

PATHWORKS for DOS (NetWare Coexistence)

digital

Installation and Configuration Guide



PATHWORKS for DOS (NetWare Coexistence)

Installation and Configuration Guide

AA-PG4TB-TK

November 1991

Revision/Update Information: This document supersedes *Installation and Configuration Guide, Version 1.0*, part number AA-PG4TA-TK.

Software Version: PATHWORKS for DOS Version 4.1
PATHWORKS for DOS
(NetWare Coexistence) Version 1.1

**Digital Equipment Corporation
Maynard, Massachusetts**

First Published, June 1991
Revised, November 1991

The information in this document is subject to change without notice and should not be construed as a commitment by Digital Equipment Corporation. Digital Equipment Corporation assumes no responsibility for any errors that may appear in this document.

The software described in this document is furnished under a license and may be used or copied only in accordance with the terms of such license.

No responsibility is assumed for the use or reliability of software on equipment that is not supplied by Digital Equipment Corporation or its affiliated companies.

Restricted Rights: Use, duplication, or disclosure by the U.S. Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013.

© Digital Equipment Corporation 1991.

All Rights Reserved.
Printed in U.S.A.

The postpaid Reader's Comments form at the end of this document requests your critical evaluation to assist in preparing future documentation.

The following are trademarks of Digital Equipment Corporation:

DECnet, DECwindows, PATHWORKS, ULTRIX, and the DIGITAL logo.

The following are third-party trademarks:

EtherLink II is a registered trademark of 3Com Corporation. NetWare is a registered trademark of Novell, Incorporated. Windows is a trademark and MS-DOS is a registered trademark of Microsoft Corporation.

HOW TO ORDER ADDITIONAL DOCUMENTATION DIRECT MAIL ORDERS

USA*

Digital Equipment Corporation
P.O. Box CS2008
Nashua, New Hampshire 03061

CANADA

Digital Equipment
of Canada Ltd.
100 Herzberg Road
Kanata, Ontario K2K 2A6
Attn: Direct Order Desk

INTERNATIONAL

Digital Equipment Corporation
PSG Business Manager
c/o Digital's local subsidiary
or approved distributor

In Continental USA, Alaska, and Hawaii call 800-DIGITAL.

In Canada call 800-267-6215.

*Any order from Puerto Rico must be placed with the local Digital subsidiary (809-754-7575).

Internal orders should be placed through the Software Distribution Center (SDC), Digital Equipment Corporation, Westminister, Massachusetts 01473.

This document was prepared using VAX DOCUMENT, Version 1.2

Contents

Preface	v
1 Introduction	
Overview of PATHWORKS for DOS (NetWare Coexistence).....	1-1
Overview of the Installation and Configuration Process.....	1-2
2 Preparing for Installation	
Software Requirements	2-1
Hardware Requirements	2-2
Disk Space Requirements	2-3
System Back Up.....	2-4
Verify Kit Contents	2-4
3 Installing the Software	
Step 1: Create the IPX Driver	3-1
Step 2: Connect to the PATHWORKS Server.....	3-2
Step 3: Update the NETSETUP Utility	3-2
Step 4: Configure the Client	3-3
Step 5: Reboot the Client.....	3-6
4 Configuring Applications and Memory	
Microsoft Windows Version 3.0 Configuration	4-1
Using PATHWORKS for DOS Version 4.1 with Windows.....	4-1
Using PATHWORKS for DOS Version 4.0 with Windows.....	4-2
Memory and Performance Issues	4-2
Network-Addressing Issues	4-3
NETBIOS Issues	4-3

5 Operating Clients

How the DOS NetWare Client Operates	5-1
How the PATHWORKS for DOS Client Operates.....	5-1
How the PATHWORKS for DOS (NetWare Coexistence) Client Operates	5-2

A Using STARTNET and STOPNET

B Deinstalling the Software

C Messages

Index

Figures

1-1	Coexistence System Configuration	1-2
2-1	Coexistence Hardware Configuration	2-3
3-1	NETSETUP Menu	3-4
5-1	PATHWORKS and NetWare Operations	5-4

Tables

3-1	DECnet Transport Configuration	3-4
3-2	TCP/IP Transport Configuration	3-5

Preface

Purpose

This guide explains how to install and configure PATHWORKS for DOS (NetWare Coexistence) software.

Audience

This guide is written for the system administrator experienced with DOS, NetWare, and PATHWORKS for DOS.

Organization

The following table can help you find information in this manual.

Chapter 1	Provides an overview of PATHWORKS for DOS (NetWare Coexistence).
Chapter 2	Describes preinstallation tasks.
Chapter 3	Describes installation.
Chapter 4	Describes applications and memory information.
Chapter 5	Describes the operation of PATHWORKS for DOS (NetWare Coexistence).
Appendix A	Describes how to use the STOPNET and STARTNET commands with PATHWORKS for DOS (NetWare Coexistence).
Appendix B	Describes how to deinstall PATHWORKS for DOS (NetWare Coexistence).
Appendix C	Describes error messages and possible solutions.

Related Documents

The following documents provide further information on PATHWORKS for DOS (NetWare Coexistence):

- *PATHWORKS for DOS (NetWare Coexistence) User's Handbook*
- *PATHWORKS for DOS (NetWare Coexistence) Software Product Description*
- PATHWORKS for DOS documentation set
- Novell NetWare installation documentation

Conventions

This manual uses the following conventions:

Convention	Meaning
<code>Return</code>	Press the key that executes commands or terminates a sequence. This key is labeled <code>Return</code> , <code>Enter</code> , or <code>↵</code> , depending on your keyboard.
“enter”	Type all required text, spaces, and punctuation marks; then press <code>Return</code> , <code>Enter</code> , or <code>↵</code> , depending on your keyboard.
UPPERCASE	In VMS, DOS, and OS/2 syntax, uppercase letters indicate commands and qualifiers. You can enter commands and qualifiers in any combination of uppercase or lowercase, unless otherwise noted.
lowercase	Lowercase letters in VMS, DOS, and OS/2 syntax indicate parameters. You must substitute a word or value, unless the parameter is optional.
teal blue type	In examples of dialog between you and the system, teal blue type indicates information that you enter.
boldface	Boldface type indicates a new term that appears in the glossary.
/	A forward slash in command descriptions indicates that a command qualifier follows.
NOTE	Notes provide information of special importance.
...	A horizontal ellipsis following an entry in a command line indicates that the entry or a similar entry can be repeated any number of times. An ellipsis following a file name indicates that additional parameters, values, or information can be entered.

Introduction

This chapter describes:

- An overview of PATHWORKS for DOS (NetWare Coexistence)
- An overview of the installation and configuration process

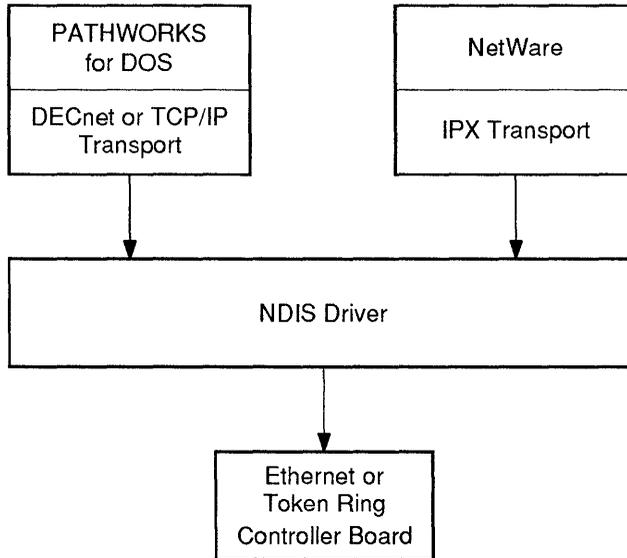
Overview of PATHWORKS for DOS (NetWare Coexistence)

PATHWORKS for DOS (NetWare Coexistence) lets NetWare software and PATHWORKS for DOS software operate at the same time, on the same PC, over the same Ethernet or Token Ring controller board. With PATHWORKS for DOS (NetWare Coexistence), PCs that are using DOS, Ethernet or Token Ring, and a Novell NetWare Local Area Network (LAN) can access services on VMS, ULTRIX, OS/2, and NetWare servers simultaneously.

PATHWORKS for DOS (NetWare Coexistence) lets PATHWORKS for DOS and NetWare coexist by using drivers that comply with the Network Driver Interface Specification (NDIS). Such drivers allow the PATHWORKS transports (DECnet and TCP/IP) and the NetWare transport (IPX) to share a communication interface in order to send requests for service to the network. PATHWORKS for DOS (NetWare Coexistence) provides the software necessary to create an IPX driver that uses NDIS.

Figure 1–1 shows how PATHWORKS and NetWare are configured to coexist.

Figure 1–1 Coexistence System Configuration



TA-0696-AC

Overview of the Installation and Configuration Process

The installation and configuration of PATHWORKS for DOS (NetWare Coexistence) involves:

- Using Novell's WSGEN or SHGEN utility to generate the IPX.COM driver required for PATHWORKS for DOS (NetWare Coexistence).
See the NetWare installation documentation for information on creating an IPX.COM driver.
- Connecting to a PATHWORKS for DOS server.
- Using the UPDATE utility to install a new version of the NETSETUP utility.
- Configuring the client.
- Rebooting the PC.

Preparing for Installation

This chapter describes:

- Software requirements
- Hardware requirements
- Disk space requirements
- System back up
- Kit contents verification

Software Requirements

To install and configure PATHWORKS for DOS (NetWare Coexistence), the following software is required:

- LAN_DRV_DEC diskette, part of the media kit
- A DOS bootable diskette, for use as the key diskette
- A version of NetWare that can be used with this product. (See the *PATHWORKS for DOS (NetWare Coexistence) Software Product Description* for detailed information.)
- PATHWORKS for DOS Version 4.0 or later for an Ethernet configuration
- PATHWORKS for DOS Version 4.1 or later for an Ethernet or Token Ring configuration

Note

To operate PATHWORKS for DOS (NetWare Coexistence), NetWare and PATHWORKS for DOS software are required. This software is not included with the PATHWORKS for DOS (NetWare Coexistence) kit.

- **NDIS Driver**
PATHWORKS for DOS Version 4.1 provides NDIS drivers and their PROTOCOL.INI files. If you are using a NDIS driver that is not supplied by PATHWORKS, you may need additional files. Check your network adapter's documentation for more information about NDIS driver files.

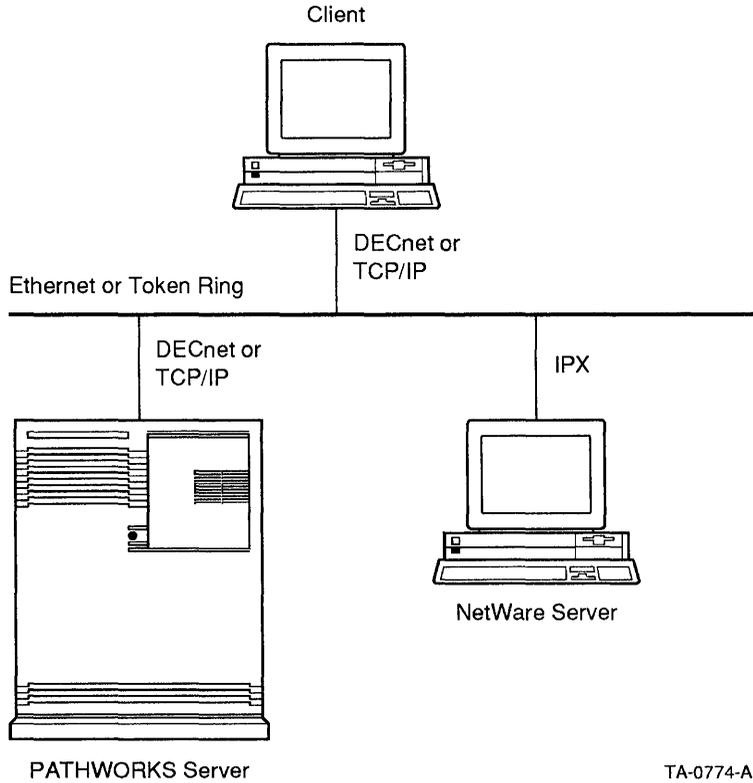
Hardware Requirements

To install PATHWORKS for DOS (NetWare Coexistence), the following hardware is required:

- One Ethernet or Token Ring controller board
- A PC configured for local boot
It is not possible to remote boot a PC from a PATHWORKS server or a NetWare server when using an NDIS driver.
- If applications requiring extensive memory are installed, the PC should be equipped with any of the following:
 - Expanded Memory Specification (EMS)
 - Extended Memory Specification (XMS)
 - 386 Memory Manager

Figure 2–1 shows a typical PATHWORKS for DOS (NetWare Coexistence) hardware configuration.

Figure 2–1 Coexistence Hardware Configuration



TA-0774-AC

Disk Space Requirements

You need 550K of free disk space to install PATHWORKS for DOS (NetWare Coexistence) and 320K of free disk space for permanent file storage.

System Back Up

Digital recommends that you back up the system and make duplicate copies of the distribution media before installing any new product.

Use the back-up procedures established at your site.

Verify Kit Contents

Your software bill of materials lists the number and contents of your media. Check the contents of your kit against this information. If any of the contents are missing or damaged, contact your Digital sales representative.

Installing the Software

The steps to install and configure PATHWORKS for DOS (NetWare Coexistence) include:

- Creating the IPX driver
- Connecting to the PATHWORKS server
- Updating the NETSETUP utility
- Configuring the client
- Rebooting the client

Step 1: Create the IPX Driver

To create the IPX driver:

1. Make a duplicate copy of your media using the DISKCOPY command. Use the copy of the media during the installation.
2. If you are using NetWare 286 Version 2.15B or lower, copy the files located in the \OLD\NDIS.LAN subdirectory to the \NDIS.LAN subdirectory.
3. Use the NetWare WSGEN or SHGEN utility to create the IPX driver. The WSGEN utility is used for NetWare 286 Version 2.2 and NetWare 386 Version 3.11. The SHGEN utility is used for all other versions of NetWare. See your NetWare installation documentation for instructions on creating the IPX driver using these utilities.
4. When running the WSGEN or SHGEN utility and the message, "Insert diskette labeled LAN_DRV_???" is displayed, insert the LAN_DRV_DEC diskette.

Note

If the NetWare servers are configured to use Ethernet II packet format, you must run **ECONFIG** to modify the IPX driver so that it runs with your NetWare servers. See the NetWare documentation for information on when you must modify drivers using **ECONFIG**.

Step 2: Connect to the PATHWORKS Server

To connect to the PATHWORKS server from a PATHWORKS client:

1. Make sure you have write access to the PATHWORKS for DOS file service directory. For information on obtaining write access to a file service directory, see your server documentation.
2. Connect to the server by entering:

```
\> USE ?: \\server-name\PCSAV41%
```

Use the name of the server running PATHWORKS for DOS in place of the server name. For example:

```
\> USE ?: \\SERV1\PCSAV41%
```

This example produces a message similar to the following:

```
Device K: connected to \\SERV1\PCSAV41
```

Step 3: Update the NETSETUP Utility

To update the NETSETUP utility:

1. Insert the LAN_DRV_DEC diskette into drive A.
 2. Change to drive A by entering:
- ```
\> A:
```
3. Update the NETSETUP utility by entering:

```
A:\> UPDATE A: server-drive
```

*Server-drive* is the drive where the PATHWORKS file services are located.

For example,

```
A:\> UPDATE A: K:
```

Running UPDATE using the previous example, causes messages similar to the following to be displayed:

```
PATHWORKS for DOS (NetWare Coexistence) Update Program v1.1
Copyright (C) 1991 by Digital Equipment Corporation.
All Rights Reserved.
```

```
.
.
```

```
PATHWORKS for DOS (NetWare Coexistence) successfully installed.
```

```
For Client configuration to successfully operate, you must now
copy the version of IPX.COM you generated, along with NET3.COM,
NET4.COM, or NET5.COM to the k:\NETWARE sub-directory
```

4. Remove the LAN\_DRV\_DEC diskette from drive A and insert the SHGEN or WSGEN diskette.
5. Copy the IPX.COM file to the \NETWARE subdirectory by entering:  
A:\> COPY IPX.COM K:\NETWARE
6. Copy the NETx.COM files to the \NETWARE subdirectory by entering:  
A:\> COPY net\*.com K:\NETWARE

---

**Note**

---

The NET5.COM file is located on the Microsoft DOS 5.0 upgrade kit.

---

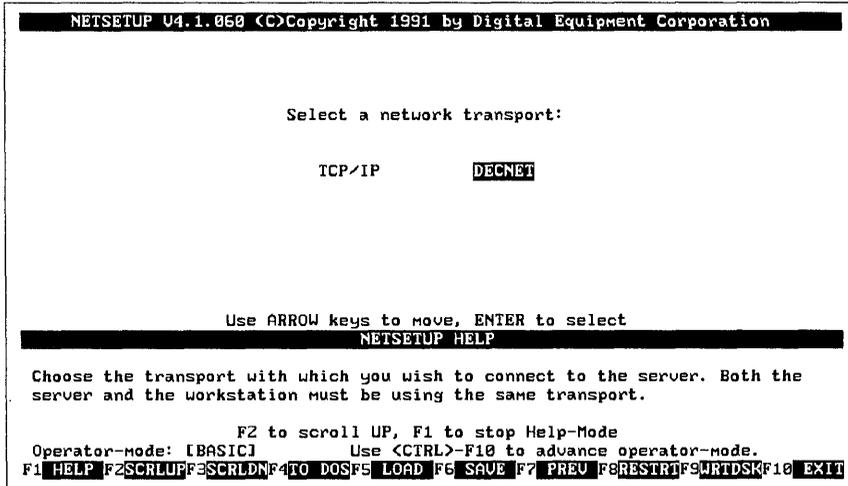
## Step 4: Configure the Client

To configure the client:

1. Change drives to where the system file service, PCSAV41, is located by entering:  
A:\> server-drive  
  
For example,  
A:\> K:
2. Start the NETSETUP utility by entering:  
K:\> \PCAPP\NETSETUP

The NETSETUP menu is displayed as shown in Figure 3–1.

**Figure 3–1 NETSETUP Menu**



3. Choose either the TCP/IP or DECnet transport used with PATHWORKS for DOS.
  - If you choose DECnet as the transport, see the information in Table 3–1.
  - If you choose TCP/IP as the transport, see the information in Table 3–2.

For further information on NETSETUP, see *PATHWORKS for DOS Client Installation and Configuration Guide*.

**Table 3–1 DECnet Transport Configuration**

| Field                                     | Response                                             |
|-------------------------------------------|------------------------------------------------------|
| Workstation to be setup to run NetWare(R) | Choose <b>Yes</b> .                                  |
| Enter the drive letter                    | Enter the drive letter of the key diskette location. |

(continued on next page)

**Table 3–1 (Cont.) DECnet Transport Configuration**

| <b>Field</b>                                    | <b>Response</b>                                                                                                                                      |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| LK250 keyboard                                  | <b>Yes</b> for LK250 keyboards or <b>No</b> for all other keyboards.                                                                                 |
| Country/language for keyboard                   | Choose the desired country or language for your keyboard.                                                                                            |
| Type of Ethernet or Token Ring controller board | Choose the type of controller board installed. If you choose <b>Other</b> , you are prompted for the required information to write the startup file. |
| Location of NDIS driver                         | Enter the drive, path, and filename for the NDIS driver.                                                                                             |
| Location of PROTOCOL.INI file                   | Enter the drive, path, and filename for the PROTOCOL.INI file.                                                                                       |

**Table 3–2 TCP/IP Transport Configuration**

| <b>Field</b>                                    | <b>Response</b>                                                                                                                       |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Workstation to be setup to run NetWare(R)       | Choose <b>Yes</b> .                                                                                                                   |
| Enter the drive letter                          | Enter the drive letter of the key diskette location.                                                                                  |
| Workstation name and internet address           | Enter the workstation name and network address.                                                                                       |
| LK250 keyboard                                  | Choose <b>Yes</b> for LK250 keyboards or <b>No</b> for all other keyboards.                                                           |
| Country/language for keyboard                   | Choose the desired country or language for your keyboard.                                                                             |
| Type of Ethernet or Token Ring controller board | Choose the type of controller board installed. If you choose <b>Other</b> , enter the required information to write the startup file. |
| Location of NDIS driver                         | Enter the drive, path, and filename for the NDIS driver.                                                                              |
| Location of PROTOCOL.INI file                   | Enter the drive, path, and filename for the PROTOCOL.INI file.                                                                        |

(continued on next page)

**Table 3–2 (Cont.) TCP/IP Transport Configuration**

| <b>Field</b>               | <b>Response</b>                                  |
|----------------------------|--------------------------------------------------|
| Domain name                | Enter the domain name (optional).                |
| Subnet mask name           | Enter the mask name (optional).                  |
| Domain name server address | Enter the domain name server address (optional). |

Once you have completed the configuration, use the key diskette written during the configuration to reboot the coexistence client.

## Step 5: Reboot the Client

To reboot the coexistence client:

1. Insert the key diskette into the boot drive.
2. Press `Ctrl/Alt/Del` to reboot the coexistence client.

The **lastdrive** parameter is set to **Q** in the CONFIG.SYS file. NetWare uses the drive letters *after* **Q**, and PATHWORKS for DOS uses drive letters *before* **Q**. Your PC is now a PATHWORKS client that can access NetWare servers.

3. Connect to the NetWare server from the \DECNET directory by entering:

```
A:\> \DECNET\net*.com
```

For *net\*.com*, enter your version of the NetWare shell (for example, NET3.COM, NET4.COM, or NET5.COM.)

4. The log in drive for the NetWare server is **R**. Change your drive letter to **R** and log in to the NetWare server, as follows:

```
R:\>LOGIN server-name/username
```

---

# Configuring Applications and Memory

This chapter describes application configuration and memory management for PATHWORKS for DOS (NetWare Coexistence) including:

- Microsoft Windows Version 3.0 configuration
- Memory and performance issues

## Microsoft Windows Version 3.0 Configuration

Microsoft Windows Version 3.0 may be configured to support either NetWare or PATHWORKS for DOS but not both simultaneously. While running Windows on a system configured as both a PATHWORKS and NetWare client, some restrictions may be encountered, depending on the version of PATHWORKS for DOS.

## Using PATHWORKS for DOS Version 4.1 with Windows

It is recommended that PATHWORKS for DOS Version 4.1 be configured with Windows. There are no restrictions for using PATHWORKS for DOS Version 4.1 and Windows Version 3.0 provided Microsoft Windows has been configured to run with NetWare and that the PATHWORKS for DOS utility, WIN3SETU, has been used for the configuration.

To use the WIN3SETU utility:

1. Connect to the PATHWORKS server by entering:  
A:\> server-drive  
  
For example,  
A:\> K:
2. Change directories to the Windows directory by entering:  
K:\> CD MSWINV30
3. Start the WIN3SETU utility by entering:  
K:\MSWINV30> WIN3SETU

For further information on the WIN3SETU utility, see *PATHWORKS for DOS Client Installation and Configuration Guide*.

## Using PATHWORKS for DOS Version 4.0 with Windows

If you are operating PATHWORKS for DOS Version 4.0, it is recommended that Windows be configured with NetWare.

- If Windows is configured to support NetWare:
  - You cannot make new connections to PATHWORKS file or print services with the Microsoft Windows File Manager.

---

### Note

---

Connections for PATHWORKS file, print, and disk services defined before starting Microsoft Windows remain valid and accessible.

---

- You can make new connections to PATHWORKS file or print service using a DOS window and the USE command.
- If Windows is configured to support PATHWORKS (LAN Manager):
  - You cannot start non-Windows applications that reside on NetWare drives with the Microsoft Windows File Manager or using the Run command from the File menu.
  - You can start non-Windows applications that reside on NetWare drives using a DOS window.
  - You can make new connections to NetWare file or print services with the Microsoft Windows File Manager.

## Memory and Performance Issues

PATHWORKS for DOS (NetWare Coexistence) should not cause any decrease in performance for either NetWare or PATHWORKS applications. If you experience a decrease in performance, examine network address and routing mechanisms, for example, NetWare bridges.

PATHWORKS modules use conventional, expanded, and extended memory. The amount of memory used depends on the transports, functions, type of PC, and the availability of memory managers. The key diskette attempts to load most PATHWORKS modules into Expanded Memory (EMS), if available. See *PATHWORKS for DOS Memory Solutions for Client Administrators* for information on memory usage.

For all PATHWORKS for DOS (NetWare Coexistence) users, the least amount of conventional memory available for end-user applications is the largest amount of conventional memory available while running PATHWORKS for DOS, less the amount required to run the NetWare shell (35K) and IPX (15K).

---

**Note**

---

If the PATHWORKS redirector is in Extended Memory (XMS), the NetWare shell cannot execute from XMS. If DECnet or TCP/IP is in EMS, the NetWare shell cannot execute from EMS

---

Since the shell is often smaller than either the redirector or the PATHWORKS transport, it is more economical to load the shell into conventional memory.

If the target PC is an 80386 or 80486 with memory management software, you can load the IPX driver and the shell into Upper Memory Blocks (UMB). In such situations, approximately 530K of conventional memory is free after installation.

If the target PC is an 80286 or 8086, less than 512K of conventional memory is free after installation of both PATHWORKS and NetWare.

## **Network-Addressing Issues**

When the PATHWORKS for DOS (NetWare Coexistence) client uses DECnet as a transport, the node address automatically changes to reflect the DECnet address. The address change has no effect on regular NetWare operations. However, if you use node addresses to create station restrictions, you must change these station restrictions to reflect the address change.

## **NETBIOS Issues**

PATHWORKS for DOS uses the NETBIOS interface for file and print services and also supplies a NETBIOS Applications Programming Interface (API) for applications. If a PATHWORKS for DOS (NetWare Coexistence) user loads the NetWare NETBIOS module, the following functions do not operate:

- If the DECnet transport is being used, the PATHWORKS NETBIOS API is not available.

PATHWORKS file and print services, DECnet utilities, and applications written to the DECnet sockets interface (for example, DECwindows) continue to operate.

- If the TCP/IP transport is used, PATHWORKS file and print services do not operate and the PATHWORKS NETBIOS API is not accessible. TCP/IP utilities and applications written to the TCP/IP sockets interface (for example, DECwindows) continue to operate.

---

## Operating Clients

This chapter describes the technical operation of PATHWORKS for DOS (NetWare Coexistence) including:

- How the DOS NetWare client operates
- How the PATHWORKS for DOS client operates
- How the PATHWORKS for DOS (NetWare Coexistence) client operates

### How the DOS NetWare Client Operates

A DOS NetWare client operates according to the following steps:

1. An application issues a DOS file request.
2. The NetWare shell (for example, NET3) checks the application's file request to see if it is for a NetWare drive.
3. If the request is for a NetWare drive, the NetWare shell formats the NetWare Core Protocol (NCP) request and passes it to the IPX driver. If it is not a NetWare drive, the shell sends the file request to DOS.
4. The IPX driver sends the NCP request to either the Ethernet or Token Ring controller board and then to the server.
5. When a response is received from the NetWare server, the IPX driver sends the response to the shell, which configures the response to look like a DOS response, and returns it to the application.

### How the PATHWORKS for DOS Client Operates

A PATHWORKS for DOS client functions as follows:

1. An application issues a DOS file request.
2. DOS examines the file request to see if it is for a LAN Manager drive. Since it is, DOS sends the file request to the PATHWORKS LAN Manager redirector.

3. The redirector takes the file request and formats it as a Server Message Block (SMB) request. The redirector then passes the SMB request to the NETBIOS interface.
4. The NETBIOS interface passes the SMB request to either DECnet or TCP/IP, depending on which transport you have installed on your client.
5. DECnet or TCP/IP passes the SMB request to the NDIS driver which passes the request to the Ethernet or Token Ring controller board and then to the server.
6. When a response comes back from the PATHWORKS server, the NDIS driver sends it to TCP/IP or DECnet, which in turn passes it through NETBIOS back to the redirector.
7. The redirector turns the response into a DOS response and returns it to the application.

## How the PATHWORKS for DOS (NetWare Coexistence) Client Operates

The PATHWORKS for DOS (NetWare Coexistence) client provides an IPX driver that sends NetWare client requests for service to the same NDIS driver used by the PATHWORKS for DOS client DECnet or TCP/IP transport. Typically, NetWare uses DOS drive letters *after* the letter specified in the **lastdrive** line in the CONFIG.SYS file. PATHWORKS for DOS uses drive letters *before* the letter specified in **lastdrive**.

Because the NetWare shell and the LAN Manager redirector use different mechanisms, they can coexist on the same PC client.

In the following example:

- Drive G is assigned to a PATHWORKS server.
- Drive R is assigned to a NetWare server.
- The DOS COPY command is used to copy files from drive G to drive R.

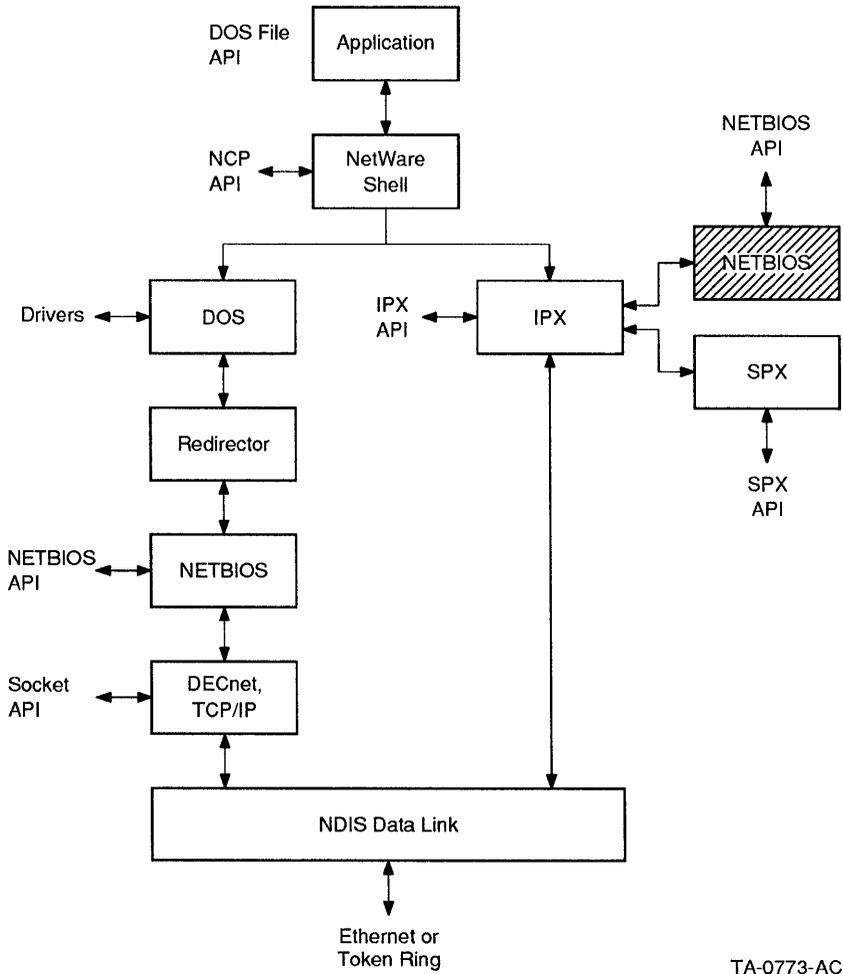
The PATHWORKS for DOS (NetWare Coexistence) client functions as follows:

1. The COPY command issues a DOS file read for drive G.
2. The NetWare shell intercepts the request and sees that it is not for a NetWare drive, and sends the request to DOS.
3. DOS examines the file request to see if it is for a LAN Manager drive. Since it is, DOS sends the file request to the PATHWORKS LAN Manager redirector.

4. The redirector formats the file request as a SMB request, which it then passes to the NETBIOS interface.
5. The NETBIOS interface passes the SMB request to the appropriate transport either DECnet or TCP/IP.
6. The transport passes the SMB request to the NDIS driver which passes the request to the network.
7. When a response is returned from the PATHWORKS server, the NDIS driver sends it to the TCP/IP or DECnet transport. The transport passes it through NETBIOS back to the redirector.
8. The redirector converts the response to look like a DOS response and returns it to the COPY command.
9. The COPY command issues a DOS file write request to drive R.
10. The NetWare shell intercepts the write request to see if it is for a NetWare drive. Since it is, the NetWare shell formats the file request as a NetWare Core Protocol (NCP) request, and passes it to the IPX driver.
11. The IPX driver sends the NCP request to the NDIS driver which passes the request to the network.
12. When a response is received from the NetWare server, the NDIS driver passes the response to the IPX driver, which in turn sends the response to the shell.
13. The shell converts the response to look like a DOS response and returns the response to the COPY command.

Figure 5-1 shows the coexistence of NetWare and PATHWORKS.

**Figure 5-1 PATHWORKS and NetWare Operations**



TA-0773-AC

---

## Using STARTNET and STOPNET

The STARTNET and STOPNET commands are used with PATHWORKS for DOS Version 4.1 to dynamically load and unload PATHWORKS components from conventional memory for use by other applications. The STOPNET command disconnects PATHWORKS connections and unloads PATHWORKS components from memory while keeping NetWare connections. The STARTNET command reloads all PATHWORKS components into memory and reconnects all PATHWORKS connections.

---

### Note

---

The STOPNET and STARTNET commands cannot be used to dynamically load and unload PATHWORKS for DOS Version 4.0 components.

---

To use the STOPNET command, update the STARTNET.BAT file from the \DECNET or \TCPIP directory by entering the following line after the %BOOT%\TCPIP\NETBIND line:

```
%BOOT%\transport-name\NET*
```

The *transport name* is either DECNET or TCPIP.



---

## Deinstalling the Software

The PATHWORKS for DOS (NetWare Coexistence) installation replaces files provided with PATHWORKS for DOS, Version 4.0. This procedure does not apply to PATHWORKS for DOS (NetWare Coexistence), Version 4.1. The new files are similar to those replaced, but support the creation of key diskettes for clients that support both NetWare and PATHWORKS for DOS. The deinstallation procedure restores the PATHWORKS for DOS files. This procedure can be used if you encounter unexpected problems during installation of PATHWORKS for DOS (NetWare Coexistence).

To deinstall PATHWORKS for DOS (NetWare Coexistence):

1. Make sure you have write access to a PCSAV40 file service.
2. Change to the drive where PATHWORKS for DOS (NetWare Coexistence) is installed, for example drive K.
3. Copy the following NETSETUP files to the \PCAPP directory by entering:

```
COPY K:\NETWARE\OLDAPP\NETSETUP.EXE K:\PCAPP
COPY K:\NETWARE\OLDAPP\NETSETUP.HLP K:\PCAPP
```

4. Copy the following network transport files:
  - a. If you have DECNET installed, copy the following files to the \DECNET subdirectory by entering:

```
COPY K:\NETWARE\OLDAPP\DECNET.OMO K:\DECNET
COPY K:\NETWARE\OLDAPP\DECNET.WIK K:\DECNET
```

- b. If you have TCP/IP installed, copy the following files to the \TCPIP subdirectory by entering:

```
COPY K:\NETWARE\OLDAPP\TCPIP.OMO K:\TCPIP
```

```
COPY K:\NETWARE\OLDAPP\TCPIP.WIK K:\TCPIP
```

5. Delete all files in the \NETWARE directory by entering:

```
DELETE K:\NETWARE K:*.*
```

PATHWORKS for DOS (NetWare Coexistence) is now deinstalled.

# C

---

## Messages

This appendix contains installation messages. The message is shown first, followed by an explanation and advice on how to respond to the problem.

Could not modify information file on drive

**Explanation:** You do not have write access to the drive.

**User Action:** Make sure you have write access. For information on obtaining write access, see your server documentation.

Could not open installation data file

**Explanation:** You are not connected to a PATHWORKS area.

**User Action:** Change directories to a PATHWORKS area and make sure there is write access. Try copying the file again. For information on obtaining write access, see your server documentation.

Either no privileges for operation, or non-PATHWORKS file area

**Explanation:** You are not connected to a PATHWORKS area.

**User Action:** Change directories to a PATHWORKS area and make sure there is write access. Try copying the file again. For information on obtaining write access, see your server documentation.

Installation of clients will not complete without this file

**Explanation:** No available disk space, file was not copied.

**User Action:** Free disk space by copying files to another disk or deleting files not needed. Copy the file again.

Installation to DOS V3.X systems will not complete without this file

**Explanation:** There is no available disk space to copy the NET3.COM file.

**User Action:** Free disk space by copying files to another disk or deleting files not needed. Copy the file again.

Installation to DOS V4.X systems will not complete without this file

**Explanation:** There is no available disk space to copy the NET4.COM file.

**User Action:** Free disk space by copying files to another disk or deleting files not needed. Copy the file again.

Installation to DOS V5.X systems will not complete without this file

**Explanation:** There is no available disk space to copy the NET5.COM file.

**User Action:** Free disk space by copying files to another disk or deleting files not needed. Copy the file again.

Netware Coexistence will function but help text may be in error

**Explanation:** There is no available disk space to copy the NETSETUP.HLP file.

**User Action:** Free disk space by copying files to another disk or deleting files not needed. Copy the file again.

Out of disk space for file

**Explanation:** No available disk space.

**User Action:** Free disk space by copying files to another disk or deleting files not needed. Copy the file again.

There will be no TCP/IP support without this file

**Explanation:** The TCP/IP option is not installed on the file server

**User Action:** If you want the TCP/IP option, copy the TCP/IP files from the \NETWARE subdirectory to the \TCPIP subdirectory on the file service.

---

# Index

## A

---

Application Programming Interface (API),  
4-3

## B

---

Backing up system, 2-4  
Bridges, 2-2

## C

---

CONFIG.SYS file, 3-6  
lastdrive, 3-6, 5-2

## D

---

Deinstalling PATHWORKS for DOS  
(NetWare Coexistence), B-1  
Disk space requirements, 2-3  
DOS NetWare client  
how it functions, 5-1

## E

---

Error messages, C-1  
Ethernet cable, 2-2

## H

---

Hardware requirements, 2-2  
Ethernet cable, 2-2  
Ethernet controller board, 2-2  
Token Ring controller board, 2-2

## I

---

Installation, 3-1  
creating the IPX driver, 3-1  
deinstalling, B-1  
disk space, 2-3  
error messages, C-1  
hardware requirements, 2-2  
kit contents, 2-4  
SHGEN utility, 3-1  
software requirements, 2-1  
system backup, 2-4  
WSGEN utility, 3-1  
IPX driver  
creating, 3-1

## K

---

Key diskette, 2-1  
Kit contents, 2-4  
LAN\_DRV\_DEC diskette, 2-1

## L

---

LAN\_DRV\_DEC diskette, 2-1

## M

---

Memory  
and performance issues, 4-2  
EMS, 2-2  
386 memory manager, 2-2  
XMS, 2-2  
Menus

Menus (Cont.)

NETSETUP, 3-4

Messages

*See* Error messages

## N

---

NCP

*See* NetWare Core Protocol, 5-3

NDIS driver, 2-2

Digital supplied, 2-2

non-Digital supplied, 2-2

NETBIOS

application programming interface, 4-3

performance issues, 4-3

NETSETUP utility

accessing, 3-3

using to create key diskette, 3-2

NetWare Core Protocol (NCP), 5-3

Network-addressing performance issues,  
4-3

## O

---

Operating PATHWORKS for DOS (NetWare  
Coexistence), 5-1

Overview

configuration, 1-2

installation, 1-2

## P

---

PATHWORKS for DOS (NetWare  
Coexistence)

client, 5-2

overview, 1-1

PATHWORKS for DOS client, 5-1

Performance

NETBIOS, 4-3

network addressing, 4-3

Windows Version 3.0, 4-1

Performance issues, 4-2

## R

---

Routers, 2-2

## S

---

Server

OS/2, 1-1

ULTRIX, 1-1

VMS, 1-1

Server Message Block (SMB), 5-1

SHGEN utility, 3-1

accessing, 3-1

Software requirements

key diskette, 2-1

LAN\_DRV\_DEC diskette, 2-1

NDIS driver, 2-2

NETSETUP utility, 2-1

SHGEN utility, 2-1

STARTNET.BAT file, A-1

STARTNET command, A-1

STOPNET.BAT file, A-1

STOPNET command, A-1

## T

---

Transport types

DECnet, 1-1

TCP/IP, 1-1

## U

---

UPDATE.BAT file

function of, 3-2

Upper Memory Blocks (UMB), 4-3

## W

---

WIN3SETU utility, 4-1

Windows Version 3.0, 4-1

WSGEN utility, 3-1

accessing, 3-1

# Reader's Comments

PATHWORKS for DOS  
(NetWare Coexistence)  
Installation and Configuration Guide  
AA-PG4TB-TK

---

Please use this postage-paid form to comment on this manual. If you require a written reply to a software problem and are eligible to receive one under Software Performance Report (SPR) service, submit your comments on an SPR form.

Thank you for your assistance.

| I rate this manual's:                      | Excellent                | Good                     | Fair                     | Poor                     |
|--------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Accuracy (software works as manual says)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Completeness (enough information)          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Clarity (easy to understand)               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Organization (structure of subject matter) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Figures (useful)                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Examples (useful)                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Index (ability to find topic)              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Page layout (easy to find information)     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

I would like to see more/less \_\_\_\_\_

What I like best about this manual is \_\_\_\_\_

What I like least about this manual is \_\_\_\_\_

I found the following errors in this manual:

| Page  | Description |
|-------|-------------|
| _____ | _____       |
| _____ | _____       |
| _____ | _____       |

Additional comments or suggestions to improve this manual:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I am using **Version** \_\_\_\_\_ of the software this manual describes.

Name/Title \_\_\_\_\_ Dept. \_\_\_\_\_

Company \_\_\_\_\_ Date \_\_\_\_\_

Mailing Address \_\_\_\_\_

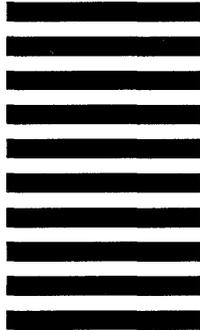
\_\_\_\_\_ Phone \_\_\_\_\_

Do Not Tear - Fold Here and Tape

**digital**™



No Postage  
Necessary  
If Mailed  
in the  
United States



**BUSINESS REPLY MAIL**  
FIRST CLASS PERMIT NO. 33 MAYNARD MASS.

POSTAGE WILL BE PAID BY ADDRESSEE

DIGITAL EQUIPMENT CORPORATION  
Corporate User Information Products  
PKO3-1/D30  
129 PARKER STREET  
MAYNARD, MA 01754-9975



Do Not Tear - Fold Here

digital

Part Number: AA-PG4TB-TK  
Printed in U.S.A.