

Software Product Description

**PRODUCT NAME: PATHWORKS Server 3100e, Version 4.0
(Formerly PCLAN/Server VMS)**

SPD 25.D1.04

DESCRIPTION

The PATHWORKS Server 3100e, Version 4.0 software product provides a server environment on a prepackaged MicroVAX system for personal computers (PCs), connected via a ThinWire Ethernet Local Area Network (LAN).

The PATHWORKS Server 3100e software is a packaging of the following components: PATHWORKS for VMS V4.0 and PATHWORKS for DOS V4.0 along with the VMS Operating System V5.4, factory installed.

The software package is preloaded onto the system disk, which provides ease of installation, PC environment configuration, and system administration. A PC user agent for VMS Mail, a screen-oriented editor, a PC DECwindows Display facility, and a system administrator broadcast facility are available.

An upgrade is available for existing customers. The PATHWORKS Server 3100e V4.0 upgrade kit is available to PCLAN/Server VMS V3.1 customers in order to upgrade to PATHWORKS for VMS V4.0 and PATHWORKS for DOS V4.0.

The Personal Computing Systems Architecture (PCSA), which is the basis of the PATHWORKS Server 3100e V4.0 software, is an extension of Digital's systems and networking architecture that merges the VMS and MS-DOS® environments. PCSA provides a framework for integrating personal computers into an organization's total information system so that different types of users can share information, large system resources, and network services across the entire organization.

PCSA Family of Products

The Personal Computing Systems Architecture (PCSA) is an extension of Digital Equipment Corporation's systems and networking architecture that merges the VMS, ULTRIX, DOS, OS/2®, and Macintosh® environments. PCSA provides a framework for integrating personal computers into an organization's total information system so that different types of users can share information, large system resources, and network services across the entire organization.

PCSA is implemented in the PATHWORKS product set. The PATHWORKS family of software products includes:

- PATHWORKS for VMS (formerly VMS Services for PCs) — Software that allows a VAX system, using the VMS Operating System, to act as a file, print, disk, and mail server to DOS- or OS/2-based personal computers (described in SPD 30.50.xx). PATHWORKS for VMS supports DECnet and TCP/IP (through the VMS/ULTRIX Connection software product) as network transports.
- PATHWORKS for ULTRIX — Software that allows a VAX or RISC system, using the ULTRIX Operating System, to act as a file, print, and mail server to DOS- or OS/2-based personal computers (described in SPD 32.44.xx). PATHWORKS for ULTRIX supports DECnet and TCP/IP as network transports.
- PATHWORKS for DOS — Software that 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 (described in SPD 55.07.xx).
- PATHWORKS for DOS (TCP/IP) — Required software for the DOS personal computer (described in SPD 33.45.xx) to use the facilities provided by PATHWORKS for VMS (described in SPD 30.50.xx) and PATHWORKS for ULTRIX (described in SPD 32.44.xx) using TCP/IP as the network transport. This product contains the TCP/IP networking software and various TCP/IP network management utilities. The PATHWORKS for DOS product is a prerequisite product.
- PATHWORKS for Macintosh — Software that allows a VAX system, using the VMS Operating System, to act as a file, print, mail, and database server to Macintosh computers (described in SPD 31.53.xx.) using the DECnet transport.
- PATHWORKS for OS/2 (formerly PCSA for OS/2) — Required software for the OS/2 personal computer (described in SPD 55.24.xx) to use the facilities provided by PATHWORKS for VMS (described in SPD 30.50.xx), PATHWORKS for ULTRIX (described in

SPD 32.44.xx) and/or make the file and print facilities of an OS/2 system available to other personal computers (described in SPD 55.24.xx) using DECnet as the network transport.

- DECnet/PCSA Client: VAXmate — Required software for VAXmates (described in SPD 55.10.xx) to use the facilities provided by PATHWORKS for VMS (described in SPD 30.50.xx) or VAXmate Services for MS-DOS (described in SPD 55.09.xx) using DECnet as the network transport.
- VAXmate Services for MS-DOS — Software that allows a VAXmate with an expansion box to act as a dedicated server to DOS computers (described in SPD 55.09.xx) using DECnet as the network transport.

Server Description

PATHWORKS for VMS software allows VAX, MicroVAX, VAXstation, and VAXserver computers to act as application, data, and resource servers to groups of personal computers. By using these server systems, personal computers can share applications, data, and resources. Information can be accessed from local and remote systems and that information can be applied in DOS or OS/2 applications.

PATHWORKS for VMS supports DECnet, LAST, and TCP/IP network transports in Local Area Network (LAN) environments and DECnet and TCP/IP in Wide Area Network (WAN) environments.

Features

PATHWORKS for VMS software provides the following services for personal computers running the following specific versions of software, PATHWORKS for DOS V3.0 and V4.0, and PATHWORKS for OS/2 V1.0 and V1.1 and DECnet/PCSA for VAXmate V2.2 client software. These services include:

- Network Transport Support
- NetBIOS Interface Support
- File Services
- Disk Services
- Print Services
- Mail Services
- Time and Date Services
- Server Management and Control
- Broadcast Utility
- Remote Boot Services (DOS clients only)

- Installation

Note: For the purposes of this Software Product Description, the term "DOS" refers to all disk operating system software supported by PATHWORKS for DOS software. (See System Support Addendum 55.07.09-x.) The term "OS/2" refers to all operating system software supported by PATHWORKS for OS/2 software. (See SPD 55.24.xx.)

Network Transport Support

PATHWORKS for VMS supports DECnet, LAST, and TCP/IP network transport software.

DECnet

The DECnet transport is provided with the VMS Operating System. Using DECnet, supported personal computer clients can access servers in both local area and wide area networks. Refer to the PATHWORKS for DOS and PATHWORKS for OS/2 Software Product Descriptions for detailed information on supported features. Using DECnet as a transport, PATHWORKS for VMS provides file, print, mail, and time and date services to supported clients.

TCP/IP

Support for TCP/IP is available using the VMS/ULTRIX Connection product. PATHWORKS clients accessing PATHWORKS for VMS via TCP/IP can use file and print services only. Refer to PATHWORKS for DOS (TCP/IP) (SPD 33.45.xx) for details.

LAST

LAST is a high performance Local Area Network protocol supported by PATHWORKS for VMS that provides file, print, and disk services. LAST does not support Wide Area Network functionality.

Refer to the *SOFTWARE REQUIREMENTS* section of this document for information on required network transport software.

NetBIOS Interface Support

PATHWORKS for VMS makes use of NetBIOS naming services and datagram service, however, a NetBIOS programmatic interface is not provided.

PATHWORKS for VMS supports the NetBIOS interface in TCP/IP Networks. This is a B-node RFC 1001/1002 compliant implementation. This means that the NetBIOS interface is supported under TCP/IP in Local Area Network (LAN) environments only.

File Services

PATHWORKS for VMS file services provide DOS and OS/2 clients with a remote file system that appears as a transparent extension of the client system's local computing environment.

PATHWORKS for VMS file services are based on the Microsoft® LAN Manager SMB (Server Message Block) protocols.

Each DOS or OS/2 file stored through the file service is stored as a VMS file, either a Stream file or an RMS Sequential Fixed Length Record (512 record bytes) file type. The files stored through the file service are accessible to PC clients, VMS users, and to applications that can interpret the content and organization of the file written by the client application. Each read issued by the client application will result in the presentation to the application of the next "n" data bytes contained sequentially in the file.

Multiple DOS and OS/2 clients can concurrently access files stored on the server's disk through the file access modes and byte range locking support provided by the server as defined by Microsoft's SMB protocol.

Through the use of the VMS Lock Manager, VMS and PC based applications can control file access. Refer to the *Server Management and Control* section of this SPD for further information on access control.

Restrictions

The DOS and OS/2 utilities that are specific to PC hardware devices, such as CHKDSK, FDISK, DISKCOPY, DISKCOMP, and FORMAT, cannot be used with file services.

DOS filenames containing two underscores sequentially (__) are not supported by PATHWORKS for VMS. This is a restricted character sequence for use by the Server only.

Disk Services

Through Digital's Local Area Systems Transport (LAST), PATHWORKS for VMS software provides PC clients with local area disk services. The local area disk service defines a space on a VMS disk for clients to access as a virtual disk. This virtual disk is formatted as an OS/2 or DOS disk. Because LAST is a LAN-only communications protocol, overhead is low and performance high.

Local area disk services are accessible through the PATHWORKS for DOS client and PATHWORKS for OS/2 client software using LAST in a Local Area Network (LAN) and through the Network Disk Utility (NDU)

using DECnet in a Wide Area Network (WAN). PATHWORKS for DOS and PATHWORKS for OS/2 client software can also access virtual disks created with NDU. Access to local area disks in extended LANs across bridges with a transfer speed of 10 Mbytes/second or less is also provided.

Disk management may be done from the VAX or remotely from the personal computer.

The local area disk service has the following restrictions:

- Only one client at a time may have read and write access to the local area disk.
- Multiple readers (and no writers) to a local area disk are allowed.
- The DOS and OS/2 files cannot be shared with VMS users.
- The local area disk service is available only in a Local Area Network configuration. However, virtual disks created with the local area disk service are available in a Wide Area Network through the Network Device Utility (NDU).

The local area disk's size is established at its creation and can be 360 Kbytes, 720 Kbytes, 1.2 Mbytes, 1.44 Mbytes, 5 Mbytes, 10 Mbytes, 20 Mbytes, or 32 Mbytes, 64 Mbytes, 128 Mbytes, 256 Mbytes, or 512 Mbytes. Refer to the *Server Management and Control* section for further information on access control.

Print Services

PATHWORKS for VMS software allows DOS, OS/2, and VMS users to share printers connected to a VAXserver, VAXcluster, or LAT supported terminal servers in a LAN or WAN. PATHWORKS clients can send files to the remote printer from DOS, OS/2, Microsoft Windows™ (DOS clients only), or from applications. PC clients can also delete a remote print entry and can associate some VMS printing parameters with a redirected logical print device.

The system administrator assigns a service name to a VMS print queue and can define user access to the print service. The PATHWORKS for DOS client and PATHWORKS for OS/2 client software redirect printer I/O from a client printer port to a defined print service.

The system administrator's utility in PATHWORKS for VMS software creates the physical and generic queues as well as defines forms for selected Digital and third party printers. Refer to the *Printers* section of the System Support Addendum for details.

Multiple print services may be set up for the same printer. For example, a landscape service and a portrait service may be created for the same LN03 PLUS printer. In addition, other printer queues can be set manually to support additional Digital and third-party printers that are not listed in the menus.

Mail Services

The mail server that is part of PATHWORKS for VMS provides DOS and OS/2 clients with the ability to send and receive electronic mail messages. A mail account is established on the VMS server for each PC client. Mail can be sent to this account by other PC clients as well as users of VMS Mail software. The mail server then routes messages to the appropriate client when the client logs onto the server.

The PATHWORKS for VMS mail server provides the PC user with folders, distribution lists, and delivery capabilities. Notification of new messages occurs both real-time and upon login to a network session. Real-time notification of incoming messages can be optionally disabled by the client.

PATHWORKS for VMS allows PC users to read mail without having to log in to the VMS system. The Mail utility is based on the MAIL-11 product.

Time and Date Services

DOS and OS/2 clients can request date and time information from the server system to set the local workstation date and time.

Server Management and Control

Two types of server management interface are provided by PATHWORKS for VMS, a menu driven user interface, and a command line interface.

The Manager Menu is a PC-style menu interface that requires only minimal knowledge of VMS Operating System commands. The Manager Menu allows the system administrator to manage file and print services, user accounts, and the client workstation database. Users can also create groups of users and grant these groups access to file, disk, and print services.

Service and file access is supported across a VAX-cluster. In a VAXcluster, a common database must be used for the cluster. Access to the file service is determined via standard VMS file access authorization mechanisms.

Print service access is controlled through username, password, and VMS Access Control Lists.

Access to the disk service is controlled via passwords and the assignment of read-only or read/write privileges to users of a local area disk service.

PATHWORKS for VMS also includes a DOS file maintenance utility called PCDISK, which can be used to maintain DOS devices accessible to VMS. This would include virtual disk files, LAD disk services, and physical diskette devices on the VMS server. The interface is DOS-like, while VMS-style prompting, line editing, and HELP are available. It supports wildcard file transfer between DOS devices and the VMS file system.

The system administrator can restrict the number of simultaneous client connections to a given service on the server. This capability means the system administrator can restrict access to DOS or OS/2 applications stored in the directory, to ensure compliance with vendor licensing agreements. Other restrictions on the use of the server can be imposed to help meet performance and security goals.

An administrator's utility is provided to allow the system administrator to add and remove services, register clients, and list resources. The server software can list current connections, current file opens, current sessions, and current services available, as well as show various counters. The server also provides for the use of broadcast information to all actively connected clients that are configured to use RECEIVE.

PATHWORKS for VMS also includes an automated tool called the Configurator, which is used to tune the VMS server. The Configurator will verify and recommend the appropriate changes needed, if any, to the VMS sysgen parameters so that the PATHWORKS software will make optimal use of the VMS server.

In addition, the Manager Menu can be used to view the following log files:

- Audit log file, which tracks network and server events such as notices about connections being opened and closed and failed attempts to access server resources.
- Error log file is used to log server related errors.

The server administrator can also use the command line interface to control all the features and services that are accessible via Menus. The command line interface can also be invoked by batch allowing the user to create automated command procedures.

Broadcast Utility

PATHWORKS for VMS includes a message broadcast facility that allows the system administrator to send messages to workstations in the local area network. A message can be sent to a single client or to all currently active clients in the LAN.

The broadcast utility can be used to inform users of system events, such as the creation of new services or the shutdown of the system.

Remote Boot Services (DOS Clients Only)

PATHWORKS for VMS software also enables remote boot for VAXmates and DOS personal computers with Digital's DEPCA or DEMCA PC Ethernet controllers. DOS personal computers using other supported Ethernet controllers can remote-boot using the supplied Remote Boot Software diskette. The administrator's utility provides facilities to add, delete, and list workstations to be booted remotely. LAST disk services on a LAN is a prerequisite.

Client Description

The PATHWORKS for DOS software allows Digital, selected IBM®, and selected IBM-compatible personal computers to participate in a DECnet Phase IV network as non-routing (end) nodes. The PCs can use selected facilities and services of other Phase IV systems and access information and services contained on other types of Digital systems in the DECnet network.

Communications

PATHWORKS for DOS nodes can be connected to a network via an Ethernet or an asynchronous DECnet connection in a Local Area Network (LAN) or Wide Area Network (WAN). Refer to the *OPTIONAL HARDWARE* section in the PATHWORKS for DOS System Support Addendum (SSA 55.07.09-x) for details on supported Ethernet configurations.

The PATHWORKS for DOS software can also be installed directly on the personal computer's local hard disk and used for peer-to-peer DECnet network communications. In this configuration, server software is not required.

The functions available to the PATHWORKS for DOS user depend largely upon the configuration of the rest of the network. Each DECnet product offers its own level of capability and set of features to the user.

PATHWORKS for DOS software is a DECnet Phase IV network product and is warranted for use only with supported Phase IV products supplied by Digital.

DECnet Phase IV networks can contain a maximum of 1023 nodes per network area, and up to 63 areas per network. Phase III nodes participating in Phase III/IV networks are limited to the Phase III routing capability of 255 nodes. Phase IV end nodes not directly connected to an Ethernet Local Area Network can connect to only one node (for DECnet-DOS, that node must be Phase IV). In order to communicate with other nodes in the network, including Phase III nodes, that node must be a Phase IV full-function (routing) node.

PATHWORKS for DOS supports direct connections to baseband and twisted pair (10baseT) Ethernet local area networks via Ethernet controllers. Refer to the System Support Addendum (SSA 55.07.09-x) for a list of supported Ethernet controllers. These controllers, when used in conjunction with Digital's baseband Ethernet components, allow PATHWORKS for DOS software to utilize Ethernet as its datalink transmission medium.

PATHWORKS for DOS supports the Digital Data Communications Message Protocol, Version 4.1 (DDCMP) for full-duplex transmission in point-to-point operation. An asynchronous connection to the network is accomplished over a serial line, using the personal computer's asynchronous communications adapter as the physical link. The adjacent system must be a DECnet Phase IV, full-function (routing) node supporting asynchronous DDCMP (for example, DECrouter 200, DECnet-VAX). DDCMP provides error detection/correction and physical link management facilities. Neither half-duplex mode nor multi-point tributary operation is supported.

Ethernet connections are recommended for their higher speed. Digital recommends the use of the multi-buffered DEC EtherWORKS family of Ethernet controllers in networks that carry heavy traffic.

If communication to another DECnet product is required, the Software Product Description for the DECnet product in question must be consulted to determine if asynchronous operation is supported, and to develop a supportable routing node configuration. Connections over asynchronous terminal lines, such as to a DECserver 200, are not supported.

PATHWORKS for DOS Features

The PATHWORKS for DOS software provides:

- File Services
- Permit Services
- Disk Services
- Print Services
- Print Screen Support

- Mail Services
- Date and Time Services
- Broadcast and Receive
- Ethernet Controller Support
- Remote Boot Capability
- Task-to-Task Communications
- Memory Savings Techniques
- Installation and Configuration Utilities
- PC DECwindows/Motif®
- Microsoft Windows Support
- Terminal Emulators
- DECnet-DOS Facilities
- Enhanced DOS Utilities
- 3270 Terminal Emulation Support
- SEDT Screen Editor
- Enhanced DOS Utilities

File Services

Through the integration of Microsoft's MS-DOS LAN Manager, Version 1.0 basic file and print services with DECnet, as well as emulation of IBM's NETBIOS, the client is provided with a remote DOS file system that appears as a transparent extension of the client's local facilities.

Optionally, file and print services can also be configured by combining Digital's Local Area Systems Transport (LAST) protocol with the DECnet protocol. Performance improvements can be realized in some applications that transfer small packets (such as database applications) by using this configuration for file and print services. The user is limited to local area network access while using this combination of transports.

File and print services over the DECnet transport are configured by default. File and print services over the DECnet and LAST transports can be configured through the advanced menu of NETSETUP.

Note: File and print services using the DECnet/LAST combination are not available with PATHWORKS for ULTRIX, Version 1.0 and PATHWORKS for OS/2, Version 1.1 servers.

Permit Services

PATHWORKS for DOS software provides DOS client systems with the ability to offer other users access to local resources via the PERMIT command. A client may offer other client systems access to its local disk, with only a single connection possible at any given time.

Disk Services

Through the use of Digital's Local Area Systems Transport (LAST) protocol and Local Area Disks (LAD), PATHWORKS clients are provided with high performance virtual disks in a local area network. In a wide area network configuration, use the Network Device Utility (NDU) to access virtual disks.

Virtual disk sizes can be 360 Kbytes, 720 Kbytes, 1.0 Mbyte, 1.2 Mbytes, 1.44 Mbytes, 10 Mbytes, 20 Mbytes, 32 Mbytes, 64 Mbytes, 128 Mbytes, 256 Mbytes, or 512 Mbytes in any combination.

Note: Disk services are not available with PATHWORKS for ULTRIX, Version 1.0 and PATHWORKS for OS/2, Version 1.1 servers.

Print Services

Through the integration of Microsoft's MS-DOS LAN Manager, Version 1.0 basic file and print services with DECnet, as well as emulation of IBM's NETBIOS, remote printers appear as a transparent extension of the client's facilities. This allows the redirection of local printing to a server-based printer.

PATHWORKS for DOS software also allows one or more parallel printers connected to a PC to be offered to the network as remote printers through the use of the Local Area Terminal (LAT) protocol, Version 5.1. This feature allows printing to occur in the background and does not prevent the user from running applications. PostScript® printers configured to use the parallel port are not supported.

Note: Not available with PATHWORKS for ULTRIX, Version 1.0 or PATHWORKS for OS/2, Version 1.1 servers.

Refer to the System Support Addendum (SSA 55.07.09-x) for a list of supported printers.

Refer to the *Microsoft Windows Support* section of this document for a list of supported printers under Microsoft Windows.

Refer to PATHWORKS for VMS (SPD 30.50.xx), PATHWORKS for ULTRIX (SPD 32.44.xx), PATHWORKS for OS/2 server software (SPD 55.24.xx), or VAXmate Services for MS-DOS (SPD 55.09.xx) for more information on remote printer support.

Print Screen Support

The user can use Print Screen functionality while using a DOS-based application, including the SETHOST terminal emulator, to a local or remote printer. However, to print screen from the VT320 terminal emulator under Microsoft Windows, press the F2 key instead. (Print

Screen Support is not available while using PC DECwindows/Motif.)

Mail Services

PATHWORKS for DOS Mail allows DOS clients to send and receive messages and documents to and from users of mail software (for example, MAIL-11) on systems that operate within the same DECnet network.

Mail is a PC-style utility for sending and reading mail. It contains horizontal menu bars, pull-down menus, and context sensitive help. Mail allows the user to read mail without having to log in to the server.

The PATHWORKS for DOS Mail utility enables the DOS client to:

- Read, delete, forward, file, print and reply to messages.
- Send messages to a distribution list as well as to a remote nodename::username address. Messages can be sent to primary addressees and to carbon copy addressees.
- Create messages with the built-in editor (or a selected callable editor, such as SEDT) which can output an ASCII file.
- Organize messages into folders that may be stored remotely on a server or locally on the system's hard disk.
- Receive notification of new messages upon login to a PATHWORKS session.
- Receive notification of incoming messages. In most cases, notification is achieved via sound while using a graphics application, and through a pop-up window on the user's display while using character cell applications. This feature may be optionally disabled.
- Send a binary file attachment (one binary file per message).
- Configure the user interface as either command line or menu-driven.

Date and Time Services

Clients can receive the date and time from the server. The benefit of this feature is that the user is assured of consistent timestamps on any given file that is created, shared, or updated by other users.

Broadcast and Receive

The Broadcast feature allows users to send "broadcast" messages to DOS and/or OS/2 clients. The Receive feature allows DOS clients to "receive" the messages. This feature allows DOS clients to notify other DOS clients of various network events, such as system shut-downs for backups.

Broadcast and receive functionality is only supported between PCs using the same network transport. For example, users can send a message from a PC using DECnet to another PC using DECnet as the network transport; users cannot send a message from a PC using DECnet to a PC using TCP/IP as the network transport.

Ethernet Controller Support

NDIS Support

PATHWORKS for DOS networking software is Network Device Interface Specification (NDIS), Version 1.0 compatible. NDIS is a standard developed by Microsoft Corporation and 3Com® Corporation. PATHWORKS for DOS software adheres to the NDIS standard on two levels:

- The product includes NDIS-compliant device drivers for DEC EtherWORKS LC, DEC EtherWORKS MC, DEC EtherWORKS Turbo, DEC EtherWORKS Turbo/TP, 3Com EtherLink II, and 3Com EtherLink/MC Ethernet controllers. The NDIS drivers can also be used with previous versions of the Digital Ethernet controller family, DEPCAs.
- The product includes software that allows it to be used with third-party Ethernet controllers that are supplied with NDIS, Version 1.0 compliant device drivers.

PATHWORKS for DOS software supports the use of NDIS, Version 1.0. Every effort has been made to ensure that the software adheres to the NDIS, Version 1.0 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 controllers. This implementation is not intended to support the simultaneous operation of the PATHWORKS for DOS product and other vendors' networking products.

Note: The NDIS drivers for the 3Com EtherLink II and 3Com EtherLink/MC Ethernet controllers will not be supplied with the next release of this product. Users need to contact their vendor directly for these drivers in future releases.

Remote boot is not supported with the use of NDIS drivers.

Proprietary Datalink Support

PATHWORKS for DOS software also includes Digital proprietary datalinks (DLLs) for DEC EtherWORKS LC, DEC EtherWORKS MC, DEC EtherWORKS Turbo, and DEC EtherWORKS Turbo/TP Ethernet controllers.

If the personal computer is equipped with a DEC EtherWORKS Ethernet controller, the configuration utility selects the Digital proprietary datalinks by default for memory and performance gains.

Remote Boot Capability

Users can remote-boot a personal computer from a network virtual boot disk using the disk services capability of PATHWORKS for VMS software. The personal computer must contain a DEC EtherWORKS Ethernet controller.

Personal computers using DEC EtherWORKS, 3Com EtherLink II, or 3Com EtherLink/MC Ethernet controllers can remote-boot by using the floppy-remote boot procedure.

Note: Remote boot is not available with PATHWORKS for ULTRIX, Version 1.0 and PATHWORKS for OS/2, Version 1.1 servers. The remote-boot capability is also unavailable if the user chooses to use a Network Device Interface Specification (NDIS), Version 1.0 driver with any Ethernet controller.

Task-to-Task Communications

Through DECnet-DOS, user programs written in Microsoft's MACRO Assembler, or the C language, can exchange messages with other network user programs. A simple set of functions is provided by the transparent task-to-task interface, which allows communication and exchange of data with a remote network program through a limited set of DOS calls (for example, OPEN, CLOSE, READ, and WRITE).

User program to user program capabilities (non-transparent) are possible in C or MACRO Assembly through a library of special network subroutine calls. This gives the network programmer access to the complete set of DECnet functions. The user may need to adapt the DECnet-DOS C language subroutines to the specific C compiler being used. Small, medium, and large size memory models are supported.

Memory Savings Techniques

PATHWORKS for DOS software supports several techniques for saving conventional PC memory space. By using these techniques, additional conventional PC memory space becomes available for user applications.

- Several network components can optionally be loaded into expanded memory simultaneously. For 80386 and 80486 Intel™ processors, the PC must be configured with a user-supplied Expanded Memory Specification (EMS), Version 4.0 software driver. For 8088, 8086, and 80286 Intel processors, the PC must be configured with both a user-supplied EMS, Version 4.0 software driver and hardware.
- The LAN Manager Basic Redirector can be loaded into the High Memory Area (HMA) portion of extended memory. The configuration must have a minimum of 64 Kbytes of extended memory and either the Digital-supplied driver, HIMEM.SYS, or a vendor-supplied high memory manager that supports Extended Memory Specification (XMS), Version 2.06.
- PATHWORKS for DOS software provides the user with the ability to unload several network components from either conventional or EMS memory.

The exact amount of conventional memory remaining for user applications will vary depending on:

- Availability and size of EMS drivers
- Whether the LAN Manager Basic Redirector is loaded into XMS (Extended Memory Specification)
- Ethernet controller type
- NDIS driver size
- DOS version
- Whether the PC is configured to remote boot
- Parameters and drivers specified in CONFIG.SYS and PROTOCOL.INI
- Other Terminate and Stay Residents (TSRs) that may be loaded

The performance of EMS boards will vary depending on the EMS hardware and software selected. PATHWORKS for DOS software includes a utility, EMSSPEED, to measure the performance of EMS boards in a PCSA environment.

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.

Background EMS applications are usually device drivers and Terminate and Stay Resident programs (TSRs). When PATHWORKS for DOS software is loaded into EMS with other background EMS applications, unpredictable results may occur.

Some EMS drivers and disk caching programs provided by PC vendors may conflict with HIMEM.SYS, which provides XMS support.

Installation and Configuration Utilities

PATHWORKS for DOS software provides the user with utility programs to assist in the installation and configuration of the product onto a server system or a PC with a local hard disk.

A menued character cell program (NETSETUP) is provided to help users configure client systems. On-line help facilities are also provided.

A DOSLOAD utility is provided to simplify system management of various versions of the DOS operating system to the server system.

PC DECwindows/Motif

PC DECwindows/Motif is an MS-DOS application. It implements an X server that uses the industry-standard Release 4 of the X Window System, Version 11 (X11), protocol. An X Window System application, such as a DECwindows application, executing on a remote VMS or ULTRIX system with DECnet may be displayed on and receive keyboard and mouse input from the personal computer.

PC DECwindows/Motif is only supported on Intel 80286, 80386, and 80486 machines listed in the System Support Addendum (SSA 55.07.09-x). Use:

- DWDOS286.EXE for Intel systems with 80286, 80386, and 80486 processors
- DWDOS386.EXE for Intel systems with 80386 and 80486 processors

(DWDOS286.EXE does not support data allocations greater than 64 Kbytes. DWDOS386.EXE does not support XMS.)

PC DECwindows/Motif supports the following keyboards with either Digital LK201 or IBM-style mappings:

- IBM compatible enhanced keyboard (102-key)

Belgium	Norway
Canada	Portugal
Denmark	Spain
Germany	Sweden
Finland	Switzerland (French)
France	Switzerland (German)
Italy	United Kingdom
Latin America	United States (101-key)
Netherlands	

- IBM compatible 84-key keyboard

Belgium	Norway
Canada	Portugal
Denmark	Spain
Germany	Sweden
Finland	Switzerland (French)
France	Switzerland (German)
Italy	United Kingdom
Latin America	United States

- Digital LK250 keyboard

Canada	Spain
Denmark	Sweden
Finland	Switzerland (French)
France	Switzerland (German)
Germany	United Kingdom
Italy	United States
Norway	

PC DECwindows/Motif requires additional extended memory over and above the conventional, EMS, and XMS memory required by other components.

A minimum of 640 Kbytes of system memory must be free and accessible to start PC DECwindows/Motif after configuring the system with the required PATHWORKS network components. This memory may be made up of free conventional and extended memory.

At least a total of 1 - 4 Mbytes of system memory must be free and accessible to run X Window System applications. The specific amount of X Server memory required will depend upon the memory requirements of the application(s) chosen by the user.

Depending on the number of X Window System applications being displayed and the memory requirements of each application, the user should test these types of configurations with PC DECwindows/Motif prior to production use.

Two utilities are provided which report the amount of memory available to the X Server:

- DWINFO2 is for Intel systems with 80286, 80386, and 80486 processors and reports the amount of memory available to DWDOS286.
- DWINFO3 is for Intel systems with 80386 and 80486 processors and reports the amount of memory available to DWDOS386.

Because PC DECwindows/Motif includes its own extended memory manager, it will conflict with expanded memory managers that do not support the Virtual Control Program Interface (VCPI). PC DECwindows/Motif may also conflict with other drivers using extended memory, such as disk caching programs and RAM drives, if their presence cannot be detected by the PC DECwindows/Motif extended memory manager.

The PC DECwindows/Motif X Server may also conflict with other drivers using extended memory, such as disk caching programs and RAM drives, if their presence cannot be detected by the X Server's extended memory manager.

DECwindows and X Window System applications that do not take into account the PC hardware characteristics (such as screen resolution, screen aspect ratios, keyboard layouts, and number of mouse buttons) may not function optimally with a PC as a display server.

In addition to the supported VMS and ULTRIX DECwindows window managers, Digital provides a VMS window manager designed specifically for PC screens that allows the user to move windows off the screen.

A configuration utility is provided so a user may configure the X Server for their hardware and configure the user preferences parameters.

A KEYSYM compiler is provided so the user may build custom keyboard layouts to support applications.

A Font compiler is provided that compiles fonts in the Adobe Bitmap Distribution Format, V2.1 into a format for the X Server.

A DECnet Remote Application Startup Program is provided for VMS systems (as a DCL command procedural file) and for ULTRIX VAX and RISC systems (as an executable program). These programs start X Window System applications on the host system on behalf of the X Server.

Print Screen Support is not available while using PC DECwindows/Motif.

Microsoft Windows Support

PATHWORKS for DOS software supports two versions of Microsoft Windows, Windows, Version 3.0 and Windows/286, Version 2.1.

Microsoft Windows, Version 3.0 support includes:

- Access to file and disk services provided through the Microsoft Windows 3.0 File Manager.
- Access to print services provided through the Microsoft Windows 3.0 Control Panel.
- The PATHWORKS for DOS software provides the ability to run the networking software in expanded memory (EMS) with Windows, Version 3.0 in Real, Standard, and 386 Enhanced modes in most cases.

If using the remote boot feature in conjunction with Microsoft Windows 3.0 in 386 Enhanced Mode, the PATHWORKS for DOS networking components must be loaded into conventional memory.

If using Microsoft Windows, Version 3.0 in 386 Enhanced Mode, the Redirector must be loaded into conventional memory.

EMM386.SYS is a memory manager shipped with Microsoft Windows 3.0. PATHWORKS for DOS does not support the use of other third-party memory managers while using Microsoft Windows 3.0.

- A windowed VT320-like terminal emulator is provided. (See the *Terminal Emulator* section for more detail.)
- Windowed versions of the Network File Transfer (NFT) and File Access Listener (FAL) network utilities are provided.
- A DOS-based, menu-driven utility is provided to simplify the installation of PATHWORKS for DOS Microsoft Windows, Version 3.0 support software.
- A Digital VSXXX-AA Mouse driver is provided (for use with a DEC EtherWORKS Ethernet controller that is equipped with a mouse port).
- A Digital LK250 keyboard driver is provided with Dynamic Link Libraries for the following languages:

English (US)	German
English (UK)	Italian
Canadian-English	Norwegian
Canadian-French	Spanish

Finnish	Swedish
French	Swiss-French
Danish	Swiss-German

- Digital printer support as defined below is provided:

Digital printer drivers are supplied in the PATHWORKS for DOS product to support the following Digital printers in both Digital and industry-standard mode. These are for use with Microsoft Windows Real Mode only.

LA50 Printer
LA75 Companion Printer
LA210 Letterprinter
LJ250, LJ252 Companion Color Printer
LN03 Printer
LN03 PLUS Printer
Generic text-only printer

In Microsoft Windows Standard and 386 Enhanced Modes, use the appropriate industry-standard printer driver from the Microsoft Windows, Version 3.0 retail kit for Digital printers (in industry-standard mode).

- A DECnet Socket Library for Microsoft Windows, Version 3.0 and DOS-based applications is included. The library is provided for programmers who wish to write networked applications that execute under Microsoft Windows, Version 3.0.
- Programming access for Microsoft Windows, Version 3.0 and DOS-based applications is provided to Digital's enhanced NETBIOS functions.
- A Terminal Access Library that provides LAT and CTERM access to Microsoft Windows, Version 3.0 applications is included. The library is provided for programmers who wish to write terminal emulators that execute under Microsoft Windows, Version 3.0.
- PIFs (Program Information Files) for most DOS-based PATHWORKS for DOS applications/utilities are provided. (These PIFs are provided as examples and should work with most configurations. The user may need to tailor them given the application mix and specific personal computer configuration.)

Microsoft Windows/286, Version 2.1 support includes:

- Access to file, print, and disk services provided through the DCONTROL network utility.
- A windowed VT320-like terminal emulator is provided. (See the *Terminal Emulator* section for more detail.)
- Windowed versions of the Network File Transfer (NFT) and File Access Listener (FAL) network utilities are provided.

- A Digital VSXXX-AA Mouse driver is provided (for use with a DEC EtherWORKS Ethernet controller that is equipped with a mouse port).
- The following Digital LK250 keyboard drivers are provided:

Canadian	Italian
Danish	Norwegian
English (UK)	Spanish
English (US)	Swedish
Finnish	Swiss-French
French	Swiss-German
German	

- Support for the following Digital printers in both Digital and industry-standard mode is provided:

LA50 Printer
LA75 Companion Printer
LA210 Letterprinter
LJ250, LJ252 Companion Color Printer
LN03 Printer
LN03 PLUS Printer
Generic text-only printer

- A Terminal Access Library that provides LAT access to all Microsoft Windows/286, Version 2.1 applications is included. The library is provided for programmers who wish to write terminal emulators that execute under Microsoft Windows/286, Version 2.1.
- PIFs (Program Information Files) for most DOS-based PATHWORKS for DOS applications/utilities are provided. (These PIFs are provided as examples and should work with most configurations. The user may need to tailor them given the application mix and specific personal computer configuration.)

Note: Support for Microsoft Windows/286, Version 2.1 will be discontinued with the next release of this product.

Terminal Emulators

The PATHWORKS for DOS software includes three terminal emulators that allow users to establish terminal sessions with a host computer such as VMS or ULTRIX:

- VT320 for Microsoft Windows, Version 3.0 (A VT320-like Microsoft Windows terminal emulator) — The VT320 does not support full modem control or replaceable character sets (DRCS).
- VT320 for Microsoft Windows/286, Version 2.1 (A VT320-like Microsoft Windows terminal emulator) — The VT320 does not support full modem control or replaceable character sets (DRCS).

- SETHOST (A VT320-like character-cell terminal emulator) — SETHOST supports control of asynchronous modems but does not support replaceable character sets (DRCS).

Terminal sessions can be established using either a serial communications port, or via an Ethernet port on a supported Ethernet controller on the client.

VT320 Features for Microsoft Windows, Version 3.0 and Microsoft Windows/286, Version 2.1

The following features of the VT320 terminal emulators are available while using either Microsoft Windows versions (3.0 and 2.1) VT320 applications except where otherwise noted:

- User-definable color attributes, background/foreground, reverse, bold, underline.
- While using Microsoft Windows 3.0, support for Digital's Local Area Terminal (LAT) and CTERM protocols, and serial terminal communication. The user can load LAT into EMS, thereby gaining more memory for other applications.

While using Microsoft Windows/286, Version 2.1, support for Digital's Local Area Terminal (LAT) and serial terminal communication only.

- Support for the Microsoft Windows Clipboard to cut and paste information.
- Ability to log characters received from the host into a file.
- Ability to send characters to the host from a file instead of from the keyboard.
- Setup feature allows selection and saving of terminal characteristics.
- Printing to a Digital remote or local printer; printing may be a screen at a time or a toggle-like function may be used to print everything from the screen until the toggle is switched off.
- Digital multinational and ISO multilingual character sets and compose sequences as defined below:
 - ISO (default) — International Standards Organization character set
 - IBM extended and IBM Norway/Denmark extended character sets
 - MCS — DEC Multinational Character set
 - NRC — Supports a 7-bit National Character Replacement set of countries:

United States	German
Swiss/French	Denmark
Sweden	United Kingdom
Italy	Swiss/German
Norway	Spain
France	Finland
Canada	

- Support for scripting facilities. The script processing language enables the automation of frequently executed functions.

SETHOST Features

- Support for Digital's Local Area Terminal (LAT) and CTERM protocols.
- Support for serial terminal communication.
- Support for a maximum of four simultaneous SETHOST sessions via LAT or CTERM. Only one session can be enabled when SETHOST uses the asynchronous communication port for an asynchronous terminal connection.
- Setup feature allows selection and saving of terminal characteristics.
- Ability to log characters received from the host into a file.
- Ability to send characters to the host from a file instead of from the keyboard.
- Support for the following list of character sets: ISO Latin-1 (ISO), DEC Multinational (MCS), DEC Technical (TCS), and the following 7-bit National Character Replacement Sets (NRCS):

ASCII	British
French	German
Italian	Spanish
Finnish	Swedish
Norwegian/Danish	Swiss
Canadian	Dutch
Portuguese	

- Support for PC code page character sets. Translation table files between the Digital character sets and the PC code page character sets (437, 865, 850, 860, 863) are used by SETHOST, NFT, and MAIL to provide code page support.
- Support for scripting facilities. The script processing language enables the automation of frequently executed functions.

- Printing to a Digital remote or local printer; printing may be a screen at a time or a toggle-like function may be used to print everything from the screen until the toggle is switched off. SETHOST sessions can also be logged to a file for future examination.

DECnet-DOS Facilities

The DECnet-DOS component of PATHWORKS for DOS includes the following facilities:

- Network Management
- NETBIOS Interface Support
- File Transfer
- Job Spawner
- File Access Listener
- Transparent File Access
- Network Device Utility

Network Management

The Network Control Program (NCP) performs three primary functions:

- Displaying statistical and error information
- Controlling the node's network components
- Testing local network components

The user can display the status of the local node's DECnet activity and statistics related to both the node and the communication line. Control functions are limited to starting and stopping the line and activating the local node. Test messages can be sent and received over the line either between the personal computer and an adjacent node, or through controller or modem loopback arrangements. The Network Control Program (NCP) can act as a loopback mirror to which remote nodes can send test messages for diagnostic purposes.

DECnet-DOS provides for limited local network event logging.

The Network Management Listener (NML) task is an optional background task that allows remote DECnet nodes to monitor network activity and parameters on DECnet-DOS nodes. Remote alteration of network parameters is not supported.

NETBIOS Interface Support

DECnet-DOS supports the session level NETBIOS interface through interrupts 5C HEX and 2A HEX. Applications written to the NETBIOS interface as documented in the April 1987 edition of the *IBM NETBIOS Application Development Guide* (order number S68X-2270-00) can be layered on DECnet-DOS.

This allows computers running DECnet-DOS and NETBIOS applications to communicate with other computers running DECnet-DOS and NETBIOS applications. This feature preserves your investment in industry-standard applications. DECnet-DOS NETBIOS applications can also communicate with other DECnet applications such as DECnet-VAX applications.

The NETBIOS naming service and datagram service is supported only in Ethernet LAN configurations.

File Transfer

Using the Network File Transfer (NFT) utility, you can transfer sequential ASCII and binary files between the personal computer and another DECnet node. Files can be transferred in both directions between the locally supported DOS file system devices and the file systems of other DECnet nodes. NFT runs to the exclusion of other tasks or programs, except when running under Microsoft Windows/286, Version 2.1 and Microsoft Windows, Version 3.0.

On transfer of binary files to a DECnet-DOS system, file data can be restored on such transfers from the personal computer to a record file system through use of utility switch settings.

Job Spawner

The Job Spawner is a utility that allows a personal computer to act as a server for performing multiple service functions. When the Job Spawner is enabled (it must be the only utility running), it listens for connect requests from other nodes and initiates the program which will service the request. The JOB Spawner can initiate the File Access Listener (FAL), Data Test Receiver (DTR), and other user-written programs or batch files.

File Access Listener

The File Access Listener (FAL) server task provides access to the personal computer's file resources from remote systems. FAL provides user ID and password protection. FAL runs to the exclusion of other tasks or programs, except when running under Microsoft Windows/286, Version 2.1 and Microsoft Windows, Version 3.0.

Transparent File Access

Transparent File Access (TFA) is a utility that allows access to remote DECnet systems through supported DOS function calls, such as READ, WRITE, OPEN, CLOSE, SUBMIT, DIRECTORY, and DELETE.

Network Device Utility

DECnet-DOS provides the capability to use disk space on a remote DECnet node as though it were an additional disk local to the DECnet-DOS system. This can be useful for providing extra storage capacity to the personal computer user or for backing up local files using the DOS COPY utility.

The Network Device Utility (NDU) creates a file on the remote system (using the standard DECnet file access interface) representing a local device. Up to four network disks can be opened simultaneously. Sizes can be 360 Kbytes, 720 Kbytes, 1.0 Mbyte, 1.2 Mbytes, 1.44 Mbytes, 10 Mbytes, 20 Mbytes, 32 Mbytes, 64 Mbytes, 128 Mbytes, 256 Mbytes, or 512 Mbytes in any combination.

The Network Device Utility also permits assignment of a local printer device identifier to the default system printer of a remote DECnet system. The user can direct output to the network printer device identifier, NPRN:, causing the data to be sent to a file located at the remote node. This is a limited facility and does not allow the use of print job switches or the setting of printer characteristics.

3270 Terminal Emulation Support

The PATHWORKS for DOS software contains an access module that allows Digital Communications Associates, Inc. DCA® IRMALAN® Client Workstation Software, Version 2.02.02 or the DCA 3270 APA Graphics, Version 2.0 Rev. A to communicate to IBM mainframe-based applications within a DECnet network. Access to IBM mainframe applications is gained by means of DECnet/SNA Gateway-CT software (V2.0) or DECnet/SNA Gateway-ST (V1.1-4) software.

SEDТ Screen Editor

SEDТ is a text editor that allows the display and editing of a full screen of text. It may be used as the callable editor for creation of text messages within the PATHWORKS for DOS Mail utility. The features and capabilities of SEDТ include:

- Simultaneous editing of up to four files in separate buffers
- Text selection, insertion, deletion, and search
- Cut and paste capability
- Use and definition of multiple rulers, with tab, margin, and justification settings
- An information line that displays the current editing modes, such as forward versus reverse search, insert versus replace, and cut and paste modes

- A file information line that displays the name of the file being editing, the current line and column position in the file, and the file buffer in use
- Customization of commands and configuration
- Definable keyboard maps

Enhanced DOS Utilities

These utilities support Digital's LK250 keyboard (including international versions) and Microsoft Mouse emulation, Version 7.0 of the Digital VSXXX-AA mouse (for use with a DEC EtherWORKS Ethernet controller that is equipped with a mouse port).

Unsupported Utilities

Included in the PATHWORKS for DOS V4.0 release are several disks labeled "UNSUPPORTED." They contain several utilities/programs that may be useful for the user. They can be found on separate diskettes and are not part of the installation procedure.

Note: These utilities are provided on an unsupported basis; that is, they are provided without phone support from the Customer Service Centers. A readers' reply card is included in the software kit for the user to report any comments to the engineering group. Inclusion of these utilities does not constitute a commitment from Digital Equipment Corporation that they will continue to be provided in this product.

Restrictions and Limitations

To create a floppy key disk, a disk greater than or equal to 720 Kbytes is required for booting purposes.

The DOS Operating System is limited to a single user, and access to a PATHWORKS for DOS node from a remote network terminal is not possible. Additionally, because DOS is a single-tasking operating system, access and management from remote command nodes is limited.

Any application that does not properly mask and unmask interrupts is incompatible with this product. For example, applications that use IBM BASICA, Version 1.0 interpreter or compiler, or GW-BASIC, Version 1.0 do not unmask the interrupts when they exit. In these cases, a BASIC program must be interpreted or recompiled using a version of BASIC that would unmask the interrupts.

For IBM PC AT® compatible configurations with an EGA or VGA graphics adapter, the DEPCA Revision E or later is required to utilize EMS.

For asynchronous network connections, all client functionality and network services are supported, except:

- NETBIOS naming service and datagrams
- Remote boot
- Local area disk services provided through the Local Area Systems Transport protocol. (The user can access virtual disks via NDU in an asynchronous DECnet environment.)
- LAT
- PC DECwindows/Motif

Simultaneous Ethernet network activity and non-DECnet asynchronous communication via the asynchronous port will experience character loss under some conditions.

The "Autosense Mode" of the Zenith Enhanced EGA card (Z-449) is incompatible with PATHWORKS for DOS and must be disabled. Refer to the *Zenith Owner's Manual* for more information.

HARDWARE REQUIREMENTS

Server

MicroVAX 3100e as specified in the System Support Addendum (SSA 25.D1.04-x).

Client

PATHWORKS for DOS software, Version 4.0 has been tested on several supported configurations (refer to SSA 55.07.09-x). If a customer problem with PATHWORKS for DOS software 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 cannot be reproduced by the customer on one of these supported configurations, it will be the responsibility of the customer to resolve the issue.

SOFTWARE REQUIREMENTS

None

INSTALLATION

The installation, configuration, and administration of PATHWORKS for VMS software is designed to be accomplished by a PC-knowledgeable, VMS and DECnet-VAX novice user by utilizing the supplied documentation, installation aids, and configuration and administration utilities. Installation by Digital is recommended if the above requirements cannot be met.

The software is preloaded and VMS is preinstalled. VMSinstall is used to restore two savesets: PATHWORKS for VMS V4.0 and PATHWORKS for DOS V4.0, which come loaded onto the disk. The simple installation procedure is described in the *Installation and Configuration Guide*.

Clients are configured according to PATHWORKS for DOS V4.0. This software provides the user with utility programs to assist in the installation and configuration of the product onto a server system or a PC with a local hard disk. Menus guide the user through the client installation and configuration process. On-line help facilities are provided.

Installation requirements of any other VMS layered software products on the PATHWORKS Server 3100e is as specified in the respective layered product SPD.

Configuration Utilities

PATHWORKS for DOS software provides the user with utility programs to assist in the configuration of the product onto a server system or a PC with a local hard disk. A three-tier menuing approach guides the user through the configuration process. On-line help facilities are also provided.

Upgrading

Upgrades from PCLAN/Server VMS V3.1 to PATHWORKS Server 3100e V4.0 software is accomplished by using VMSinstall to load the PATHWORKS Server 3100e V4.0 upgrade kit. Upgrades from versions prior to PCLAN/Server VMS V3.1 must be upgraded to PCLAN/Server VMS V3.1 and then to PATHWORKS Server 3100e V4.0.

Upgrade to VMS Operating System V5.4 is not required, but may be accomplished by ordering the VMS V5.4 upgrade kit.

ORDERING INFORMATION

Client Software Licenses:

QL-0TL**-**

Software Media:

Software media is available only with the purchase of the hardware system

Software Documentation:

System Administrator Documentation Kit:
QA-VHMAA-GZ

User's Documentation Kit: QA-VHMAB-GZ

Full Documentation Kit: QA-VHMAC-GZ

Software Product Services:

Media and Documentation Update Services:
PCLAN/Server 3100: QT-VHMAR-EW

Layered Product Support: QT-A93A9-LB

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

A Client Single-Use License Option is also available in DEPCA Network Integration Packages.

SOFTWARE LICENSING

The customer is licensed to use the VMS server product if that customer has purchased an appropriate Digital PATHWORKS client license. A license must be obtained in advance for each system on which the client software is installed.

For the first installation of this software product, the customer must purchase as a minimum for each server:

- The PATHWORKS for DOS license for each DOS PC (see SPD 55.07.xx), a PATHWORKS for OS/2 client license for each OS/2 PC (see SPD 55.24.xx), and a VAXmate license (see SPD 55.10.xx).

To support TCP/IP the customer must purchase the VMS/ULTRIX Connection (see SPD 25.A4.xx).

The PATHWORKS for DOS license gives the user the right to use the client software on a single DOS personal computer and/or to access the services of one or more VAX systems running PATHWORKS for VMS server software, VAX or RISC systems running PATHWORKS for ULTRIX server software.

The PATHWORKS for DOS license also grants the right to run ALL-IN-1 MAIL for DOS (SPD 31.51.xx) on the client system. ALL-IN-1 MAIL is an electronic mail product that adheres to CCITT X.400 international standards for electronic messaging. The client media and documentation for the ALL-IN-1 MAIL for DOS are available separately. The ALL-IN-1 MAIL server for VMS license and software must be also purchased separately.

This software is furnished under the licensing provisions of Digital Equipment Corporation's Standard Terms and Conditions. For more information about Digital's licensing terms and policies, 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.

- ® HP and LaserJet are registered trademarks of Hewlett-Packard Company.
- ® Microsoft and MS-DOS are registered trademarks of Microsoft Corporation.
- ® IBM, Micro Channel, OS/2, PC AT, and PS/2 are registered trademarks of International Business Machines Corporation.
- ® PostScript is a registered trademark of Adobe Systems, Incorporated.
- ® Tandy is a registered trademark of Tandy Corporation.
- ® Toshiba is a registered trademark of Kabushiki Kaisha Toshiba.
- ® DCA and IRMA are registered trademarks of Digital Communications Associates.
- ® Macintosh is a registered trademark of Apple Computer, Inc.
- ® Motif is a registered trademark of Open Software Foundation, Inc.
- ® 3Com and EtherLink are registered trademarks of 3Com Corporation.
- ® COMPAQ and COMPAQ Deskpro are registered trademarks of COMPAQ Computer Corporation.
- ® Olivetti is a registered trademark of Ing. C. Olivetti.
- ™ Intel is a trademark of Intel Corporation.
- ™ Windows is a trademark of Microsoft Corporation.
- ™ The DIGITAL Logo, ALL-IN-1, CI, Companion, DEC, DEC EtherWORKS, DECnet, DECnet-VAX, DECrouter, DEMCA, DEPCA, DECserver, DECstation, DECwindows, LA50, LAT, LN03, LN03 PLUS, LVP16, MicroVAX, PATHWORKS, PrintServer, RX33, ThinWire, ULTRIX, VAXcluster, VAX, VAXmate, VAXserver, VAXstation, VT220, VT320, and VMS are trademarks of Digital Equipment Corporation.

System Support Addendum

PRODUCT NAME: **PATHWORKS Server 3100e, Version 4.0**
(Formerly PCLAN/Server VMS)

SSA 25.D1.04-A

SERVER HARDWARE REQUIREMENTS

A PATHWORKS Server packaged system consists of:

- VAXserver 3100e with 8 Mbytes of memory, 4-line asynch controller, and Ethernet controller
- RZ24 209 Mbyte Disk Drive
- TK50 or TZ30 95 Mbyte Streaming Tape
- VT320 Video Terminal

The PATHWORKS Server system must be connected to the same DECnet network as the client systems.

Disk Space Requirements (Block Cluster Size = 1):

Disk space required for installation: 228,803 blocks
(111 Mbytes)

Disk space required for use (permanent): 228,803 blocks
(111 Mbytes)

These counts refer to the disk space required on the system disk. The sizes are approximate; actual sizes may vary depending on the user's system environment, configuration, and software options.

SERVER OPTIONAL HARDWARE

For PATHWORKS Server 3100e:

- RZ24 209 Mbyte Disk Drive
- RZ55 332 Mbyte Disk Drive
- RZ56 665 Mbyte Disk Drive
- RZ57 1 Gbyte Disk Drive
- DSH32 SYNCH/ASYNCH Controller
- MS42 Memory

Optional Printers

- LA75
- LN03R
- LJ250

- LA210
- PrintServer 40
- PrintServer 20
- HP® LaserJet®
- HP LaserJet with Adobe PostScript® cartridge

CLUSTER ENVIRONMENT

This layered product is fully supported when installed on any valid and licensed VAXcluster* configuration without restrictions. The *HARDWARE REQUIREMENTS* sections of the product's Software Product Description and System Support Addendum detail any special hardware required by this product.

* V5.x VAXcluster configurations are fully described in the VAXcluster Software Product Description (29.78.xx) and include CI, Ethernet, and Mixed Interconnect configurations.

CLIENT HARDWARE REQUIREMENTS

Those 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* in this SSA.
- A minimum of 640 Kbytes of system memory.
- One network connection, either asynchronous or via an Ethernet controller. Refer to the *Supported Base Systems Chart* at the end of this document for a list of supported Ethernet controllers in the various supported systems. More than one communications device may be installed in a system, subject to system limitations. If use of another device is required, the system may need to be rebooted. A device cannot typically be shared with other communications products.

- In a PC local area network, at least one base system must have one diskette drive capable of reading 5.25 inch (360 Kbyte) diskettes or 3.50 inch (720 Kbyte) diskettes to load the distribution media. (To create a floppy key disk, a disk greater than or equal to 720 Kbytes is required for booting purposes.)
- In an asynchronous network environment, every base system must have at least one diskette drive capable of reading 5.25 inch (360 Kbyte) diskettes or 3.50 inch (720 Kbyte) diskettes (to load the distribution media) and 12 Mbytes 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.

Disk Space Requirements

PATHWORKS for DOS software may be stored either on the personal computer's local storage device or on the server system.

Maximum disk space required for the installation of all PATHWORKS for DOS software is 12 Mbytes of free disk space (or 23,000 blocks on a VMS server).

Other configurations, using selected components, may require less disk space.

CLIENT OPTIONAL HARDWARE

Expanded Memory Specification, Version 4.0 Support

PATHWORKS for DOS software supports the use of Expanded Memory Specification (EMS) applications that are EMS, Version 4.0 compliant. The PATHWORKS for DOS networking software that can be loaded into EMS requires 144 Kbytes of memory.

Digital Printers

PATHWORKS for DOS software supports the following Digital printers, which can be connected to the PC:

LA75	LA75P
LA50	LA210
LJ250	LJ252
LN03	LN03 PLUS

The following hardware options from Digital may be added to the IBM PC, XT, AT, and DECstation PC family systems described in the *Supported Base Systems Chart*:

- Digital LK250-xx Keyboard

Note: The IBM PC Model 5150 system unit must have a system ROM BIOS dated 10-27-82 or later.

- Keyboard cables required to connect the LK250 keyboard to:

IBM AT, DECstation 210, 316, 320: BCC37-06
IBM PC and XT: BCC41-06
DECstation 200, 350: BCC39-06
DECstation 220, 300, 316, 320, 325, 425:
BCC40-06

- Digital VSXXX-AA 3-button mouse (for use with a DEC EtherWORKS Ethernet controller that is equipped with a mouse port)
- Digital DECstation Mouse PC6XS-** (DECstation models 200, 220, 300, 316, 320, 325, 425 only)

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
- Printer Adapter

Video Adapters

PATHWORKS for DOS software supports the following video adapters (subject to vendor support of the adapters in base systems):

- MDA — IBM Monochrome Display Adapter
- CGA — IBM Color Graphics Adapter
- EGA — IBM Enhanced Graphics Adapter
- MCGA — IBM PS/2® Model 30 video hardware
- VGA — IBM Video Graphics Adapter
- Hercules Monochrome — Hercules Graphic Card
- COMPAQ Video Graphics Controller Board

- COMPAQ Enhanced Color Graphics Board
- COMPAQ Video Display Controller Board
- COMPAQ PLASMA Internal Display Controller
- COMPAQ LCD Internal Display Controller
- OGC — Olivetti Graphics Controller
- OVC — Olivetti VGA-Compatible Controller
- OEC — Olivetti EGA-Compatible Controller
- EVC — Olivetti Eisa Video Controller for VGA+
- PVGA — Paradise Video Graphics Array, mono and color
- PGC — Positive Graphic Controller
- Zenith Enhanced EGA Card
- DECstation 8-bit Video Adapter
- DECstation 16-bit SVGA Adapter

Ethernet Controller Support

Hardware

For purposes of this System Support Addendum, the terms DEC, DEC1, DEC2, DECLC, DECT, DECMC, 3COM2, 3COM3 refer to the definitions below:

DEPCA	Digital's DEPCA-xx multi-buffered Ethernet controller for personal computers. The use of the DEPCA-AU transceiver adapter is also supported. The terms DEC, DEC1, and DEC2 refer to revisions of the same Ethernet controller.
DEC	Revision D, E, F, or H FCC Class B compliant.
DEC1	Revision E, F, or H FCC Class B compliant.
DEC2	Revision F03, H03. This Ethernet controller is FCC/VDE Class B compliant. (For IBM PC AT® compatible configurations with EGA or VGA graphics adapter, the DEPCA Revision E or later is required to utilize EMS.)
DECLC	EtherWORKS LC. This is an 8-bit Ethernet controller that is FCC/VDE Class B compliant. (Part number DE100-AA.)
DECT	EtherWORKS Turbo and Turbo/TP. These are 16-bit Ethernet controllers (ISA/EISA Specifications for I/O Bus Speed either equal to or below 8.33 MHz) that are FCC Class B compliant. The EtherWORKS Turbo/TP is a 10baseT Ethernet controller. (Part numbers DE200-AA, DE201-AA respectively.)

DECMC	EtherWORKS MC. This multi-buffered Ethernet controller is for IBM PS/2 Micro Channel® Architecture personal computers. It is FCC/VDE Class B compliant. (Part number DE210-AA.)
3Com2	3Com® EtherLink/MC (3C523) Ethernet multi-buffered Controller for IBM PS/2 Micro Channel Architecture personal computers.
3Com3	3Com EtherLink II (3C503) Ethernet Network Interface.

Refer the *Supported Base Systems Chart* at the end of this document for a list of tested Ethernet controllers.

Ethernet Controller Drivers

The PATHWORKS for DOS software contains both Network Device Interface Specification (NDIS), Version 1.0 compliant device drivers for DEC EtherWORKS LC, DEC EtherWORKS MC, DEC EtherWORKS Turbo, DEC EtherWORKS Turbo/TP, 3Com EtherLink II, and 3Com EtherLink/MC Ethernet controllers. The NDIS drivers can also be used with previous versions of the Digital Ethernet controller family, DEPCAs.

Note: The NDIS drivers for the 3Com EtherLink II and 3Com EtherLink/MC Ethernet controllers will not be supplied with the next release of this product.

The PATHWORKS for DOS software also includes Digital proprietary datalinks (DLLs) for DEC EtherWORKS LC, DEC EtherWORKS MC, DEC EtherWORKS Turbo, DEC EtherWORKS Turbo/TP Ethernet controllers.

Asynchronous Communications Support

Asynchronous DDCMP network connections are supported using the system's asynchronous serial port. Maximum line speed can be determined by consulting the PC vendor's documentation. Recoverable data errors may occur at the higher line speeds. All models listed in the *Supported Base Systems Chart* can be configured asynchronously unless otherwise noted.

PC DECwindows/Motif® Support

Hardware Requirements

- An Intel 80286-, 80386-, or 80486-based personal computer listed in the *Supported Base Systems Chart*.
- A minimum of 640 Kbytes of system memory must be free and accessible to start PC DECwindows/Motif after configuring the system. This memory may be made up of free conventional and extended memory.

At least a total of 1 - 4 Mbytes of system memory must be free and accessible to run X Window System applications. The specific amount of memory

required will depend upon the memory requirements of the application chosen by the user.

Depending on the number of X Window System applications being displayed and the memory requirements of each application, the user should test these types of configurations with PC DECwindows/Motif prior to production use.

- The PC DECwindows/Motif X server is not supported in an asynchronous network environment.

Disk Space Requirements

PC DECwindows/Motif requires an additional 1 - 2 Mbytes of secondary hard disk space (per PC DECwindows user) for the creation of temporary files.

Memory Requirements

PC DECwindows/Motif supports 80386 expanded memory managers that are Virtual Control Program Interface (VCPI) compliant.

Video Adapters

The PC DECwindows/Motif supports the following video adapters:

- Ahead VGA Video Adapter, mono and color, 800 x 600 or 640 x 480
- EGA — IBM Enhanced Graphics Adapter, mono and color, 640 x 350
- MCGA — IBM PS/2 Model 30 video hardware, mono, 640 x 480
- VGA — IBM Video Graphics Adapter, mono and color, 640 x 480
- COMPAQ Video Graphics Controller Board, mono and color, 640 x 480
- COMPAQ Enhanced Color Graphics Board, mono and color, 640 x 350
- COMPAQ LCD Internal Display Controller, mono and color, 640 x 480
- DECstation 8-bit Video Adapter, mono and color, 640 x 480 or 800 x 600
- DECstation 16-bit SVGA Adapter, mono and color, 640 x 480 or 800 x 600
- EVC — Olivetti Eisa Video Controller for VGA+, mono and color, 640 x 480
- Everex Viewpoint VGA Video Adapter, mono and color, 800 x 600 or 640 x 480
- IBM 8514/A 16/256-color Video Adapter, color, 640 x 480 or 1024 x 768

- OVC — Olivetti VGA-Compatible Controller, mono and color, 640 x 480
- OEC — Olivetti EGA-Compatible Controller, mono and color, 640 x 350
- Paradise 8514/A Plus 16/256-color card, color, 1024 x 768
- PVGA — Paradise Video Graphics Array, mono and color, 640 x 480 or 800 x 600
- Video 7 Enhanced VGA Video Adapter, mono and color, 640 x 480 or 800 x 600
- DECstation 8514/A-Compatible Graphics Adapter, color, 1024 x 768

Mice

PC DECwindows/Motif is designed for operation with a mouse for the user's convenience and ease-of-use, although keyboard emulation for a mouse is provided. If PC DECwindows/Motif is configured for use with a mouse, the user must acquire a Microsoft®-compatible mouse driver (Version 6.0 or later) and install it on the system prior to the installation of PC DECwindows/Motif. PATHWORKS for DOS software does not include such a mouse driver; it does include a driver for the VSXXX-AA mouse (for use with a DEC EtherWORKS Ethernet controller equipped with a mouse port).

Keyboards

PC DECwindows/Motif supports the following keyboards in both PC-style or LK201-like mappings:

- Digital's LK250
- IBM 84 key (or compatible)
- IBM 101 enhanced key (or compatible)
- IBM 102 enhanced key (or compatible)

SOFTWARE REQUIREMENTS

For the Server:

None

(VMS Operating System and DECnet-VAX are included with the distribution of new systems.)

VMS Tailoring

For VMS V5.x systems, the following VMS classes are required for full functionality:

- VMS Required Saveset
- Network Support
- System Programming

- Secure User's Environment
- Miscellaneous Files

For more information on VMS classes and tailoring, refer to the VMS Operating System Software Product Description (SPD 25.01.xx).

For the Client:

Operating System Support:

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

The base systems listed in the *Supported Base Systems Chart* at the end of this document are supported only when using operating system software supplied by the same vendor as the system unit itself.

Server Support

The following versions of the PATHWORKS server software products are supported for use in conjunction with PATHWORKS for DOS V4.0 client software when used in a server/client environment:

- PATHWORKS for VMS V4.0 (SPD 30.50.xx)
- PATHWORKS for ULTRIX V1.0 (SPD 32.44.xx)
- PATHWORKS for OS/2® V1.0, V1.1 server software (SPD 55.24.xx)
- VAXmate Services for MS-DOS® V2.2 (SPD 55.09.xx)

OPTIONAL SOFTWARE

For the Server:

VMS/ULTRIX Connection V1.3 is required for TCP/IP support.

Certain versions of these products depend upon a specific version of the Operating System. Please see the System Support Addendum of the product in question to determine which version you need.

For the Client:

Microsoft Windows™/286, Version 2.1 and Microsoft Windows, Version 3.0 are supported.

PATHWORKS for DOS (TCP/IP) is required software for the PATHWORKS for DOS client if the user requires TCP/IP network transport support (SPD 33.45.xx).

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

Disk: RX33 Floppy Diskette, RX31 Floppy Diskette, RX24 Hard-shell Diskette

Tape: TK50 Tape Cartridge, 9-track 1600 BPI Magtape

ORDERING INFORMATION

Client Software Licenses:

QL-0TL**-**

Software Media:

Software media is available only with the purchase of the hardware system.

Software Documentation:

System Administrator Documentation Kit:
QA-VHMAA-GZ

User's Documentation Kit: QA-VHMAB-GZ

Full Documentation Kit: QA-VHMAC-GZ

Software Product Services:

Media and Documentation Update Services:
PCLAN/Server 3100: QT-VHMAR-EW

Layered Product Support: QT-A93A9-LB

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

A Client Single-Use License Option is also available in DEPCA Network Integration Packages.

TABLE 1: SUPPORTED CONFIGURATION CHART

Supported Base Systems

COMPAQ Model	Ethernet Controller Support	Comments
COMPAQ Deskpro	DEC, 3COM3 Model 2	
COMPAQ Deskpro 286 Personal Computer Model 20 and 40 (Model 2551 on UL label)	DEC, 3COM3	
COMPAQ Deskpro 286e	DEC1, DECLC, DECT, 3COM3	
COMPAQ Deskpro 286N	DECLC	
COMPAQ Deskpro 386/16	DEC1, DECLC, DECT, 3COM3	
COMPAQ Deskpro 386/20	DEC, DECLC, DECT, 3COM3	
COMPAQ Deskpro 386/25	DEC1, DECLC, DECT, 3COM3	
COMPAQ Deskpro 386/33	DEC1, DECLC, DECT, 3COM3	
COMPAQ Deskpro 386N	DECT	
COMPAQ Deskpro 386s	DEC1, DECLC, DECT, 3COM3	
COMPAQ Deskpro 386s/20	DECT	
COMPAQ Deskpro 386/20e	DEC1, DECLC, DECT, 3COM3	
COMPAQ Deskpro 386/25e	DEC2, 3COM3	
COMPAQ Deskpro 486/25	DECT	
COMPAQ Deskpro 486/33L	DECT	
COMPAQ PORTABLE II	DEC1, 3COM3	
COMPAQ PORTABLE III	DEC1, 3COM3	
COMPAQ PORTABLE 386	DEC1, 3COM3	
COMPAQ 286/SLT	DEC1, DECLC, 3COM3	Some restrictions apply. Contact COMPAQ for details.
COMPAQ SLT 386s/20	DECT	
COMPAQ SYSTEMPRO	DEC2, 3COM3	
COMPAQ LTE	Not Applicable	
COMPAQ LTE/286	Not Applicable	

Digital Model	Ethernet Controller Support	Comments
DECstation 200	DEC2, 3COM3, DECLC, DECT	
DECstation 210	DEC1, DECLC, DECT	DECT supported for 8MHz bus speed configuration only.
DECstation 212	DEC2, DECLC, DECT	
DECstation 212LP	DEC2, 3COM3	
DECstation 220	DEC2, DECLC, DECT, 3COM3	
DECstation 300	DEC2, DECLC, DECT, 3COM3	
DECstation 316	DEC1, DECLC, DECT	
DECstation 316+	DEC2, DECLC, DECT, 3COM3	
DECstation 316SX	DEC2, DECLC, DECT, 3COM3	

Digital Model	Ethernet Controller Support	Comments
DECstation 320	DEC1, DECLC, DECT	
DECstation 320+	DECT	
DECstation 320SX	DECT	
DECstation 32	5DEC2, DECLC, DECT, 3COM3	
DECstation 325c	DEC2, 3COM3	
DECstation 333c	DEC2	
DECstation 350	DEC2, DECLC, DECT, 3COM3	
DECstation 425	DEC2, DECLC, DECT, 3COM3	
DECstation 425c	DECT	

IBM Model	Ethernet Controller Support	Comments
IBM 5150 Personal Computer	DEC, 3COM3	IBM 5150-2074 Asynch. Comm. adapter used for Asynch connections.
IBM 5160 Personal Computer XT	DEC, DECLC, 3COM3	IBM 5150-2074 Asynch. Comm. adapter used for Asynch connections.
IBM 5162 Personal Computer XT Model 286	DEC, DECLC, 3COM3	IBM 5170-0215 serial/parallel adapter used for Asynch connections.
IBM 5170 Personal Computer AT	DEC, DECLC, DECT, 3COM3	IBM 5170-0215 serial/parallel adapter used for Asynch connections.
IBM 8530-021 Personal System/2 Model 30	DEC, DECLC, 3COM3	
IBM 8530-E21 Personal System/2 Model 30-286	DEC, DECLC, 3COM3	
IBM 8550 Personal System/2 Model 50	3COM2, DECMC	
IBM 8550 Personal System/2 Model 50Z	3COM2, DECMC	
IBM 8555 Personal System/2 Model 55SX	3COM2, DECMC	
IBM 8560 Personal System/2 Model 60	3COM2, DECMC	
IBM 8570 Personal System/2 Model 70 386 16MHz, 20MHz, 25MHz	3COM2, DECMC	
IBM 8580 Personal System/2 Model 80	3COM2, DECMC	

Olivetti Model	Ethernet Controller Support	Comments
Olivetti M24	DEC1, 3COM3	
Olivetti M28	DEC1, 3COM3	
Olivetti M240	DEC1, 3COM3	
Olivetti M250	DEC2, 3COM3	
Olivetti M250E	DEC2, DECLC, DECT, 3COM3	
Olivetti M280	DEC1, 3COM3	
Olivetti M290	DEC2, 3COM3	
Olivetti M290s	DEC2, DECLC, DECT, 3COM3	
Olivetti M300	DEC2, DECLC, DECT, 3COM3	

Olivetti Model	Ethernet Controller Support
Olivetti M380/XP1	DEC2, DECLC, DECT, 3COM3
Olivetti M386/25	DEC2, DECLC, DECT, 3COM3
Olivetti M486	DEC2, DECLC, DECT, 3COM3

Tandy Model	Ethernet Controller Support
Tandy 3000NL	DECLC
Tandy 4025LX	DEC2

Toshiba Model	Ethernet Controller Support	Comments
Toshiba T3200	3COM3	
Toshiba T3200SX	DEC2, 3COM3	System ROM 3.10 or later required.
Toshiba T5200	DEC2, 3COM3	System ROM 3.00 or later required.

Zenith Model	Ethernet Controller Support
Zenith Z-248	DEC1, DECLC, DECT, 3COM3
Zenith Z-248/12	DEC1, DECLC, DECT, 3COM3
Zenith Z-386/20	DEC2, DECLC, DECT, 3COM3
Zenith Z-386/25	DEC2, DECLC, DECT, 3COM3
Zenith Z-386/33	DEC2, DECLC, DECT, 3COM3
Zenith Z-386/33E	DECT
Zenith Z-386SX	DEC2, DECLC, DECT, 3COM3
Zenith SupersPort 286	DEC1, DECLC, 3COM3
Zenith SupersPort SX	DEC2, 3COM3

SUPPORTED CONFIGURATIONS

The PATHWORKS for DOS software has been tested on the base systems listed in the *Supported Base Systems Chart* above. 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 software, Version 4.0 has been tested on the preceding supported configurations. If a customer problem with PATHWORKS for DOS software 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 cannot 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 software supports the use of NDIS, Version 1.0. Every effort has been made to ensure that the software adheres to the NDIS, Version 1.0 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 in-

tended to allow users a greater choice of Ethernet controllers. This implementation is not intended to support the simultaneous operation of the PATHWORKS for DOS product and other vendors' networking products.

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.

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