DECnet–DOS

Installation Guide

Order No. AA–EF20B–TV

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This manual details procedures for installing DECnet–DOS on the IBM Personal Computer, the IBM Personal Computer XT, and the IBM Personal Computer AT.

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Preface

DECnet–DOS is a communications software product that enables you to use your IBM personal computer to communicate in a DECnet network. DECnet–DOS Version 1.1 runs on the IBM PC, IBM PC/XT, and IBM Personal Computer AT personal computer systems using the PC–DOS operating system V2.10 or V3.10.

Manual Objectives

The *DECnet–DOS Installation Guide* describes how to install, set up, and use DECnet–DOS. It also discusses the procedures for verifying software and hardware installation.

Before reading the *DECnet–DOS Installation Guide*, it is required that you read the *DECnet–DOS Release Notes* for information pertinent to installation.

Intended Audience

This manual is designed for IBM personal computer users who want to expand their system capabilities by sharing data and other resources with other DECnet systems. This manual assumes that the user has a working knowledge of the IBM PC, IBM PC/XT, or IBM PC AT personal computer and the PC–DOS operating system. This manual is also designed for application developers who are responsible for creating DECnet–DOS applications.

Structure of This Manual

This manual consists of five chapters and five appendices.

- **Chapter 1** introduces DECnet–DOS terms and concepts.
- **Chapter 2** describes the hardware necessary for configuring the DECnet–DOS node.
- **Chapter 3** outlines the steps you must complete before you can install the DECnet software on your IBM personal computer.
- **Chapter 4** describes how to use the DECnet–DOS Installation Procedure (DIP) to install DECnet–DOS software.
- **Chapter 5** describes how to verify your DECnet–DOS installation.
- **Appendix A** lists the contents of each distribution diskette and provides the disk and memory requirements for each DECnet–DOS file.
- **Appendix B** details how to install individual DECnet–DOS files.
- **Appendix C** explains how to specify the DECnet database path.
- **Appendix D** provides sample installation sessions.
- **Appendix E** provides a preinstallation checklist.

Conventions Used in This Document

The following graphic conventions are used in this manual:

Convention	Meaning
Monospaced type	Monospaced type indicates examples of system output or user input. System output is in black; user input is in red.
UPPER CASE	Represents acceptable abbreviations, for example **DEL**ETE. The abbreviations are printed as bold characters.
UPPERCASE	Uppercase in commands and examples indicates that you should enter the characters as shown (enter either uppercase or lowercase).
italics	Italics in commands and examples indicate that either the system supplies or you should supply a value.
[ ]	Square brackets indicate that the enclosed text is optional. If there is more than one option, you can choose one and only one of the options. Do not type the brackets when you enter the command.
{ }	Braces indicate that the enclosed text is required and you must choose one and only one of the options. Do not type the braces when you enter the command.
KEY	Indicates that you should press the specified key. CTRL/*x* indicates that you should hold down the CTRL key while you press the *x* key, where *x* is a letter. Note that unless otherwise specified, you should end every command line by pressing the RET key. This key is labeled ↵ on the IBM PC and IBM PC/XT personal computers, and ↵ ENTER on the IBM Personal Computer AT.
. . .	Ellipses in commands indicate that you can repeat the preceding item one or more times.

Associated Documents

You should have the following documents available for reference:

- *DECnet–DOS Installation Guide*, which you are reading
- *DECnet–DOS Getting Started*
- *DECnet–DOS User's Guide*
- *DECnet–DOS Mini–Reference Guide*
- *DECnet–DOS Programmer's Reference Manual*
- *DECnet–DOS Release Notes*
- Any introductory manuals for your personal computer.

1
Introduction

1.1 Introduction

Digital offers capabilities that permit the linking of computers into flexible configurations called networks. Networking allows computer systems to share resources and exchange information, files and programs. All of the computers participating in the network are called nodes.

DECnet is the name given to the family of software and hardware communications products that enable individual computer systems to communicate with one another in a network.

DECnet–DOS software allows IBM PC, IBM PC/XT, and IBM Personal Computer AT systems to participate as end nodes in a DECnet network. DECnet–DOS enables users to perform the following high level network functions:

- **Task-to-Task communication.** Programs running under different operating systems and written in different languages can exchange data. Using DECnet–DOS, task-to-task communication can take place between an IBM PC, IBM PC/XT, or IBM PC AT and any DECnet Phase III system connected to a DECnet router, or any other DECnet Phase IV system.
- **Network management.** Network management and maintenance functions allow you to control, monitor, and test DECnet–DOS software to ensure correct operation of the network.
- **Remote file access.** Transport facilities permit programs to access remote files. You can create, store and retrieve information on remote nodes.

- **Resource sharing.** Virtual device capabilities enable you to define devices on a remote system, and use them as if they were directly connected to your computer. Remote terminal services allow you to use your IBM personal computer as if it were a terminal directly connected to another node in the network.

1.2 DECnet–DOS Concepts

Before using the DECnet–DOS software, you should understand how different terms are used in the manual to describe the DECnet–DOS network. The following definitions should be helpful:

- **The DECnet–DOS environment.** The DECnet–DOS environment consists of the entire network of DECnet systems that include systems running the DECnet–DOS software.
- **A routing node.** A DECnet routing node can receive and forward information from one node to another. It can perform other functions that are not limited strictly to routing information.
- **An end node.** The DECnet–DOS node is an end node. It can only receive information for its own use. An end node cannot receive and then forward information intended for another node.
- **A local node.** A local node is the node you are working on when you enter commands. Your local node is connected to the DECnet network with an asynchronous communications line or Ethernet controller. Once the connection is made and the DECnet–DOS software has been installed, you can communicate with any other node in the DECnet network.
- **A remote node.** Any node in the network other than your local node is called a remote node.
- **An executor node.** An executor node performs network management functions. This node enables you to obtain information about the network. For DECnet–DOS, the executor node is your local node.
- **An adjacent node.** In an asynchronous configuration, an adjacent node is a node that your system is physically connected to by an asynchronous communications line. To communicate with any node in the network, DECnet–DOS requires that the adjacent node must be a routing node. A routing node forwards your messages to the proper remote node.
- **Logical links.** Tasks that run on different nodes and exchange data are connected by logical links. Logical links are temporary software information paths established between two communicating tasks in a DECnet network.

In addition to understanding the terms just defined, you must also know where to find the relevant information for installing DECnet–DOS. The following chapters present this information.

2
Hardware Components for DECnet–DOS Nodes

This chapter briefly describes the hardware components necessary for configuring your IBM PC, IBM PC/XT, or IBM Personal Computer AT system as a DECnet node.

2.1 Hardware Components

Any supported IBM PC, IBM PC/XT, or IBM Personal Computer AT configuration, with 256KB memory, can run the DECnet–DOS software. While DECnet–DOS runs on diskette-based systems, it is recommended that you use an IBM system that includes one of the fixed (hard) disk options for the most convenient and efficient software operation. A physical connection, either directly to baseband Ethernet or to an adjacent node, allows communication between your IBM system and other DECnet systems to take place. You must install the following hardware components according to the physical communication method you choose.

2.2 Hardware Components for Asynchronous DDCMP Communication

You must install the following hardware components if you use an asynchronous communications scheme:

- IBM's asynchronous communications adapter (model number 2074 for IBM PC – standard for the IBM PC/XT)

  or

  IBM's serial/parallel adapter (model number 0215 for the IBM PC AT)

- IBM Communications Adapter cable Model 2067 or Electrical Industry Association RS232C/V.24 cable

- A modem, a pair of modems, or a null modem/null modem cable
- Loopback connector plug

You should be able to install each of these components with the help of the appropriate installation/owner's manual. How your IBM system is connected to the network will depend upon your application needs and the configuration of the network. Contact the person responsible for configuring your network for assistance.

2.2.1 Asynchronous Communications or Serial/Parallel Adapter

The asynchronous communications adapter (IBM PC and IBM PC/XT), or the serial/parallel adapter (IBM PC AT), provides you with a channel to communicate with other I/O devices and systems. The asynchronous communications adapter comes standard with the IBM PC/XT personal computer. However, the adapter is an option for the IBM PC and requires a System Expansion Slot in the System Unit. The serial/parallel adapter is an option for the IBM PC AT and also requires a System Expansion Slot in the System Unit.

Your IBM system can be connected, directly or through a modem, to another computer. The connections are made using a cable that is directly attached to the asynchronous communications adapter or serial/parallel adapter.

2.2.2 Asynchronous Communications Adapter Cable

The Asynchronous Communications Adapter cable and/or the EIA RS232C/V2.4 cable serves as a physical connection between terminals, personal computers and modems. Each include the specifications necessary for carrying modem signals, circuit functions, and electrical functions between the devices.

2.2.3 Modem

To relay electrical signals over telephone lines, the signals must be changed from digital (produced by the computer) to analog (transmitted by a telephone line). Modems are devices that are capable of changing signals from digital to analog, then back to digital. This process involves modulation and then demodulation of the electrical signals. The word modem is a combination of the first letters of the two terms. You connect the modem to your IBM system using the asynchronous communications adapter cable or the EIA cable.

2.2.4 Loopback Connector Plug

Loopback tests allow you to verify that your node is operating correctly. These tests check hardware and software components. Some loopback tests require the use of a loopback connector plug. A loopback connector is a hardware device which is temporarily attached to a hardware component or to a cable. You use the connector to test each component section. Loopback plugs are discussed in more detail in the *DECnet–DOS User's Guide*.

2.3 Hardware Components for Ethernet Communication

You must install the following hardware components if you use an Ethernet communications scheme:

- Ethernet Communications Adapter
- Ethernet Connector
- Ethernet Cable
- Ethernet Loopback Connector Plug

You should be able to install each of these components with the help of the appropriate installation/owner's manual. How your IBM system is connected to the network will depend upon your application needs and the configuration of the network. Contact the person responsible for configuring your network for assistance.

2.3.1 Ethernet Communications Adapter

The Ethernet communications adapter provides you with a channel to communicate with other I/O devices and systems. Your IBM system can be connected to the Ethernet connector using a cable that is directly attached to the Ethernet communications adapter. One of the following adapters is required for direct connection to an Ethernet network:

- 3Com IE4 EtherLink/IBM PC Ethernet Network Interface ("Assembly 1221–00" imprinted on the face of the card)
- 3Com IE2 EtherLink/IBM PC Ethernet Network Interface ("Assembly 34–0780–00" imprinted on the face of the card)
- MICOM Systems NI5010–1 Ethernet Data Link Controller
- MICOM Systems NI5010–2 Ethernet Data Link Controller

You should refer to Chapter 3 for specific hardware configuration requirements.

2.3.2 Ethernet Connector

Ethernet connectors, the H4000 transceiver or a DELNI, are devices that connect one node directly to Ethernet cabling. The transceiver exchanges coded signals among nodes by converting data and control signals into signals that can be transmitted over the Ethernet network.

2.3.3 Ethernet Cable

Standard Ethernet cable is a coaxial cable system that physically connects individual nodes. Ethernet allows nodes to exchange data, messages, and signals with other nodes on the same cable. (Multiple nodes can be connected to the cable at the same time.)

2.3.4 Ethernet Loopback Connector Plug

Loopback tests allow you to verify that your node is operating correctly. These tests check hardware and software components. One loopback test requires the use of a loopback connector plug. A loopback connector is a hardware device which is temporarily attached to a hardware component or to a cable. Loopback plugs are discussed in more detail in the *DECnet–DOS User's Guide.*

3
Connecting to the DECnet Network

DECnet–DOS software allows you to connect your personal computer to the DECnet network. This chapter outlines the steps you must complete before you can install the DECnet–DOS software on your IBM personal computer. For your convenience, this outline is presented at the end of this chapter in the form of a checklist. Use this checklist to collect the information you will need to provide during installation. (Chapter 4 provides you with step-by-step instructions for installing DECnet–DOS.) Also use this checklist to track your progress throughout the procedure.

3.1 Do You Have an IBM PC, IBM PC/XT, or IBM PC AT System?

Before you can begin to install the DECnet–DOS software, you must be sure that:

Your personal computer is an IBM PC, IBM PC/XT, or IBM Personal Computer AT.

3.2 The IBM PC–DOS Operating System

The IBM PC–DOS Operating System is a collection of instructions that controls the overall operation of your IBM personal computer. You must install PC–DOS Version 2.10 or PC–DOS Version 3.10 in order for DECnet–DOS Version 1.1 software to work properly.

Refer to the IBM *Disk Operating System User's Guide* to install the PC–DOS operating system.

3.3 Where to Find DECnet–DOS Software Components

You use DECnet–DOS software to establish your IBM system as a DECnet–DOS node. The DECnet–DOS software is distributed on four **RX31** diskettes. An RX31 diskette is a 5.25 inch flexible disk that provides low-cost, compact, and reliable mass storage. Each diskette is identified with a volume label. They are DECNETPC11A, DECNETPC11B, DECNETPC11C, and DECNETPC11D, respectively. Check to make sure you have the four diskettes. You should create backup copies of each diskette and use these backup copies during installation. Be sure to leave the write protect tabs off of your backup copies.

3.4 Setting Up Your Node

Before connecting your node to the network, you must identify your node with a unique name and address. Obtain these node names and node addresses from the person responsible for setting up networks in your facility. Node names and addresses should be assigned as follows:

1. **Node Name**. A node name is a unique identification string consisting of one to six alphanumeric characters, including at least one alphabetic character.

   Note that the name must not already be assigned to another node.

2. **Node Address.** A node address is a unique numeric identification of a specific node. The node's address includes an area number and a node number:

   area.number

   where

   area is a number in the range of 1 to 63.

   number can be in the range of 1 to 1023. It is separated from the area number with a period.

   The area number for your node must match the number for your adjacent node.

   The node address must not already be assigned to another node.

3. **Node User Name**. A unique identification string consisting of 1 to 16 alphanumeric characters. The local node user name is used by DECnet–DOS as access control information required for outgoing proxy logins.

Remember to enter this node information in the checklist provided at the end of this chapter to aid you at installation time.

3.5 Choosing the Connection Scheme

Communication between your DECnet–DOS node and other DECnet systems is possible through a physical connection either directly to baseband Ethernet or to an adjacent routing node. Choose one of the following communications types and enter your selection in the checklist found at the end of this chapter.

3.5.1 Asynchronous DDCMP Communications

To connect your DECnet–DOS node to an adjacent routing node you must follow these steps:

1. **Select an adjacent node.** The adjacent node that you select must be a Phase IV routing node supporting asynchronous DDCMP connections:
   - VMS Version 4.2 or later
   - RSX–11M Version 4.2 or later
   - RSX–11S Version 4.2 or later
   - RSX–11M–PLUS Version 3.0 or later
   - Ethernet DECnet Router Server Version 1.1 or later.
2. **Install appropriate hardware.** Install one of the following:
   - null modem/null modem cable
   - a pair of modems
3. **Select a communications speed for the line.** The maximum baud rate is 9600 for an IBM personal computer system. Enter this rate in the checklist provided at the end of this chapter.
4. **Configure the adjacent node for asynchronous DDCMP communication.** The DECnet product at the adjacent node must be able to communicate with the DECnet–DOS software. Contact the person responsible for configuring the network for assistance.

   Configure the adjacent node to meet the following requirements.
   - The software and hardware must support a full duplex asynchronous DDCMP line; communication with the IBM system is either direct or modem controlled. (Use the same method as selected for the IBM system.)
   - Be sure that the baud rate selected for the communications line matches the rate to be used by the IBM system.

3.5.2 Ethernet Communications

To connect your DECnet–DOS node directly to a baseband Ethernet local area network, you must follow these steps:

1. **Select a Communications Adapter**. Select one of the following supported adapters for connection to standard Ethernet cabling:
   - 3Com IE4 EtherLink/IBM PC Ethernet Network Interface
   - 3Com IE2 EtherLink/IBM PC Ethernet Network Interface
   - MICOM Systems NI5010–1 Ethernet Data Link Controller
   - MICOM Systems NI5010–2 Ethernet Data Link Controller
2. **Install the appropriate hardware.** Refer to the manufacturers documentation for general instructions in installing either the MICOM or 3Com Ethernet adapter.
3. **Configure hardware options.** To run the DECnet–DOS software, you must set certain hardware options as follows:

   3Com

   - Set the option which determines whether the BNC or DIX (15 pin transceiver) cable will be used.
   - Set the interrupt line to 3.
   - Set the I/O address to 300 (hex).
   - Disable the memory enable option.
   - Set the DMA request channel and the DMA ACK channel to 1.

   NOTE

   These options are factory default options.

   MICOM

   - Set the option which determines whether the BNC cable or the DIX (15 pin transceiver) cable will be used.
   - Set the interrupt request option to 3.
   - Set the I/O base address to 300 (hex).
   - Set the DMA request channel and the DMA ACK channel to 1.
   - Choose AC (not DC) coupling.

Important

The use of interrupt request option 3 possibly conflicts with the secondary communications adapter (COM–2). If you encounter problems you should check that the COM–2 is not plugged into any device or remove it.

3.6 Specifying the Location of Files

You can use system startup files (CONFIG.SYS and AUTOEXEC.BAT) to automatically execute programs when you start PC–DOS. The installation procedure will create or modify these files for you to add information needed to correctly configure and run DECnet–DOS.

3.6.1 Assigning a Device Specification

You must specify the device on which the system files reside. This is the drive from which you "booted" or started your personal computer. These files must reside in the root directory of this drive. You can use the default parameter offered by the installation procedure or choose your own device. The default device is C:. Enter the device name in the checklist provided at the end of this chapter.

3.6.2 Assigning Path Specifications

You must specify where files will be found or written to during installation. A path specification indicates where files are located by working as a pointer to a specific directory. A valid path specification should always include a device name. For example:

```
C:\DECNET
```

In the above example, C: represents the device name; \DECNET represents the path name.

You must assign path specifications for each of the following:

- Installation destination path
- DECnet database path
- Programming Library sources destination path

3.6.2.1 Installation destination path — This is the path into which the DECnet–DOS utilities and network functions will be copied. You may assign a path specification or use the default specification C:\DECNET. The DECnet–DOS Installation Procedure (DIP) will automatically provide this path specification to the PATH command in the file AUTOEXEC.BAT.

3.6.2.2 DECnet database path — DECnet–DOS requires several database files to run DECnet–DOS components. The DECnet database path is the path into which the database files will be stored. You may assign a path specification or use the default specification C:\DECNET. DIP will automatically add this path specification to the DECnet process command line in the file AUTOEXEC.BAT. Refer to Appendix C for detailed instructions on specifying a DECnet database path.

3.6.2.3 Programming library sources destination path — This is the path into which the DECnet C programming library sources will be copied. You may assign a path specification or use the default specification C:\DECNET.

Enter the path names in the checklist provided at the end of this chapter.

3.7 Verifying the Installation

You can verify the DECnet–DOS installation by running tests using the Network Test Utility (NTU). You may choose to run these tests manually or have them run automatically as part of the installation procedure. If you choose to have the tests run automatically, you must specify at least one "reachable" remote node to be used for testing. Use the guidelines in section 3.5 when assigning remote node names and addresses, then enter this node information in the checklist provided at the end of this chapter.

If you choose to run the verification tests manually, refer to Chapter 5 of this manual and the chapter "Testing the Network" in the *DECnet–DOS User's Guide* for more information.

3.8 Reboot Line State

You have the option of automatically starting DECnet–DOS upon system reboot. Setting the "Reboot Line State" to ON enables the automatic startup of DECnet–DOS when your system is rebooted.

Select an option and enter your choice in the checklist provided at the end of this chapter.

3.9 Selecting DECnet–DOS Utilities

The DECnet–DOS software kit consists of many separate components which enable you to perform high-level network functions. When installing DECnet–DOS software, you can install the entire kit or you may install individual components. Whether you choose to copy the entire kit or individual components will depend upon how your system is configured (hard- or floppy-based) and whether you have sufficient disk and memory space. Each DECnet–DOS component takes up disk and memory space on your personal computer. Some components require memory all the time while others require memory space only when used. (See Appendices A and B for detailed information.)

Select some or all of the following DECnet–DOS utilities and record your choices in the checklist provided at the end of this chapter:

Programming Utilities:

- Transparent Task-to-Task (TTT)
- Transparent File Access (TFA)
- C Programming Library (Programming Interface)

Network Utilities:

- Network Control Program (NCP)
- Network File Transfer (NFT)
- SETHOST
- Local Area Transport (LAT)
- Network Virtual Disk (NVD)
- Network Virtual Printer (NVP)
- Network Test Utility (NTU)
- MAIL Sender
- File Access Listener (FAL)
- Job Spawner

3.10 Completing Preinstallation Check

The following checklist summarizes the preinstallation requirements presented in this chapter. This checklist is also reproduced in Appendix E for easy removal. Use the information you prepare with this checklist, along with the information presented in Chapter 4, to install DECnet–DOS software.

Preinstallation Check

Hardware

☐ Personal Computer

- IBM PC
- IBM PC/XT
- IBM PC AT

Software

☐ Operating System – PC–DOS Version 2.10 or Version 3.10

☐ DECnet–DOS Software Kit – four RX31 diskettes labeled:

DECNETPC11A

DECNETPC11B

DECNETPC11C

DECNETPC11D

Configure Network Parameters

Node Parameters

☐ Local Node

Node Name _____

Node Address _____

Local Node
User Name _____

☐ Remote Node(s)

Node Name _____

Node Address _____

Node Name _____

Node Address _____

Node Name _____

Node Address _____

Communications Type

Choose one of the following communication schemes:

☐ Asynchronous DDCMP – (line speed) _____

☐ Ethernet – (interface installed) _____

Device and Path Specifications

☐ Boot Drive (system startup files) _____

☐ Destination Path (kit files) _____

☐ Destination Path (DECnet database files) _____

☐ Destination Path (programming library sources) _____

Reboot Line State

☐ ON

☐ OFF

Select DECnet–DOS Utilities

☐ TTT – Transparent Task-to-Task

☐ TFA – Transparent File Access

☐ SETHOST

☐ LAT – Local Area Transport

☐ NFT – Network File Transfer

☐ FAL – File Access Listener

☐ NTU – Network Test Tool

☐ DTS – Data Test Sender

☐ DTR – Data Test Receiver

☐ NVD – Network Virtual Disk

☐ NVP – Network Virtual Printer

☐ C Programming Library (Programming Interface)

☐ MAIL – Mail Sender Utility

☐ Job Spawner Utility

4
Installing the DECnet–DOS Software

The DECnet–DOS Installation Procedure (DIP) is an automated procedure that offers an installation method for the experienced as well as the inexperienced user. This chapter describes how to use DIP to install the DECnet–DOS software on your IBM PC, IBM PC/XT, or IBM Personal Computer AT. See Appendix D for sample installation sessions.

4.1 Before You Install DECnet–DOS

If you already have an earlier version of DECnet–DOS installed on your system, you must remove it by completing the following steps:

1. Delete all files in the old DECnet directory, then remove the directory. For example, if your old DECnet files are found in \DECNET you should type:

```
c> DEL \DECNET\*.*
c> RMDIR \DECNET
```

2. Reboot your system and proceed with the installation

4.2 Using the DECnet–DOS Installation Procedure

During the installation procedure, you will be asked to reply to a set of questions and then prompted to make selections from a series of menus. The checklist you prepared in Chapter 3 will help you answer questions and make menu selections. Before proceeding, make sure you have completed that checklist and have it at hand.

4.2.1 Understanding DIP Conventions

DIP's Yes/No queries include a question mark (?) and indicate your choices and the default response within square brackets [Y/N Default:Y]. Some answers will cause you to enter into one or more menus. One of the selections in each menu is HELP. When you choose HELP, DIP displays information you may need to aid you in the selection process. When menu selections result in an installation configuration change, a confirmation of the change will be displayed.

You can exit the installation procedure at any time by entering a CTRL/C. Before exiting you will be given the opportunity to permanently save any selections or changes you made to the file DIP.SAV (located on the first distribution diskette). When you rerun the installation, DIP will give you the opportunity to use your previously selected options. See Appendix D for sample installation sessions.

4.2.2 Installing DECnet–DOS Software

Complete the following steps to install DECnet–DOS software:

1. Insert the diskette labeled DECNETPC11A into drive A:, and close the door.
2. Set your default drive to A: by typing:

   ```
   C>A:
   ```

3. Type DIP after the PC–DOS prompt.

   ```
   A>DIP
   ```

4. Answer questions posed by DIP and make selections from subsequent menus.

After you have proceeded through the series of questions and menu selections, DIP will prompt you to insert some or all of the remaining diskettes (DECNETPC11B, DECNETPC11C, and DECNETPC11D). DIP will then give you the opportunity to save your answers to the file DIP.SAV located on the diskette labeled DECNETPC11A. (Remember to leave the write protect tab off of this diskette.)

4.3 Updating System Startup Files

DIP automatically updates, or creates if necessary, your system startup files (CONFIG.SYS and AUTOEXEC.BAT) to include commands necessary to correctly configure, test, and run DECnet–DOS. These files are located in the root directory of the boot drive and are tailored specifically according to the configuration you selected.

If you copy DECnet–DOS files manually, you must update your system startup files. See Appendix B for more information on the commands you should include in the system startup files.

4.4 Completing the Installation

After completing the installation, you must reboot your system from the drive you specified during the installation procedure. The Network Control Program (NCP) will configure your DECnet node and, if selected, the Network Test Utility (NTU) will run verification tests. A message will be displayed at your PC when your system is initializing (after it is rebooted). The following message is a sample only — the message you receive will vary depending upon your selected configuration.

```
DECnet Warning: No Database, using defaults
DECnet Warning: Uninitialized Node Address
DECnet Version 1.1 installed
DECnet - Network Disk Driver Version 1.1 installed
DECnet - Network Printer Driver Version 1.1 installed
DECnet - TTT Version 1.1 installed
DECnet - TFA Version 1.1 installed
```

If problems appear while NCP or NTU are running, you may enter a CTRL/C to abort the procedure. See the chapter, "Testing the Network", in the *DECnet–DOS User's Guide* for solutions to your problem(s), if you receive any error messages from NCP or NTU. After you solve your problem, you must reboot your system to allow NCP and/or NTU to be run again.

4.5 Rerunning the DECnet–DOS Installation Procedure

You may wish to rerun DIP if you aborted the installation procedure or encountered problems after installing and initializing the software. Follow the instructions provided in section 4.2.2 to rerun DIP. DIP searches for the file DIP.SAV. If you saved the previous installation selections to the file DIP.SAV, DIP allows you to use your saved answers or to enter new selections.

5
Verifying DECnet–DOS Installation

The Network Test Utility (NTU) can assist you in verifying your installation of the DECnet–DOS product. NTU can diagnose problems you may have when connecting your IBM system to the network. It allows you to display information about your node and how it is interacting with the network. You do not need any special technical knowledge to use NTU. At this point, it is not necessary to have a thorough understanding of the NTU commands. The *DECnet–DOS User's Guide* can provide you with more details.

During the installation procedure, you can choose to have diagnostic tests run automatically or manually. If you choose to have diagnostic tests run automatically and one or more of the verification tests fail, refer to the *DECnet–DOS User's Guide* for assistance in solving any problems that arise.

The following NTU are used to verify the DECnet–DOS installation:

- LOOP EXECUTOR – to check the operation of your local node.
- LOOP NODE – to check the communication with a specified remote node. (It is recommended that you test against the adjacent node if using an asynchronous configuration.)

The following sections describe these tests in more detail. Make sure that the connection to your IBM system, and the remote node is in place.

5.1 LOOP EXECUTOR

The LOOP EXECUTOR command invokes the loop test for your local (executor) node. It verifies the operation of your local node by checking the local network software.

When you execute this command, NTU performs the test *n* times, as long as the test is successful. (The default value for *n* is 1. You can change this value using the SET COUNT command.)

You should refer to the *DECnet–DOS User's Guide* for more information about these commands.

Enter the LOOP EXECUTOR command:

```
NTU>LOOP EXECUTOR
```

The following example requests that the loop test be performed 10 times, with mixed ones and zeroes, and a message length of 50.

```
C>NTU
NTU>LOOP EXECUTOR COUNT 10 WITH MIXED LENGTH 50 (ENTER)
```

5.2 LOOP NODE

The LOOP NODE test determines whether the IBM system can communicate with a specified remote node. The following example illustrates the LOOP NODE command and a possible system response.

```
NTU>LOOP NODE GRAHAM COUNT 10 LENGTH 40(ENTER)
Connect complete to node GRAHAM

Remote node maximum buffer size for loopback:  4096

LOOP NODE test started at    4-FEB-1986  14:32:14

Sending loop message 1, 40 bytes.
Receiving loop message 1, 40 bytes.
Successful send and receive, message 1.
Sending loop message 2, 40 bytes.
Receiving loop message 2, 40 bytes.
Successful send and receive, message 2.
Sending loop message 3, 40 bytes.
Receiving loop message 3, 40 bytes.
Successful send and receive, message 3.
Sending loop message 4, 40 bytes.
Receiving loop message 4, 40 bytes.
Successful send and receive, message 4.
Sending loop message 5, 40 bytes.
Receiving loop message 5, 40 bytes.
Successful send and receive, message 5.
Sending loop message 6, 40 bytes.
Receiving loop message 6, 40 bytes.
Successful send and receive, message 6.
Sending loop message 7, 40 bytes.
Receiving loop message 7, 40 bytes.
Successful send and receive, message 7.
```

(continued on next page)

```
Sending loop message 8, 40 bytes.
Receiving loop message 8, 40 bytes.
Successful send and receive, message 8.
Sending loop message 9, 40 bytes.
Receiving loop message 9, 40 bytes.
Successful send and receive, message 9.
Sending loop message 10, 40 bytes.
Receiving loop message 10, 40 bytes.
Successful send and receive, message 10.

LOOP NODE test finished at   4-FEB-1986  14:32:44
```

The LOOP NODE test was successful. The IBM system was able to communicate with the remote node GRAHAM. To exit from NTU, type:

NTU>EXIT ENTER

5.3 Diagnosing Problems

If the verification tests fail, check the following list for possible solutions to your problem or problems.

1. Are all cables and other hardware components properly installed?
2. Are your network parameters properly configured?
   - The area number for your IBM system and the adjacent node must be the same. (asynchronous only)
   - Your line must be state ON.
   - The line speed for your IBM system and the adjacent node must be the same. (asynchronous only)
   - Node passwords (if used) for your IBM systems and the adjacent node must be the same. (asynchronous only)
   - Network parameters must be properly defined on the adjacent node.
   - Your IBM system must have a unique node name.
3. Are you sending and receiving any messages to and from the adjacent node?
   - Use NCP or NTU to display line and circuit counters and events.
   - Use a breakout box or a line monitor to check if you are sending and receiving messages. (asynchronous only)
   - Also check by putting your IBM system in terminal emulation mode and watching the screen. The binary DDCMP start messages appear as regularly timed sequences of strange characters. (asynchronous only)

After solving your problem, you should rerun the verification tests by entering the command VERIFYDN. This command will rerun NCP to configure your node and rerun NTU to verify your installation. If the verification tests still fail, see the chapter, "Testing the Network" in the *DECnet–DOS User's Guide* for details on running the Network Test Utility. If you require additional help, contact the person at your site who is responsible for DECnet at the adjacent node. To isolate the problem, this person may use data communications test equipment, and perform network management tests at the adjacent node.

A
Contents of the Distribution Diskettes

This appendix lists the contents of the distribution diskettes. The description of each DECnet–DOS file includes required disk size and how much memory is required.

Table A–1: DECnet–DOS Files

Facility	File Name	Disk Size Bytes*	Memory Size Bytes*
DECNETPC11A			
Installation Tools	DIP.EXE	never copied	66000
	DIP.DAT	never copied	–
Real-Time Scheduler	SCHPC.EXE****	3000	3000
Data Link Layer	DLL3COM.EXE****	11000	50000
	DLLMICOM.EXE****	11000	50000
Permanent Database	DECPARM.DAT***	400	–
Node Name Database	DECNODE.DAT***	14/node	–
Access Control Information	DECALIAS.DAT***	121/node	–
Network Control Program	NCP.EXE	95000	10700
	NCPHELP.BIN	17000	–
Access Control Database	DECACC.DAT***	82/username	–

(continued on next page)

Table A–1 (cont.): DECnet–DOS Files

Facility	File Name	Disk Size Bytes*	Memory Size Bytes*
DECnet Network Process	DNPDCPPC.EXE****	44000	70000
	DNPETHPC.EXE****	38000	51000
DECNETPC11B			
Set Host Utility	SETHOST.EXE	96000	121000
Network File Transfer Utility	NFT.EXE	82000	106000
Network Test Utility	NTU.EXE	88000	100000
	NTUHELP.BIN	10000	–
Network Device Utility	NDU.EXE	46000	56000
Network Virtual Disk Driver	NDDRV.SYS**	3000	7000
Network Virtual Printer Driver	NPDRV.SYS**	2600	8000
DECNETPC11C			
Local Area Terminal	LAT.EXE****	10000	13000
File Access Listener	FAL.EXE	49000	102000
DECnet Test Receive Utility	DTR.EXE	21000	26000
DECnet Test Send Utility	DTS.EXE	65000	72000
DECnet Mail Utility	MAIL.EXE	67000	84000
DECnet Mail Database	MAIL.DAT***	100	–
Transparent File Access	TFA.EXE****	27000	47000
Transparent Task-to-Task	TTT.EXE****	17000	22000
Transparent Network Task	TNT.EXE	14000	17000

(continued on next page)

Table A–1 (cont.): DECnet–DOS Files

Facility	File Name	Disk Size Bytes*	Memory Size Bytes*
Job Spawner	SPAWNER.EXE	19000	22000
Job Spawner Database	DECSPAWN.DAT***	100	
DECNETPC11D			
	DTS.TXT	15000	–
Release Notes	RELEASE.NOT	40000	–
Break Source Utility	BREAKSRC.EXE	never copied	12000
	DNETLIB.SRC	227000	–

* The amount of disk space and memory requirements are given as approximate sizes.
** Resident in memory; must be installed at boot time.
*** Not included in kit; may be created during installation or when using utilities.
**** Resident in memory; may be installed at any time.

B
DECnet–DOS Utilities

The DECnet–DOS Installation Procedure (DIP) allows you to automatically install DECnet–DOS files and utilities onto your IBM PC, IBM PC/XT, or IBM Personal Computer AT. You may, however, copy these files and utilities manually if you wish to do so. This appendix provides you with the information you need to successfully copy portions of the DECnet–DOS software kit.

B.1 Copying Files from the Distribution Diskette

Each DECnet–DOS utility may require more than one file. Appendix A lists the contents of all distribution diskettes.

Complete the following steps to install only portions of the DECnet–DOS product:

1. Create a DECnet directory on the disk to which DECnet–DOS files will be copied. Enter the MKDIR command at the keyboard. Type:

   ```
   C>MKDIR \DECNET
   ```

2. Insert the diskette labeled DECNETPC11A into drive A:, and close the door.

3. Select the files to be copied (using Appendix A as a guide).

   Files needed for a specific DECnet–DOS utility can be copied into any directory of your choice. The directory must be in your path. However, if the DECnet–DOS utility requires *.BIN files, you must copy them into the DECnet database path. (See Appendix C.)

For example, to copy the Network Control Program utility, move the *.BIN files to the \DECNET directory and the NCP.EXE file to any other directory in your path. Type:

```
C>COPY A:NCPHELP.BIN \DECNET
C>COPY A:NCP.EXE
```

4. Repeat the copy operation until you have finished copying the required files for each DECnet–DOS utility from the diskette.
5. Once step 4 is complete, you can remove the diskette from the drive. Repeat the above directions, beginning with step 2, if you want to copy files from any other diskette.
6. Update your system startup files to include the command lines necessary to install DECnet–DOS software.

B.2 Individual DECnet–DOS Components

You may need to copy one or more files in order to run some DECnet–DOS components correctly. This section provides you with the detailed information you need to copy portions of the DECnet–DOS files and utilities, including:

- how to run the specific DECnet–DOS utility (if applicable)
- any DECnet or PC–DOS parameter(s) that must be modified before the utility is run (if applicable)

Refer to Appendix A for disk and memory requirements for each DECnet–DOS file and utility.

B.2.1 Installation Tools

Required Files

DIP.EXE
DIP.DAT
DIP.SAV

These files are used only during installation. They are never automatically copied from the software kit. The file DIP.SAV is created if the user runs the DECnet–DOS Installation Procedure (DIP) and chooses to save answers.

B.2.2 Real-Time Scheduler

Required File

SCHPC.EXE

Installation Requirements

The Real-Time Scheduler is required for all other DECnet–DOS services and utilities. SCHPC.EXE is a terminate and stay resident task which is loaded into memory the first time it is run. It remains resident in memory. SCHPC.EXE must be run before the Data Link Layer (DLL) (if using Ethernet configuration) and the DECnet Network Process (DNP).

SCHPC.EXE can be copied to any directory as long as that directory is in your path. You may install the scheduler by including the following line in the file AUTOEXEC.BAT:

```
SCHPC
```

NOTE

SCHPC.EXE is always automatically selected by DIP.

B.2.3 Data Link Layer Process

Required Files

DLL3COM.EXE
DLLMICOM.EXE

The Data Link Layer (DLL) process is required (for all DECnet–DOS services and utilities) for Ethernet configurations only. DLL is a terminate and stay resident task which is loaded into memory the first time it is run. It remains resident in memory. DLL must be installed after SCH but before LAT and DNP.

You can install DLL in any directory as long as that directory is in your path. You can specify the DECnet database path as a command line argument. (See Appendix C for details on specifying the DECnet database path.) During initialization, DLL reads the permanent database file, \DECPARM.DAT in the DECnet database path. If you plan to install DLL, you may install the file by including the following line in the file AUTOEXEC.BAT:

```
DLL3COM <DECnet database path>
```

or

```
DLLMICOM <DECnet database path>
```

NOTE

DLL is automatically selected by DIP for Ethernet configurations.

B.2.4 The DECnet–DOS Network Process

Required Files

DNPDCPPC.EXE (asynchronous)
DNPETHPC.EXE (Ethernet)

Installation Requirements

The DECnet network process is required by all other DECnet–DOS services and utilities. It is loaded into memory and initialized the first time it is run. The DECnet process remains resident in memory.

During initialization, DNP reads the permanent database file, \DECPARM.DAT in the DECnet database path. DNP can be copied to any directory as long as that directory is in your path. (See Appendix C for more details on specifying a DECnet database path.) If you plan to install DNP, you may install the file by including the following line in the file AUTOEXEC.BAT:

```
DNPCPPC <DECnet database path>
```

or

```
DNPETHPC <DECnet database path>
```

When your system is rebooted, **the line comes up in the state last defined by NCP before the reboot.** When the line state is OFF, the asynchronous communications port can be used by any other software, even with the DECnet–DOS process loaded.

NOTE

DNP is always automatically selected by DIP.

B.2.5 DECnet Database Files

Required Files

DECPARM.DAT (Permanent Database)
DECNODE.DAT (Node Name Database)
DECALIAS.DAT (Access Control Information)
DECACC.DAT
DECSPAWN.DAT (Job Spawner Database)
MAIL.DAT (DECnet Mail Database)
VT102.DAT (SETHOST Database)

Installation Requirements

The files DECPARM.DAT, DECNODE.DAT, and DECLIAS.DAT are created automatically during installation. DNP or DLL reads the permanent database file DECPARM.DAT. DECNODE.DAT and DECALIAS.DAT are never read or written by DNP. All database files are read and written by utility programs. They are created and changed by NCP and read by the utilities. No memory space is required for these data files. Refer to the *DECnet–DOS User's Guide* for more information on how these files are created.

The database files must be in the DECnet database path. See Appendix C for details on specifying the DECnet database path.

NOTE

All files with the file extensions *.DAT and *.BIN must be located in the DECnet database path.

Use the NCP command SHOW EXECUTOR CHARACTERISTICS to display your DECnet database path.

B.2.6 Network File Transfer Utility

Required File

NFT.EXE

Installation Requirements

NFT.EXE can be copied to any directory as long as that directory is in your path. NFT uses memory only when it is running.

B.2.7 Set Host Utility

Required File

SETHOST.EXE

Installation Requirements

SETHOST.EXE can be copied to any directory. SETHOST uses memory only when it is running.

When you define parameters using the SET-UP display, the parameters are saved in the file VT102.DAT. SETHOST then uses the DECnet database path to find the DECnet directory.

B.2.8 Local Area Transport

Required File

LAT.EXE

Installation Requirements

LAT.EXE can be copied to any directory as long as that directory is in your path. It must be run after SCH and DLL but before DNP. This process is used by SETHOST if you are using an Ethernet configuration. LAT is a terminate and stay resident task which is loaded into memory the first time it is run. It remains resident in memory.

NOTE

This file is automatically selected by DIP if an Ethernet and SETHOST configuration is selected.

If LAT is not installed, SETHOST makes all connections using the DECnet CTERM protocol.

If you plan to install LAT, you must install the file by including the following line in the file AUTOEXEC.BAT:

```
LAT
```

Four command line switches are provided:

1. /D:*nn* — This is used to increase the default size of the LAT Service Directory, where *nn* is an unsigned integer. Each additional entry will cause an extra 47 bytes of memory to be allocated (rounded to the nearest 16 byte paragraph). The default size of the directory is 50 entries = 470 bytes.
2. /G:byte1,byte2,byte3,...byte32 — Each byte represents a byte in the group code field. Omit a byte by using a comma. Groups are numbered from 0 to 255 starting at the rightmost bit of byte number one. All group codes are enabled by default.
3. /R:*n* — This is used to set the number of retransmits permitted for a circuit. Eight retransmits are allowed by default before the circuit is stopped.
4. /N — This switch stops LAT from listening for announcements of services. If this switch is used, all LAT services must be declared using the NCP SET NODE ADDR LAT command. Load balancing will not work.

B.2.9 Network Control Program

Required Files

NCP.EXE
NCPHELP.BIN

Installation Requirements

NCP.EXE can be copied to any directory as long as that directory is in your path. However, the NCP.BIN file must be in the DECnet database path. (See Appendix C for more details on specifying a DECnet database path.)

NCP opens many files when it runs. For NCP to run, you must increase the number of FILES in CONFIG.SYS. Edit the command line FILES = *n* in CONFIG.SYS with EDLIN or any editor. The value must be at least 20.

NOTE

The FILE value in CONFIG.SYS is automatically adjusted if you are using DIP to install the software.

NCP uses memory only when it is running.

B.2.10 Network Test Utility

Required Files

NTU.EXE
NTUHELP.BIN

Installation Requirements

NTU.EXE can be copied to any directory as long as that directory is in your path. However, the NTU.BIN file must be in the DECnet database path. (See Appendix C for more details on specifying a DECnet database path.)

NTU opens many files when it runs. For NTU to run, you must increase the number of FILES in CONFIG.SYS. Edit the command line FILES = *n* in CONFIG.SYS with EDLIN or any editor. The value must be at least 20.

NOTE

The FILE value in CONFIG.SYS is automatically adjusted if you are using DIP to install the software.

NTU uses memory only when it is running.

B.2.11 Transparent File Access

Required File

TFA.EXE

Installation Requirements

TFA can be copied to any directory as long as that directory is in your path.

TFA is a terminate and stay resident task which is loaded into memory the first time it is run. It remains resident in memory. TFA can be removed from memory by TNT. If you plan to use TFA, you may install the file by including the following line in the file AUTOEXEC.BAT:

```
TFA
```

NOTE

This line will automatically be added to your AUTOEXEC.BAT file if you are using DIP to install the software.

B.2.12 Transparent Task-to-Task

Required File

TTT.EXE

Installation Requirements

TTT can be copied to any directory as long as that directory is in your path.

TTT is a terminate and stay resident task which is loaded into memory the first time it is run. It remains resident in memory. TTT can be removed from memory by TNT. If you plan to use TTT, you may install the file by including the following line in the file AUTOEXEC.BAT:

```
TTT
```

NOTE

This line will automatically be added to your AUTOEXEC.BAT file if you are using DIP to install the software.

B.2.13 Transparent Network Task Control

Required File

TNT.EXE

Installation Requirements

TNT.EXE can be copied to any directory as long as that directory is in your path. TNT reports errors from the use of TFA and TTT. Do not install TNT if you do not use TFA and TTT.

NOTE

TNT.EXE is automatically selected if TTT and/or TFA are selected when running the installation procedure.

TNT uses memory only when it is running.

B.2.14 Network Device Utility

Required File

NDU.EXE

Installation Requirements

This utility is required if you plan to use the network virtual disk and/or the network virtual printer. The NDU.EXE file can be copied to any directory as long as that directory is in your path.

NOTE

NDU.EXE is automatically selected if Network Virtual Disk and/or Network Virtual Printer are selected during the automatic installation procedure.

B.2.15 Network Virtual Disk Driver

Required File

NDDRV.SYS

Installation Requirements

The driver is required for the Network Virtual Disk utility. It is loaded into memory and initialized at boot time as a result of the DEVICE = *NDDRV.SYS* statement in \CONFIG.SYS. The driver must be on the hard disk if it is booted from the hard disk. Once installed, the driver remains resident in memory. If you plan to use Network Virtual Disk utility, you must install the driver by including the following command line in the system startup file CONFIG.SYS:

```
DEVICE = <DECnet database path>\NDDRV.SYS
```

Although NDU controls your use of virtual disks, the network virtual disk driver actually performs the input and output for you. You must install this program before you can run NDU. Refer to the *DECnet–DOS User's Guide* on how to run the Network Device Utility, and use the NDU commands.

If you want to frequently access files from an existing virtual disk, you can update your current \AUTOEXEC.BAT file and include the NDU OPEN command. This should automatically establish the necessary link to the remote DECnet node where the virtual disk is stored. To do this, include the NDU OPEN command in your current \AUTOEXEC.BAT file. Refer to the *DECnet–DOS User's Guide* for an explanation of the NDU OPEN command.

B.2.16 Network Virtual Printer Driver

Required File

NPDRV.SYS

Installation Requirements

The driver is required for the Network Virtual Printer utility. It is loaded into memory and initialized at boot time as a result of the DEVICE = *NPDRV.SYS* statement in \CONFIG.SYS. The driver must be on the hard disk if it is booted from the hard disk. Once installed, the driver remains resident in memory. If you plan to use Network Virtual Printer utility, you must install the driver by including the following command line in the system startup file CONFIG.SYS:

```
DEVICE = <DECnet database path>\NPDRV.SYS
```

Although NDU controls your use of virtual printers, the network virtual printer driver actually performs the input and output for you. You must install this program before you can run NDU. Refer to the *DECnet–DOS User's Guide* on how to run the Network Device Utility, and use the NDU commands.

If you want to frequently access the virtual printer, you can update your current \AUTOEXEC.BAT file and include the NDU OPEN command. This should automatically establish the necessary link to the remote DECnet node where the virtual printer file is located. To do this, include the NDU OPEN command in your current \AUTOEXEC.BAT file. Refer to the *DECnet–DOS User's Guide* for an explanation of the NDU OPEN command.

B.2.17 DECnet Test Receive and Send Utilities

Required Files

DTR.EXE (DECnet Test Receiver Utility)
DTS.EXE (DECnet Test Sender Utility)
DTS.TXT

Installation Requirements

DTR and DTS are used for testing the network. They do not need to be copied for normal operations. DTR.EXE and DTS.EXE can be copied to any directory as long as that directory is in your path. DTS.TXT provides documentation (not found in the User's Guide) on the use of DTS and DTR.

DTR and DTS use memory only when they are running.

B.2.18 DECnet–DOS Mail Utility

Required File

MAIL.EXE

Installation Requirements

MAIL.EXE can be copied to any directory as long as that directory is in your path. MAIL.EXE uses memory only when it is running.

NOTE

MAIL.EXE is automatically selected by DIP.

B.2.19 File Access Listener

Required File

FAL.EXE

Installation Requirements

FAL.EXE can be installed in any directory as long as that directory is in your path. FAL.EXE uses memory only when it is running.

NOTE

FAL.EXE is automatically selected by DIP.

B.2.20 Programming Interface Library Sources

Required File

DNETLIB.SRC

Installation Requirements

This file contains the source and header files for the programming interface library. After building the proper object or library file for your compiler, this file can be deleted. You should also refer to the *DECnet–DOS Programmer's Reference Manual* on how to create your own programming interface library.

If you are not involved in writing any programs which access the network directly, this file is not needed.

B.2.21 Break Source Utility

Required File

BREAKSRC.EXE

Installation Requirements

Use this file to break the DNETLIB.SRC file into separate source files for compiling and assembling your programs.

C
Specifying a DECnet Database Path

You need several database files to run DECnet–DOS software components. Your system startup file AUTOEXEC.BAT contains a path specification that enables DECnet–DOS software to access these database files. This appendix provides instructions you need to specify a DECnet database path if you want to change the existing path specification or if you are manually installing portions of the DECnet–DOS software components.

DECnet database device and path names are specified as input arguments to the Data Link Layer (DLL) and/or the DECnet Network Process (DNP) command lines in AUTOEXEC.BAT. Upon system reboot, DNP and DLL use their command line arguments as path specification for accessing the database files. To change the DECnet database path, you must enter a new path specification to the DLL and/or the DNP command lines. (Use EDLIN or a similar text editor to edit the command lines in the file AUTOEXEC.BAT.)

C.1 Ethernet Configurations

If you have an Ethernet configuration, the Data Link Layer (DLL) and the DECnet Network Process (DNP) will be installed and require the database path specification. Enter the path specification on the DLL and DNP command line in AUTOEXEC.BAT. For example:

```
PATH C:\DECNET;

REM *** Ethernet Configuration ***
SCH
DLL C:\DECNET
LAT
DNP C:\DECNET
TTT
TFA
```

A default path will be used if no path specification is entered on either command line.

NOTE

The default path is built using the default drive (when DLL and/or DNP are run) and the directory "\DECNET". For example, if C: is the default drive and the user enters DNP with no command line argument, the database path will be C:\DECNET.

C.2 Asynchronous DDCMP Configurations

If you have an asynchronous DDCMP configuration, the DNP will be installed and requires a database path specification. The DECnet database path specification should be entered on the DNP command line in AUTOEXEC.BAT. For example:

```
PATH C:\DECNET;

REM *** Asynchronous Configuration ***
SCH
DNP C:\DECNET
```

A default path will be used if no path specification is entered on either command line.

NOTE

The default path is built using the default drive (when DLL and/or DNP are run) and the directory "\DECNET". For example, if C: is the default drive and the user enters DNP with no command line argument, the database path will be C:\DECNET.

The DECnet database path does not have to match the path in which the DECnet software is copied. However the path into which the DECnet software is copied should be added to the path environment variable string. For example:

```
PATH C:\DECNET;C:\;C:\utility
```

D
Sample Installations Using DIP

This appendix provides sample procedures which illustrate how to use the DECnet–DOS Installation Procedure (DIP) to install DECnet–DOS software on your IBM personal computer. The answers used are for demonstration purposes only and will probably differ from the answers that you will supply during your actual installation.

Example 1 – Asynchronous DDCMP Configuration

This example presents the screens and menus that you will see when you use DIP to copy the entire DECnet–DOS software kit to your IBM PC AT personal computer, configured for asynchronous communications. Many screens are self explanatory. Where necessary, explanatory text is inserted to help explain the process.

First, insert the diskette labeled DECNETPC11A into drive A: and type:

```
A>DIP
```

DIP displays:

```
                DECnet-DOS Installation Procedure (DIP) - V1.1

Press any key to continue or <CTRL/C> to exit...
```

The first series of screens provide an overview of the installation procedure:

```
                                OVERVIEW

*****************************************************************

During the DECnet-DOS installation you will be asked to reply
to a set of questions and prompted to make selections from
a series of menus.  You may select any one of the items listed
in each menu.  On-line HELP is included as an item in each menu.

When your menu selection results in an installation configuration
change, a confirmation of your selection is displayed.

You can back out of any menu by pressing <ENTER> after
the "Enter selection?" prompt.

*****************************************************************

Press any key to continue or <CTRL/C> to exit...


                          OVERVIEW (continued)

*****************************************************************

The default answer is displayed with each question.
For example:

"Do you want to change it ? [Y/N  Default: Y]"

You may exit the installation procedure at any time by
entering a <CTRL/C>.  Before exiting, you will be given the
chance to permanently save your answers to the file
DIP.SAV located on the first distribution floppy.  Leave
the write protect tab off of the floppy.

Have your Installation Guide handy during this
installation procedure.

*****************************************************************

Press any key to continue or <CTRL/C> to exit...
```

OVERVIEW (continued)

```
*****************************************************************

Release notes contain information about DECnet-DOS
that may not have been included in any of the other formal
documentation.  Such things as hints on installation,
configuration and troubleshooting as well as some additional
information about software components and reporting problems are
included in the release notes.  If you have not read the release
notes yet, do so at this time.

Release Notes are in the file RELEASE.NOT on kit floppy DECNETPC11D
(4 of 4).

*****************************************************************

Press any key to continue or <CTRL/C> to exit...
```

The next set of screens pertain to setting up your personal computer as a DECnet–DOS node:

```
                    SET UP LOCAL NODE INFORMATION

****************************************************************

To run your IBM PC AT personal computer as a DECnet-DOS
node, you must give it a node name and a
unique node address.  Obtain this information before
continuing with this installation procedure.

****************************************************************

Press any key to continue or <CTRL/C> to exit...
```

DIP prompts you for your node name and address, then displays a summary of your responses. Use the information you recorded in your preinstallation checklist to answer these questions.

```
 Node name (Example: ANODE) ? wtplns <ENTER>
Node address (Example: 10.55) ? 55.63 <ENTER>

Local node information . . .

Node name:      WTPLNS
Node address:   55.63

Change it [Y/N  Default: Y] ? n <ENTER>
```

Here DIP prompts you to enter your local node user name:

```
                    SET UP LOCAL NODE USER NAME

****************************************************************

You must set up a local node user name to be used by
DECnet-DOS as the access control information required for proxy
logins.  Upper and lower case characters make a
difference, therefore take care when entering this name.
(See the Programmer's Reference Manual for more
information.)

****************************************************************


Press any key to continue or <CTRL/C> to exit...


Enter a user name of from 1 to 16 alphanumeric characters.

 User name ? adams <ENTER>

Local node user name . . .
 name is: "adams"

Change it [Y/N  Default: Y] ? n <ENTER>
```

You can communicate with other DECnet nodes by physically connecting your node directly to the baseband Ethernet or to an adjacent routing node. DIP prompts you to enter your communications type.

```
                    SET UP COMMUNICATIONS TYPE

************************************************************

You may run DECnet-DOS using Ethernet or Asynchronous DDCMP
communications.  The following menus allow you to select
the appropriate communication type.

************************************************************

Press any key to continue or <CTRL/C> to exit...


                              COMMUNICATIONS TYPE

                          Select from the following:
                      1.  Help
                      2.  Ethernet
                      3.  Asynchronous DDCMP

Enter selection? 3 <ENTER>
```

To connect your DECnet node to an adjacent routing node using asynchronous DDCMP, you must select a communications speed for the line.

```
                    DDCMP - LINE SPEED

                Select from the following:

 1.  Help
 2.  50
 3.  75
 4.  110
 5.  134
 6.  150
 7.  200
 8.  300
 9.  600
10.  1200
11.  1800
12.  2000
13.  2400
14.  3600
15.  4800
16.  7200
17.  9600

Enter selection? 17 <ENTER>
```

DIP displays a summary of your communications type and offers you the option of making further changes.

```
                SUMMARY OF COMMUNICATIONS PARAMETERS

      Communications Type: Asynchronous DDCMP
Communications Line Speed: 9600

Change it [Y/N  Default: Y] ? n <ENTER>
```

Your system startup files (CONFIG.SYS and AUTOEXEC.BAT) contain information needed to correctly configure and run DECnet–DOS. Here DIP supplies a summary of the default choices for device and path specifications.

```
                SUMMARY OF PATH SPECIFICATIONS

 Boot drive is C: (location of CONFIG.SYS and AUTOEXEC.BAT).
 DECnet-DOS kit files will be copied FROM drive A:
 DECnet-DOS kit files will be copied TO C:\DECNET\
 DECnet-DOS default database files will be located in C:\DECNET\

Change it [Y/N  Default: Y] ? n <ENTER>
```

You may use the Network Test Utility (NTU) to verify your installation. You may choose to have verification tests run automatically or you may run them manually.

```
                AUTOMATIC INSTALLATION VERIFICATION

****************************************************************

You can verify the DECnet-DOS installation
by running tests using the Network Test Utility (NTU).
You may choose to have these tests run automatically
or you may run tests manually. If you choose to run
the tests manually, please refer to the chapter on NTU
in the User's Guide.

****************************************************************

Automatic verification of installation currently set OFF

Change it [Y/N  Default: Y] ? n <ENTER>
```

```
                    SET UP REBOOT LINE STATE

*****************************************************************

Setting "Reboot Line State" to ON enables the automatic
startup of DECnet-DOS upon IBM PC AT system reboot.

*****************************************************************

Reboot line state currently set OFF

Change it [Y/N  Default: Y] ? n <ENTER>


                  SELECTING SOFTWARE COMPONENTS

*****************************************************************

Use the following menus to copy any or all of the
DECnet-DOS kit components (files). You may back out
of a menu by pressing <ENTER>.

*****************************************************************

Press any key to continue or <CTRL/C> to exit...
```

You may choose to copy the entire DECnet–DOS software kit or select individual components. A minimum configuration is necessary to run DECnet–DOS on your system. The files and utilities that make up this minimum configuration will always be copied.

Before you copy files however, you may review your current software and hardware configuration with the "Summaries" menu selection. The following series of screens illustrate how to use the summary menus.

```
                              COPY KIT FILES

                          Select from the following:

                      1.  Help
                      2.  Summaries
                      3.  Copy Entire Kit
                      4.  Select Individual Components

Enter selection? 2 <ENTER>
```

```
                              SUMMARIES

                          Select from the following:

                      1.  Help
                      2.  Begin Copying Kit Files
                      3.  General Information Summary
                      4.  Node Information Summary
                      5.  Communications Information Summary
                      6.  Software Summary

Enter selection? 3 <ENTER>
```

The following screen displays a summary of your software and hardware configuration and the choices you made for copy path, database path, reboot line state, and automatic installation verification.

```
                        SUMMARY OF GENERAL INFORMATION

      Personal Computer Type:   IBM PC AT
                 DOS Version:   3.10
                   Boot drive:  C:
 Kit File(s) to be Copied to:   C:\DECNET\
        DECnet Database Path:   C:\DECNET\
           Reboot Line State:   OFF
   Installation Verification:   OFF

 Minimum DECnet Memory Usage:   167374 (estimated)
   Available Bytes of Memory:   486160 (before installing DECnet)
   Available Bytes of Memory:   318786 (after installing DECnet)

            DECnet Disk Usage:  172700
  Available Bytes on Drive C:   237568 (before copying files)
  Available Bytes on Drive C:   64868 (after copying files)

Press any key to continue or <CTRL/C> to exit...
```

```
                              SUMMARIES

                          Select from the following:

                    1.  Help
                    2.  Begin Copying Kit Files
                    3.  General Information Summary
                    4.  Node Information Summary
                    5.  Communications Information Summary
                    6.  Software Summary

Enter selection? 4 <ENTER>
```

The following screen displays the names and addresses you entered for each node during the installation procedure. It also displays the local node user name.

```
                          SUMMARY OF DEFINED NODE(S)

  WTPLNS  55.63     - Local Node (User Name: adams)

Press any key to continue or <CTRL/C> to exit...
```

```
                    SUMMARIES

          Select from the following:

     1.   Help
     2.   Begin Copying Kit Files
     3.   General Information Summary
     4.   Node Information Summary
     5.   Communications Information Summary
     6.   Software Summary

Enter selection? 5 <ENTER>
```

The following screen summarizes your communications type (asynchronous or Ethernet).

```
              SUMMARY OF COMMUNICATIONS PARAMETERS

      Communications Type: Asynchronous DDCMP
Communications Line Speed: 9600

Press any key to continue or <CTRL/C> to exit...
```

```
                    SUMMARIES

            Select from the following:

         1.  Help
         2.  Begin Copying Kit Files
         3.  General Information Summary
         4.  Node Information Summary
         5.  Communications Information Summary
         6.  Software Summary

Enter selection? 6 <ENTER>
```

The following screen summarizes the individual DECnet–DOS files and utilities to be copied based upon your current configuration. The information displayed here includes the file name, the location of, and disk and memory requirements for each component.

If you have not yet selected any DECnet–DOS components, the files which make up the minimum configuration will be displayed at this time and subsequently copied.

```
               SUMMARY OF SELECTED SOFTWARE COMPONENTS

                 Found on         Disk      Memory
   File Name   Kit Labeled       Usage       Usage

     NCP.EXE   DECNETPC11A       91412       97268
 NCPHELP.BIN   DECNETPC11A       15872           0
   SCHPC.EXE   DECNETPC11A        3968        3334 [memory resident]
DNPDCPPC.EXE   DECNETPC11A       56448       66772 [memory resident]

Press any key to continue or <CTRL/C> to exit...
```

You can back out of the SUMMARIES menu by pressing ENTER in response to the "Enter Selection ?" prompt.

```
                                SUMMARIES

                            Select from the following:

                        1.  Help
                        2.  Begin Copying Kit Files
                        3.  General Information Summary
                        4.  Node Information Summary
                        5.  Communications Information Summary
                        6.  Software Summary

Enter selection?  <ENTER>
```

You may proceed with the installation procedure when you are satisfied with your configuration selections.

```
                              COPY KIT FILES

                            Select from the following:

                        1.  Help
                        2.  Summaries
                        3.  Copy Entire Kit
                        4.  Select Individual Components

Enter selection? 3 <ENTER>
```

If you have an earlier version of DECnet–DOS installed on your system, DIP automatically deletes the old DECnet directory and creates a new one.

```
Insert diskette labeled DECNETPC11A into drive A (1 of 4)

Press any key to continue or <CTRL/C> to exit...


[<CTRL/C> disabled while a file is being copied]
[Deleted old C:\DECNET\DECPARM.DAT]
[Created directory C:\DECNET]

Copying file A:NCP.EXE to C:\DECNET\NCP.EXE . . .

Copying file A:NCPHELP.BIN to C:\DECNET\NCPHELP.BIN . . .

Copying file A:SCHPC.EXE to C:\DECNET\SCH.EXE . . .

Copying file A:DNPDCPPC.EXE to C:\DECNET\DNP.EXE . . .


Insert diskette labeled DECNETPC11B into drive A (2 of 4)

Press any key to continue or <CTRL/C> to exit...


[<CTRL/C> disabled while a file is being copied]
Copying file A:SETHOST.EXE to C:\DECNET\SETHOST.EXE . . .

Copying file A:LAT.EXE to C:\DECNET\LAT.EXE . . .

Copying file A:NFT.EXE to C:\DECNET\NFT.EXE . . .

Copying file A:NTU.EXE to C:\DECNET\NTU.EXE . . .

Copying file A:NTUHELP.BIN to C:\DECNET\NTUHELP.BIN . . .

Copying file A:NDU.EXE to C:\DECNET\NDU.EXE . . .

Copying file A:NDDRV.SYS to C:\DECNET\NDDRV.SYS . . .

Copying file A:NPDRV.SYS to C:\DECNET\NPDRV.SYS . . .
```

```
Insert diskette labeled DECNETPC11C into drive A (3 of 4)

Press any key to continue or <CTRL/C> to exit...


[<CTRL/C> disabled while a file is being copied]
Copying file A:TNT.EXE to C:\DECNET\TNT.EXE . . .

Copying file A:TTT.EXE to C:\DECNET\TTT.EXE . . .

Copying file A:TFA.EXE to C:\DECNET\TFA.EXE . . .

Copying file A:FAL.EXE to C:\DECNET\FAL.EXE . . .

Copying file A:DTS.EXE to C:\DECNET\DTS.EXE . . .

Copying file A:DTR.EXE to C:\DECNET\DTR.EXE . . .

Copying file A:MAIL.EXE to C:\DECNET\MAIL.EXE . . .


Insert diskette labeled DECNETPC11D into drive A (4 of 4)

Press any key to continue or <CTRL/C> to exit...


[<CTRL/C> disabled while a file is being copied]
Copying file A:SPAWNER.EXE to C:\DECNET\SPAWNER.EXE . . .
```

```
**********************************************************************

You have selected to copy C Programming Library.
The library will be broken out into separate source
files.  Enter a destination path for these
source files if different from the default.

You can interrupt the break up procedure by entering
a <CTRL/C>.  You will have the option to start again
or to continue with the installation procedure.

**********************************************************************

Do you want to copy the C Programming Library [Y/N Default: Y] ? Y<ENTER>


 [Default: C:\DECNET\]

 Enter path ? <ENTER>
Insufficient disk space on drive C: (30475 additional bytes required).

 Enter path ? f:\decnet

[Created directory F:\DECNET\]
[Executing: BREAKSRC.EXE A:DNETLIB.SRC F:\DECNET\...]

Writing file: F:\DECNET\BCMP.C
Writing file: F:\DECNET\GETSNENI.C
Writing file: F:\DECNET\BZERO.C
Writing file: F:\DECNET\DNETADDR.C
Writing file: F:\DECNET\BCOPY.C
Writing file: F:\DECNET\DNETEOF.C
Writing file: F:\DECNET\DNETHTOA.C
Writing file: F:\DECNET\DNETPATH.C
Writing file: F:\DECNET\DNETNTOA.C
Writing file: F:\DECNET\PRGBND.C
Writing file: F:\DECNET\GNODEADD.C
Writing file: F:\DECNET\FILEDIR.C
Writing file: F:\DECNET\GETDATE.C
Writing file: F:\DECNET\GETTIME.C
Writing file: F:\DECNET\GKNONOD.C
Writing file: F:\DECNET\GNODENAM.C
Writing file: F:\DECNET\GNODEBAD.C
Writing file: F:\DECNET\GNODEBNM.C
Writing file: F:\DECNET\HWRITE.C
Writing file: F:\DECNET\PRGCON.C
Writing file: F:\DECNET\GREMNOD.C
Writing file: F:\DECNET\HSEEK.C
Writing file: F:\DECNET\HOPEN.C
Writing file: F:\DECNET\GNODEENT.C
Writing file: F:\DECNET\HCLOSE.C
Writing file: F:\DECNET\HREAD.C
Writing file: F:\DECNET\GETCNE.C
Writing file: F:\DECNET\PAUSEC.C
Writing file: F:\DECNET\PRGGPN.C
Writing file: F:\DECNET\PRGGSN.C
Writing file: F:\DECNET\PRGGSO.C
Writing file: F:\DECNET\DNETALIA.C
Writing file: F:\DECNET\HCREATE.C
Writing file: F:\DECNET\PRGCLS.C
```

(continued on next page)

```
Writing file: F:\DECNET\PRGLSN.C
Writing file: F:\DECNET\PRGRCV.C
Writing file: F:\DECNET\PRGSEL.C
Writing file: F:\DECNET\PRGSHD.C
Writing file: F:\DECNET\PRGSIO.C
Writing file: F:\DECNET\PRGSND.C
Writing file: F:\DECNET\PRGSOC.C
Writing file: F:\DECNET\PRGSSO.C
Writing file: F:\DECNET\DNETINST.C
Writing file: F:\DECNET\SETDATE.C
Writing file: F:\DECNET\SETTIME.C
Writing file: F:\DECNET\UPPER.C
Writing file: F:\DECNET\PTRCONV.C
Writing file: F:\DECNET\GETCNENI.C
Writing file: F:\DECNET\PRGACC.C
Writing file: F:\DECNET\PERROR.C
Writing file: F:\DECNET\DNETCONN.C
Writing file: F:\DECNET\NERROR.C
Writing file: F:\DECNET\DSREG.ASM
Writing file: F:\DECNET\MSDOS.ASM
Writing file: F:\DECNET\FBCOPY.ASM
Writing file: F:\DECNET\DNETSES.ASM
Writing file: F:\DECNET\DECNET.ASM
Writing file: F:\DECNET\SOCKET.H
Writing file: F:\DECNET\BEGIN.H
Writing file: F:\DECNET\DERRNO.H
Writing file: F:\DECNET\DN.H
Writing file: F:\DECNET\DNETDB.H
Writing file: F:\DECNET\DNPREFIX.H
Writing file: F:\DECNET\TYPES.H
Writing file: F:\DECNET\FINISH.H
Writing file: F:\DECNET\PRGPRE.H
Writing file: F:\DECNET\IOCB.H
Writing file: F:\DECNET\SCBDEF.H
Writing file: F:\DECNET\SIOCTL.H
Writing file: F:\DECNET\SIZE.H
Writing file: F:\DECNET\TIME.H
Writing file: F:\DECNET\PROTOSW.H
Writing file: F:\DECNET\ERRNO.H
Writing file: F:\DECNET\STRINGS.H
Writing file: F:\DECNET\DNMSDOS.H

Finished breaking up A:DNETLIB.SRC

Copy of DECnet-DOS files completed.

Press any key to continue or <CTRL/C> to exit...
```

DIP now automatically updates (or creates if necessary) your system start-up files:

```
**********************************************************************

Startup files, CONFIG.SYS and AUTOEXEC.BAT, will be updated (or
created if necessary) in root directory of drive C:....

**********************************************************************

Is boot disk ready in drive C: [Y/N Default: Y] ?  Y <ENTER>


C:\CONFIG.SYS updated for DECnet-DOS...

C:\AUTOEXEC.BAT updated for DECnet-DOS...

Press any key to continue or <CTRL/C> to exit...
```

Here you may save your installation configuration answers. If you need to rerun DIP, you will be able to use these saved answers or enter new selections.

```
Do you want to save installation configuration answers
                                        [Y/N Default: Y] ? y <ENTER>

Insert the diskette labeled DECNETPC11A (1 of 4) into drive A

Press any key to continue or <CTRL/C> to exit...

Saving installation configuration answers to the file A:DIP.SAV . . .

To rerun DIP:
   1. Insert the diskette labeled DECNETPC11A (1 of 4) into drive A
   2. Set your current (default) drive to A:
   3. Enter the command "DIP"
       DIP will automatically look for the saved answer file, A:\DIP.SAV

Press any key to continue or <CTRL/C> to exit...
```

```
                    DECnet-DOS
            Finished Copying and Editing Files

        *** Now REBOOT Your System from drive C: ***
```

Example 2 – Ethernet Configuration

This example presents the screens and menus that you will see when you use DIP to copy the entire DECnet–DOS software kit onto an IBM PC AT personal computer, configured for Ethernet communications. Many screens are self-explanatory. Where necessary, explanatory text is inserted to help explain the process.

First, insert the diskette labeled DECNETPC11A into drive A, set your default drive to A, then type:

```
A>DIP
```

DIP displays:

```
                DECnet-DOS Installation Procedure (DIP) - V1.1


Press any key to continue or <CTRL/C> to exit...
```

If you have previously saved any installation configuration selections, DIP displays:

```
There is a saved installation configuration answer file.
The date of the file is: FRI FEB 14 12:39:14 1986.

Do you want to use the saved answers [Y/N Default: Y] ? N <ENTER>
```

You may use the saved answers or enter new selections. If you choose to enter new selections, the first series of screens provide an overview of the installation procedure:

```
                                OVERVIEW

**************************************************************

During the DECnet-DOS installation, you will be asked to reply
to a set of questions and prompted to make selections from
a series of menus.  You may select any one of the items listed
in each menu.  On-line HELP is included as an item in each menu.

When your menu selection results in an installation configuration
change, a confirmation of your selection is displayed.

You can back out of any menu by pressing <ENTER> after
the "Enter selection? " prompt.

**************************************************************

Press any key to continue or <CTRL/C> to exit...
```

```
                          OVERVIEW (continued)

**************************************************************

The default answer is displayed with each question.
For example:

"Do you want to change it ? [Y/N  Default: Y]"

You may exit the installation procedure at any time by
entering a <CTRL/C>.  Before exiting, you will be given the
chance to permanently save your answers to the file
DIP.SAV located on the first distribution floppy.  Leave
the write protect tab off of the floppy.

Have your Installation Guide handy during this
installation procedure.

**************************************************************

Press any key to continue or <CTRL/C> to exit...
```

(continued on next page)

OVERVIEW (continued)

```
**********************************************************************

Release notes contain information about DECnet-DOS
that may not have been included in any of the other formal
documentation.  Such things as hints on installation,
configuration and troubleshooting as well as some additional
information about software components and reporting problems are
included in the release notes.  If you have not read the release
notes yet, do so at this time.

Release Notes are in the file RELEASE.NOT on kit floppy DECNETPC11A
(1 of 1).

**********************************************************************

Press any key to continue or <CTRL/C> to exit...
```

The next set of screens pertain to setting up your personal computer as a DECnet–DOS node:

```
                    SET UP LOCAL NODE INFORMATION

****************************************************************

To run your IBM PC AT computer as a DECnet-DOS
node, you must give it a node name and a
unique node address.  Obtain this information before
continuing with this installation procedure.

****************************************************************

Press any key to continue or <CTRL/C> to exit...
```

DIP prompts you for your node name and address, then displays a summary of your responses. Use the information you recorded in your preinstallation checklist to answer these questions.

```
Node name (Example: ANODE) ? PCDOS <ENTER>
Node address (Example: 10.55) ? 55.49 <ENTER>

Local node information . . .

Node name:      PCDOS
Node address:   55.49

Change it [Y/N  Default: Y] ?  N <ENTER>
```

Here Dip prompts you to enter your local node user name:

```
                    SET UP LOCAL NODE USER NAME

**************************************************************

You must set up a local node user name to be used by
DECnet-DOS as the access control information required for proxy
logins.  Upper and lower case characters make a
difference, therefore take care when entering this name.
(See the Programmer's Reference Manual for more
information.)

**************************************************************

Press any key to continue or <CTRL/C> to exit...

Enter a user name of from 1 to 16 alphanumeric characters.

 User name ? adams <ENTER>

Local node user name . . .
 name is: "adams"

Change it [Y/N  Default: Y] ? N <ENTER>
```

You can communicate with other DECnet nodes by physically connecting your node directly to the baseband Ethernet or to an adjacent routing node. DIP prompts you to enter your communications type.

```
                    SET UP COMMUNICATIONS TYPE

*****************************************************************

You may run DECnet-DOS using Ethernet or Asynchronous DDCMP
communications.  The following menus allow you to select
the appropriate communication type.

*****************************************************************

Press any key to continue or <CTRL/C> to exit...


                         COMMUNICATIONS TYPE

                      Select from the following:

                   1.  Help
                   2.  Ethernet
                   3.  Asynchronous DDCMP


Enter selection? 2 <ENTER>
```

To connect your DECnet node to an Ethernet network you must have already installed the appropriate hardware interface. DIP prompts you to enter the hardware you have installed:

```
                    ETHERNET CONTROLLER

                Select from the following:

            1.  Help
            2.  3Com Controller
            3.  Micom Controller

Enter selection? 2 <ENTER>
```

DIP displays a summary of your communications type and offers you the option of making further changes.

```
                SUMMARY OF COMMUNICATIONS PARAMETERS

      Communications Type: Ethernet
Communications Controller: 3Com Ethernet Interface Board

Change it [Y/N  Default: Y] ? N <ENTER>
```

Your system startup files (CONFIG.SYS and AUTOEXEC.BAT) contain information needed to correctly configure and run DECnet–DOS. Here DIP supplies a summary of the default choices for device and path specifications.

```
                    SUMMARY OF PATH SPECIFICATIONS

 Boot drive is C: (location of CONFIG.SYS and AUTOEXEC.BAT).
 DECnet-DOS kit files will be copied FROM drive A:
 DECnet-DOS kit files will be copied TO C:\DECNET\
 DECnet-DOS default database files will be located in C:\DECNET\

Change it [Y/N  Default: Y] ? Y <ENTER>
```

The next series of menus provide a means of choosing your own device and path specifications. You may use the default values or choose your own. After you make your selections, DIP displays a summary of your choices and offers the option of making further changes.

```
                    SET UP PATH INFORMATION

****************************************************************

To correctly configure and run DECnet-DOS
some information is required to be contained in the system boot
(or startup) files - CONFIG.SYS and AUTOEXEC.BAT.  This installation
procedure will automatically create or modify these files for you.

Enter the drive on which these files reside.  This is
the drive from which you "booted" or started your IBM PC AT.

****************************************************************

 [Default: C:]

 Enter drive ? E: <ENTER>



****************************************************************

The kit files will be copied from the disk in drive C.
Enter a destination path into which these files will be copied.

****************************************************************

 [Default: C:\DECNET\]

 Enter path ? E:\DECNET\ <ENTER>
```

```
************************************************************

DECnet-DOS requires several database files such as
DECNODE.DAT or DECPARM.DAT.  Enter the path into which all of
the database files will be stored.

************************************************************

 [Default: C:\DECNET\]


 Enter path ? E:\DECNET\ <ENTER>
```

DIP displays a summary of your choices for device and path specifications.

```
                    SUMMARY OF PATH SPECIFICATIONS

 Boot drive is E: (location of CONFIG.SYS and AUTOEXEC.BAT).
 DECnet-DOS kit files will be copied FROM drive A:
 DECnet-DOS kit files will be copied TO E:\DECNET\
 DECnet-DOS default database files will be located in E:\DECNET\

Change it [Y/N  Default: Y] ? N <ENTER>
```

```
                AUTOMATIC INSTALLATION VERIFICATION

*****************************************************************

You can verify the DECnet-DOS installation
by running tests using the Network Test Utility (NTU).
You may choose to have these tests run automatically
or you may run tests manually. If you choose to run
the tests manually, please refer to the chapter on NTU
in the User's Guide.

*****************************************************************

Automatic verification of installation currently set OFF

Change it [Y/N  Default: Y] ? Y <ENTER>
```

If you choose to have the verification test run automatically, DIP prompts you to define one or more nodes to be used for testing.

```
*****************************************************************

You must define at least one remote node for use by
the installation verification test(s).  You should
define only "reachable" remote nodes to be used for
the testing.

Press <ENTER> in response to the prompt to stop
entering node information.

*****************************************************************

Press any key to continue or <CTRL/C> to exit...
```

Here DIP prompts you to enter the name and address for each remote node and displays a summary of the information that you enter. Press ENTER to proceed with the installation when you have finished adding nodes.

```
Press <ENTER> when finished entering nodes...
Node name (Example: ANODE) ? ORION <ENTER>
Node address (Example: 10.55) ? 4.30 <ENTER>

Remote node information . . .

Node name:      ORION
Node address:   4.30

Change it [Y/N  Default: Y] ? NO <ENTER>


Press <ENTER> when finished entering nodes...
Node name (Example: ANODE) ? <ENTER>

Automatic verification of installation currently set ON

Change it [Y/N  Default: Y] ? N <ENTER>
```

```
                    SET UP REBOOT LINE STATE

****************************************************************

Setting "Reboot Line State" to ON enables the automatic
startup of DECnet-DOS upon IBM PC AT system reboot.

****************************************************************

Reboot line state currently set OFF

Change it [Y/N  Default: Y] ? N <ENTER>


                    SELECTING SOFTWARE COMPONENTS

****************************************************************

Use the following menus to copy any or all of the
DECnet-DOS kit components (files). You may back out
of a menu by pressing <ENTER>.

****************************************************************

Press any key to continue or <CTRL/C> to exit...
```

You may choose to copy the entire DECnet–DOS software kit or select individual components. A minimum configuration is necessary to run DECnet–DOS on your system. The files and utilities that make up this minimum configuration will always be copied.

Before you copy files however, you can review your current software and hardware configuration with the "Summaries" menu selection. The following series of screens illustrate how to use the summary menus.

```
                        COPY KIT FILES

                    Select from the following:

                1.  Help
                2.  Summaries
                3.  Copy Entire Kit
                4.  Select Individual Components

Enter selection? 2 <ENTER>
```

```
                        SUMMARIES

                    Select from the following:

                1.  Help
                2.  Begin Copying Kit Files
                3.  General Information Summary
                4.  Node Information Summary
                5.  Communications Information Summary
                6.  Software Summary

Enter selection? 3 <ENTER>
```

The following screen displays a summary of your software and hardware configuration and the choices you made for copy path, database path, reboot line state, and automatic installation verification.

```
                        SUMMARY OF GENERAL INFORMATION

       Personal Computer Type:   IBM PC AT
                PC-DOS Version:  3.10
                    Boot drive:  E:
  Kit File(s) to be Copied to:   E:\DECNET\
         DECnet Database Path:   E:\DECNET\
            Reboot Line State:   OFF
    Installation Verification:   ON

  Minimum DECnet Memory Usage:   171536 (estimated)
    Available Bytes of Memory:   245296 (before installing DECnet)
    Available Bytes of Memory:   73760 (after installing DECnet)

           DECnet Disk Usage :   267144
  Available Bytes on Drive C :   8445952 (before copying files)
  Available Bytes on Drive C :   8178808 (after copying files)

Press any key to continue or <CTRL/C> to exit...
```

```
                    SUMMARIES

                Select from the following:

             1.  Help
             2.  Begin Copying Kit Files
             3.  General Information Summary
             4.  Node Information Summary
             5.  Communications Information Summary
             6.  Software Summary

Enter selection? 4 <ENTER>
```

The following screen displays the names and addresses you entered for each node during the installation procedure. It also displays the local node user name.

```
                 SUMMARY OF DEFINED NODE(S)

   PCDOS  55.49    - Local Node (User Name: adams)
   ORION   4.30    - Remote Node

Press any key to continue or <CTRL/C> to exit...
```

```
                              SUMMARIES

                          Select from the following:

                    1.  Help
                    2.  Begin Copying Kit Files
                    3.  General Information Summary
                    4.  Node Information Summary
                    5.  Communications Information Summary
                    6.  Software Summary

Enter selection? 5 <ENTER>
```

The following screen summarizes your communications type (asynchronous or Ethernet).

```
                    SUMMARY OF COMMUNICATIONS PARAMETERS

      Communications Type: Ethernet
Communications Controller: 3Com Ethernet Interface Board

Press any key to continue or <CTRL/C> to exit...
```

```
                         SUMMARIES

                    Select from the following:

                 1.  Help
                 2.  Begin Copying Kit Files
                 3.  General Information Summary
                 4.  Node Information Summary
                 5.  Communications Information Summary
                 6.  Software Summary

Enter selection? 6 <ENTER>
```

The following screen summarizes the individual DECnet–DOS files and utilities to be copied based upon your current configuration. The information displayed here includes the file name, on which diskette it is located, and disk and memory requirements for each component.

If you have not yet selected any DECnet–DOS components, the files which make up the minimum configuration will be displayed at this time and subsequently copied.

```
                SUMMARY OF SELECTED SOFTWARE COMPONENTS

                 Found on         Disk      Memory
     File Name  Kit Labeled       Usage      Usage

       NTU.EXE  DECNETPC11B       83200      89288
   NTUHELP.BIN  DECNETPC11B        6272          0
       NCP.EXE  DECNETPC11A       92416      98258
   NCPHELP.BIN  DECNETPC11A       15872          0
       SCH.EXE  DECNETPC11A        3712       3126 [memory resident]
    DLL3COM.EXE DECNETPC11A        9728       8704 [memory resident]
  DNPETHPC.EXE  DECNETPC11A       50944      61448 [memory resident]

Press any key to continue or <CTRL/C> to exit...
```

After displaying a summary, DIP returns you to the SUMMARIES menu. You can back out of this menu by pressing ENTER in response to the "Enter Selection?" prompt.

```
                    SUMMARIES

                Select from the following:

            1.  Help
            2.  Begin Copying Kit Files
            3.  General Information Summary
            4.  Node Information Summary
            5.  Communications Information Summary
            6.  Software Summary

Enter selection? <ENTER>
```

You may proceed with the installation procedure when you are satisfied with your configuration selections.

```
                  COPY KIT FILES

                Select from the following:

            1.  Help
            2.  Summaries
            3.  Copy Entire Kit
            4.  Select Individual Components

Enter selection? 3 <ENTER>
```

When you choose to copy the entire kit, DIP checks to see if your PC AT has sufficient memory. Here DIP has determined that your system does not and gives you the opportunity to return to the software components menu.

```
                              COPYING DECNET FILES

    *** WARNING!! MAY NOT BE ENOUGH MEMORY TO INSTALL AND RUN DECNET ***

  Minimum DECnet Memory Usage:    287219 (estimated)
    Available Bytes of Memory:    245296 (before installing DECnet)
    Additional Bytes Required:    41923

Review software components menu [Y/N  Default: Y] ? <ENTER>


                                 COPY KIT FILES

                              Select from the following:

                          1.  Help
                          2.  Summaries
                          3.  Copy Entire Kit
                          4.  Select Individual Components

Enter selection? 4 <ENTER>
```

Here DIP allows you to select utilities from the kit on a file-by-file basis. Only the files you select will be copied.

```
Select Transparent Task-to-Task (TTT) [Y/N Default:Y] ? N <ENTER>
Select Transparent File Access (TFA) [Y/N Default:Y] ? Y <ENTER>
Select SETHOST [Y/N Default:Y] ? Y <ENTER>
Select Local Area Transport (LAT) [Y/N Default:Y] ? Y <ENTER>
Select Network File Transfer (NFT) [Y/N Default:Y] ? Y <ENTER>
Select File Access Listener (FAL) [Y/N Default:Y] ? N <ENTER>
Select Network Test Utility (NTU) [Y/N Default:Y] ? N <ENTER>
Select Data Test Sender (DTS) [Y/N Default:Y] ? N <ENTER>
Select Data Test Receiver (DTR) [Y/N Default:Y] ? N <ENTER>
Select Network Virtual Disk (NVD) [Y/N Default:Y] ? N <ENTER>
Select Network Virtual Printer (NVP) [Y/N Default:Y] ? N <ENTER>
Select C Programming Library [Y/N Default:Y] ? N <ENTER>
Select Mail Sender [Y/N Default:Y] ? Y <ENTER>
Select Job Spawner [Y/N Default:Y] ? N <ENTER>
```

If you have an earlier version of DECnet–DOS installed on your system, DIP automatically deletes the old DECnet directory and creates a new one.

```
Insert diskette labeled DECNETPC11A into drive A (1 of 4)

Press any key to continue or <CTRL/C> to exit...


[Deleted old E:\DECNET\DECPARM.DAT]
[Created directory E:\DECNET ]

[<CTRL/C> disabled while a file is being copied]
Copying file A:NCP.EXE to E:\DECNET\NCP.EXE . . .

Copying file A:NCPHELP.BIN to E:\DECNET\NCPHELP.BIN . . .

Copying file A:SCHPC.EXE to E:\DECNET\SCH.EXE . . .

Copying file A:DLL3COM.EXE to E:\DECNET\DLL.EXE . . .

Copying file A:DNPETHPC.EXE to E:\DECNET\DNP.EXE . . .


Insert diskette labeled DECNETPC11B into drive A (2 of 4)

Press any key to continue or <CTRL/C> to exit...


[<CTRL/C> disabled while a file is being copied]
Copying file A:SETHOST.EXE to E:\DECNET\SETHOST.EXE . . .

Copying file A:LAT.EXE to E:\DECNET\LAT.EXE . . .

Copying file A:NFT.EXE to E:\DECNET\NFT.EXE . . .
```

```
Insert diskette labeled DECNETPC11C into drive A (3 of 4)

Press any key to continue or <CTRL/C> to exit...


[<CTRL/C> disabled while a file is being copied]
Copying file A:TNT.EXE to E:\DECNET\TNT.EXE . . .

Copying file A:TFA.EXE to E:\DECNET\TFA.EXE . . .

Copying file A:MAIL.EXE to E:\DECNET\MAIL.EXE . . .



Copy of DECnet-DOS files completed.

Press any key to continue or <CTRL/C> to exit...
```

DIP now automatically updates (or creates if necessary) your system start-up files:

```
**********************************************************************

Startup files, CONFIG.SYS and AUTOEXEC.BAT, will be updated (or
created if necessary) in root directory of drive C: ...

**********************************************************************

Is boot disk ready in drive C: [Y/N Default: Y] ?  Y <ENTER>


C:\CONFIG.SYS updated for DECnet-DOS...

C:\AUTOEXEC.BAT updated for DECnet-DOS...

Press any key to continue or <CTRL/C> to exit...
```

Here you may save your installation configuration answers. If you need to rerun DIP, you will be able to use these saved answers or enter new selections.

```
 Do you want to save installation configuration answers
                                                [Y/N Default: Y] ? <ENTER>

Insert the diskette labeled DECNETPC11A (1 of 4) into drive A

Press any key to continue or <CTRL/C> to exit...


Saving installation configuration answers to the file A:DIP.SAV...


To rerun DIP:
   1. Insert the diskette labeled DECNETPC11A (1 of 4) into drive A
   2. Set your current (default) drive to A:
   3. Enter the command "DIP"
       DIP will automatically look for the saved answer file, A:\DIP.SAV


Press any key to continue or <CTRL/C> to exit...
```

```
                              DECnet-DOS
                      Finished Copying and Editing Files

                   *** Now REBOOT your System from drive C: ***

A:
```

E
Installation Checklist

This appendix provides a checklist to record your preinstallation and network configuration requirements. This checklist is reproduced here for easy removal. Refer to Chapter 3 in this manual for instructions in using this checklist.

Preinstallation Check

Hardware

☐ Personal Computer

- IBM PC
- IBM PC/XT
- IBM PC AT

Software

☐ Operating System – PC–DOS Version 2.10 or Version 3.10

☐ DECnet–DOS Software Kit – four RX31 diskettes labeled:

DECNETPC11A

DECNETPC11B

DECNETPC11C

DECNETPC11D

Configure Network Parameters

Node Parameters

☐ Local Node

Node Name _____

Node Address _____

Local Node
User Name _____

☐ Remote Node(s)

Node Name _____

Node Address _____

Node Name _____

Node Address _____

Node Name _____

Node Address _____

Communications Type

Choose one of the following communication schemes:

☐ Asynchronous DDCMP – (line speed) _____

☐ Ethernet – (interface installed) _____

Device and Path Specifications

☐ Boot Drive (system startup files) _____

☐ Destination Path (kit files) _____

☐ Destination Path (DECnet database files) _____

☐ Destination Path (programming library sources) _____

Reboot Line State

☐ ON

☐ OFF

Select DECnet–DOS Utilities

☐ TTT – Transparent Task-to-Task

☐ TFA – Transparent File Access

☐ SETHOST

☐ LAT – Local Area Transport

☐ NFT – Network File Transfer

☐ FAL – File Access Listener

☐ NTU – Network Test Tool

☐ DTS – Data Test Sender

☐ DTR – Data Test Receiver

☐ NVD – Network Virtual Disk

☐ NVP – Network Virtual Printer

☐ C Programming Library (Programming Interface)

☐ MAIL – Mail Sender Utility

☐ Job Spawner Utility

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DECnet–DOS
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AA–EF20B–TV

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