/TN2170 Multi Function Board sandwiches) also, consult *DEFINITY Enterprise Communications Server Installation, Administration, and Maintenance of CallVisor ASAI over the DEFINITY LAN Gateway,* 555-230-223, as well as this document.
  - For information about **ProLogix**, consult *DEFINITY ProLogix Solutions Overview, (555-235-100).*

Intended Audience

This document is intended for 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 anyone who needs to understand how CallVisor ASAI over the MAPD operates.

Prerequisite Knowledge

Anyone administering the DLG application over the MAPD should have a 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 Transmission Control 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 DEFINITY LAN Gateway 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:

- 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

- *DEFINITY ProLogix Solutions Overview,* (555-235-100)

  This document provides an overview of the features, components, and capabilities of DEFINITY ProLogix Solutions as well as high-level information about the system.

- *DEFINITY Enterprise Communications Server Release 8 System Description,* (555-230-211)

  The system description provides hardware descriptions, system parameters, listing of hardware required to use features, system configurations, and environmental requirements.

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

  The Overview provides a general description of CallVisor Adjunct Switch Application Interface (ASAI) applications, functions, and services provided with this interface.

- *DEFINITY Enterprise Communications Server Release 8 CallVisor ASAI Protocol Reference*, 555-230-221

  This document provides detailed protocol information for the DEFINITY ECS CallVisor Adjunct/Switch Application Interface (ASAI). It is the companion to *ASAI Technical Reference* (555-230-220).

- *DEFINITY Enterprise Communications Server Release 8 CallVisor ASAI Technical Referenc*e, 555-230-220

  This document provides a detailed functional description of CallVisor ASAI, its capabilities, and the TCP/IP protocol used for transporting messages in CallVisor ASAI.

- *DEFINITY ECS Release 8, Administrator's Guide* 555-230-502

  A task-based document that provides step-by-step procedures for administering the DEFINITY ECS.

- *DEFINITY Communications System Generic 3 Management Applications Station Provisioning Quick Guide,* 585-229-203

  This document describes the installation instructions for connecting a PC as a MAPD 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 PC LAN over MAPD Installation, Administration, and Maintenance*, 555-230-113

  This document describes the implementation of the CV/LAN application over the MAPD board.

- *DEFINITY Enterprise Communications Server, Release 8, CallVisor ASAI Documents,* 585-246-801, Issue 4

  This CD ROM contains the CallVisor ASAI Release 8 documents. It includes: CallVisor ASAI Technical Reference, CallVisor ASAI Protocol Reference, CallVisor ASAI Overview, CallVisor ASAI PC LAN over MAPD, and CallVisor ASAI DEFINITY LAN Gateway over MAPD.

Introduction

1

Overview of CallVisor ASAI DEFINITY LAN Gateway over the MAPD

CallVisor ASAI DEFINITY LAN Gateway system is a communications interface that provides the functionality of the Adjunct/Switch Application Interface (ASAI) using an Ethernet transport instead of a Basic Rate Interface (BRI) transport.

The CallVisor ASAI DEFINITY LAN Gateway system is composed of a system assembly (1273-MPD), and a software application (1273-LAN). The system assembly consists of a **TN801B** MAPD board with a Pentium processor card.

NOTE:
The TN801B board works in both the DEFINITY ECS and the DEFINITY ProLogix. The TN801 board works in the DEFINITY ECS only.

This system assembly is inserted into a DEFINITY carrier. The software application serves as an ISDN Brouter of ASAI messages through a TCP “tunnel” via 10Base-T Ethernet. This version is release 2 of the DEFINITY LAN Gateway and it runs on the MAPD. See Figure 1-1 for an overview of the MAPD system in the DEFINITY system.

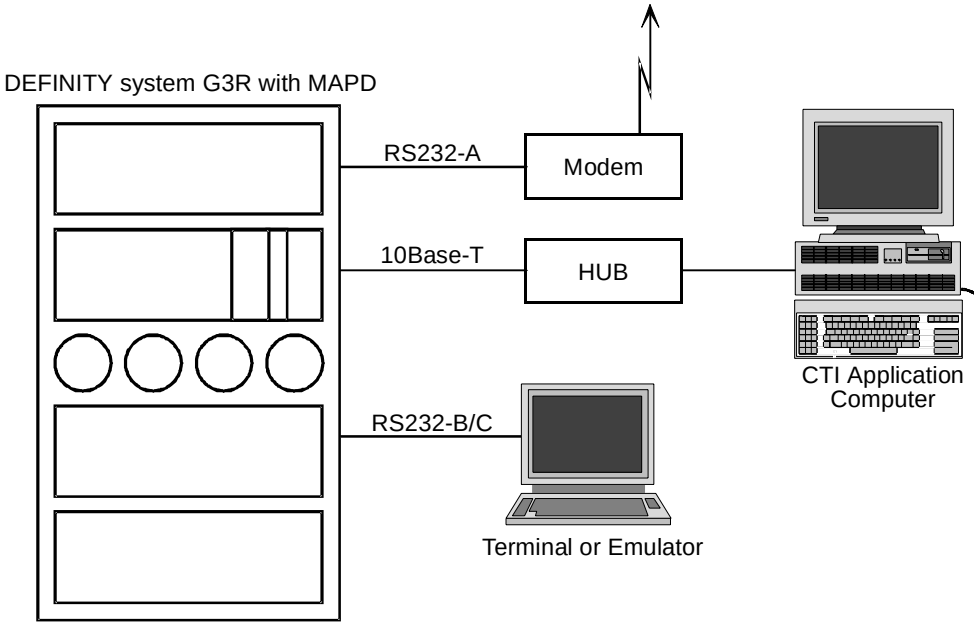


Figure 1-1. MAPD System in the DEFINITY System

The ASAI-Ethernet transport option can either replace or supplement BRI. For example, an ASAI-Ethernet link may replace an ASAI-BRI link if more throughput is desired for the same client application. Or, the ASAI-Ethernet transport option may be used in addition to the ASAI-BRI transport option if a client application is being added to the system and the customer does not want to disturb an existing client application.

Since the MAPD system requires its own administrative information (not found on the DEFINITY system), it is necessary to administer the system assembly as well as the DEFINITY system. 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, in DEFINITY ECS, 240 messages per second can be processed in full duplex mode. This is equivalent to the bandwidth of 8 BRI ASAI links. On the MAPD System in **ProLogix** up to 120 messages per second can be processed in full duplex mode. This is equivalent to the bandwidth of 4 BRI ASAI links. These are the MAPD TN801B board limits and these messages will be distributed among all the links on the board in any fashion. There is also a DEFINITY system limit. Refer to the DEFINITY ECS document, System Description, 555-230-211.

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

DLG over the MAPD is provided with a default set of administered parameters, but the customers can also administer the MAPD system 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:
The DEFINITY system administration of ASAI does not change when using DLG 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 TN801B MAPD board and a Pentium processor card. Figure 1-2 shows the MAPD system assembly.

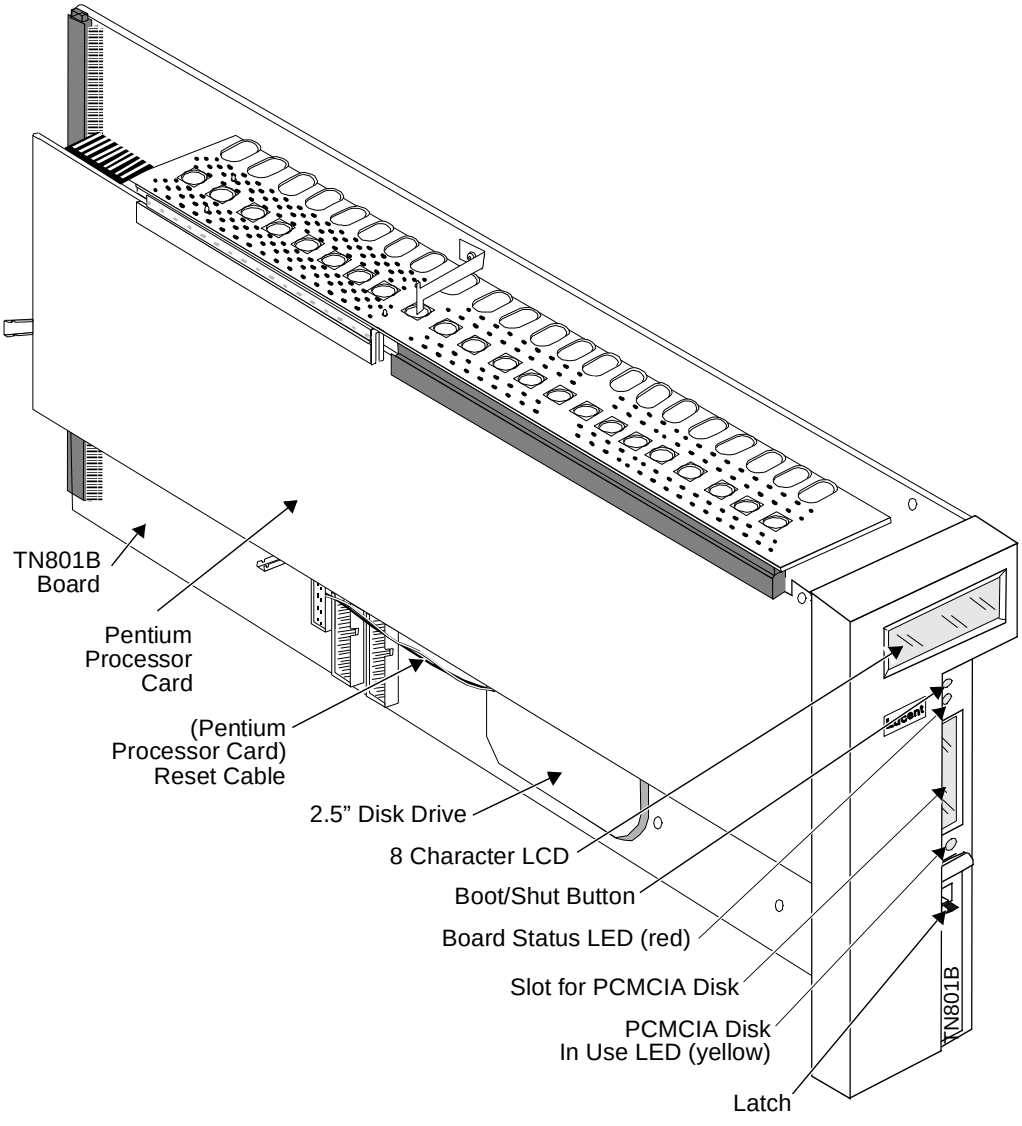


Figure 1-2. MAPD System Assembly (J58890MA-1)

The TN801B 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 TN801B 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 TN801B board

supports a Liquid Crystal Display (LCD) panel. Naturally, it also has an interface to the DEFINITY system call control and switching fabric.

System Software

The software that provides the DEFINITY LAN Gateway application on the system assembly comes preloaded on the system when it is shipped from the factory.

The function of the software is to act as a mapper (or Brouter) for ASAI messages. It links an ISDN network (the DEFINITY system call control) to a TCP/IP network (computer client) by moving ASAI messages back and forth from Q.921 synchronous data frames to TCP/IP Ethernet packets. It also associates computer clients (by their TCP/IP network addresses) to physical ports on the DEFINITY system that are administered as ASAI extensions.

This mapping provides a virtual point-to-point connection between a particular computer client and an associated port on the DEFINITY system. This arrangement continues to support the ASAI ability to sense when a particular computer client connection is lost and to send an alarm. It also provides a more secure environment by fixing the addresses of the clients that may receive this service.

Upgrading Your Existing System

If you want to add a MAPD system to a non-supported DEFINITY system, you must first upgrade it with a field maintenance release of R6.1 or later software.

NOTE:
For MAPD support on ProLogix, you must upgrade to field release 6.3.2 or later.

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 system 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 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).

Installation

2

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 system 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

Before beginning the installation, make sure you have completed these prerequisites.

Task 1: Verify the Selected Site

NOTE:
Defining the system requirements and ensuring that the site meets these requirements is the responsibility of the Project Manager and the customer and must be completed before you install the MAPD system. However, the guidelines are listed here so that you are aware of these requirements.

Verify that the site selected for the DEFINITY system and the MAPD system provides the following:

- For DEFINITY system, an R5 system, or higher (requires R6.1 or later system software in V5 or V6 mode)
- For **ProLogix**, system software Release 6.3.2 or later is required.
- For a MAPD system being installed in an existing switch, three contiguous slots in a switch carrier are required to house the MAPD system (slots 16 to 18 as shown in Figure 2-1, “MAPD System in a DEFINITY ECS System Carrier,” and slots 6, 7, and the spacer as shown in Figure 2-2, “MAPD System in a DEFINITY ProLogix Carrier”). See Appendix A “PBX Carrier Configuration Worksheets,” for carrier worksheets.

  NOTE:
  The slots depicted in Figures 2-1 and 2-2 are intended for illustrative purposes. Any slots can be used in either switch. If you use slots 6 and 7 in a DEFINITY ProLogix, the MAPD takes up only two slots instead of three.

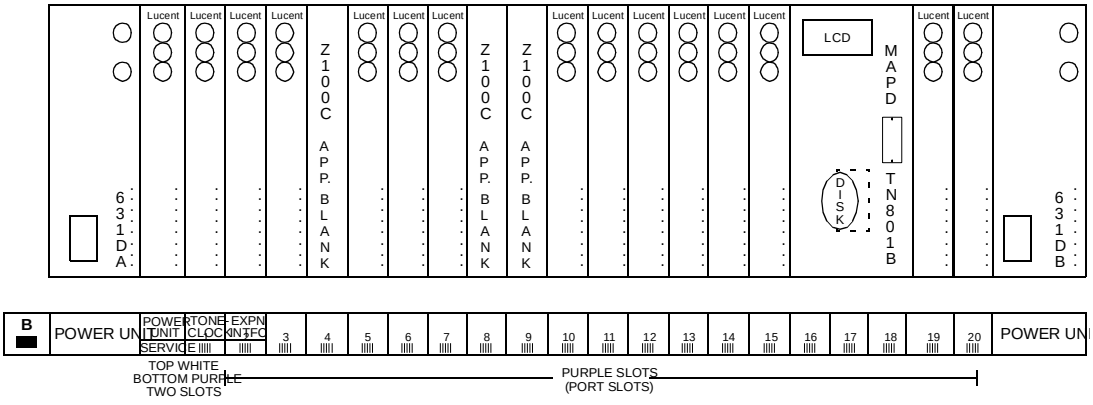


Figure 2-1. MAPD System in a DEFINITY ECS System Carrier

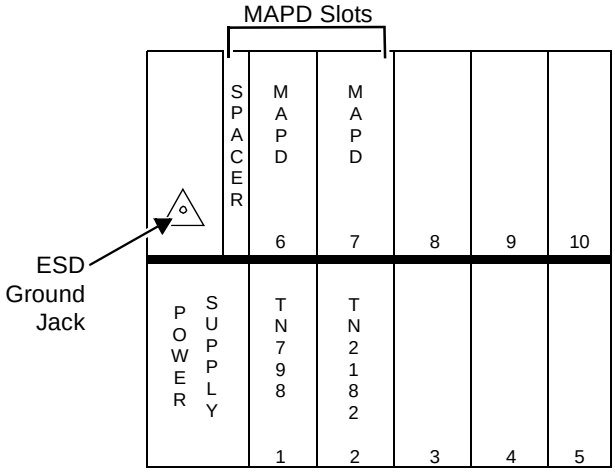


Figure 2-2. MAPD System in a DEFINITY ProLogix Carrier

- A LAN connection available to the system prior to hookup. This connection to the LAN is provided by the customer for Lucent Technologies at an agreed-upon demarcation point.
- Easy access for cabling.
- Good workspace for the system administrator and/or operators.
- Temperature range of 50 to 100 F (10 to 38 C), with the ideal range between 50 and 80 F.
- 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 system 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 2-3 "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.

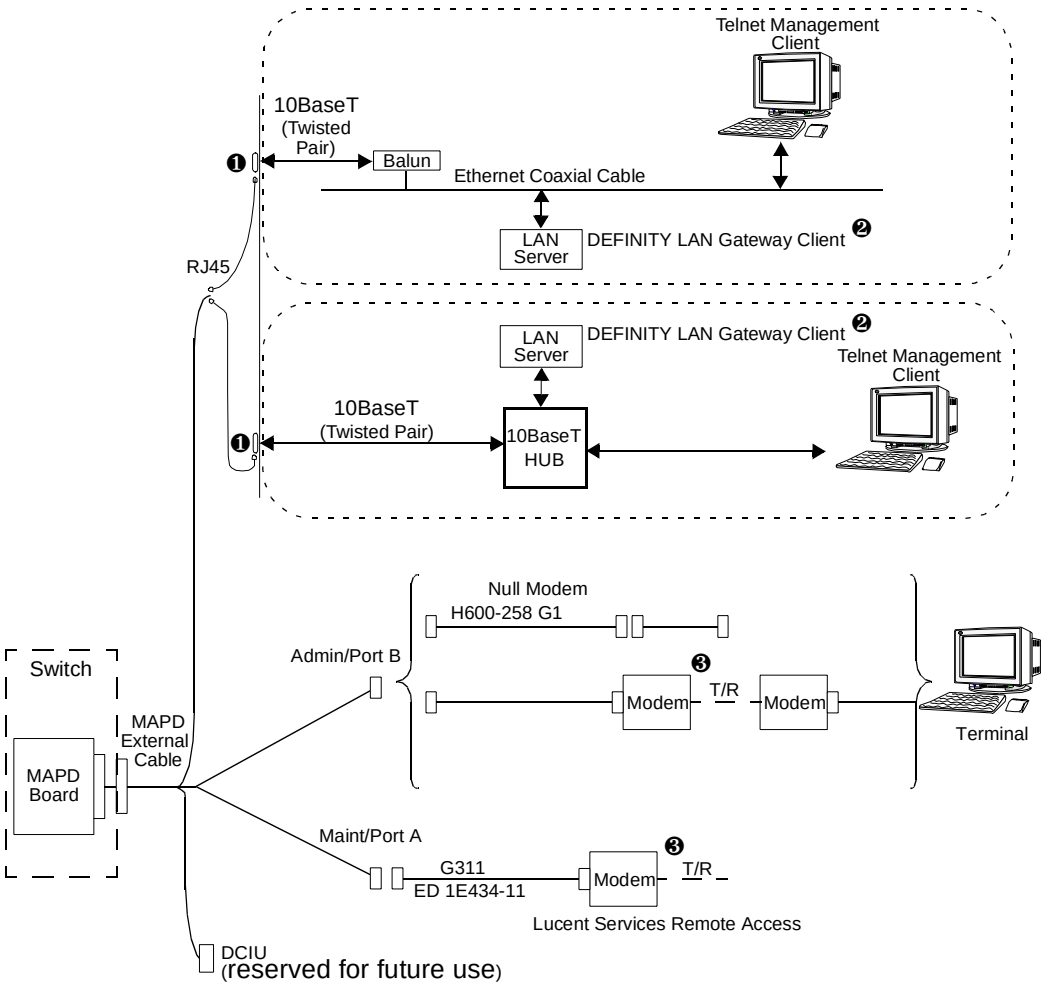
- Balun (**bal**anced/**un**balanced) — An impedance matching transformer. Baluns are small, passive devices that convert the impedance of coaxial cable so that its signal can run on twisted-pair wiring. They are used often so that IBM 3270-type terminals, which traditionally require coaxial cable connection 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.



NOTES:

❶ Demarcation Point
- — Provided by Lucent Technologies
- — RJ45 connection using a D8W modular wall cord
- — Located on cross-connect field
- — Maximum distance - 25 feet from switch

❷ Software
- — Installed by customer
- — Maintained by customer

❸ 9600 baud modem

Figure 2-3. 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 (DLG)" 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-1: Port Slot Assignments (Before Carrier Arrangement)" 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 system Cabinet. The rightmost slot must be a port slot, (indicated by purple color). Placement in a DEFINITY system 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.

For **ProLogix**, preferred placement of MAPD is slots 6, 7, and the space before slot 6. It will save one slot, as MAPD requires 3 slots.

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 2-4 for DEFINITY system, “Connecting the Adapter Cable, Rear-Panel View of DEFINITY ECS system,” and Figure 2-5 for ProLogix “Rear-Panel View of MAPD in DEFINITY ProLogix.” 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 TN801B MAPD Board.

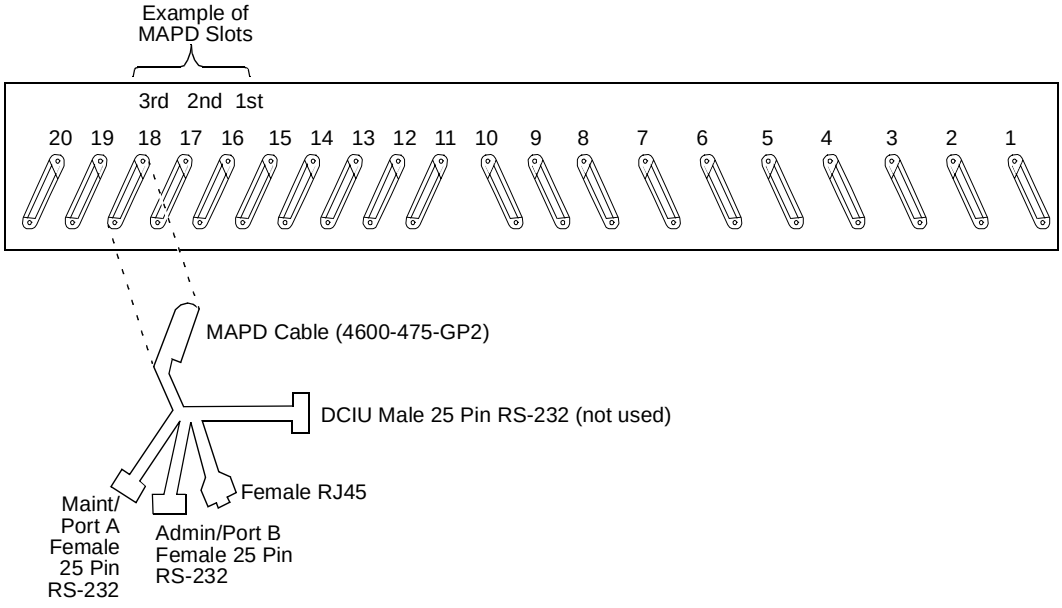


Figure 2-4. Connecting the Adapter Cable, Rear-Panel View of DEFINITY ECS system

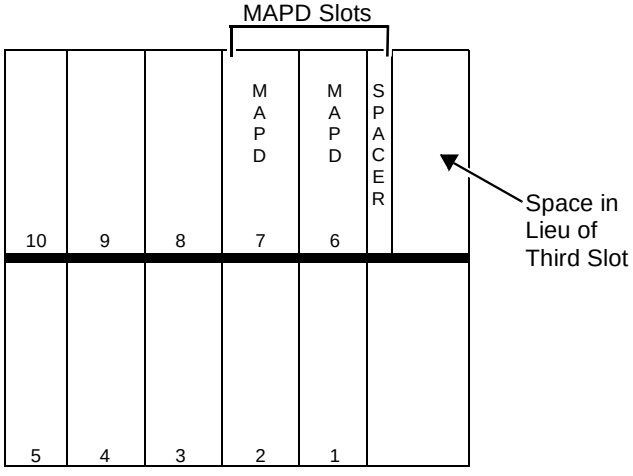


Figure 2-5. Rear-Panel View of MAPD in DEFINITY ProLogix

Installation Steps

Using 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, remove the I/O cables from slot 9. (This is the slot that provides connectivity to the TN801B MAPD circuit pack.)

2. Referring back to Figure 2-4, ‘‘Connecting the Adapter Cable, Rear-Panel View of DEFINITY ECS system,’’ and Figure 2-5, “Rear-Panel View of MAPD in ProLogix,” 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 (TN801B), 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.

   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 TN801B board. The top of the disk should be facing left.

5. Insert the system assembly (see Figure 2-6, "MAPD System Assembly (J58890MA-1)") into the switch cabinet as follows:

Holding the system assembly by the top and bottom edges of the TN801B 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.

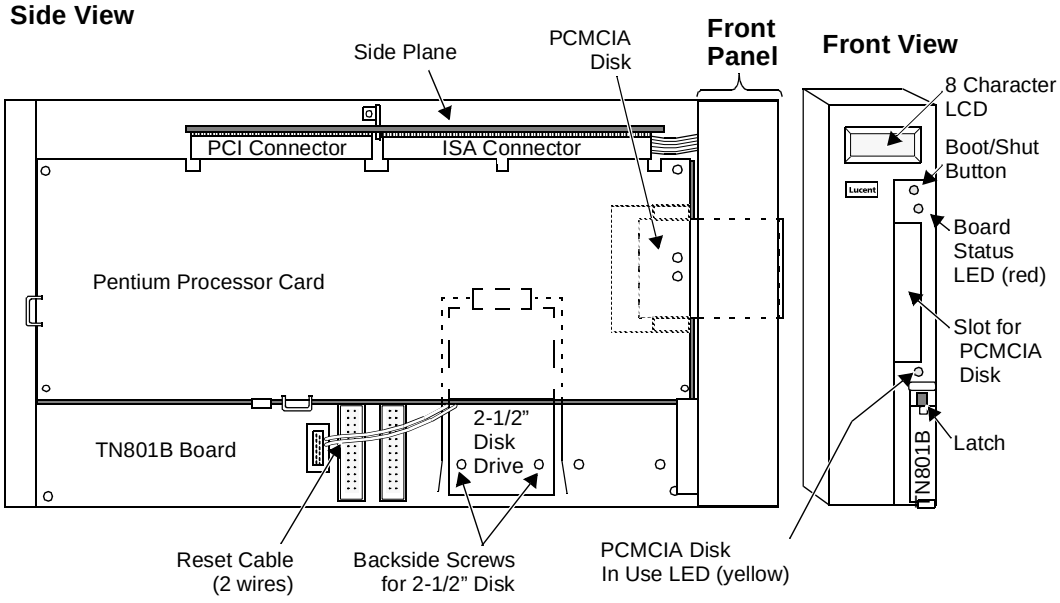


Figure 2-6. MAPD System Assembly (J58890MA-1)

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. Be sure that the assembly is properly aligned in the slot, and then insert it with a single, firm push. Do not adjust or attempt to reinsert the assembly once it has started to boot.

6. 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.

7. As the MAPD system comes up, watch the Liquid Crystal Display (LCD) on the faceplate (see Figure 2-7). The LCD identifies the MAPD states and alarms.

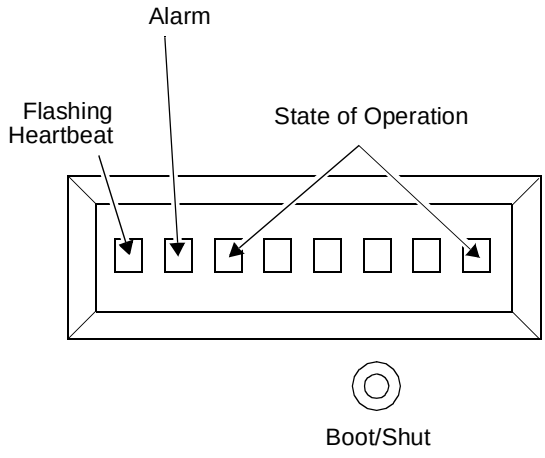


Figure 2-7. MAPD System LCD Display

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)

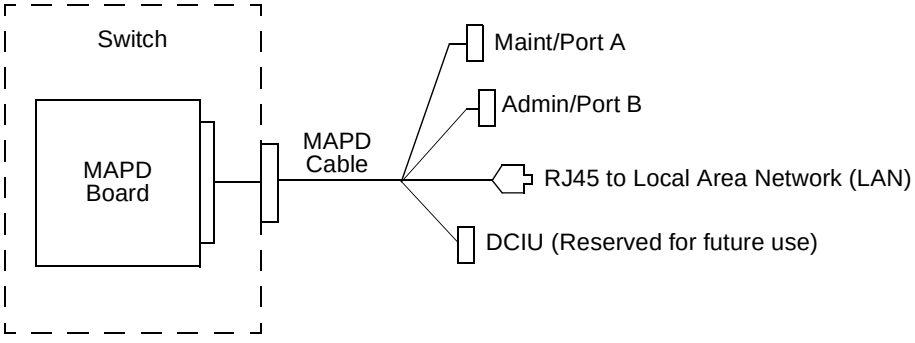


Figure 2-8. MAPD Board Cable Connections

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 2-9, ‘‘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 services 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.

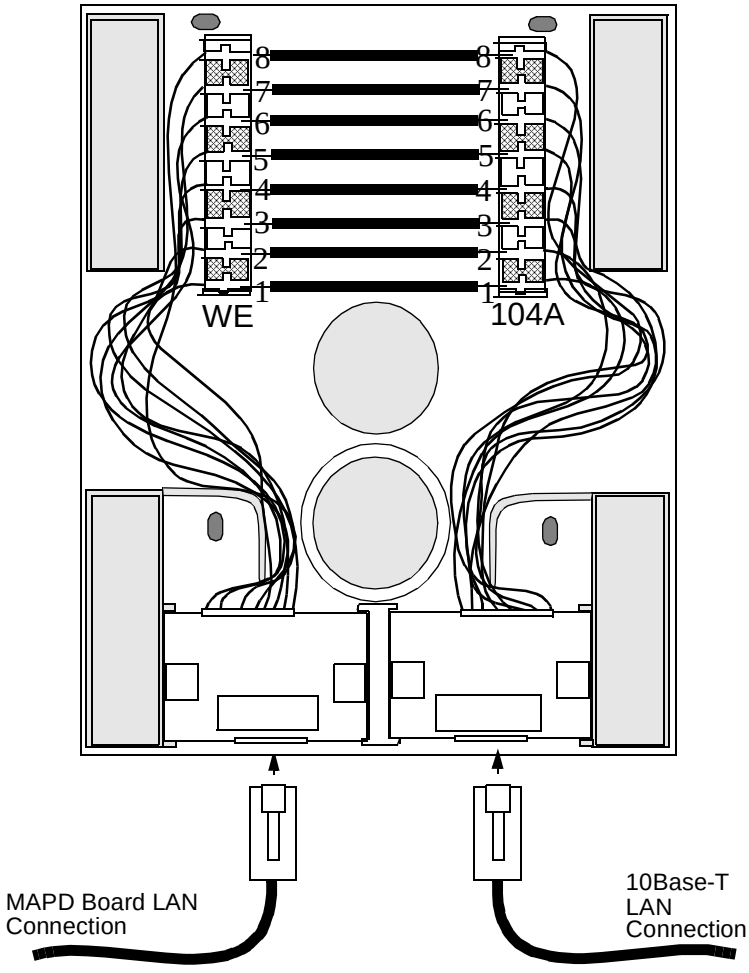


Figure 2-9. 104A Connecting Block

- 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 2-10, "Installing a Terminal Via Direct Connection," and 2-11, "Installing a Terminal via Direct Connection (DC Switch Only)," while performing this task.

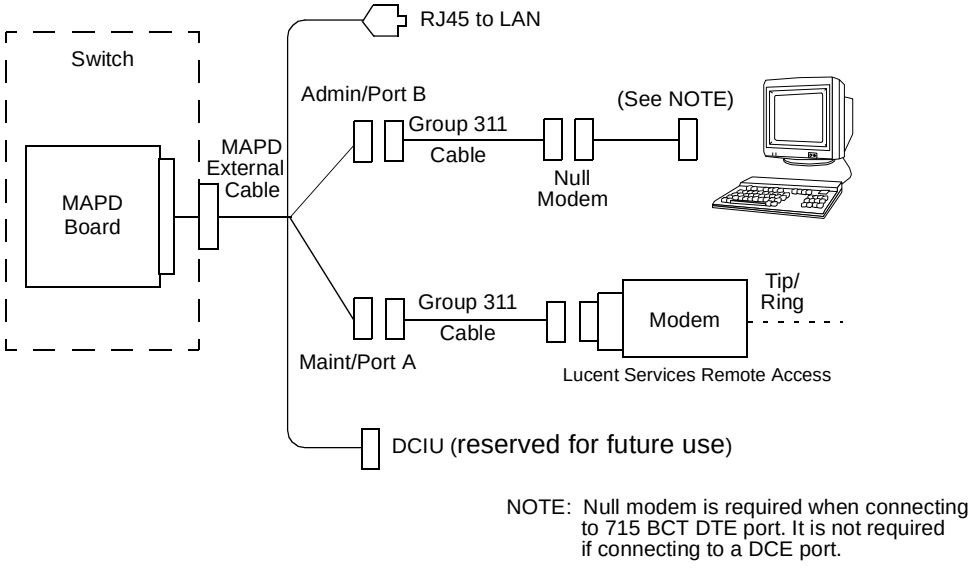


Figure 2-10. Installing a Terminal Via Direct Connection

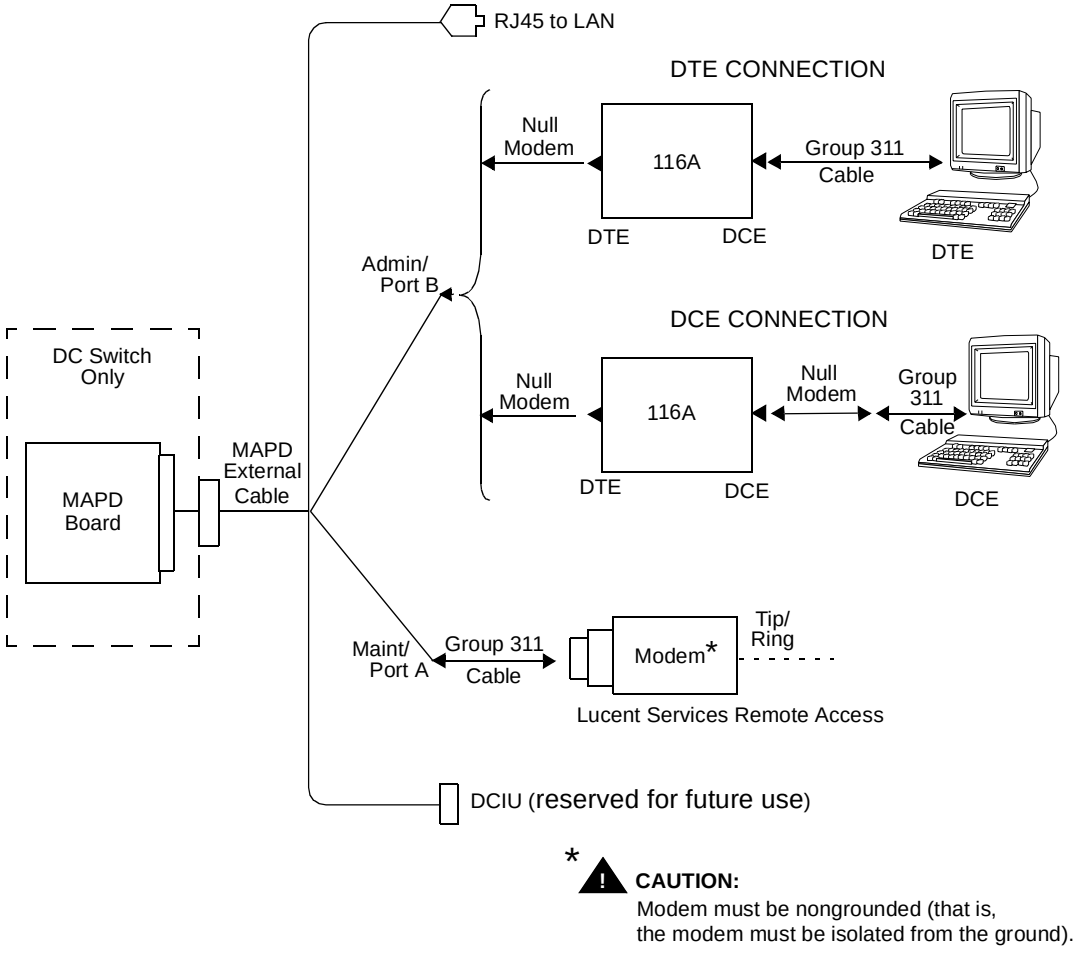


Figure 2-11. Installing a Terminal via Direct Connection (DC Switch Only)

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 system, or for a DC DEFINITY system 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 2-12, "Connecting a terminal to the MAPD via Modem," when performing this task.

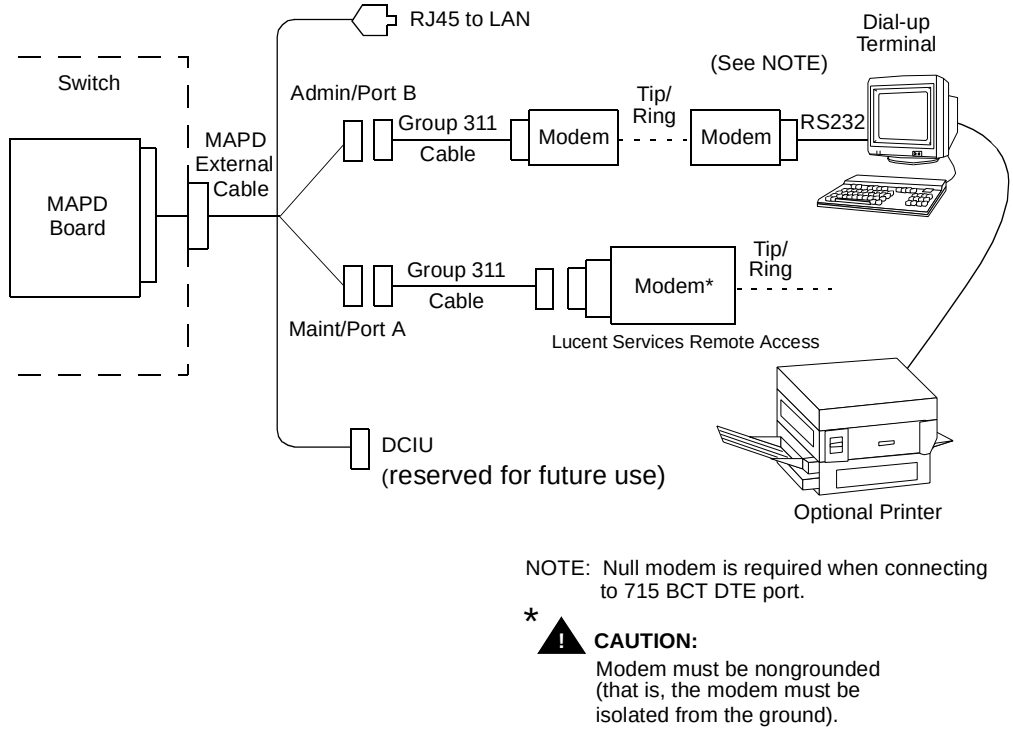


Figure 2-12. Connecting a terminal to the MAPD via Modem

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 “0K” (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 system **change circuit-packs** command. Follow the steps listed below.

NOTE:
ASAI must be enabled on the DEFINITY system Customer Options Form for the system to be fully operational. For more information on switch administration, see *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*, Issue 2, 555-230-502.

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    Sfx   Name                    Slot Code     Sfx     Name
 01: _____   ___                             11: _____    ___
 02: _____   ___                             12: _____    ___
 03: _____   ___                             13: _____    ___
 04: ASAIM1  ___ RESERVED-LANGATE            14: _____    ___
 05: ASAIM1  ___ RESERVED-LANGATE            15: _____    ___
 06: TN801   _B_  MAPD BOARD                 16: _____    ___
 07: _____   ___
 08: _____   ___
 09: _____   ___
 10: _____   ___
 '#' indicates circuit pack conflict
```

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 (TN801B 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        TN801B     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
```

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 TN801B 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**: "**TN801B**" is displayed for the slot on which it is administered. For the reserved slots, the string "**TN801B**" is displayed.
- **Vintage**: If a TN801B 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 TN801B.
- **Assigned Ports**: The assigned ports are displayed if there are ports administered on the TN801B 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 station[1]. 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: Use the Call Reference Value (CRV) for your application.

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____                                                TN: 1__
     Port: 2a1701___                                              COR: 1_
     Name: ____________________                                   COS: 1_
                                      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
------------------------------------------------------------------------------

                                STATION


FEATURE OPTIONS

        Event Minimization? n


                                                Audible Message Waiting? 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:

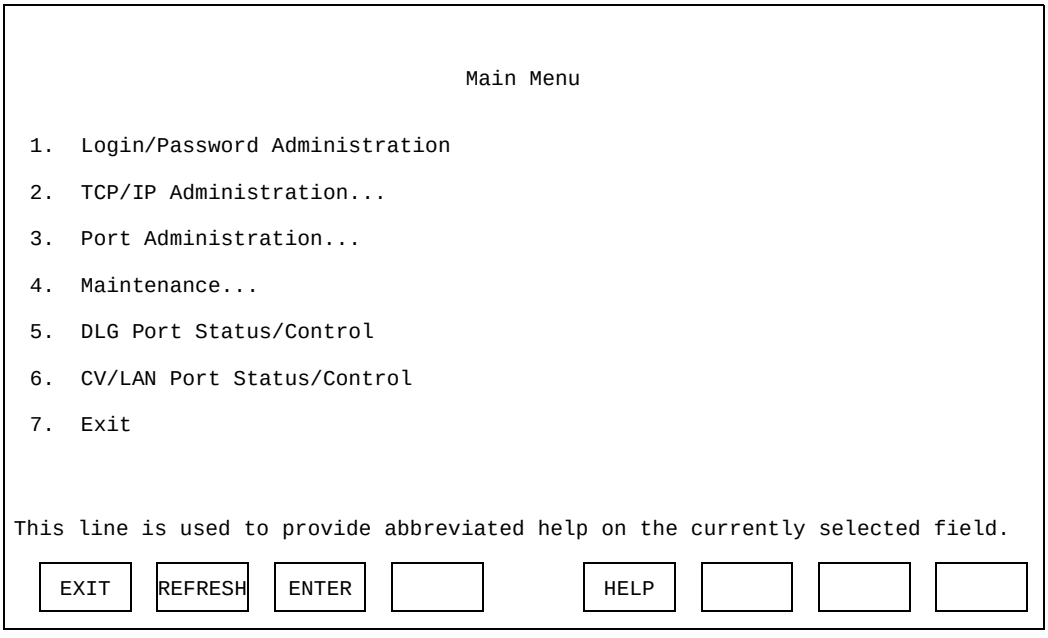
   - 513 for a 513 BCT or 715 BCT; enter 513 also for a 610/615 BCT or a PC with a 513 emulation package. (Since 513 is the default, you can just press RETURN to select it.)

- `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.

```
                                    Main Menu

 1.   Login/Password Administration

 2.   TCP/IP Administration...

 3.   DLG Administration

 4.   Maintenance...

 5.   DLG Port Status/Control

 6.   Exit



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

  [ EXIT ]  [REFRESH]  [ ENTER ]  [       ]     [ HELP ]  [       ]  [       ]  [       ]
```

Screen 2-5. Main Menu DLG



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

NOTE:
This screen will appear only if CV/LAN is also installed.

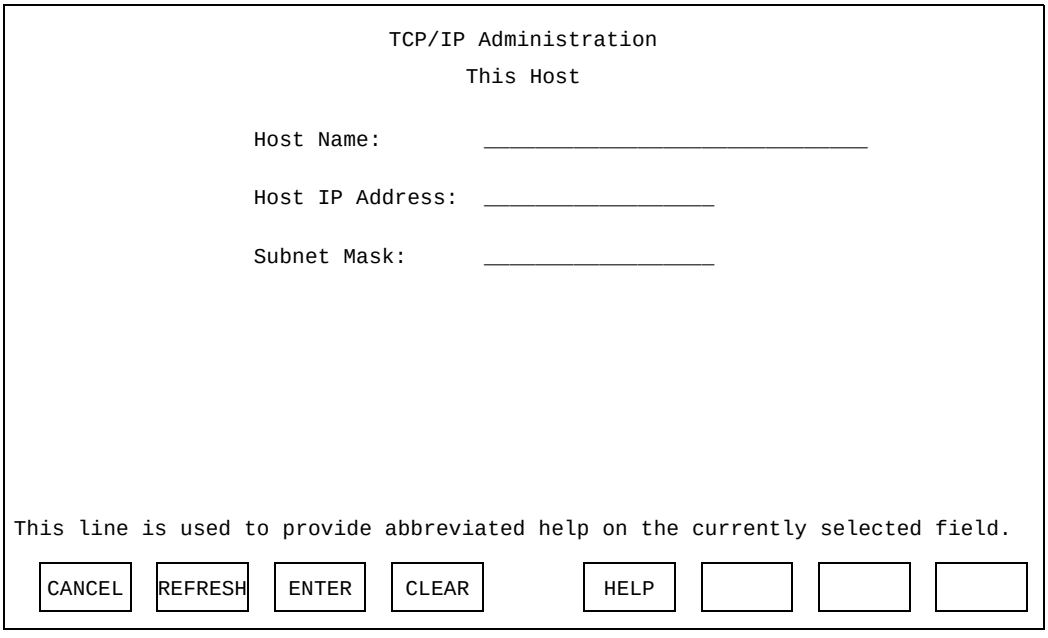
5. Select `Maintenance` and then `Set System Time and Date.` Follow the instructions for setting System Time and Date in Screen, "Set System Time and Date" in Chapter 3, "System Administration."

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:



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.

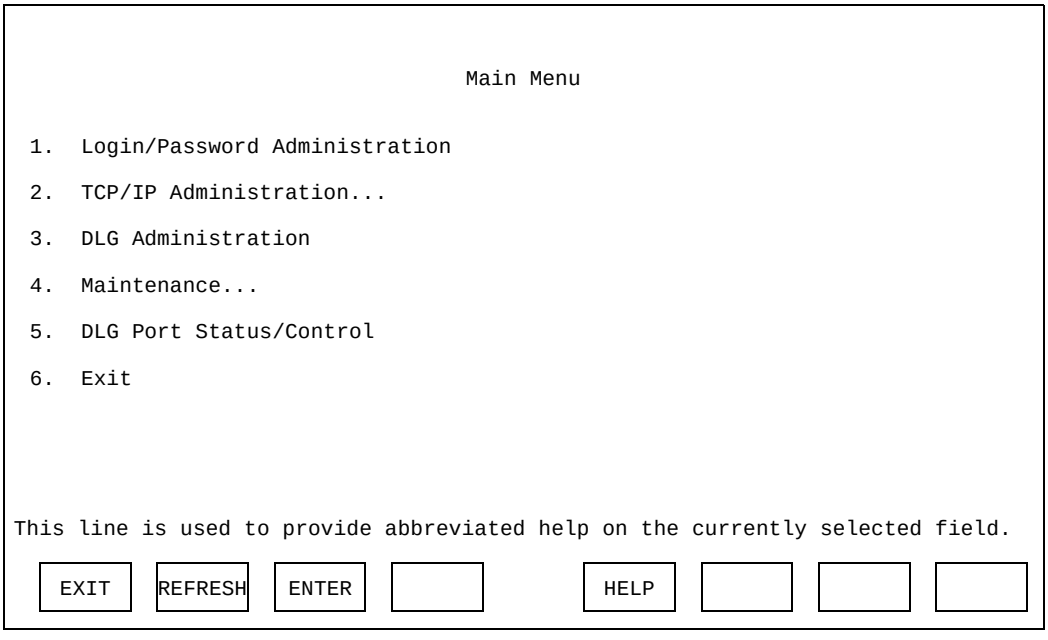
Task 12: Reboot MAPD

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

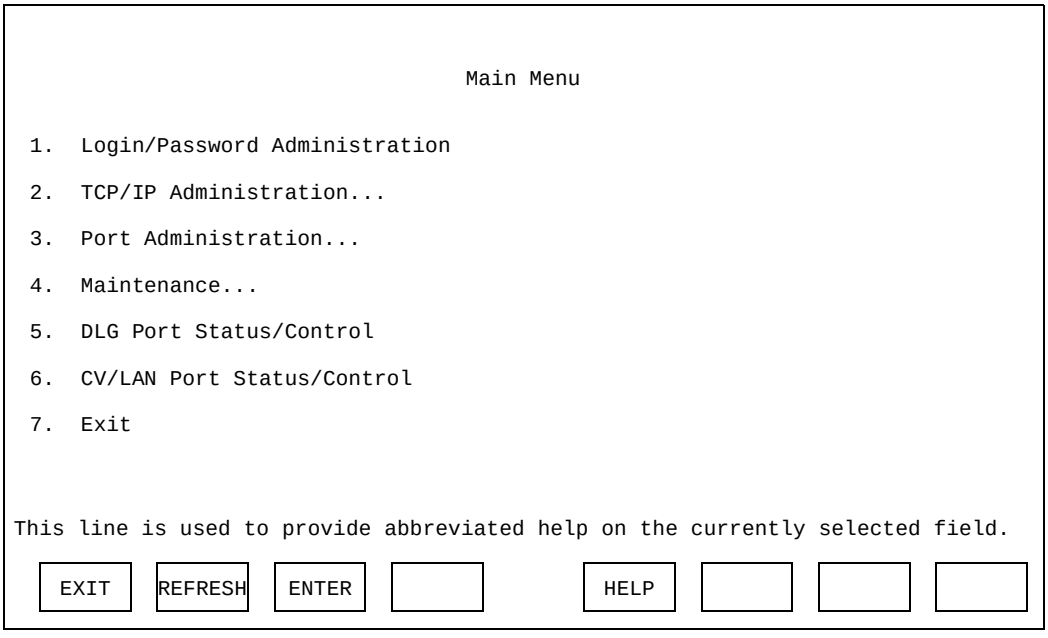
NOTE:
If you previously logged in, then the Main Menu should be displayed. Proceed to Step 5 in this task.

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 (DLG)



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

NOTE:
This screen will appear only if CV/LAN is also installed.

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

Task 13: Test MAPD/LAN Connectivity (Optional)

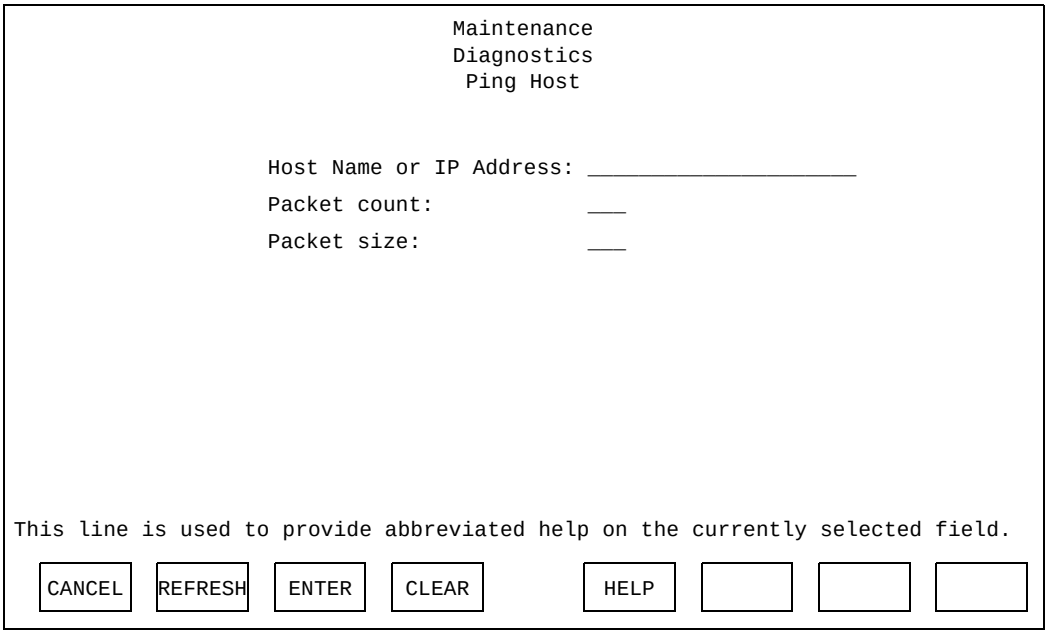
Task 13 is performed to test the TCP/IP connection to ensure that connectivity exists between the MAPD and the customer's LAN, as well as between the MAPD and a client. This testing should be done jointly with the customer's LAN administrator.

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 DLG." Select `Maintenance, Diagnostics`, and then `Ping Host`. The screen "Ping Host" follows.



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 service 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.

System Administration

3

This chapter presents the screens used to administer and maintain the system. Sample configurations are located in Appendix E, "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 TSC.[1]

- 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 the DEFINITY LAN Gateway application and CV/LAN stands for the CallVisor ASAI 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, "Using the 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.
4. 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
ACTION	Toggles to activate or deactivate CV/LAN ISDN alarm.
ADD	Accesses new screen for adding data.
APPL	Appears on Application Port Assignment screen. Toggles port assignment between DLG and CV/LAN applications.
ASSIGN	Assigns port numbers to node IDs for CV/LAN.
CANCEL	Aborts operation and returns you to previous menu or screen.
CHGPW	Appears on the Login/Password Administration screen. Displays the screen for changing passwords.
CLEAR	Clears the field the cursor is located on.
CLIENT	Displays a list of clients associated with a node ID.
DELETE	Deletes data the cursor is on (either an item or a line depending on the screen). Prompts: **`Are you sure? (Y/N)`** before deleting data.
DROP	Drops connections to clients.
ENTER	On menu screens, executes the selected action. On other screens, enters updates or additions typed and returns you to previous screen.
EXIT	On menu screens, redisplays previous screen. Returns you to login prompt from Main Menu.
HELP	Displays help screen for selected field. Then, when RETURN is pressed, redisplays screen from which help was requested.
MSGPER	On DLG and CV/LAN Port Status/Control screen, accesses Message Collection Period screen.
NXTDAY	Accesses next day's data. On the last day, wraps to first day.
NXTPG	Displays next page of a multi-page screen. On the last page, wraps to first page.
PORT	Accesses screen to associate a port to a node ID.
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 this document should be considered a function key and not a regular key on the keyboard.

List of Screens (DLG and CV/LAN)

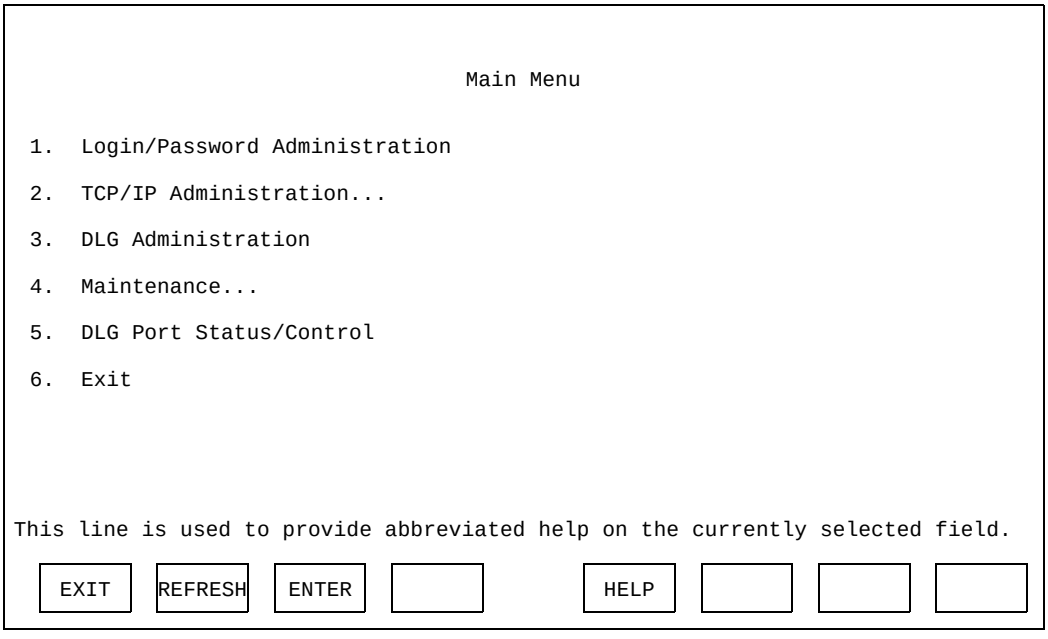
A list of the system administration screens appears below. This list shows the screen hierarchy and all the screens that will appear if both CV/LAN and DLG are installed.

List of Screens (DLG)

A list of the system administration screens appears below. This list depicts the screen hierarchy and all the screens that will appear if only DLG is installed.

Field Names and Descriptions

Main Menu (DLG)



Screen 3-1. Main Menu (DLG)

Main Menu (DLG and CV/LAN)

```
                                Main Menu

 1.  Login/Password Administration

 2.  TCP/IP Administration...

 3.  Port Administration...

 4.  Maintenance...

 5.  DLG Port Status/Control

 6.  CV/LAN Port Status/Control

 7.  Exit


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

  EXIT    REFRESH    ENTER                    HELP
```

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

NOTE:
This screen will appear only if CV/LAN is also installed.

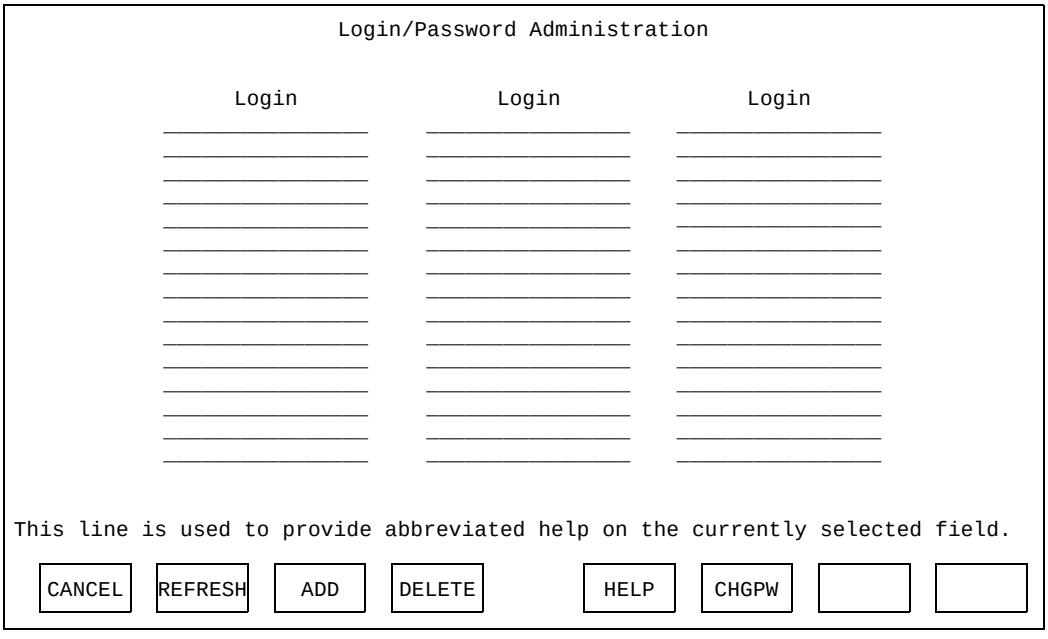
Menu Item	Description
Login/Password Administration	Allows administrators to add and delete user logins. Allows administrators and users to modify passwords.
TCP/IP Administration	Provides access to all administrable network data: network name, IP address of the MAPD board the user is accessing, all locally known hosts, and all network routing information.
Port Administration	Provides access to administration of virtual BRI ports. Only applies to Screen 3-2.
DLG Administration	Provides access to a screen for viewing, adding, and deleting DLG Clients. Only applies 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.
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. Only applies to Screen 3-2.
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.)

Login/Password Administration

NOTE:
Only the primary administrator using login = `asai_adm` is allowed to add or delete logins. (The ADD and DELETE keys only appear for the primary administrator login.) Also, only the `asai_adm` login can be used to change a password for any login.



Screen 3-3. Login/Password Administration

This screen is used to view and delete logins. It also provides access to the **Add Logins** and **Change Passwords** screens. Logins are listed in alphabetical order. A maximum of 45 logins may be administered.

Field Name	Description
Login	Lists all administered logins. Maximum login length is 15 characters.

Use this screen as follows:

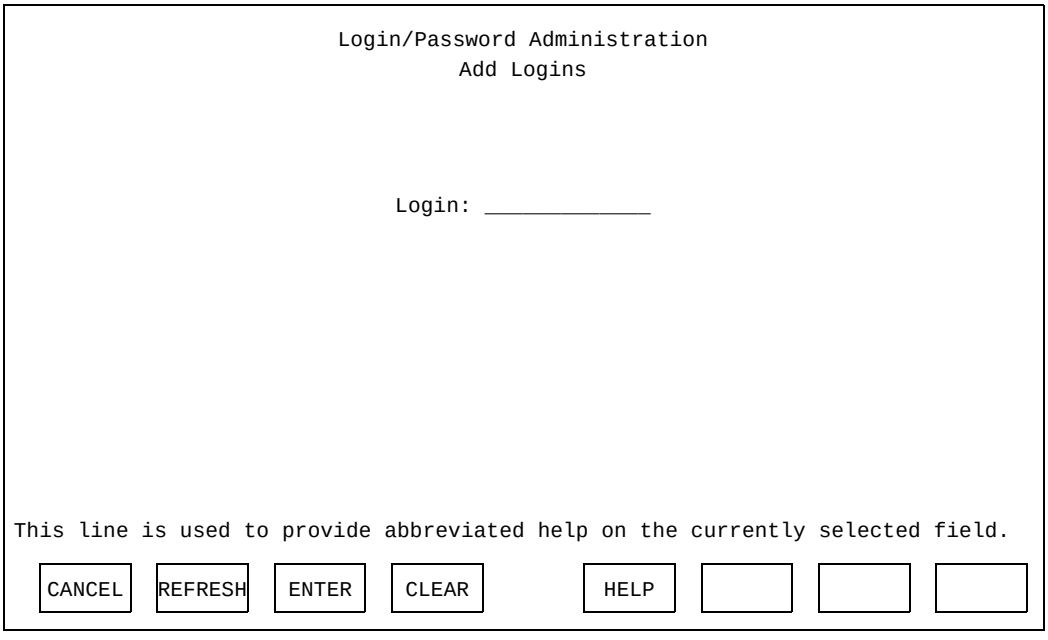
- To delete a login:
  1. Press TAB or use the arrow keys to move to the login you want to delete, and then press DELETE**.**
  2. The following prompt appears: **`Are you sure? (Y/N).`** Type `Y` and press RETURN. The screen reappears, minus the deleted login.

     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_adm` 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.



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_adm` 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_adm` 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:

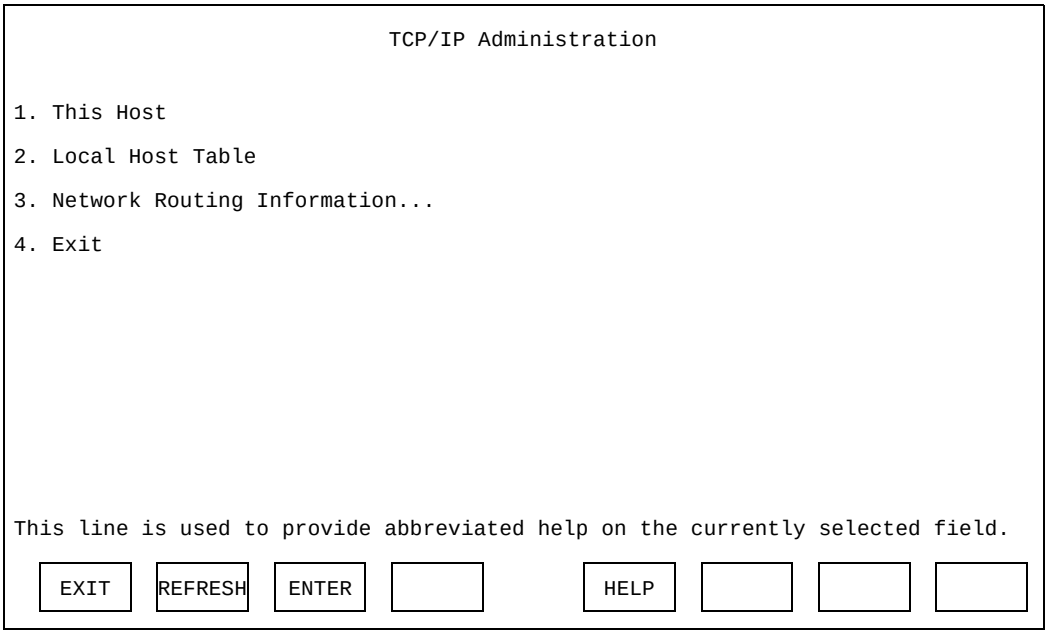
   Type the new password and press RETURN.

   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

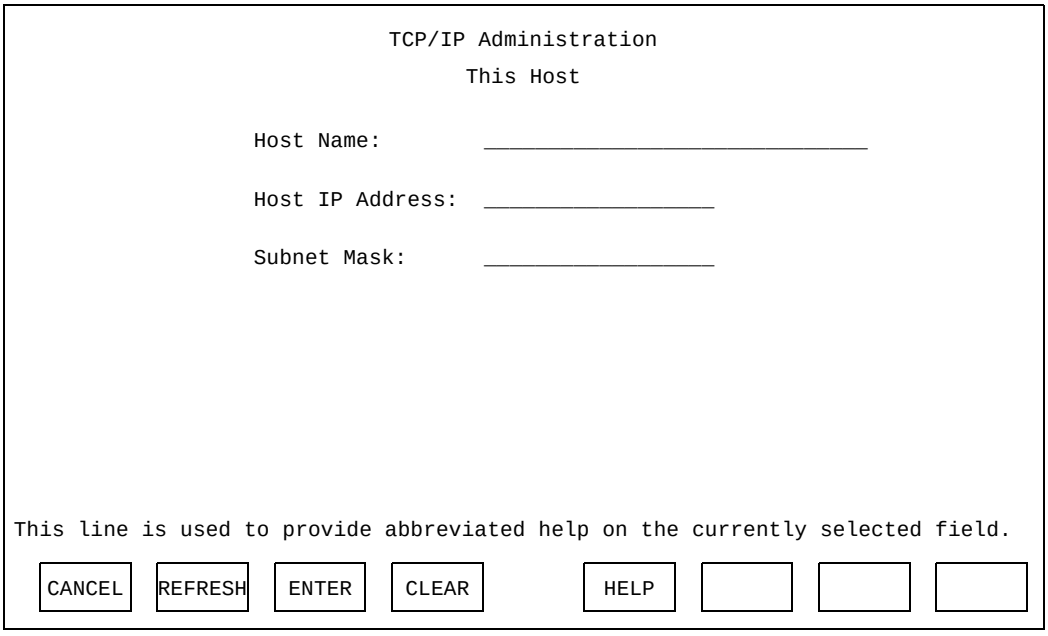


Screen 3-6. TCP/IP Administration

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



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 3-25, "Reset System (DLG)" and "Reset System (DLG and CV/LAN)" in this chapter.

Field Name	Field 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.	

1. R = Required field.

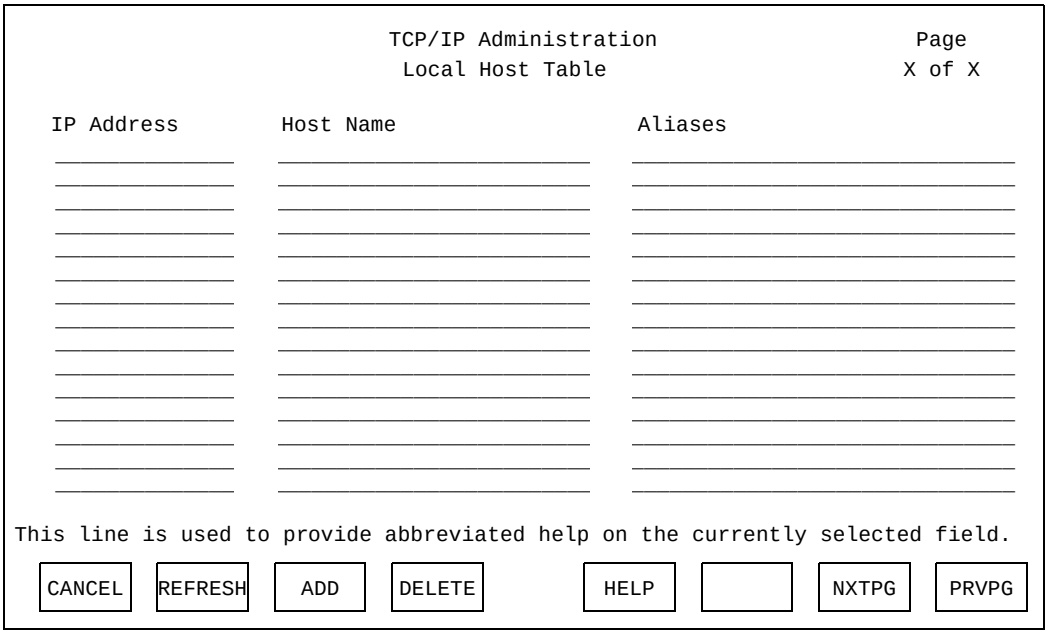
Use this screen as follows:

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.

Local Host Table



Screen 3-8. Local Host Table

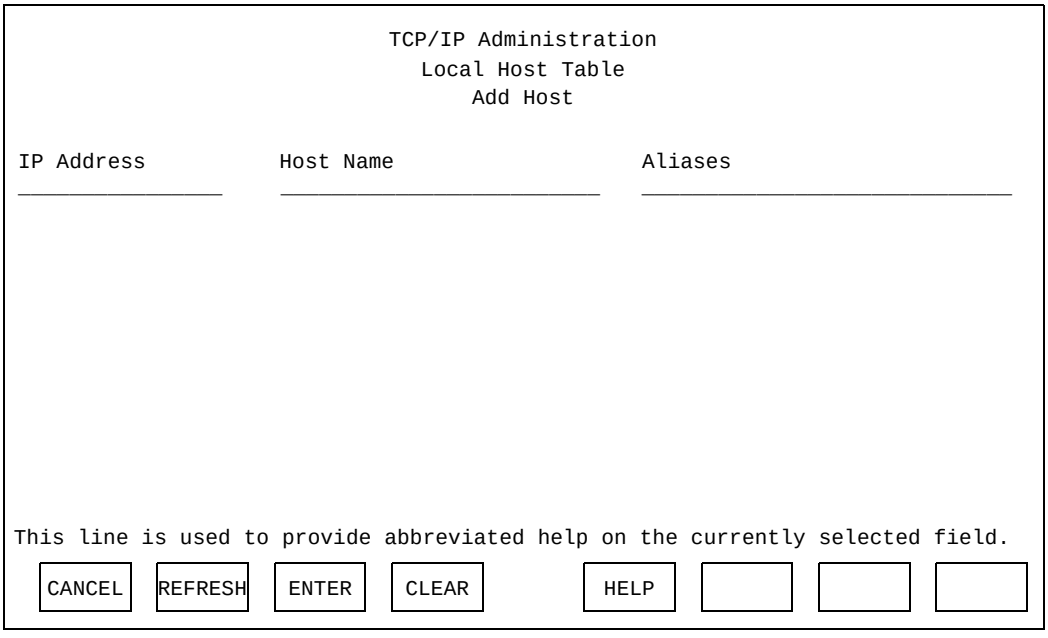
This screen is used to resolve host names. Each locally known host appears on this screen in alphabetical order by host name. A maximum of 84 local hosts may be administered. Defaults or preadministered entries may appear when the screen is first accessed. Users can add or change entries.

Field Name	Description
IP Address	IP address of locally known host. Maximum field size = 15 characters.
Host Name	Name of locally known host. Several defaults are provided. 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:

- 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



Screen 3-9. Add Host

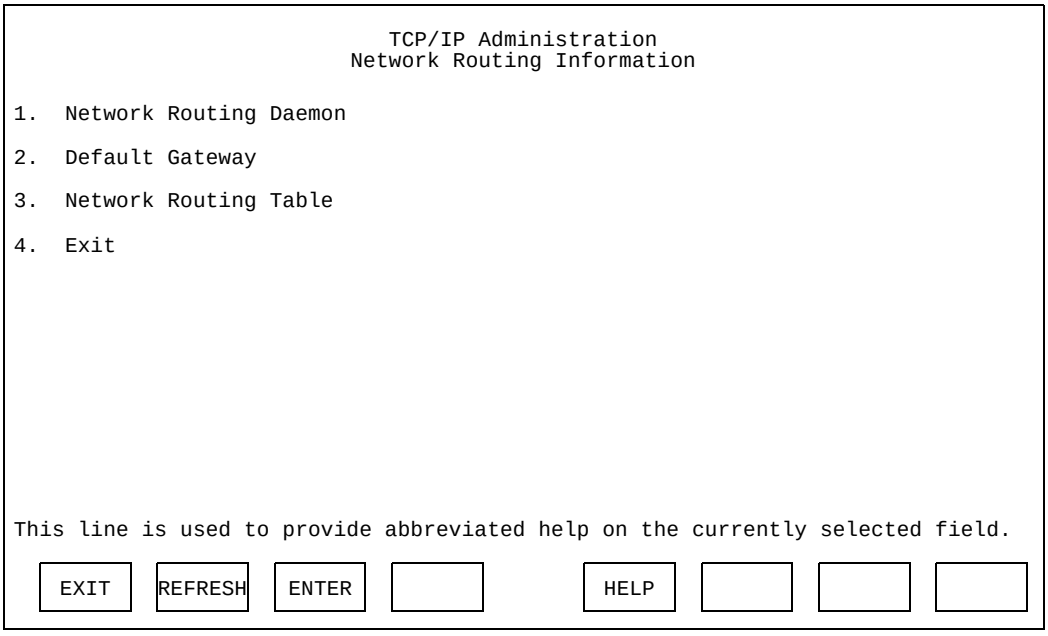
This screen is used to add hosts. When you add a host using this screen, after you press the ENTER function key, the previous screen reappears with the cursor positioned at the beginning of the new entry.

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 filed, 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



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 on or `off`. When on, the network routing daemon can automatically find routes to other networks. **Default = on**.

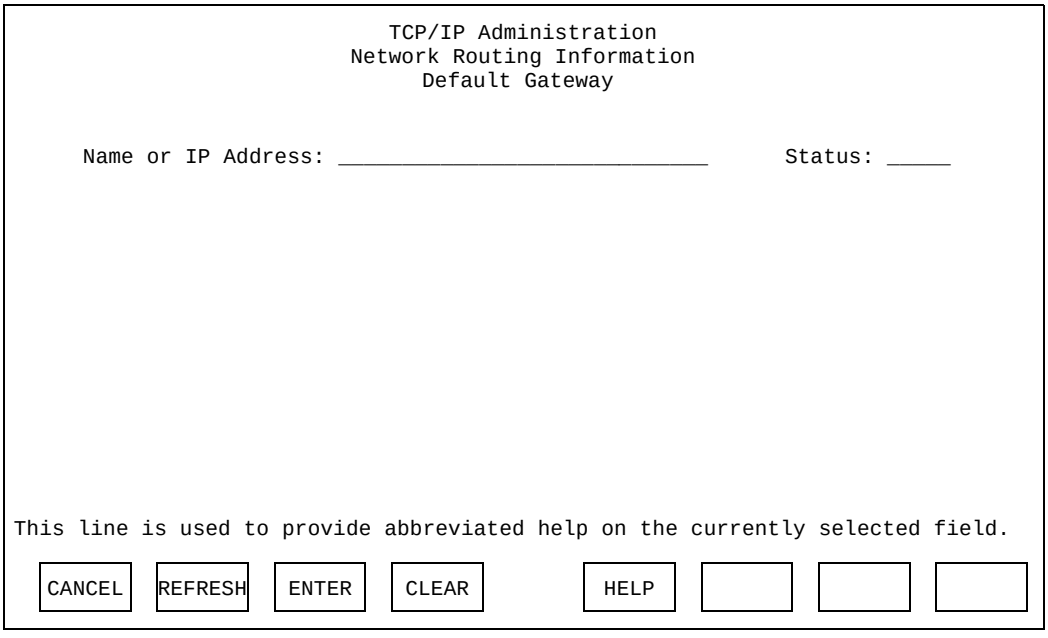
Use this screen as follows:

- 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



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 up or down. If down, 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. Next time when 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.

Network Routing Information — Network Routing Table

```
                    TCP/IP Administration                      Page
                Network Routing Information                   x of x
                    Network Routing Table

    Destination                Type       Gateway                     Status

  _________________________   _________  _________________________   _____
  _________________________   _________  _________________________   _____
  _________________________   _________  _________________________   _____
  _________________________   _________  _________________________   _____
  _________________________   _________  _________________________   _____
  _________________________   _________  _________________________   _____
  _________________________   _________  _________________________   _____
  _________________________   _________  _________________________   _____
  _________________________   _________  _________________________   _____
  _________________________   _________  _________________________   _____
  _________________________   _________  _________________________   _____
  _________________________   _________  _________________________   _____
  _________________________   _________  _________________________   _____

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

 [CANCEL] [REFRESH] [ ADD ] [DELETE]       [ HELP ] [      ] [NXTPG] [PRVPG]
```

Screen 3-13. Network Routing Table

This screen has two uses.

1. If automatic routing is not enabled (see Screen 3-13, "Network Routing Daemon"), users can administer the set of network routes.
2. If automatic routing is enabled, it displays the current set of network routes provided by the Network Routing Daemon.

Routes appear on this screen in numerical order by IP address. A maximum of 65 routes may be administered.

NOTE:
If the routing daemon is enabled, the ADD and DELETE keys do not appear on this screen.

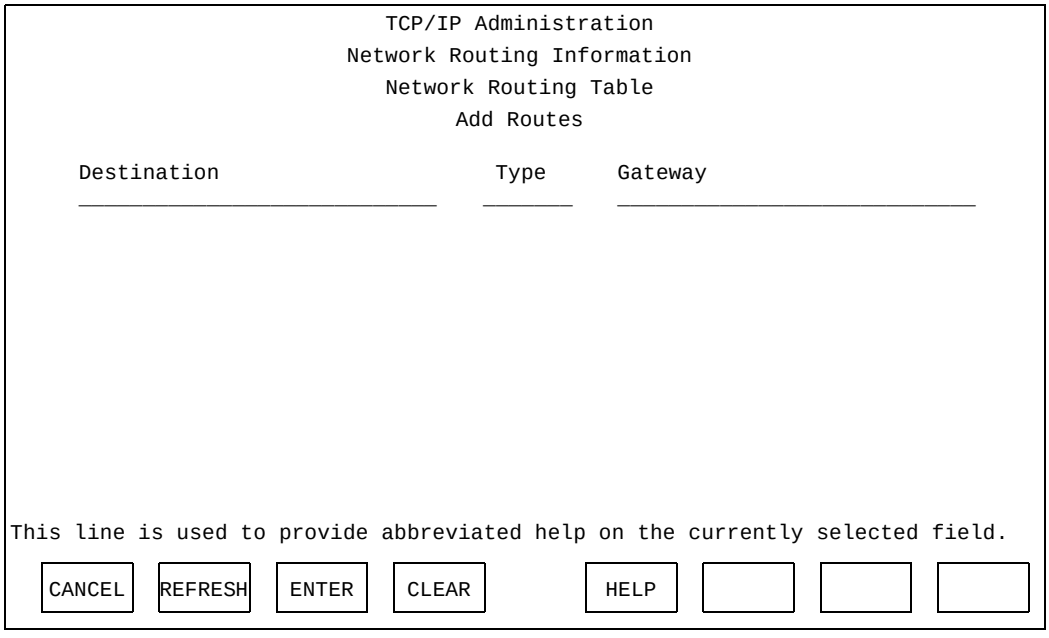
Field Name	Description
Destination	Name or IP address of a host, or a partial IP address of a network. Maximum field size = 20 characters.
Type	The type of destination, either `host` or `network`. (Most routes are to network destinations.)
Gateway	Name or IP address of the gateway, the machine used to route all traffic to the given destination. Maximum field size = 20 characters.
Status	Either `up` or `down`. If `down`, 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



Screen 3-14. Add Routes

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

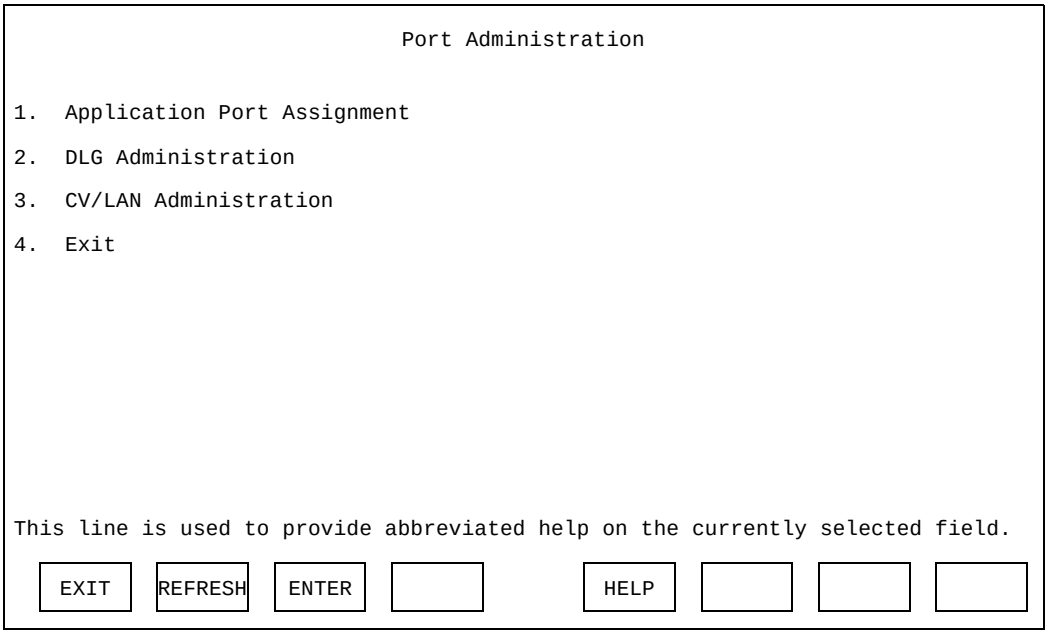
When you add a route, after you press the ENTER function key, the previous screen reappears with the cursor positioned at the beginning of the new entry.

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 `host` or `network`. (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



Screen 3-15. Port Administration

NOTE:
This screen will appear only if CV/LAN is also installed.

Menu Item	Description
Application Port Assignment	Provides access to screens for assigning the DEFINITY system BRI ports to either the DLG or CallVisor 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

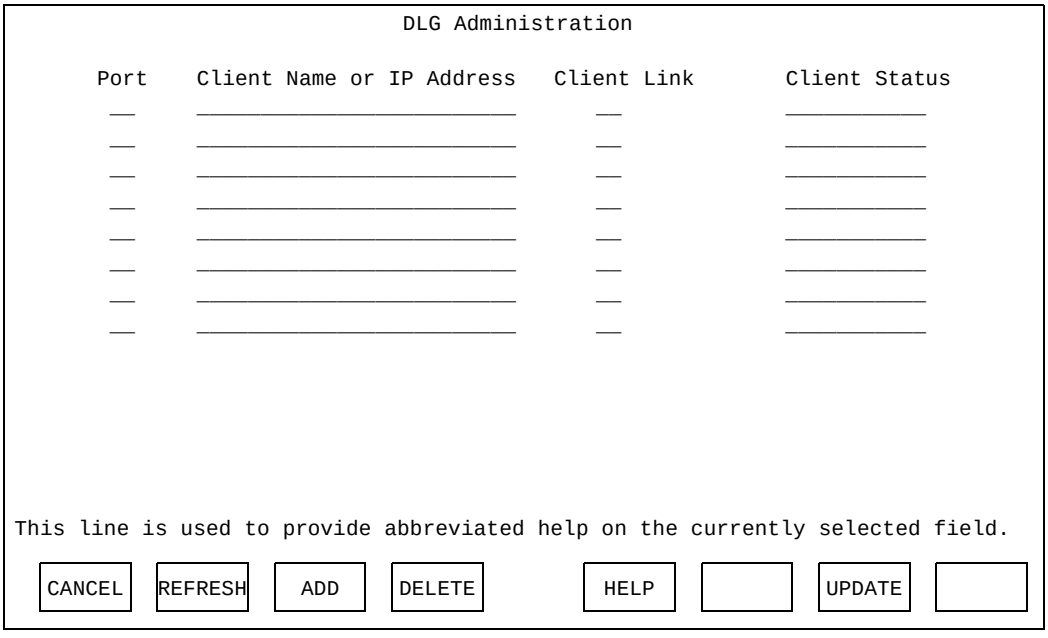
NOTE:
This screen will appear only if CV/LAN is also installed.

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



Screen 3-17. DLG Administration

This screen is used to associate clients with ASAI ports on the DEFINITY system. 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.

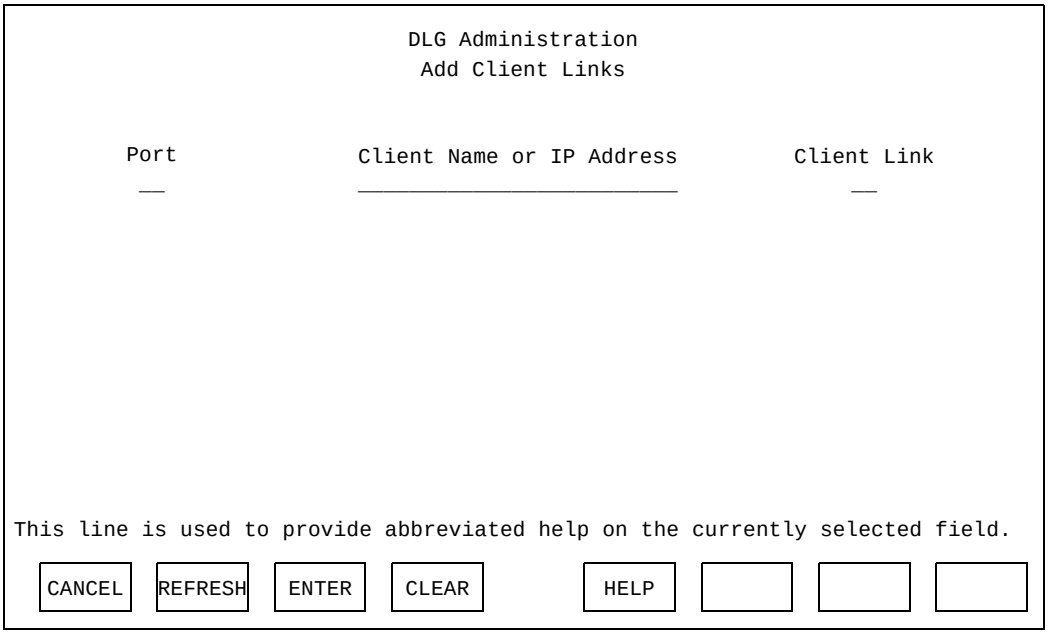
Field Name	Description
Port	Port number used on the DEFINITY system. Valid range is 1 to 12. Each port can only be assigned once.
Client Name or IP Address	Host name or IP address of the client machine authorized to connect to this port. (Network name of the adjunct.) Must be resolvable by the local 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.

Add Client Link



Screen 3-18. Add Client Link

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 system. 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

NOTE:
This screen will appear only if CV/LAN is also installed.

Field Name	Description
Node ID	**Read-only**. Node ID used by CV/LAN clients.
Port	Port number used on the DEFINITY system. 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.

CV/LAN Administration — Clients for Node ID signalXX

```
                              CV/LAN Administration                    Page
                          Clients for Node ID signalXX                 X of X

Client Name or IP Address     Status      Client Name or IP Address     Status
_________________________  __________  _________________________  __________
_________________________  __________  _________________________  __________
_________________________  __________  _________________________  __________
_________________________  __________  _________________________  __________
_________________________  __________  _________________________  __________
_________________________  __________  _________________________  __________
_________________________  __________  _________________________  __________
_________________________  __________  _________________________  __________
_________________________  __________  _________________________  __________
_________________________  __________  _________________________  __________
_________________________  __________  _________________________  __________
_________________________  __________  _________________________  __________
_________________________  __________  _________________________  __________
_________________________  __________  _________________________  __________
_________________________  __________  _________________________  __________

This line is used to provide abbreviated help on the currently selected field.
 CANCEL  REFRESH  ADD  DELETE  HELP  UPDATE  DROP
```

Screen 3-20. Clients for Node ID signalXX

NOTE:
This screen will appear only if CV/LAN is also installed.

This screen is used to associate CV/LAN clients with ASAI ports on the DEFINITY system. It allows the user to add up to 60 entries per port.

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 be an IP address. Maximum field size = 20 characters.
Status	**Read-only**. Either **`in use`** or **`idle`**. Idle client states may be modified or deleted. If you attempt to delete a client which is in use, the connection to that client will be disconnected.

Use this screen as follows:

- To drop the connection to a client:

Press TAB or use the arrow keys to move the cursor to the entry whose connection you want to drop, and then press DROP.

4. 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.

5. 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:

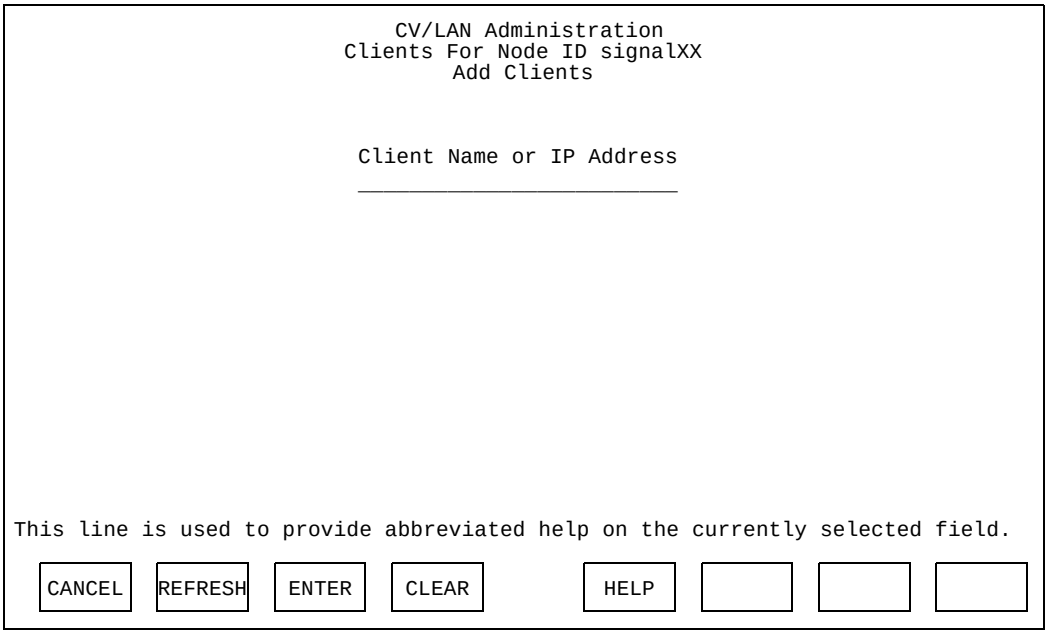
1. Press TAB or use the arrow keys to move the cursor to the entry of the client you want to delete, and then press DELETE.
2. The following prompt appears: **`Are you sure? (Y/N)`**. Type Y and press RETURN**.**

   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



Screen 3-21. Add Client

NOTE:
This screen will appear only if CV/LAN is also installed.

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 CANCEL if you do not want to add what you just typed, or press ENTER 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

NOTE:
This screen will appear only if CV/LAN is also installed.

This screen is used to assign a DEFINITY system 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 system. Valid range is 1 to 12.

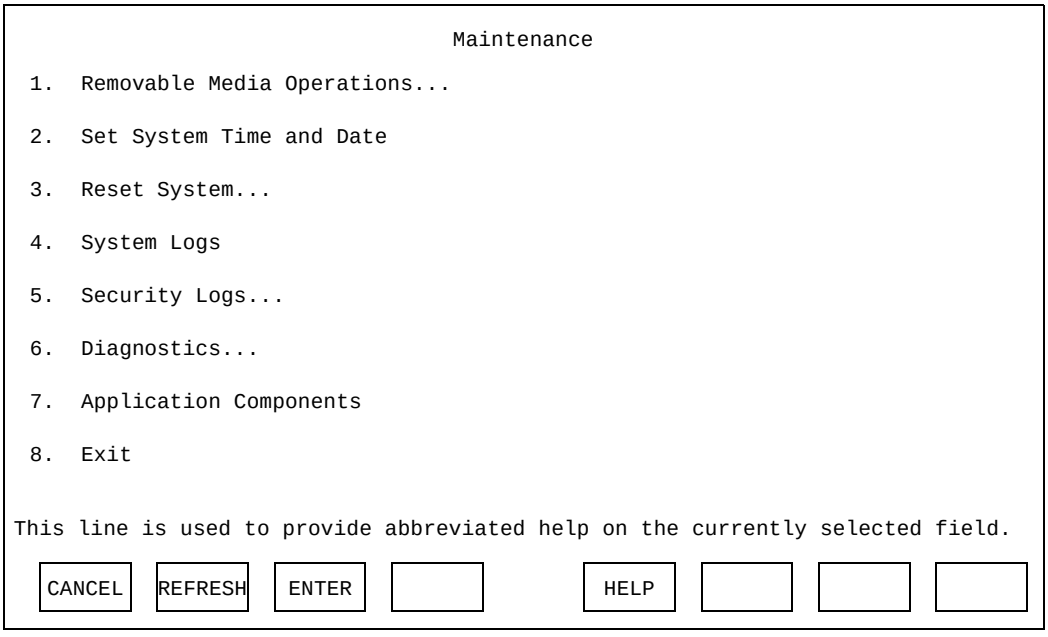
Use this screen as follows:

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.

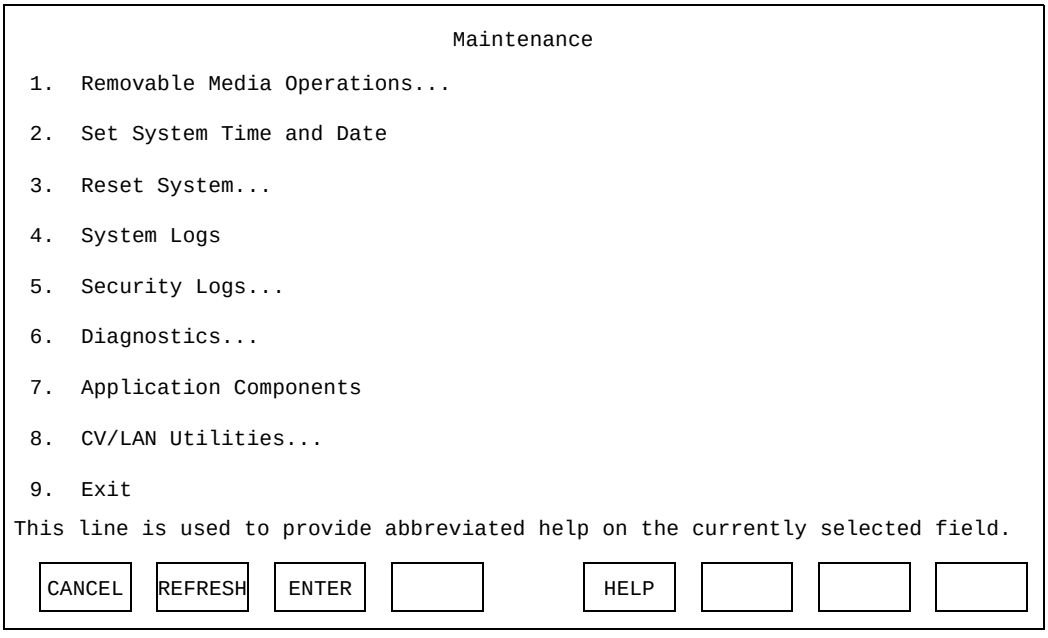
3. Then press CANCEL and the previous screen will appear.

Maintenance (DLG)



Screen 3-23. Maintenance (DLG)

Maintenance (DLG and CV/LAN)



Screen 3-24. Maintenance (DLG and CV/LAN)

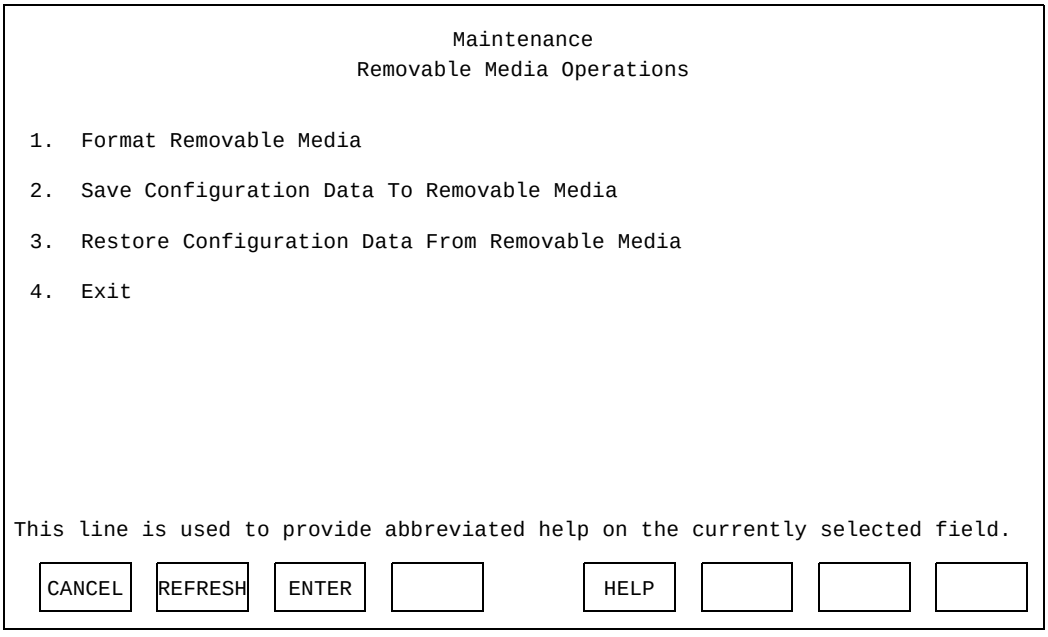
NOTE:
This screen will appear only if CV/LAN is also installed.

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.

Menu Item	Description
Application Components	Provides access to identification information about each application.
CV/LAN Utilities	Provides access to a variety of CV/LAN utilities. Only applies to screen 3-24.
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



Screen 3-25. Removable Media Operations

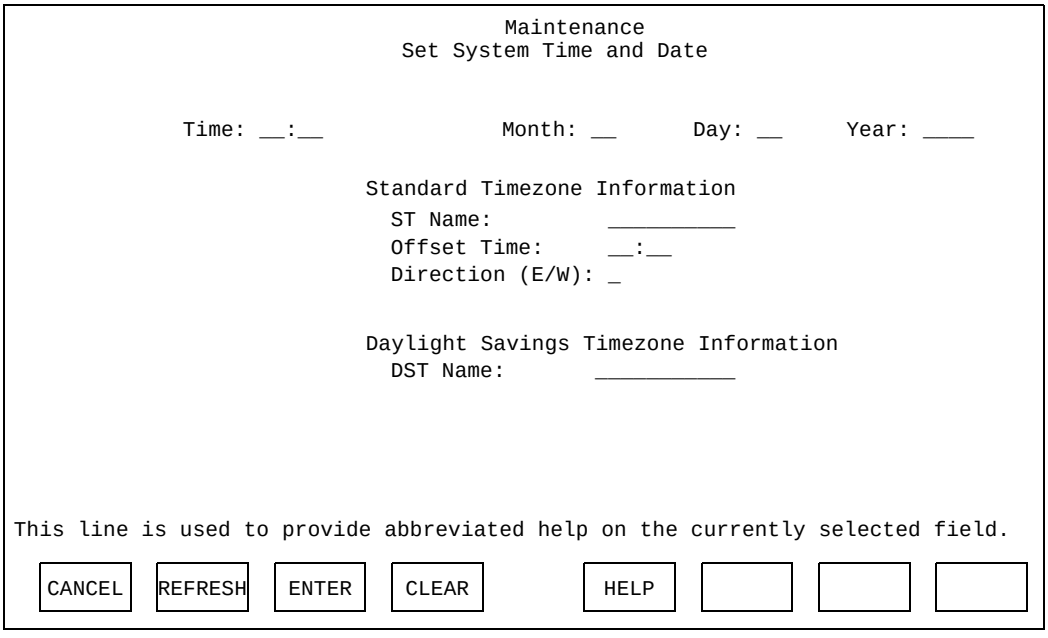
Menu Item	Description
Format Removable Media	Instructs the system to format the removable media.
Save Configuration Data to Removable Media	Instructs the system to start a backup of all its configuration data.
Restore Configuration Data From Removable Media	Begins restoring configuration data from removable 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



Screen 3-26. 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 am. Standard Time begins on the last Sunday of October at 2 am. 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 standard time zone.

- 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.

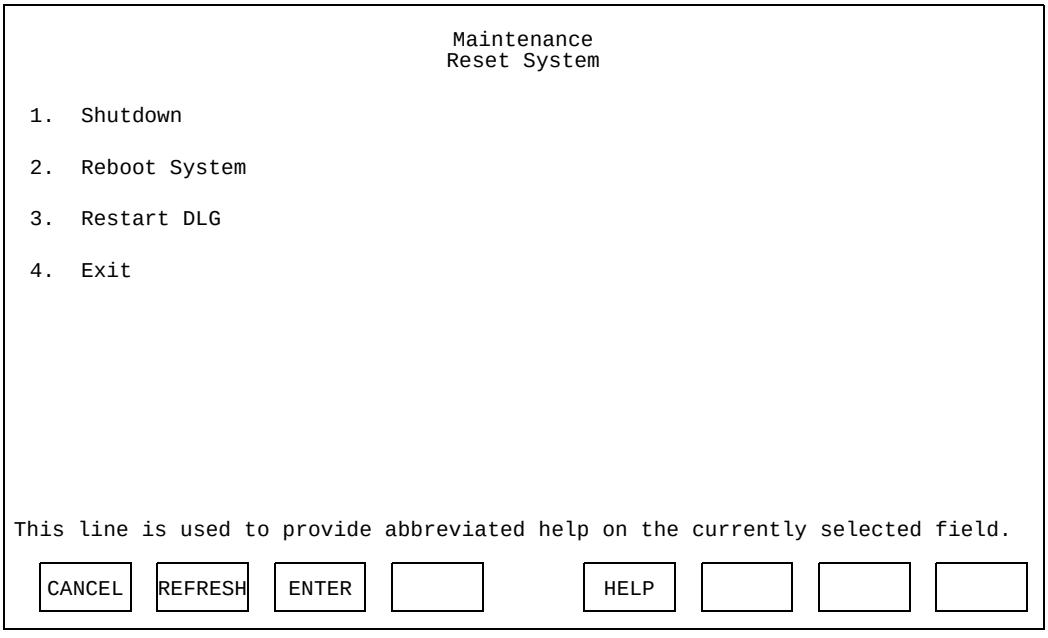
3. If you do not want to enter a second time zone, be sure **DST Name** is clear and then skip to step 4.

   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.

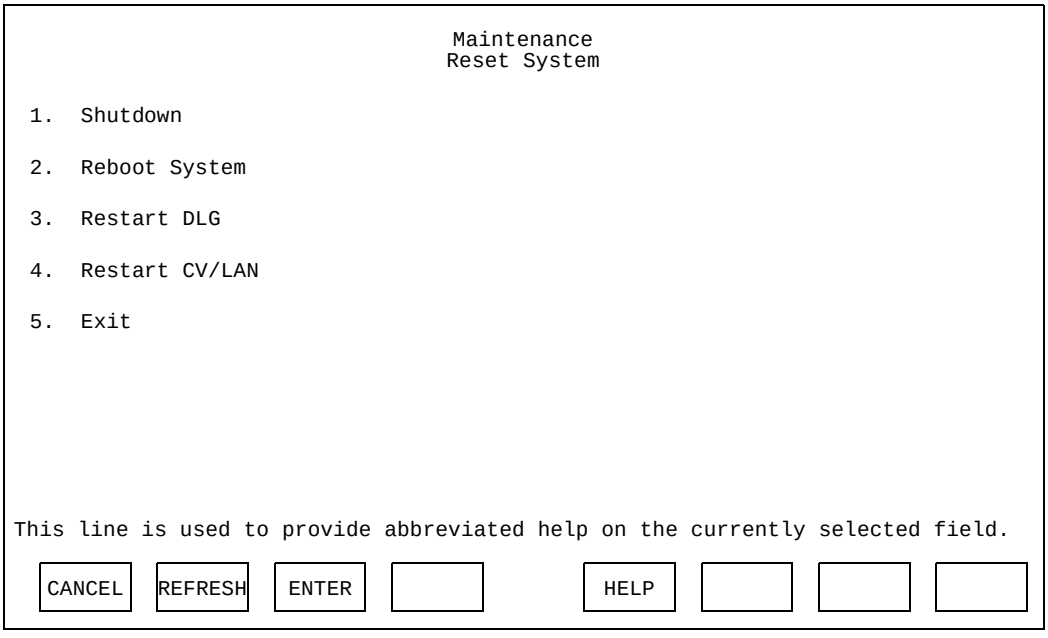
4. Press ENTER when you are done typing data. The **Maintenance** menu reappears.

Reset System (DLG)



Screen 3-27. Reset System (DLG)

Reset System (DLG and CV/LAN)



Screen 3-28. Reset System (DLG and CV/LAN)

NOTE:
This screen will appear only if CV/LAN 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	Reintializes the DLG application.
Restart CV/LAN	Reintializes the CallVisor CV/LAN application.Only applies to screen 3-28.
Exit	Returns you to the 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
```

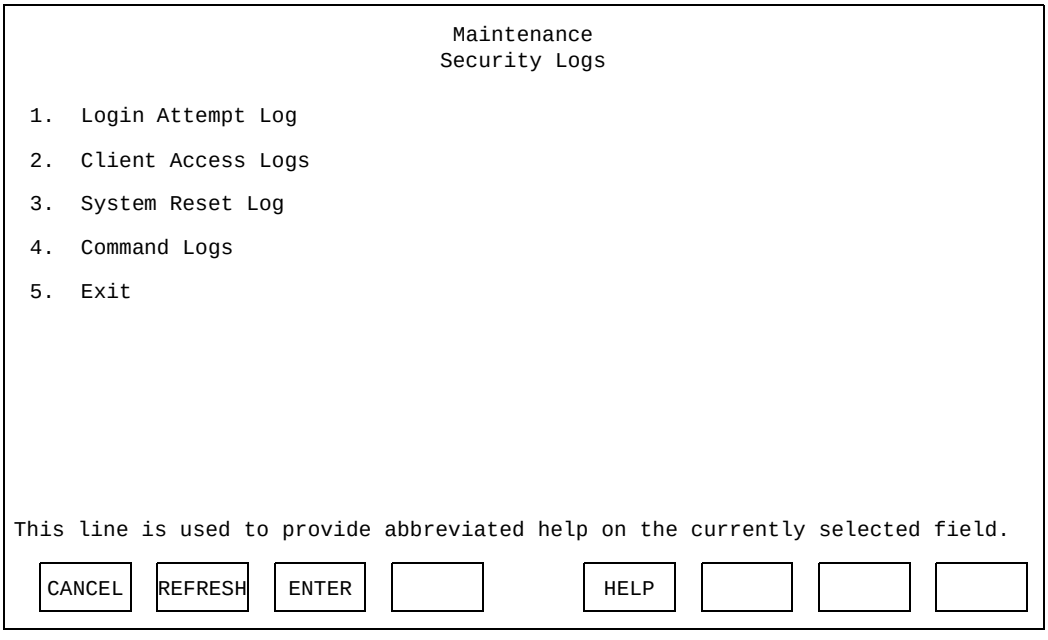
Screen 3-29. System Logs

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



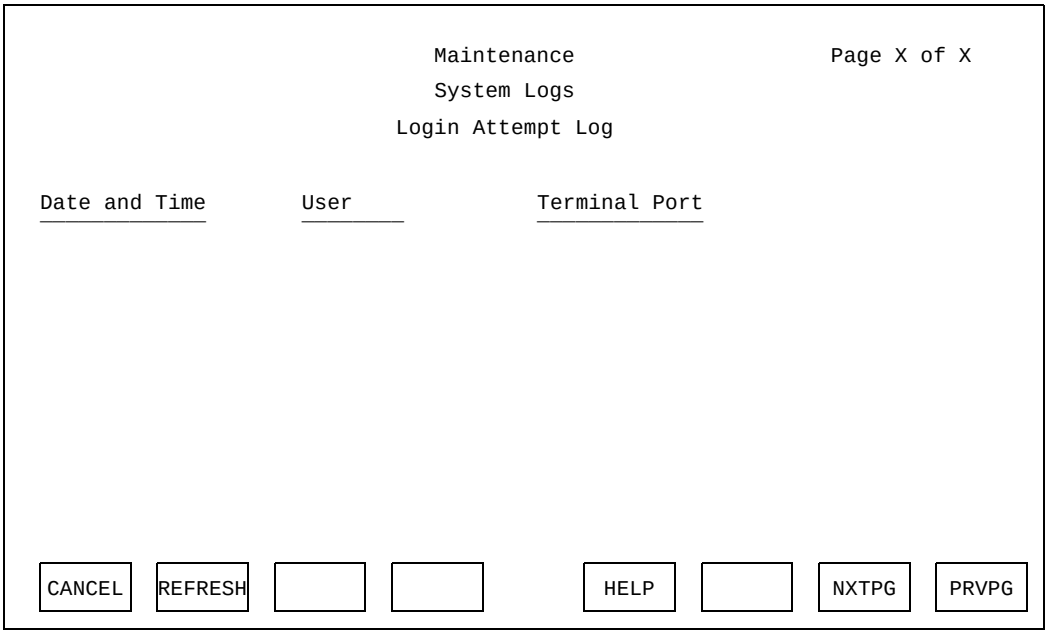
Screen 3-30. Security Logs

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



Screen 3-31. 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 NXTPG and PRVPG to step through multiple pages.

Security Logs — Client Access Log

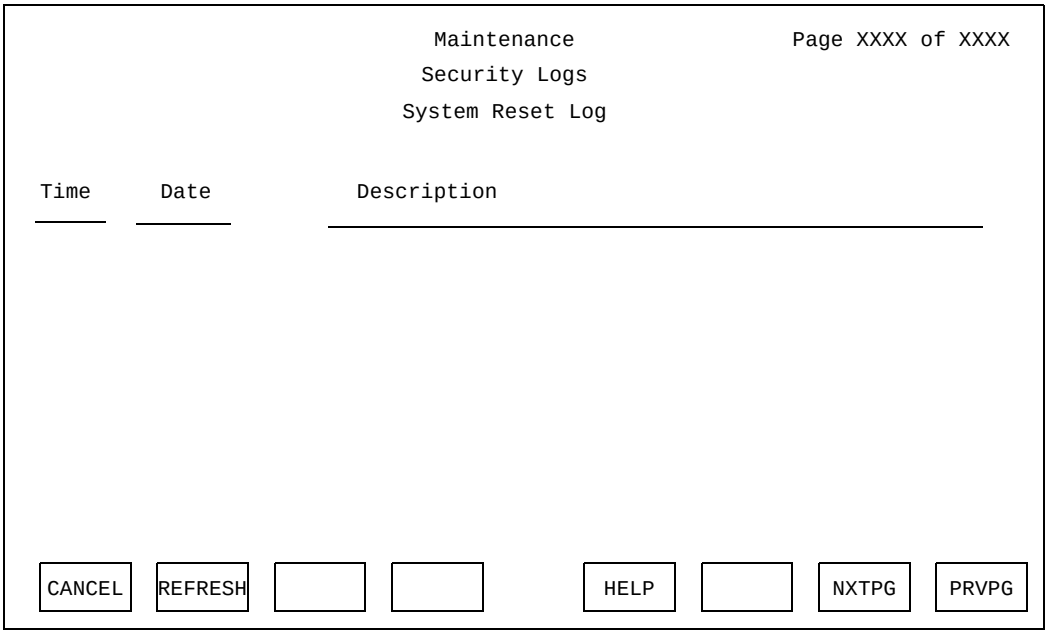
```
   <Date>                          Maintenance                  Page XXXX of XXXX
                                 Security Logs
                              Client Access Logs
Time     Type      Process  Description
_______  ________  _______  ____________________________________________________


This line is used to provide abbreviated help on the currently selected field.
 CANCEL  REFRESH  NXTDAY  PRVDAY        HELP          NXTPG  PRVPG
```

Screen 3-32. 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 `Brouter` and **`oam_ui`**.
Description	Description of the client access activity. Example: **`client/3520 TCP_Connect`**.

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

Security Logs — System Reset Log

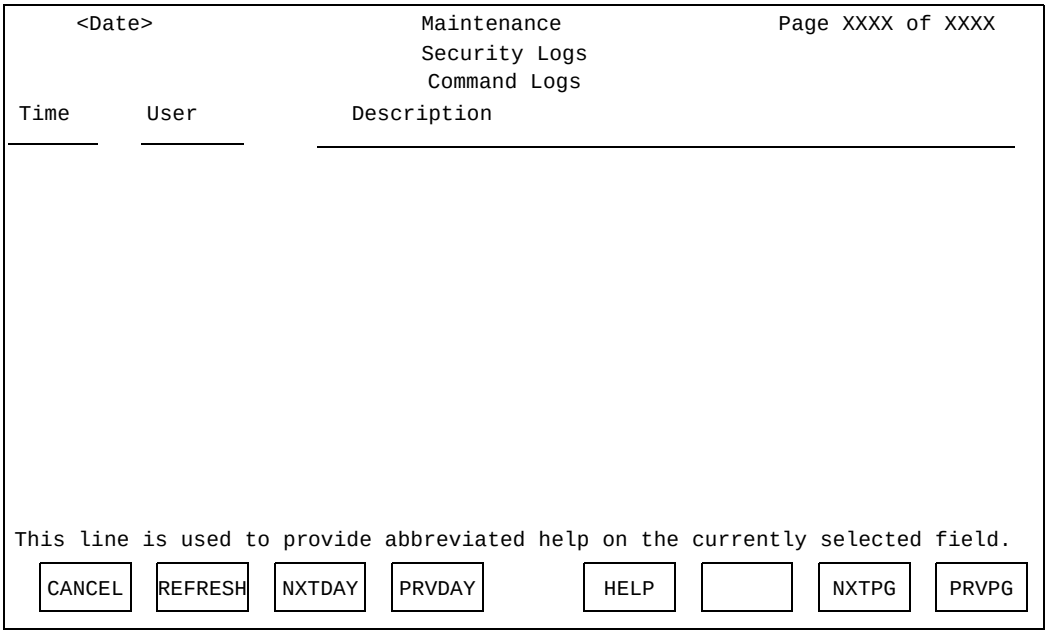


Screen 3-33. System Reset Log

Field Name	Description
Time	Time of the reset (Hour:Minutes:Seconds).
Date	Date of the reset (MM/DD/YY).
Description	Description of the reset (system boot).

To use this screen, press NXTPG and PRVPG to step through multiple pages.

Security Logs — Command Log



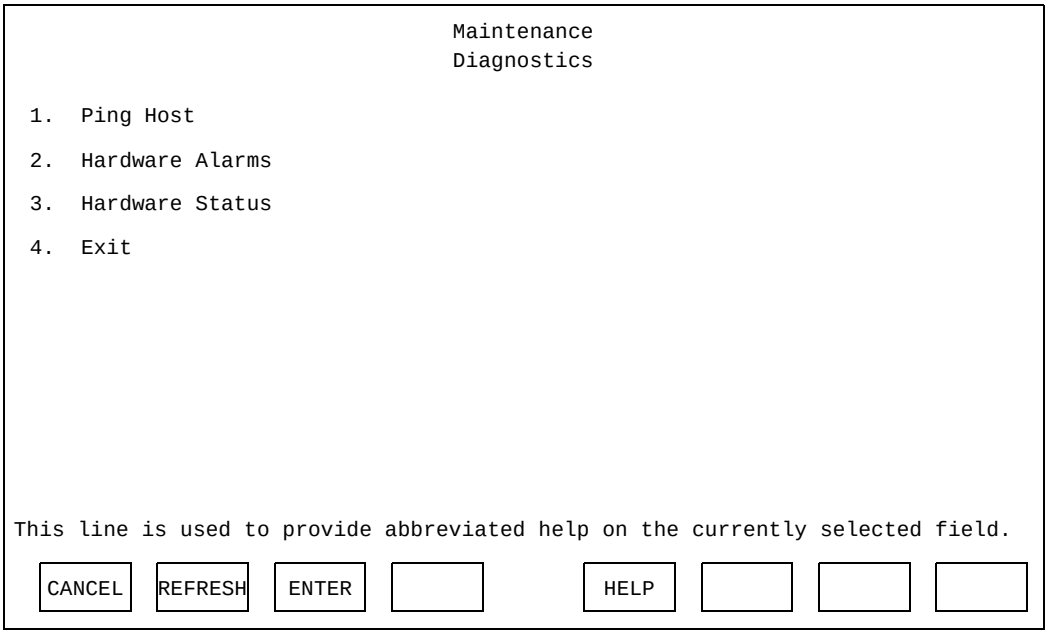
Screen 3-34. Command Log

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 asaimapd.**

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

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

Diagnostics



Screen 3-35. Diagnostics

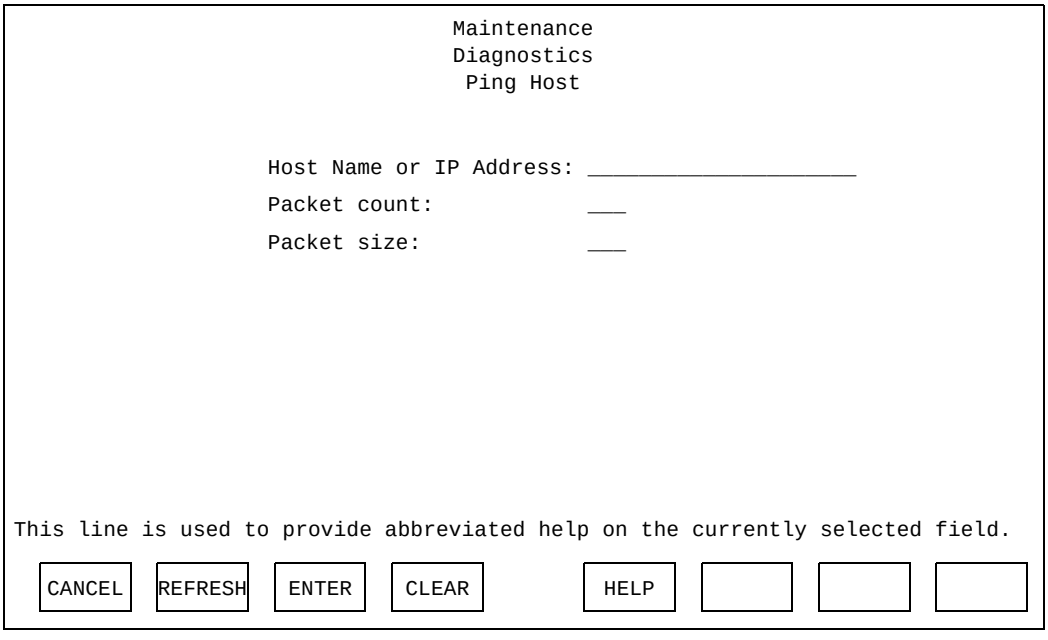
This screen allows the user to test connections and check alarms and status for hardware.

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



Screen 3-36. 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 TAB or the arrow keys to move from field to field.
2. When you are done entering data, press ENTER to enter the data, or CANCEL to return to the **Maintenance** menu. If you press ENTER, this displays the results and redisplays this screen. (You can do multiple pings.)

Diagnostics — Hardware Alarms

```
TN Code/Vintage:
        TN801B   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 3-37. Hardware Alarms

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

Field Name	Description
TN Code/Vintage	Displays the MAPD (TN801B) board code and vintage as reported by the DEFINITY system.
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

```
TN Code/Vintage:
        TN801B   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 3-38. Hardware Status

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

Field Name	Description
TN Code/Vintage	Displays the MAPD (TN801B) board code and vintage as reported by the DEFINITY system.
FW Version	Displays the 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.

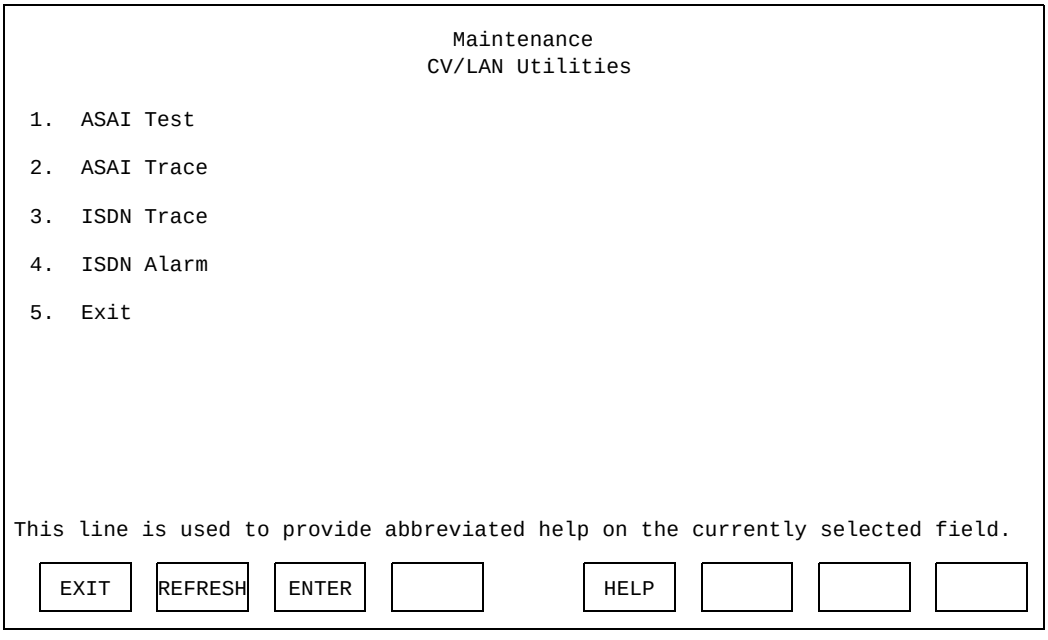
Application Components

```
=========== Application Packages ===========
DLG             DLG application
                (MAPD) Release 2.0, Issue 2.01
brm             BRM driver
                (MAPD) Release 2.0, Issue 2.01
cvasai          LUCENT CALLVISOR PC ASAI
                (MAPD) 6.1.0
cvisdn          LUCENT CALLVISOR PC ISDN
                (MAPD) 6.1.0
cvlansrv        LUCENT CV/LAN SERVER
                (MAPD) 6.1.0
cvmapd          LUCENT CALLVISOR PC OAM
                (MAPD) 6.1.0
klog            MAPD klog driver
                (MAPD) Release 2.0, Issue 2.01
mapd-ae         MAPD Application Environment
                (MAPD) Release 2.0, Issue 2.01

============ Platform Packages =============
angl            ANGEL Driver
                (MAPD) Release 2.0, Issue 2.01
bri             BRI Driver
                (MAPD) Release 2.0, Issue 2.01
:
```

Screen 3-39. Application Components

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

CV/LAN Utilities



Screen 3-40. CV/LAN Utilities

NOTE:
This screen will appear only if CV/LAN is also installed.

Menu Item	Description
ASAI Test	Tests communication with the DEFINITY system 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 system.
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 3-41. ASAI Test

NOTE:
This screen will appear only if CV/LAN is also installed.

The above screen 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 3-42. ASAI Trace

NOTE:
This screen will appear only if CV/LAN is also installed.

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

CV/LAN Utilities — ISDN Trace

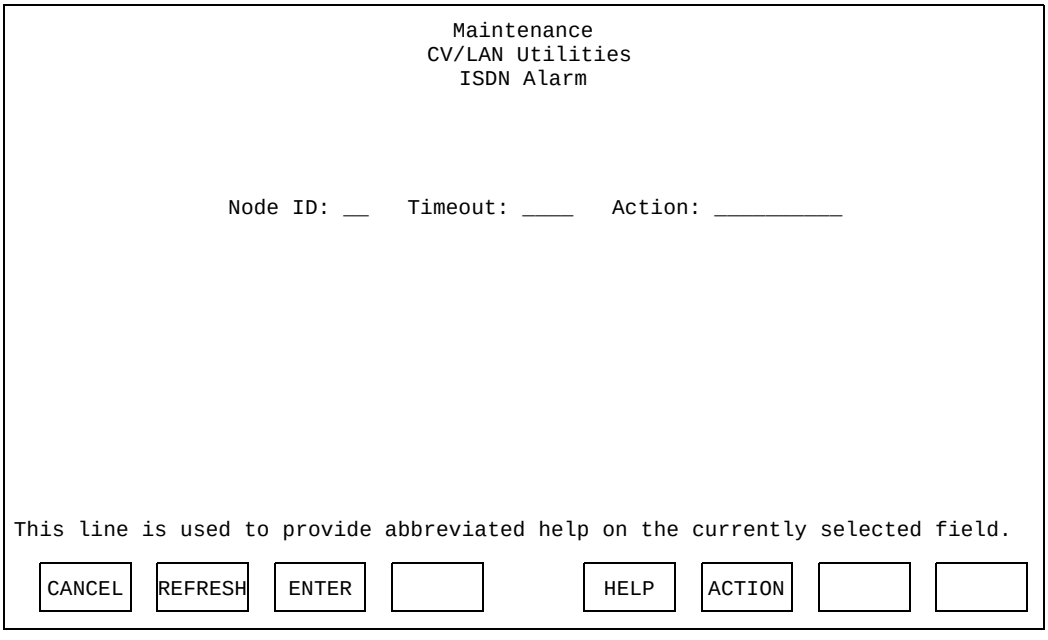
```
50539 IPCI gviSendSignal/0 MSG_TR[0]: 95 1c 00 08 02 00 06 64 96 1c 14 91
50539 IPCI gviSendSignal/12 MSG_TR[0]: a1 11 02 01 03 02 01 c4 40 09 96 49
50539 IPCI gviSendSignal/24 MSG_TR[0]: 06 83 32 34 30 35 b1 00 00 00 00 00
50542 IPCI rcv cc/0 MSG_TR[0]: 91 0e 00 08 02 80 06 62 96 1c 06 91
50542 IPCI rcv cc/12 MSG_TR[0]: a2 03 02 01 03 00 00 00 00 00 00 00
50760 IPCI gviSendSignal/0 MSG_TR[0]: 95 1c 00 08 02 00 08 64 96 1c 14 91
50760 IPCI gviSendSignal/12 MSG_TR[0]: a1 11 02 01 03 02 01 8a 40 09 96 49
50760 IPCI gviSendSignal/24 MSG_TR[0]: 06 8c 32 34 31 30 b0 00 00 00 00 00
50767 IPCI rcv cc/0 MSG_TR[0]: 91 0e 00 08 02 80 08 62 96 1c 06 91
50767 IPCI rcv cc/12 MSG_TR[0]: a2 03 02 01 03 00 00 00 00 00 00 00
50842 IPCI rcv cc/0 MSG_TR[0]: 91 1e 00 08 02 80 06 62 96 1c 16 91
50842 IPCI rcv cc/12 MSG_TR[0]: a1 13 02 01 02 02 01 95 40 0b 10 02
50842 IPCI rcv cc/24 MSG_TR[0]: 02 68 96 44 01 81 47 01 97 00 00 00
51063 IPCI rcv cc/0 MSG_TR[0]: 91 36 00 08 02 80 06 62 96 1c 2e 91
51063 IPCI rcv cc/12 MSG_TR[0]: a1 2b 02 01 02 02 01 95 40 23 0c 06
51063 IPCI rcv cc/24 MSG_TR[0]: 80 32 34 30 35 31 10 02 02 68 6c 06
51063 IPCI rcv cc/36 MSG_TR[0]: 80 32 34 30 35 31 70 06 80 32 34 31
51063 IPCI rcv cc/48 MSG_TR[0]: 30 30 96 44 01 81 47 01 9d 00 00 00
51066 IPCI rcv cc/0 MSG_TR[0]: 91 33 00 08 02 80 08 62 96 1c 2b 91
51066 IPCI rcv cc/12 MSG_TR[0]: a1 28 02 01 02 02 01 95 40 20 10 02
51066 IPCI rcv cc/24 MSG_TR[0]: 02 68 6c 06 80 32 34 30 35 31 70 06
51066 IPCI rcv cc/36 MSG_TR[0]: 80 32 34 31 30 30 96 47 01 91 49 06
51066 IPCI rcv cc/48 MSG_TR[0]: 8c 32 34 31 30 b0 00 00 00 00 00 00
```

Screen 3-43. ISDN Trace

NOTE:
This screen will appear only if CV/LAN is also installed.

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

CV/LAN Utilities — ISDN Alarm



Screen 3-44. ISDN Alarm

NOTE:
This screen will appear only if CV/LAN is also installed.

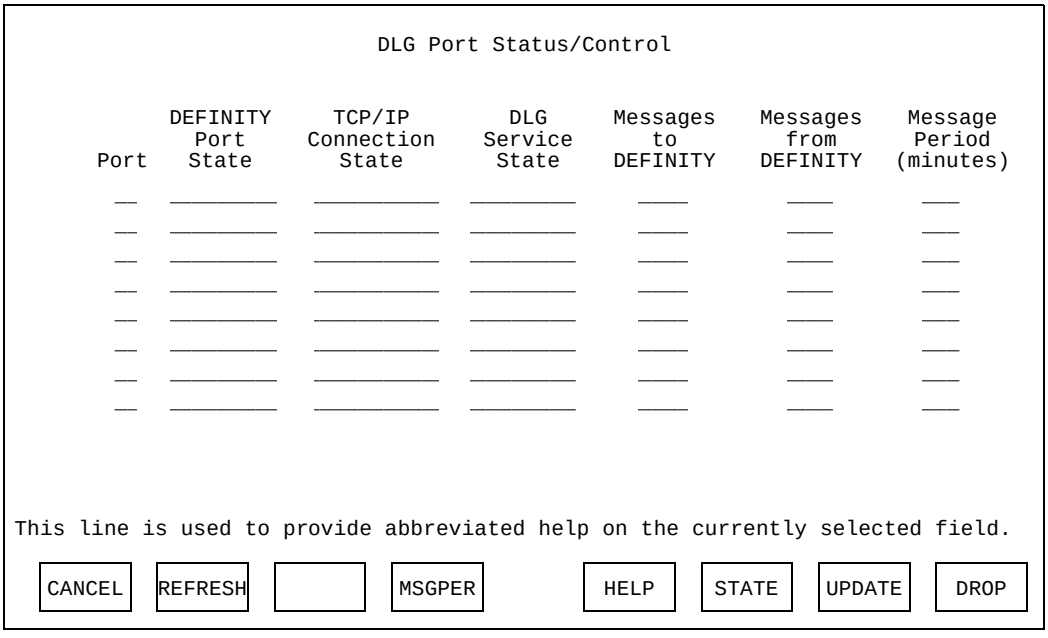
This screen can be used to activate or deactivate ASAI alarms on the DEFINITY system for a specific virtual BRI port.

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 system 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 system.

Use this screen as follows:

- To activate or deactivate ASAI alarms on the DEFINITY system 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



Screen 3-45. DLG Port Status/Control

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 system. To determine which client is associated with a particular port, See the Screen 3-19, ''DLG Administration.''
DEFINITY system Port State	**Read-only**. Possible port states are as follows: ■ **NOT CONNECTED** — The BRI port is not administered (or is busied out) on the DEFINITY system or Layer 1 is down. ■ **CONNECTED DOWN** — The BRI port is administered on the DEFINITY system but Layer 2 is not established. ■ **CONNECTED** — The BRI port is administered on the DEFINITY system and Layer 2 is established. ■ **BUSIEDOUT** — The BRI Port is administered on the DEFINITY system but has been busied out in the BRI driver on the MAPD. ■ **SW INTF DN** — The DEFINITY system interface (angel) is down. ■ **SW INTF DN BSY** — The DEFINITY system interface (angel) is down and the BRI Port has been busied out in the BRI driver on the MAPD.

Field Name	Description
TCP/IP Connection State	**Read-only**. ■ **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. ■ **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.**

Field Name	Description
Messages to the DEFINITY system	**Read-only**. The number of messages sent to the DEFINITY system in the last message collection period.
Messages from the DEFINITY system	**Read-only**. The number of messages sent by the DEFINITY system 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.

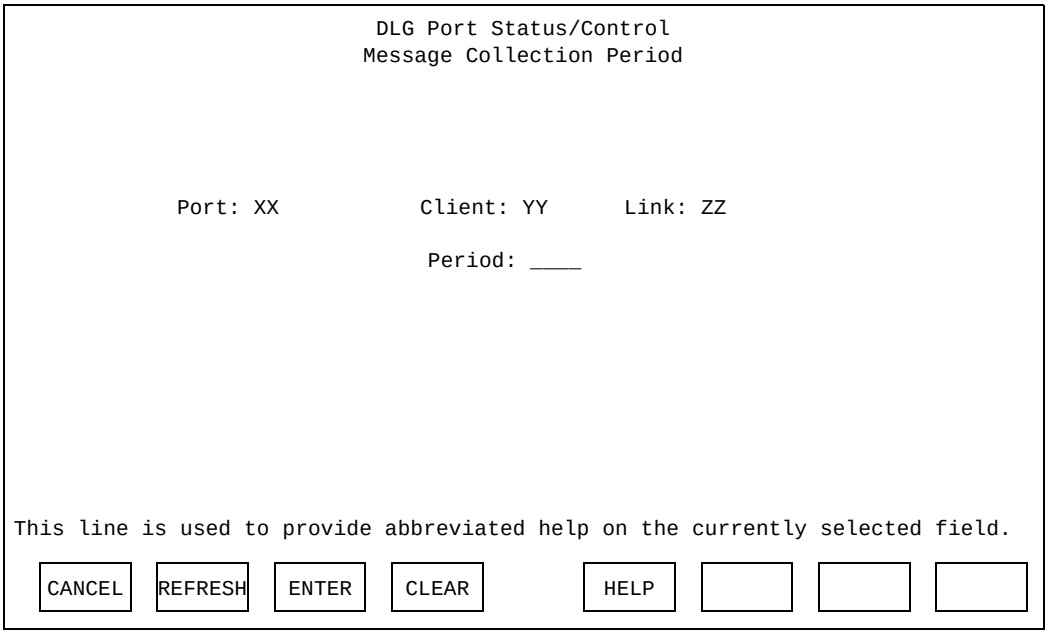
NOTE:
New connections are permitted on this port.

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



Screen 3-46. Message Collection Period

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).

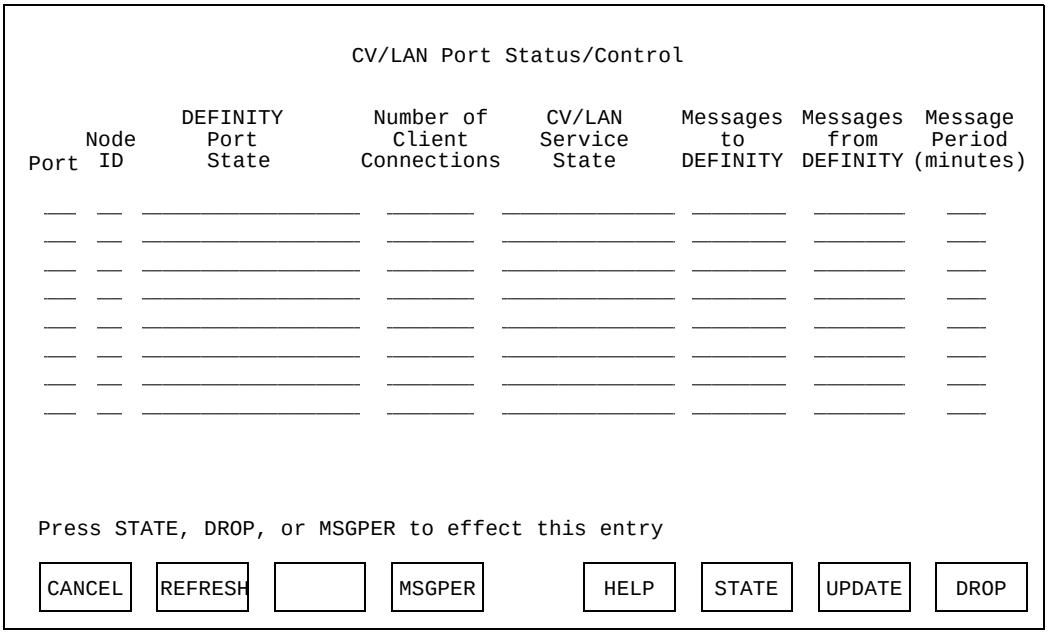
After you enter a value for **Period** on this screen and press ENTER the previous screen reappears with the cursor positioned at the beginning of the new entry. Changing the collection period clears the traffic counts (messages to the DEFINITY system and messages from the DEFINITY system) on the **DLG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



Screen 3-47. CV/LAN Port Status/Control

NOTE:
This screen will appear only if CV/LAN is also installed.

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 system. 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.
The DEFINITY system Port State	**Read-only**. Possible port states are as follows: ■ **NOT CONNECTED** — The BRI port is not administered (or is busied out) on the DEFINITY system, or Layer 1 is down. ■ **CONNECTED DOWN** — The BRI port is administered on the DEFINITY system but Layer 2 is not established. ■ **CONNECTED** — The BRI port is administered on the DEFINITY system and Layer 2 is established.

Field Name	Description
The DEFINITY system Port State (continued)	■ **BUSIEDOUT** — The BRI Port is administered on the DEFINITY system but has been busied out in the BRI driver on the MAPD. ■ **SW INTF DN** — The DEFINITY system interface (angel) is down. ■ **SW INTF DN BSY** — The DEFINITY system 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 system	**Read-only**. The number of messages sent to the DEFINITY system in the last message collection period.
Messages from the DEFINITY system	**Read-only**. The number of messages sent by the DEFINITY system 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 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 **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.

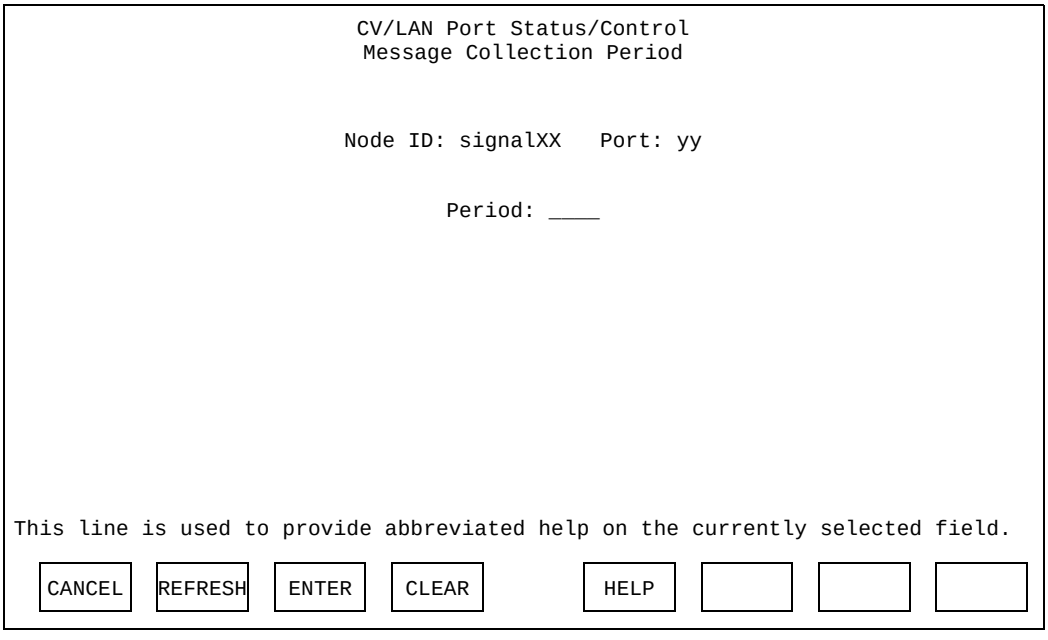
NOTE:
New connections are permitted on this port

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



Screen 3-48. Message Collection Period

NOTE:
This screen will appear only if CV/LAN is also installed.

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 system and messages from the DEFINITY system) on the **CV/LAN Port Status/Control** screen.

Field Name	Description
Node ID	**Read-only**. Node ID number used by CV/LAN clients.
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	■ Weight: 2.9 pounds ■ Length: 14.75 inches ■ Height: 7.6 inches ■ Width: 2.2 inches
Power Requirements	-48 VDC from the switch (Acceptance range: -54.0 VDC to -44.0 VDC). +5VDC from the switch -5VDC from the switch
Capacities	■ 8 ASAI links in DEFINITY ECS, 4 ASAI links in ProLogix ■ 5 login sessions
System Hardware Supported	■ DEFINITY ECS R5/R6, vs, si, r[1] ■ ProLogix R6
Switch Software Supported	■ DEFINITY ECS R5, or R6 (provisioned with R6.1 or later software) in V5 or V6 mode ■ ProLogix R6 (provisioned with R6.3.2 or later software) in V5 or V6 mode
Temperature Requirements	■ -40 to 150F (-19 to 71C) storage temperature ■ 60 to 85F (18 to 29C) operating temperature
Humidity Requirements	10 to 80 percent (noncondensing) 79F (26C) maximum wet-bulb temperature
Altitude Limitations	200 feet (60m) below sea level 10,000 feet (3050m) above sea level

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.

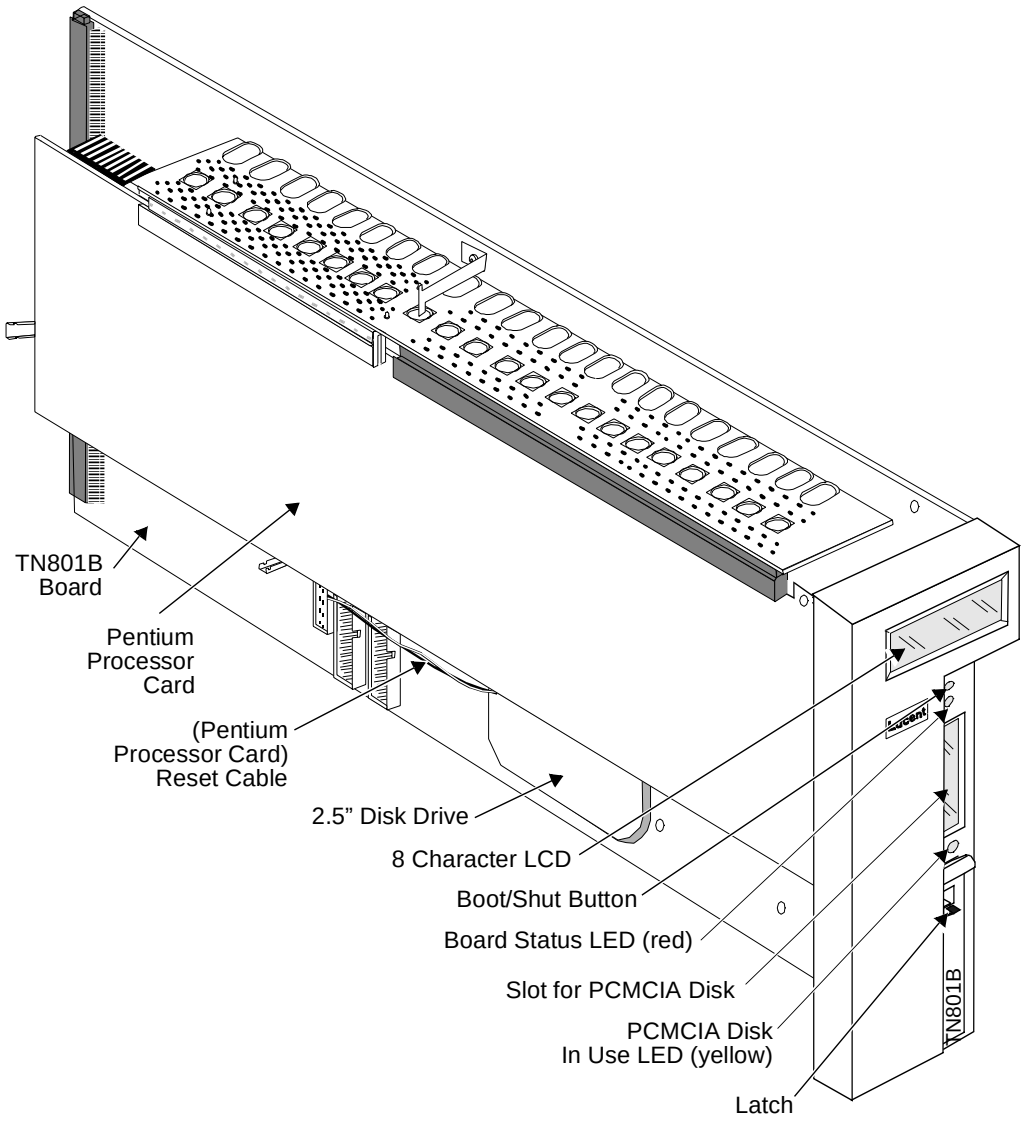


Figure 4-1. MAPD System Assembly (J58890MA-1)

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

- The TN801B MAPD (Multi-Application Platform for the DEFINITY system) Board — The main circuit board that provides connectivity to the DEFINITY 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 TN801B, MAPD Board and the faceplate LCD display.
- Reset Cable — A two wire cable that provides the TN801B MAPD Board with the ability to issue a reset to the Pentium processor card.
- External cable — The MAPD external cable connects the TN801B 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.

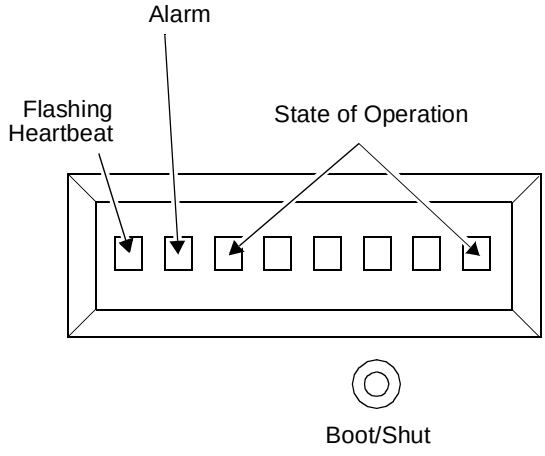


Figure 4-2. LCD Status Mode Display

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	
m	Minor alarm — Displays a problem that could disable part of a system function and noticeably degrade operation. Requires on site intervention.
M	Major alarm — Displays a problem that could widely degrade system operation and seriously impact service. Requires intervention from the TSC.
w	Warning — Displays a problem not severe enough to noticeably degrade operation. Requires on-site intervention.
C	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	
FWBOOT	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.
PCBIOS	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.
OSINIT	Operating System Initialization — Displayed as the UNIX Operating System is initializing.
PGMFW	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
AINIT	ASAI Initialization — Displayed when the MAPD System software is operating, but no ASAI links are yet established.

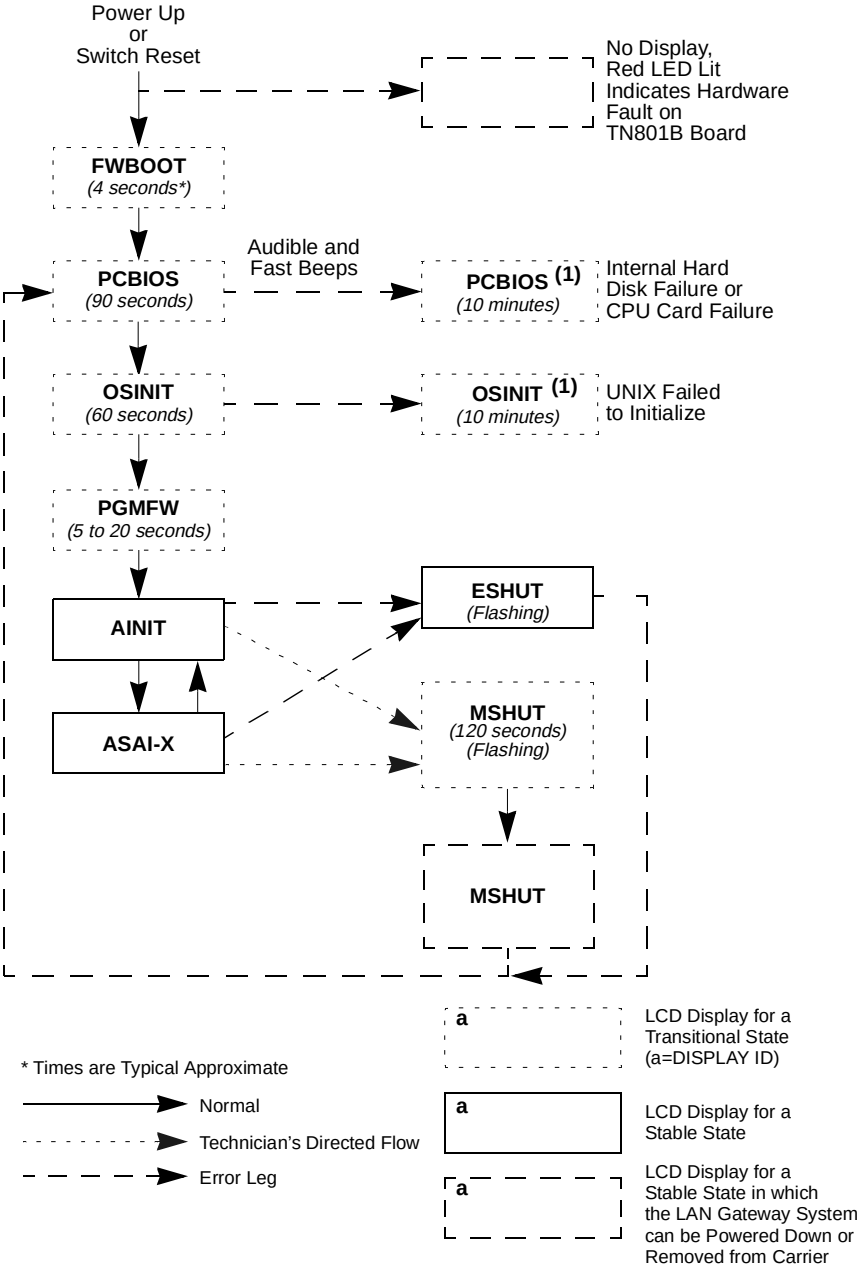
Continued on Next page

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.
Shutdown States	
ESHUT	Error Shutdown — Flashes whenever the TN801B 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. When 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.
MSHUT	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. 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.

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.



(1) TN Board will reset the CPU card and try initialization one more time after 10 minutes. If initialization fails a second time (after another 10 minutes), the display will go blank. This state, NO DISPLAY, with the red LED off, indicates a CPU or disk problem.

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.

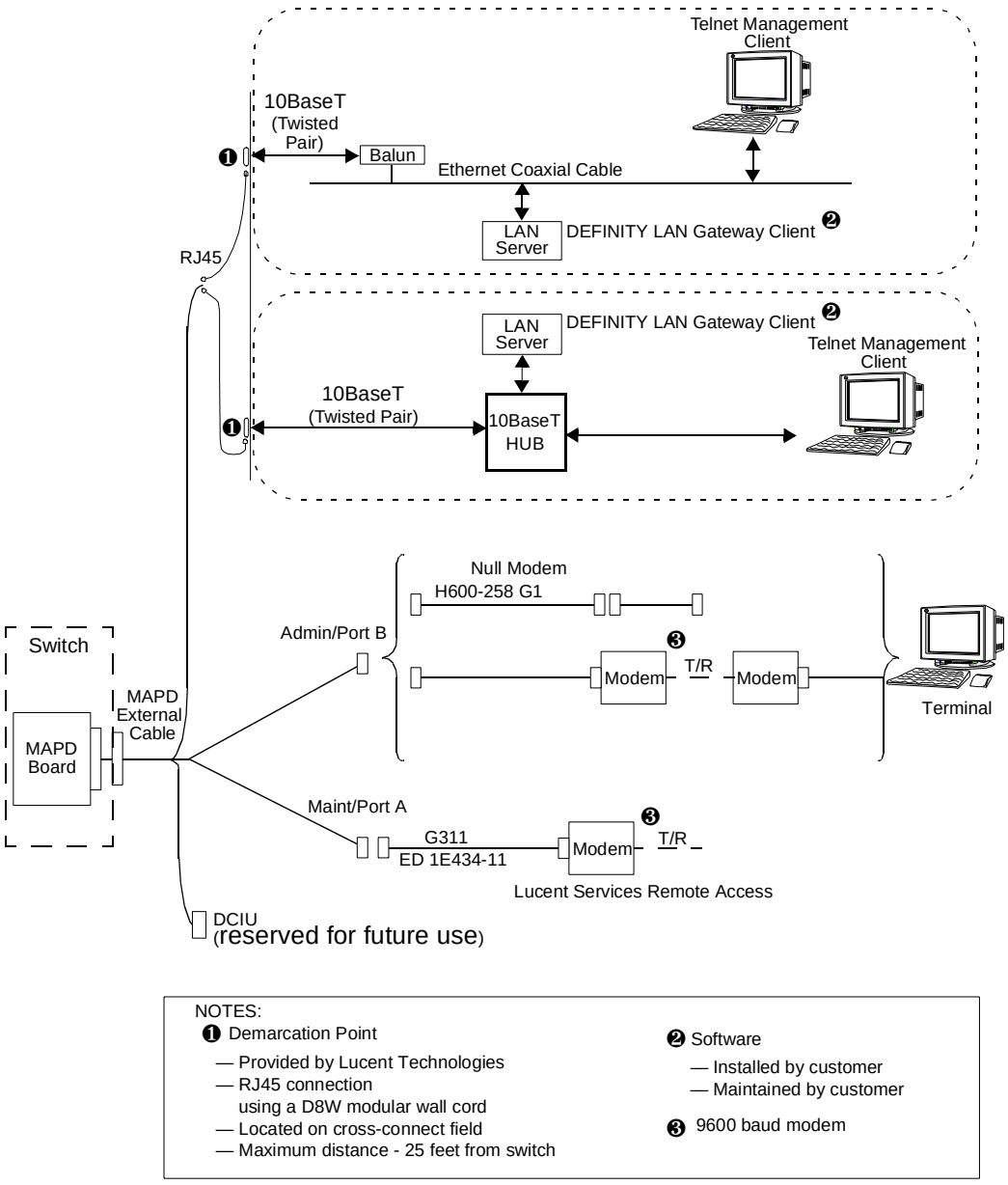


Figure 4-4. Available Terminal Connections to a MAPD System

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: ■ 9600	Baud Rate: ■ 9600
Option settings: (On all terminals) ■ 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	Option settings: (On all terminals) ■ 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: ■ MAPD screens ■ Operating system Shell	Accesses: ■ 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, "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 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 TN801B 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 TN801B 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 TN801B 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 TN801B 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 TN801B 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

A

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 system 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 system multi-carrier cabinet should be such that MAPD system assemblies are not vertically aligned. For example, in a standard reliability R6si system if the TN801B board in the assembly is placed in slot 7 of the J58890AH control carrier A, then the second TN801B board could be placed in slot 18 of the port carrier B, and the third in slot 12 of the port carrier C.
6. For **ProLogix**, preferred slots are A06 and A07 in the cabinet.

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 the existing circuit packs; simply specify the circuit packs that must be moved (if any) in the carrier reconfiguration process.

Carrier Functions	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 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 Functions	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	TN801B

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
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 DEFINITY system administration screens and MAPD system screens.)		
How would you like the terminal connected to the MAPD system? You can implement any of the following: ■ Directly via cables ■ Via modem 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 the 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.		
What length cables would you like for the terminals? Default is 50 feet: other options are 10, 20. 30, or 40.		

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 DEFINITY LAN Gateway system.

Complete System

Table C-1. Identifiers for Complete System

Description	QTY	PEC
MAPD System	1	1273-MPD
DEFINITY LAN GATEWAY R2 SOFTWARE	1	1273-LAN
US Robotics external modem (33.6k)	1	2569-839

The 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 TN801B	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	
MAPD 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-LAN GATEWAY SOFTWARE	1273-LAN	J58890TL1 L-3	1	
LAN Gateway Software Documentation Doc # DCMTN-555-230-114 ISSUE 2		107991077	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 TCP/IP Connection 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 TCP/IP Connection Problems

1. If a client cannot connect to the MAPD, check the Client Access Logs screen to see if any error messages appear related to that client. (Access the Screen, "Main Menu (DLG)" and select the Screen, "Maintenance (DLG)," then select the Screen "Security Logs," and then access the Screen "Client Access Log.")

    - If a **`TCP_Connect`** message appears in the log from the Name or IP address of that client, then the MAPD and the client are able to communicate. Check the messages that follow the **`TCP_Connect`** message for that client.

        1. If either **`InvalidClient`** or **`InvalidLink`** appears, then check the DLG Administration.
        2. If either **`ClientTooSlow`**, **`InvalidDataSize`**, or **`UnsupportedVersion`** appears, then the client is violating the connection protocol.

    - If a **`TCP_Connect`** message does not appear in the log, then the MAPD and the client cannot communicate. Check the following:

        1. Is the MAPD administered with the correct name, IP address, and subnet mask? (Access the Screen, "Main Menu (DLG)," select "TCP/IP Administration," and then select This Host.) The MAPD must be rebooted after any changes are made to this information.
        2. If the client is on a different network (or subnet if a subnet mask is in use), does the MAPD have a correct, working route to the network (or subnet) where the client resides? This route could be either via the Default Gateway or a route in the Network Routing Table. (Access the Screen, "Main Menu (DLG)," select "TCP/IP Administration," and then "Network Routing Information," and finally, select either "Default Gateway," or "Network Routing Table.")

2. If everything in the second bullet item above is properly administered and the client still cannot communicate with the MAPD, try the following:

    - Ping a machine on the same network (or subnet) where the MAPD resides. Be sure that this machine is up and running and is responding to ping from other machines. If the MAPD cannot successfully ping this machine (no answer from machine _name), contact the TSC. (Access "Main Menu (DLG)," select "Maintenance (DLG)," select "Hardware Status," and then select "Ping Host.")
    - If the MAPD is on a different network (or subnet) from the client, try the following:

1. Ping the gateway, which routes packets to the client. This could be either the Default Gateway or a route found in the Network Routing Table. If the MAPD cannot successfully ping the gateway, contact your network administrator.
2. Ping another machine on the same network (or subnet) where the client resides. Be sure that this machine is up and running and is responding to pings from other machines on the same network (or subnet) as the MAPD. If the MAPD cannot successfully ping this machine, contact your network administrator.
3. Ping the client. If the MAPD cannot successfully ping the client, then the problem is within the client machine. Check its TCP/IP administration. If it is administered correctly, contact your network administrator.

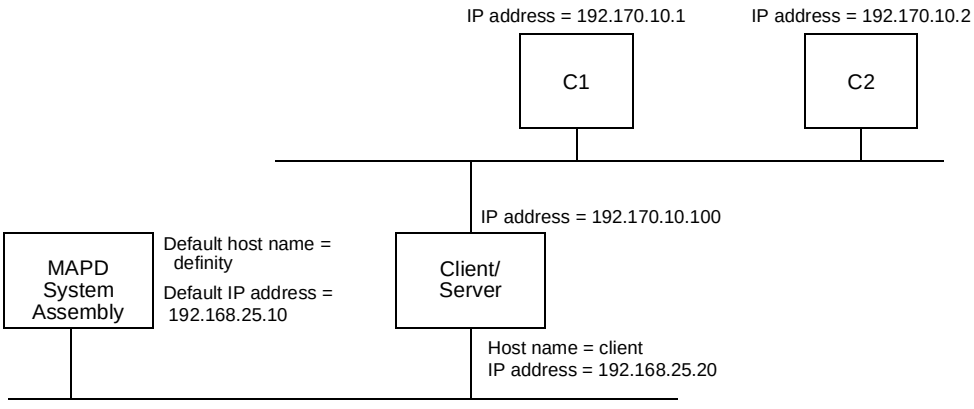
Sample Customer Configurations

E

This appendix contains three examples of how a customer might configure a system using CallVisor ASAI DEFINITY LAN Gateway over MAPD. It requires knowledge of TCP/IP networking. “Example 1. Secure LAN with Defaults,” shows DLG application already administered with default values and client/server requiring administration. In “Example 2. Secure LAN with No Defaults,” subnetting may be used. Both the DLG application and the client/server require administration in this example. “Example 3, 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.

NOTE:
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

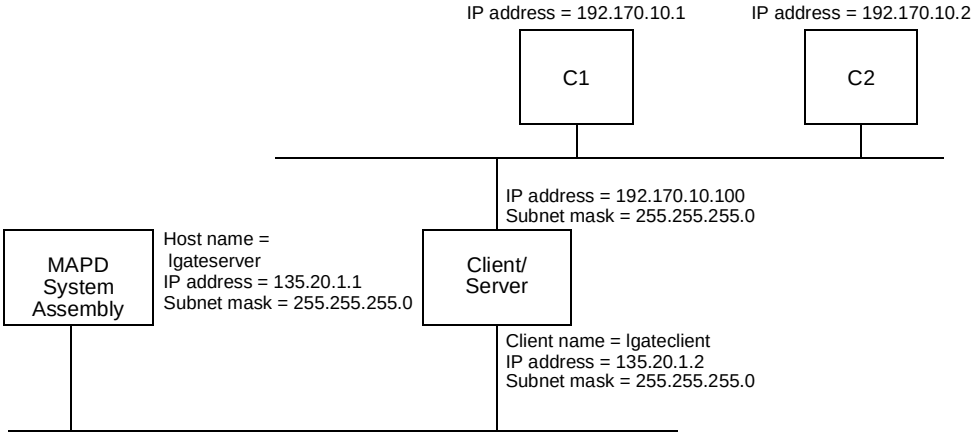


This sample configuration shows the DLG application shipped from the factory with defaults already administered (default hostname = *definity* and default IP address = *192.168.25.10*). The client/server shown in the figure is both a client of ASAI over the MAPD system and a server to two other clients, C1 and C2.

The DLG application requires no additional administration. The client/server requires the following administration:

1. Administer the **client** host name (*client*) IP address (*192.168.25.20*).
2. Add the MAPD system assembly host name (*definity*) and IP address (*192.168.25.10*) to the address resolution mechanism.
3. Administer the client/server as a router on both networks (*192.168.25* and *192.70.10*).

Example 2. Secure LAN, No Defaults



This sample configuration requires that both the DLG application and the client/server be administered, as follows:

- Administer the MAPD 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 (*lgateserver* in this example).
     b. Do the same for the host IP address (135.20.1.1 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 entry.
     b. Press ADD to access the Add Hosts screen. Add the entry for the client (*lgateclient* in this example) on the same network (the same subnet if subnetting is used).
     c. You will be on the Local Host Table screen when done. Press CANCEL to return to the TCP/IP Administration screen and then select EXIT on this menu to return to the Main Menu.
  3. Administer the DLG. From the Main Menu, access the DLG Administration screen.
     a. Delete the default client entry.
     b. Press ADD to access the Add Client Link screen. Add the entry for the client (*lgateclient* in this example) on the appropriate port and client link.

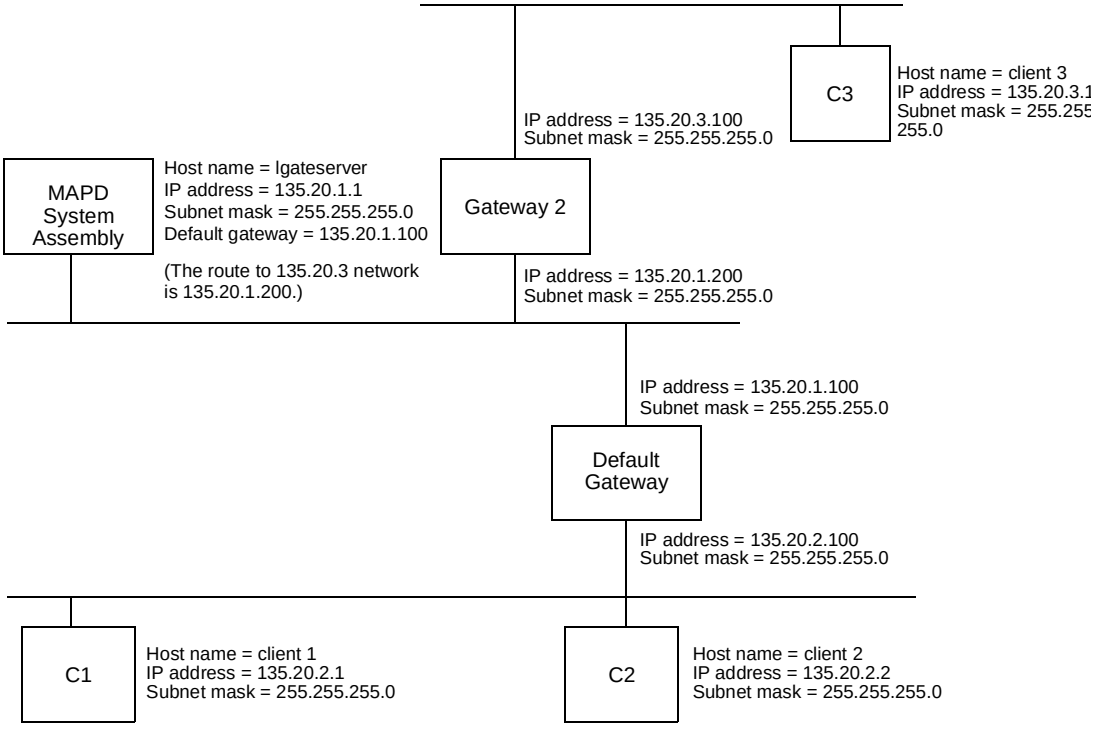
c. You will be on the DLG Administration screen when done. Press EXIT to return to the Main Menu**.**

4. Reboot the system as follows. On the Main Menu, select Maintenance and then Reset System. When the Reset System screen appears, select Reboot System.

- Administer the Client/Server:

1. Administer the client host name (*lgateclient* in this example), IP address (*135.20.1.2* in this example), and subnet mask (*255.255.255.0* in this example) (if not already done).
2. Add the MAPD system assembly host name (*lgateserver*) and IP address (*135.20.1.1*) to the address resolution mechanism.
3. Administer the client/server as a router on both networks (*135.20.1* and *192.170.10*).

Example 3. Multiple Secure LANs



This sample configuration shows the DLG application with three 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 DLG 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 (*lgateserver* 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 DLG as follows. On the Main Menu, select DLG 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 DLG 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 TN801B board.
2. Power down the MAPD system assembly by disengaging it from the DEFINITY system carrier.
3. Insert the PCMCIA Installation disk into the TN801B, 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 Operation, 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. 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...
```

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 with the services login (default password) and become root with `su - root`.
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 (DLG)" 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 (DLG)" Menu.
    - Select "Reset System (DLG)".
    - 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 to use 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

H

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 TN801B board.
2. Make sure the customer's backup SanDisk PCMCIA FlashDisk is inserted in the TN801B board. 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 (DLG)" 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 (DLG)" Menu.
   - Select "Reset System (DLG)."

- 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 the PCMCIA Installation disk into the TN801B 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 SPACE key while it is running.

8. 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 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 Operation, 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 with the services login (default password) and become root with `su - root`.
15. To install the DEFINITY LAN Gateway application, type

    `pkgadd-n DLGset`.

NOTE:
Before loading the DEFINITY LAN Gateway 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 (DLG)" 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 (DLG).''
    - Select ''Reset System (DLG).''
    - 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

Brouter
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

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

FEPROM
Flash Erasable Programmable Read Only Memory

G3-MT
Generic 3 Maintenance Terminal

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

LANGate
DEFINITY LAN Gateway

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

m
Minor warning

M
Major warning

MAPD
Multi-Application Platform for DEFINITY system

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

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 system. This port is differentiated via an extension number and via a physical port number assignment.

Asynchronous Data Unit (ADU)
A small device that can extend data transmission far beyond the recommended Electronic Industries Association (EIA) limits over building wiring.

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**.

Brouter
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
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 system.

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 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
Multi-Application Platform for DEFINITY system 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.

Port
A connection or link between two devices, allowing information to travel through the link to a desired location.

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* **Brouter**.

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.

Index

Numerics

A

B

C

D

E

F

G

H

I

K

L

M

N

O

P

R

S

T

U

V

W

X

Lucent Technologies
Bell Labs Innovations

We'd like your opinion ...

Lucent Technologies welcomes your feedback on this document.
Your comments can be of great value in helping us improve our documentation.

DEFINITY® ECS
CallVisor® ASAI DEFINITY LAN Gateway over MAPD
Installation, Administration, and Maintenance
555-230-114, Comcode 108617028, Issue 3, December 1999

1. Please rate the effectiveness of this document in the following areas:

	Excellent	Good	Fair	Poor
Ease of Finding Information	❑	❑	❑	❑
Clarity	❑	❑	❑	❑
Completeness	❑	❑	❑	❑
Accuracy	❑	❑	❑	❑
Organization	❑	❑	❑	❑
Appearance	❑	❑	❑	❑
Examples	❑	❑	❑	❑
Illustrations	❑	❑	❑	❑
Overall Satisfaction	❑	❑	❑	❑

2. Please check the ways you feel we could improve this document:

❑ Improve the overview/introduction
❑ Improve the table of contents
❑ Improve the organization
❑ Add more figures
❑ Add more examples
❑ Add more details
❑ Make it more concise
❑ Add more step-by-step procedures/tutorials
❑ Add more troubleshooting information
❑ Make it less technical
❑ Add more/better quick reference aids
❑ Improve the index

Please add details about your major concerns. _____

_____

_____

3. What did you like most about this document? _____

_____

_____

4. Feel free to write any comments below or on an attached sheet. _____

_____

_____

If we may contact you concerning your comments, please complete the following:

Name: _____ Telephone Number: (____) _____

Company/ Organization: _____ Date: _____

Address: _____

You may FAX your response to (732) 817-4562. Thank you.