Software Product Description

PRODUCT NAME: PATHWORKS for DOS (NetWare® Coexistence), Version 1.1 **SPD 34.76.01**

DESCRIPTION

PATHWORKS for DOS (NetWare Coexistence) extends the Personal Computing Systems Architecture (PCSA) to certain networked personal computer systems that are also Novell® NetWare client platforms. The Personal Computing Systems Architecture is a key component of Digital Equipment Corporation's systems and networking architecture that merges the VAX, RISC, and personal computer environments.

PATHWORKS for DOS (NetWare Coexistence) provides users with the facilities required to install and operate PATHWORKS for DOS V4.x software concurrently with Novell's NetWare client software (shell) on personal computers having a single Ethernet interface controller or a single Token Ring interface controller, and using the DOS Operating System.

Supported platforms must:

- Satisfy the hardware, software, and network topology requirements of PATHWORKS for DOS
- Satisfy the network topology requirements of a NetWare DOS client
- Have a single Ethernet or a single Token Ring interface controller for which a NDIS-compliant driver is available

Note:

Digital's PATHWORKS for DOS software (Software Product Description SPD 55.07.xx) allows a personal computer running the DOS Operating System to use the facilities provided by PATHWORKS for VMS, PATHWORKS for ULTRIX, or the PATHWORKS for OS/2 server software, utilizing either the DECnet or TCP/IP transports; V4.1 or greater is required for Token Ring support.

Novell's NetWare client software allows a personal computer running the DOS Operating System to use the facilities available from appropriate NetWare Server products, usually provided by Novell, using the IPX transport.

Features

PATHWORKS for DOS (Netware Coexistence) includes the following components:

- NetWare driver components which are used by NetWare utilities to generate an IPX driver that interfaces to either an Ethernet or Token Ring controller via a NDIS driver produced for that controller.
- Installation and configuration procedures for use with PATHWORKS for DOS, V4.x
- Documentation describing the installation, configuration, and use of the PATHWORKS for DOS facilities, while concurrently retaining access to NetWare client capabilities.

The IPX Driver for NDIS

The Network Device Interface Specification (NDIS) was jointly developed by Microsoft® Corporation and 3Com™ Corporation. This standard is intended to provide protocol-independent software support for network interface controllers. Drivers for network interface controllers developed to this standard can also service multiple network protocols simultaneously.

PATHWORKS for DOS (NetWare Coexistence) includes driver components that can be configured by the standard NetWare SHGEN or WSGEN utility to yield an IPX driver, which interfaces with NDIS drivers for either Ethernet or Token Ring controllers.

PATHWORKS for DOS V4.1, as distributed, incorporates support for NDIS drivers for Ethernet and Token Ring controllers, and support for DECnet and TCP/IP; it does not support these two protocols simultaneously.

The two environments supported by this product are:

- PATHWORKS via DECnet and NetWare via IPX

  or

- PATHWORKS via TCP/IP and NetWare via IPX.

Note: NDIS-compliant drivers for specific controllers are generally available from the board manufacturers.

INSTALLATION

Digital recommends the customer's first purchase of this software product include the PATHWORKS for DOS DECstart installation and orientation service. For more information, please contact your local Digital office.

To install and configure PATHWORKS for DOS (NetWare Coexistence):

1. Use Novell's SHGEN or WSGEN utility to generate the required IPX.COM driver.
2. Use a distributed utility called UPDATE to copy any required software from a copy of the distribution media to the designated area for PATHWORKS for DOS client configuration.
3. Copy the newly generated IPX.COM driver and other required NetWare client components to the designated area for PATHWORKS for DOS client configuration.
4. Use the NETSETUP utility to guide the system manager through the remaining configuration process using a series of menus, including on-line HELP.

Documentation

The documentation for PATHWORKS for DOS (NetWare Coexistence) is essential for the installation, configuration, and proper use of this product.

The *Installation and Configuration Guide* provides the system manager with "cookbook" instructions for the installation and configuration of these special client platforms. The guide provides information to assist the system manager in understanding the key interactions between the two LAN products. It also provides guidance and strategies to best utilize this environment for typical use.

The User's Handbook provides end-users of NetWare and PATHWORKS for DOS on the same personal computer with a consolidated reference for the ordinary use of PATHWORKS for DOS V4.1.

Restrictions

This product takes advantage of the fact that client software for each LAN product is a well-behaved DOS product, and neither does anything overt to prevent the proper execution of the other. This product has no effect on the basic design or operation of either LAN product. However, certain options available from each LAN product may limit and/or restrict the full range of capabilities optionally offered by the other.

NETBIOS Issues

PATHWORKS for DOS uses its NETBIOS interface for file and print services and also supplies a NETBIOS Applications Programming Interface (API) for applications. If the NetWare NETBIOS is also loaded on a system configured to use both NetWare and PATHWORKS software, the following will result:

- If the DECnet transport is being used, the PATHWORKS NETBIOS API will no longer be accessible and the BROADCAST/RECEIVE utilities will no longer operate as expected. PATHWORKS file and print services, DECnet utilities, and applications written to the DECnet sockets interface (e.g., PC DECwindows) will continue to operate.
- If the TCP/IP transport is being used, PATHWORKS file and print services will be disabled and the PATHWORKS NETBIOS API will no longer be accessible. Other TCP/IP utilities and applications written to the TCP/IP sockets interface (e.g., PC DECwindows) will continue to operate.

Network-Addressing Issues

If a system that is both a PATHWORKS and NetWare client is using DECnet to support PATHWORKS functions, please note the following:

- The NDIS-compliant driver used must support a feature called SET STATION ADDRESS (contact the manufacturer for this information).
- The station address of the client is automatically changed to reflect the DECnet address.

Note: The address change has no effect on normal NetWare operations. However, since station addresses can be used to restrict access to NetWare services, the NetWare LAN administrator should be aware of this and take appropriate action to retain the desired restrictions.

Remote Boot

Under certain conditions, each LAN product can normally support diskless personal computers by utilizing a capability known as "remote boot". When a personal computer is configured as both a PATHWORKS and NetWare client, neither LAN product can offer this "remote boot" capability to this client.

Therefore, the target workstation must be able to support local boot.

Use of Microsoft Windows™ V3.0

Microsoft Windows V3.0 may be configured to support either the NetWare or the PATHWORKS for DOS (LAN Manager) technology, but not both simultaneously. *Note:* PATHWORKS for DOS, V4.x incorporates LAN Manager technology.

While running Microsoft Windows on a system configured as both a PATHWORKS and NetWare client, a user may encounter some restrictions, depending on the version of PATHWORKS for DOS in use.

Using PATHWORKS for DOS, V4.1

No restrictions apply if Microsoft Windows is configured to run with NetWare, and the PATHWORKS for DOS utility, WIN3SETU, is started, as explained in the documentation.

Using PATHWORKS for DOS, V4.0

If Microsoft Windows is SETUP to support NetWare:

- Users cannot make connections to PATHWORKS file or print services with the Microsoft Windows File Manager.

  However,

  — Connections defined for PATHWORKS file, print, and disk services established before invoking Microsoft Windows remain valid and fully accessible.

  — Users can make connections to PATHWORKS file or print service via a DOS window and the USE utility.

If Microsoft Windows is SETUP to support PATHWORKS LAN Manager:

- Users cannot launch non-Windows applications that reside on NetWare drives with the Microsoft Windows File Manager (or using the "RUN" command from the "FILE" menu).

  However,

  — Users can launch non-Windows applications that reside on NetWare drives via a DOS window.

Note: In this environment, users can make connections to NetWare file or print services with the Microsoft Windows File Manager.

In all environments, all connections made to Netware and PATHWORKS services before Microsoft Windows is invoked can still be accessed while using Microsoft Windows.

Memory Usage

Systems configured to use both PATHWORKS for DOS and NetWare require that the code to support both LAN environments be loaded into memory. This requirement means there will be less conventional memory for other applications in such an environment than available if only one LAN product were used.

In general, the amount of conventional memory available for end-user applications is "the best case PATHWORKS for DOS memory usage" less memory required when the NetWare IPX and shell modules are installed in conventional memory, typically about 50-55 KB.

HARDWARE REQUIREMENTS

Processors and/or peripherals as specified in the System Support Addendum (SSA 34.76.01-x) are supported.

Ethernet and Token Ring Controllers

PATHWORKS for DOS, when used in conjunction with PATHWORKS for DOS (NetWare Coexistence), supports Digital's family of EtherWORKS controllers via the NDIS drivers supplied with PATHWORKS for DOS.

The family of EtherWORKS controllers includes:

- EtherWORKS LC
- EtherWORKS LC/TP
- EtherWORKS MC
- EtherWORKS MC TP/BNC
- EtherWORKS Turbo
- EtherWORKS Turbo/TP
- EtherWORKS Turbo TP/BNC

Notes: The Digital Ethernet NDIS drivers can also be used with previous versions of the Digital Ethernet controller family, DEPCAs.

Digital recommends the use of the Digital multi-buffered EtherWORKS controllers in networks which carry heavy traffic.

Because the PATHWORKS for DOS and PATHWORKS for DOS (NetWare Coexistence) software are written to the NDIS interface, users can use third-party Ethernet or Token Ring controllers if accompanied by an NDIS Version 2.0.1 driver.

Every effort has been made to ensure that the software adheres to the NDIS Version 2.0.1 specification. However, individual vendors' interpretation of the specification may vary and therefore may not function in Digital's PATHWORKS for DOS network environment.

The PATHWORKS for DOS product contains several NDIS drivers for the convenience of our users. The NDIS drivers are furnished " as is," and Digital cannot be held liable for any special, indirect, incidental, or consequential damages.

SOFTWARE REQUIREMENTS

- PATHWORKS for DOS as specified in the System Support Addendum SSA 34.76.01-x.
- At least one of the following Novell NetWare products called out in the System Support Addendum SSA 34.76.01-x.

PATHWORKS Server Support

The following PATHWORKS server software products are supported for use in conjunction with a PATHWORKS for DOS server/client environment:

PATHWORKS for VMS (SPD 30.50.xx)
PATHWORKS for ULTRIX (SPD 32.44.xx)
PATHWORKS for OS/2 (SPD 55.24.xx)

Refer to System Support Addendum (SSA 34.76.01-x) for availability and required versions of prerequisite /optional software.

ORDERING INFORMATION

Software License: QL-0TL**-**
(included with PATHWORKS for DOS)
Software Media and Documentation: QA-GLVAA-HW
Software Media and Documentation PATHWORKS for DOS: QA-0TL**-**
Software Documentation Only: QA-GLVAA-GZ

* Denotes variant fields, For additional information on available licenses, services, and media, refer to the appropriate price book.

SOFTWARE LICENSING

The right to use the software is granted by the PATHWORKS for DOS client license (SPD 55.07.xx).

A license must be obtained in advance for each system on which the software is installed.

This software is furnished under the licensing provisions of Digital Equipment Corporation's Standard Terms and Conditions. For more information on Digital's licensing terms and policies, please contact your local Digital office.

SOFTWARE PRODUCT SERVICES

A variety of service options are available. For more information, please contact your local Digital office.

SOFTWARE WARRANTY

Warranty for this software product is provided by Digital with the purchase of a license for the product as defined in the Software Warranty Addendum of this SPD.

System Support Addendum

PRODUCT NAME: PATHWORKS for DOS (NetWare® Coexistence), Version 1.1 **SSA 34.76.01-A**

HARDWARE REQUIREMENTS

Systems, components, and peripherals as specified below are supported except as noted for specific software components:

- An Intel® 8086-, 8088-, 80286-, 80386-, 80486-based personal computer from the *Supported Base Systems Chart*.
- A minimum of 640KB system memory.
- Network connections may consist of either
  - — One network connection, via an Ethernet or Token Ring controller, for both PATHWORKS for DOS and NetWare, or
  - — One network connection via an Ethernet or Token Ring controller for NetWare and an asynchronous connection for PATHWORKS for DOS using DECnet.
- Base system must have one diskette drive capable of reading 5.25 inch (360KB) diskettes or 3.50 inch (720KB) diskettes to load the distribution media. (To create a floppy key disk, a disk greater than or equal to 720KB is required for booting purposes.)
- In an asynchronous PATHWORKS network environment, every base system must have at least one diskette drive capable of reading 5.25 inch (360KB) diskettes or 3.50 inch (720KB) diskettes (to load the distribution media) and 12MB of free hard disk space.
- A system power supply that provides at least 130 watts (for IBM® XTs with a DEPCA).
- Standard keyboards that come with the base systems listed in the *Supported Base Systems Chart* are supported.

Mass Storage Requirements

Refer to the SSA for PATHWORKS for DOS (55.07.xx-x) and Novell® NetWare® documentation for specific storage requirements to support both products.

OPTIONAL HARDWARE

The System Support Addendum for PATHWORKS for DOS, makes reference to the following optional hardware components:

- Expanded Memory Specification Version 4.0 Support
- Digital Printers
- Digital Keyboards, Mice
- Video Adapters
- Ethernet and Token Ring Controllers
- Asynchronous Communications Support
- Hardware related to Microsoft® Windows™ Support
- Hardware related to PC DECwindows Motif™ Support

Refer to the PATHWORKS for DOS System Support Addendum (SSA 55.07.xx-x) for specific information regarding supported optional hardware components.

Special note should be made regarding the use of *Ethernet and Token Ring* controllers in this environment.

PATHWORKS for DOS, when used in conjunction with PATHWORKS for DOS (NetWare Coexistence), supports Digital's family of EtherWORKS controllers via the NDIS drivers supplied with PATHWORKS for DOS. The family of EtherWORKS controllers includes:

- EtherWORKS LC
- EtherWORKS LC/TP
- EtherWORKS MC
- EtherWORKS MC TP/BNC
- EtherWORKS Turbo, EtherWORKS Turbo/TP
- EtherWORKS Turbo TP/BNC

Note: The Digital Ethernet NDIS drivers can also be used with previous versions of the Digital Ethernet controller family, DEPCAs.

Because the PATHWORKS for DOS software is written to the NDIS interface, users can use third-party Ethernet or Token Ring controllers if accompanied by an NDIS Version 2.0.1 driver. Every effort has been made to ensure that the software adheres to the NDIS Version 2.0.1 specification. However, individual vendors' interpretation of the specification may vary and therefore may not function in Digital's PATHWORKS for DOS network environment.

SOFTWARE REQUIREMENTS

- Either V4.0 or V4.1 of PATHWORKS for DOS, as follows:
  - — PATHWORKS for DOS V4.0, for use *only* with Ethernet controllers
  - — PATHWORKS for DOS V4.1, for use with Ethernet or Token Ring controllers, or if PATHWORKS for DOS will be used via asynchronous DECnet.
- One of the following Novell NetWare products:
  - — Advanced NetWare V2.15, NetWare V2.2
  - — NetWare 386 V3.1, NetWare V3.11
  - — NetWare for VMS V2.1

Operating System Support

- COMPAQ DOS V3.31, V4.0, V4.01, V5.0
- DECstation DOS V3.3, V4.0, V5.0
- IBM DOS V3.3, V4.0, V5.0
- Olivetti DOS V3.3, V4.0, V4.01, V5.0
- Tandy® DOS V3.30, V4.01, V5.0
- Toshiba® DOS V3.3 (R3C90US), V4.01 (R4A15US), V5.0
- Zenith DOS V3.3+, V4.0, V4.01, V5.0

The base systems listed in the *Supported Base Systems Chart* at the end of this document are supported when using PATHWORKS for DOS, V4.1 and operating system software supplied by the same vendor as the system unit itself or with Microsoft DOS V5.0. Digital recommends using the operating system software supplied by the PC vendor to ensure complete interoperability.

Note: If using DOS V4.0, Digital recommends upgrading to DOS V4.01 or V5.0, where available; enhancements associated with these releases ensure interoperability with PATHWORKS for DOS.

PATHWORKS Server Support

The following versions of the PATHWORKS server software products are supported for use in conjunction with a PATHWORKS for DOS V4.1 server/client environment:

- PATHWORKS for VMS V4.1 (SPD 30.50.xx)
- PATHWORKS for ULTRIX V1.0, V1.1 (SPD 32.44.xx)
- PATHWORKS for OS/2® V1.1, V2.0 Server Software (SPD 55.24.XX)

OPTIONAL SOFTWARE

PATHWORKS for DOS (TCP/IP) (SPD 33.45.xx) may be used to provide PATHWORKS LAN capabilities via TCP/IP.

GROWTH CONSIDERATIONS

The minimum hardware/software requirements for any future version of this product may be different from the requirements for the current version.

DISTRIBUTION MEDIA

RX31 and RX24 Floppy Diskette

ORDERING INFORMATION

Software Licenses: QL-0TL**-**
(included with PATHWORKS for DOS)
Software Media and Documentation: QA-GLVAA-HW
Software Media and Documentation PATHWORKS for DOS: QA-0TL**-**
Software Documentation Only: QA-GLVAA-GZ

* Denotes variant fields. For additional information on available licenses, services, and media, refer to the appropriate price book.

A variety of service options are available. For more information, please contact your local Digital office.

Supported Configurations

PATHWORKS for DOS V4.1 and V4.0, NetWare, and PATHWORKS for DOS (NetWare Coexistence) have been tested on the base systems listed in the *Supported Base Systems Chart* at the end of this document. Support of a particular model as a client is subject to the requirements stated in the *HARDWARE REQUIREMENTS* and *SOFTWARE REQUIREMENTS* sections of this document.

Each system is supported in a native hardware configuration only, and with its native operating system; that is, supported configurations are those in which the hardware components and operating system software are supplied by the base system vendor. The supported operating system versions are listed in the *SOFTWARE REQUIREMENTS* section of this document.

PATHWORKS for DOS V4.1 and V4.0, NetWare, and PATHWORKS for DOS (NetWare Coexistence) have been tested on the base systems listed in the *Supported Base Systems Chart* at the end of this document. If a customer problem with these software products can be reproduced by the customer on one of these supported configurations, Digital will work the problem to resolution on these supported configurations. If the customer problem can not be reproduced by the customer on one of these supported configurations, it will be the responsibility of the customer to resolve the issue.

PATHWORKS for DOS software supports the use of Expanded Memory Specification (EMS) applications that are Version 4.0 compliant. Every effort has been made to ensure that the software adheres to the EMS, Version 4.0 specification. However, individual applications may have interpreted the specification differently and, therefore, may not function in Digital's PATHWORKS for DOS network environment.

PATHWORKS for DOS and PATHWORKS for DOS (NetWare Coexistence) software is written to comply with the NDIS Version 2.0.1 interface. Every effort has been made to ensure that the software adheres to the NDIS, Version 2.0.1 specification. However, individual vendors' interpretation of the specification may vary and therefore may not function in Digital's PATHWORKS for DOS network environment.

Digital's implementation of the NDIS standard is intended to allow users a greater choice of Ethernet and Token Ring controllers. This implementation is not intended to support, in general, the simultaneous operation of the PATHWORKS for DOS product and arbitrary networking products from other vendors.

The above information is valid at time of release. Please contact your local Digital office for the most up-to-date information.

Note: The availability of these software product options and services may vary by country. Customers should contact their local Digital office for information on availability.

The following hardware options from Digital, IBM, COMPAQ®, Olivetti®, Tandy®, Toshiba®, or Zenith may be added to the configurations described in the *Supported Base Systems Chart* subject to the compatibility of the hardware options with the base system: Enhanced Keyboard, Diskette Drives and Adapters, Fixed Disks and Adapters, Memory Expansion Options, Memory Module Kits, Color Display, Color/Graphics Monitor Adapter, and Printer Adapter.

Supported Base Systems

COMPAQ Model	Comments
COMPAQ DESKPRO Model 2 (*)	
COMPAQ DESKPRO 286 Personal Computer Model 20 and 40 (Model 2551 on UL label) (*)	
COMPAQ DESKPRO 286e (*)	
COMPAQ DESKPRO 286N	
COMPAQ DESKPRO 386/16 (*)	
COMPAQ DESKPRO 386/20 (*)	
COMPAQ DESKPRO 386/25 (*)	
COMPAQ DESKPRO 386/33 (*)	
COMPAQ DESKPRO 386N	
COMPAQ DESKPRO 386s (*)	
COMPAQ DESKPRO 386s/20	
COMPAQ DESKPRO 386/20e (*)	
COMPAQ DESKPRO 386/25e (*)	
COMPAQ DESKPRO 486/25	
COMPAQ DESKPRO 486/33L	
COMPAQ PORTABLE II (*)	
COMPAQ PORTABLE III (*)	
COMPAQ PORTABLE 386 (*)	
COMPAQ SLT/286 (*)	Some restrictions apply. Contact COMPAQ for details.
COMPAQ SLT 386s/20	
COMPAQ SYSTEMPRO 386(*)	
COMPAQ DESKPRO 386/33L	
COMPAQ SYSTEMPRO 486	

Digital Model	Comments
DECstation 200 (*)	
DECstation 210 (*)	EtherWORKS Turbo supported for 8MHz bus speed configuration only.
DECstation 212 (*)	
DECstation 212LP (*)	
DECstation 220 (*)	
DECstation 300 (*)	
DECstation 316 (*)	
DECstation 316+ (*)	
DECstation 316sx (*)	
DECstation 320 (*)	
DECstation 320+	
DECstation 320SX	
DECstation 325 (*)	

Digital Model	Comments
DECstation 325c (*)	
DECstation 333c (*)	
DECstation 350 (*)	
DECstation 425 (*)	
DECstation 425c	
DECpc 433 Workstation	
DECpc 433T	
DECpc 320sx Notebook	
DECpc 333 Portable	

IBM Model	Comments
IBM 5150 Personal Computer (*)	IBM 5150-2074 Asynch. Comm. adapter for DECnet Asynch connections
IBM 5160 Personal Computer XT (*)	IBM 5150-2074 Asynch. Comm. adapter for DECnet Asynch connections
IBM 5162 Personal Computer XT Model 286 (*)	IBM 5170-0215 serial/parallel adapter for DECnet Asynch connections
IBM 5170 Personal Computer AT (*)	IBM 5170-0215 serial/parallel adapter for DECnet Asynch connections
IBM 8530-021 Personal System/2 Model 30 (*)	
IBM 8530-E21 Personal System/2 Model 30-286 (*)	
IBM 8550 Personal System/2 Model 50	
IBM 8550 Personal System/2 Model 50Z	
IBM 8555 Personal System/2 Model 55sx	
IBM 8560 Personal System/2 Model 60	
IBM 8570 Personal System/2 Model 70 386 16mhz, 20mhz, 25mhz	
IBM 8580 Personal System/2 Model 80	
IBM 8590 Personal System/2 Model 90	
IBM 8595 Personal System/2 Model 95	

Olivetti Model	Comments
Olivetti M24 (*)	
Olivetti M28 (*)	
Olivetti M240 (*)	
Olivetti M250 (*)	
Olivetti M250E (*)	
Olivetti M280 (*)	
Olivetti M290 (*)	
Olivetti M290s(*)	
Olivetti M300 (*)	
Olivetti M300-05	
Olivetti M300-10	

Olivetti Model	Comments
Olivetti M380/XP1 (*)	
Olivetti M386/25 (*)	
Olivetti M486 (*)	

Tandy Model	Comments
Tandy 3000NL (*)	
Tandy 4025LX (*)	

Toshiba Model	Comments
Toshiba T3200	
Toshiba T3200sx (*)	System ROM 3.10 or later required
Toshiba T5200 (*)	System ROM 3.00 or later required

Zenith Model	Comments
Zenith Z-248 (*)	
Zenith Z-248/12 (*)	
Zenith Z-386/20 (*)	
Zenith Z-386/25 (*)	
Zenith Z-386/33 (*)	
Zenith Z-386/33E	
Zenith Z-386SX (*)	
Zenith SupersPort 286 (*)	
Zenith SupersPort SX (*)	

(*) Denotes support for the previous versions of the Digital Ethernet controller family, DEPCAs.