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HP PC ARPA and Network Services
for MS-DOS, Microsoftª LAN Manager,
and NetWareª

Technical Data

Product Number
J2246A
HP PC ARPA and Network Services provide a PC running MS-DOS with
HP ARPA Services to host computers in a multivendor environment and
HP Network Services to HP minicomputers. HP PC ARPA and Network
Services run on Microsoftª LAN Manager 2.1 and 2.1a, NetWareª ODI
and NDIS, and standalone clients. This product also supports the
Windows 3.X environment in all modes.

   Note: The J2246A product combines the following products:
HP Network Services 2.1/MS-DOS (D1811B), HP ARPA Services 2.1/MS-
DOS (D1812B), HP Network Services 2.1 for Netware (D1819A), and
HP ARPA Services 2.1 for Netware (D1823A).

For specifics on supported NDIS and ODI card drivers refer to the
Product Requirements section.

HP Network Services provide a PC running MS-DOS with Network File Transfer (NFT), Terminal Access, and Network Interprocess Communication (NetIPC) to HP minicomputers. These services supply a complete and sophisticated set of communication facilities between the PC and the minicomputer, complementing Microsoft's^{a} LAN Manager and Novell's NetWare solutions. Also, PROBE is provided for HP 3000 Resource Sharing connectivity for Microsoft^{a} LAN Manager 2.1 TCP/IP clients.

With HP ARPA Services a PC running MS-DOS can communicate in a multivendor environment using the networking services defined by the Department of Defense Advanced Research Project Agency (ARPA) and Berkeley Software Distribution (BSD) UNIX^{a} system.

Features and Benefits of the ARPA Services

┤ File Transfer (FTP, MIL–STD 1780)

FTP is a family of commands for performing file and directory operations over the network. You can get or put files to a remote computer, using either ASCII or binary transfers. File transfers to HP 9000, HP 1000, HP 3000, Sun, DEC VAX and IBM machines are supported.

┤ Virtual Terminal (TELNET, MIL–STD 1782)

Teletype Network Protocol (TELNET) lets you use your local PC as a terminal to another computer on the network. The remote computer can be running UNIX or another operating system. A public-domain VT100 terminal emulator (Kermit) is included with this TELNET product. TELNET also supports HP AdvanceLink for DOS, HP AdvanceLink for Windows / NewWave, and compatible third party terminal emulators.

┤ **Berkeley Remote Commands (rcp, rsh)**
Remote UNIX file copy (rcp) lets you copy files to or from your PC with a UNIX node over the network. Single files or whole directories can be copied in this way. Remote shell (rsh) lets you execute a command on a remote UNIX host.

┤ **Berkeley Sockets Run Time Development Support**
Berkeley Sockets run time application support is included. Berkeley Sockets run time support, using the sockets interface provided with the HP PC Sockets Developer's Kit (D1827A), allow developers to create a program running on their PC that can communicate with a peer process running on another machine on the network. The Sockets Developer's Kit allows developers to create distributed Sockets applications in either the DOS or the Windows 3.0 and 3.1 environments.

   Note: The D1827A product is orderable by phoning 1-800-848-9283 or 303-353-7650 outside the U.S. This product only supports development to HP's sockets interface.

Features and Benefits of Network Services

┤ **Network File Transfer (NFT)**
Network File Transfer allows a PC to transfer a file to or from an HP 3000, HP 9000, or HP 1000, or initiate a transfer between any two of these computers. The NFT operation uses the dscopy command, which can be issued from the keyboard or from within a program.

┤ **Terminal Access (VT)**
Terminal Access provides a PC user with terminal access over the network to HP 3000s as if the PC were directly connected to the minicomputer. This terminal access uses HP Advance- Link for DOS, HP AdvanceLink for Windows / NewWave, and compatible third party terminal emulators.

┤ **Network Interprocess Communication (NetIPC)**
The NetIPC application program interface is fully supported by HP NS Services. With these interfaces, a number of distributed applications can use the processor power of the PC and the HP 3000, HP 9000, or HP 1000.

Other Features and Benefits

┤ **Supports Industry Standard TCP/IP Transport**

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Standards allow users to interoperate with other TCP/IP systems.

┤   **Internetting Support**
This support allows PC users to access hosts locally on the network as well as remotely using the TCP/IP transport through routers and gateways. This allows users to access hosts anywhere in a TCP/IP based network.

┤   **Microsoft LAN Manager 2.1 and 2.1a support**
Both Services run on LM 2.1 clients and also provides HP 3000 Resource Sharing connectivity for Microsoft LAN Manager 2.1 TCP/IP clients. PC clients can operate on Ethernet, Ethertwist (10BaseT), StarLAN10, and Token Ring based networks. (Refer to Product Requirements Section for NDIS drivers and cards supported.)

┤   **Netware 2.15c or later support**
Both Services run on Netware clients using NDIS or ODI MAC drivers. All ODI drivers must be ODINSUP compatible. PC clients can operate on Ethernet, Ethertwist (10BaseT), and Token Ring based networks. (Refer to Product Requirements Section for ODI drivers and cards supported.)

┤   **Microsoftª Windows 3.0a and 3.1 and HP NewWave 3.0 and 4.0 Support**
Product Requirements Required Hardware

┤   **A supported PC with 640 Kbytes of memory (plus memory needed for the terminal emulator or application) from the following list:**
- HP Vectra 286/12
¬   HP Vectra 386/25
¬   HP Vectra 486/25T
¬   HP Vectra CS
¬   HP Vectra ES 12
¬   HP Vectra QS/16, 16S, 20
¬   HP Vectra RS/16, 20, 20C, 25C
¬   Compaq Deskpro 386/S, Model 60
¬   Compaq Deskpro 386/25, Model 110
¬   Compaq Deskpro 286, Model 40
¬   Compaq Portable II
¬   Compaq Portable III
¬   IBM AT
¬   IBM PS/2 (50, 50Z, 60, 70, 80)
¬   IBM PS/2 (25, 30)
¬   IBM PS/2 (30/286)

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┤ **One of the following network interface cards to connect to the LAN:** Microsoft LAN Manager 2.1 and 2.1a Environment NDIS drivers for cards that are TCP/IP certified are supported. When NetBEUI is loaded those cards that are certified with LAN Manager over NetBEUI and Microsoft TCP/IP are supported.

AT Backplane Interface Card	Standalone NDIS	Netware NDIS	Netware ODI
HP 27250A ThinLAN	hplanb.dos (A.02.05)		same hpisaodi.com v2.00 (920629)
HP 27210A/B ThinLAN	elnk.dos (1.1)	no	no
HP 27245A Ethertwist/8	hplanb.dos (A.02.05)		same hpisaodi.com v2.00 (920629)
HP 27247A Ethertwist/16		hplanb.dos (A.02.05)	same no
HP 27236A StarLAN10	elnk.dos (1.1)	same	no
HP 27240A StarLAN10 II		hplan.dos (A.02.00)	same no
HP 27252A PCLAN TL Plus		hplanp.dos (A.00.00)	same no
HP 27247B PCLAN TP Plus		hplanp.dos (A.00.00)	same no
3Com 3C501 Etherlink	elnk.dos (1.1)	no	no
3Com 3C503 Etherlink II		elnkii.dos	same 3C503.com v1.22 (910614)
3Com 3C505 Etherlink Plus		elnkpl.dos	same no
Western Digital/SMC EtherCard+ WD8003E	smcmac.dos (1.19b)		same smcplus.com v2.11 (920406)
NE2000 (Novell or Anthem/Eagle Tech)	no	no	ne2000.com v1.34 (910603)
IBM Token Ring Adaptors	token.com (1, 2 or 4/16) (910614) (no 4/16)	ibmtok.dos (1.1) v1.12	no

MCA Backplane Interface Card	Standalone NDIS	Netware NDIS	Netware ODI
HP 27246A Ethertwist	hplan.dos (A.02.00)		same no
HP 27241A StarLAN10	hplan.dos (A.02.00)		same no
3Com 3C523 EtherLink	elnkmc.dos	same	no
Western Digital/SMC	macwd.dos (1.15b)		same smcplus.com v2.11 (920406)

Ethercard+/A WD8003ET/A		
IBM TRN Adaptor/A and 4/16A		ibmtok.dos (1.1)
no	token.com v1.12 (910614)	

MS-DOS Standalone or Netware Environment

The following matrix covers the support of NDIS and ODI drivers for cards that run in a MS-DOS standalone or Netware environment.

Note: HP has tested the interface cards listed below. Other Ethernet or Token Ring cards with NDIS or ODI drivers may or may not work. HP support is only for the drivers and cards listed above.

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Required Software

┤   DOS version 3.3, 4.01, 5.0

Compatible Software Versions

┤   NetWare Version 2.15C or later
The Netware clients must have NDIS or ODI MAC drivers. All ODI
drivers must be ODINSUP compatible which means the driver works
with LSL.COM version 1.2 or later.
┤   HP AdvanceLink for Windows/NewWave (Version A.03.14 or later),
HP AdvanceLink for DOS (Version B.02.21 or later) or compatible third
party product to provide terminal emulation. HP ARPA Services
includes a public domain (Kermit) vt100 terminal emulator.
┤   Microsoft LAN Manager 2.1 or 2.1a Client
┤   Microsoft Windows 3.0a or 3.1 version

Other Notes on Software Versions

HP Network Services does not support NFT and VT to a DEC VAX
minicomputer (running Network Services for VAX, HP 50950A).

HP PC ARPA and Network Services is not supported with the following
products:
¬   HP LAN Manager 1.X
¬   3Com 3+Open
¬   Microsoft LAN Manager 2.0
¬   Microsoft LAN Manager using the DLC transport

Installation and Support Installation

HP PC ARPA and Network Services is a customer installable product.
The customer can purchase installation from HP if desired.

Hardware Support Services

Provides customers with standard hardware support for their HP 1000,
HP 3000, HP 9000, and HP PC hardware.

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Software Support Services

HP Software Materials Update¬Entitles the customer to receive updated software and documentation for any revisions to the product up to, but not including, the next upgrade.

HP BasicLine Software Support¬Provides customer with self-support through right-to-use updates and access to electronic database.

HP ResponseLine Software Support¬Provides all the services of HP BasicLine Software Support, plus unlimited access to the Response Center for problem resolution assistance.

HP TeamLine Software Support¬Provides all the services of HP ResponseLine Software Support plus a local account-assigned HP Service Engineer who will assist the customer with proactive planning and other support needs.

Network Support Services

HP WireTest¬Verifies the suitability of the customer's existing twisted-pair cabling for their network. By utilizing sophisticated tests, which quickly and accurately evaluate existing cabling, the customer can potentially save a substantial investment that would be required for rewiring.

Network Planning and Design¬Provides customers with a comprehensive network strategy that supports their business objectives. HP Network consultants analyze the customer's communication requirements and create a detailed network design based on these requirements.

Network Startup¬Provides customers with quick implementation of their network, a simplified service interface, verified network operation, and assured on-going supportability. Please refer to the HP Network Startup data sheet for more information.

NetAssure¬Provides customers with fault isolation and assistance with problem resolution anywhere on their network. Please refer to the HP NetAssure data sheet for more information.

HP PCLAN¬Provides Novell customers with a single source of support for NetWare and HP PC-based local area networks and personal computers and peripherals attached to the network.

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Ordering Information

J2246A HP PC ARPA and Network Services for MS-DOS, Microsoft LAN Manager and Netware

(Must order at least one option)
(Must order option 001 or 006 for 1 set manuals and software)

Options

001   1 user license with manuals and software
002   RTC for 8 additional users
003   RTC for 32 additional users
004   RTC for 128 additional users
005   RTC for 512 additional users
006   Upgrade from NS 2.1 (D1811B, D1819A) or ARPA 2.1 (D1812B, D1823A) or NS LAN GW (D1807A); 1 user license with software and manuals
007   Upgrade from NS 2.1 (D1811B, D1819A) or ARPA 2.1 (D1812B, D1823A) or NS LAN GW (D1807A); RTC for additional 1 user
008   Upgrade from NS 2.1 (D1811B, D1819A) or ARPA 2.1 (D1812B, D1823A) or NS LAN GW (D1807A); RTC for additional 8 users
009   Upgrade from NS 2.1 (D1811B, D1819A) or ARPA 2.1 (D1812B, D1823A) or NS LAN GW (D1807A); RTC for additional 32 users
010   Upgrade from NS 2.1 (D1811B, D1819A) or ARPA 2.1 (D1812B, D1823A) or NS LAN GW (D1807A); RTC for additional 128 users
011   Upgrade from NS 2.1 (D1811B, D1819A) or ARPA 2.1 (D1812B, D1823A) or NS LAN GW (D1807A); RTC for additional 512 users
012   Additional user manual

HP Commercial PC Software Support Services

H2015A+H00 HP Response Line
H2016A+S00 Software Material Update Service

Documentation

HP PC ARPA and Network Services includes:

J2246-90000 Installation Guide
J2246-90001 Error Messages and Troubleshooting Guide
J2246-90002 ARPA User Guide
J2246-90003 Network Services User Guide

Related Products

B1003A HP LAN Manager/X for the HP 9000 Series 300
B1011A HP LAN Manager/X for the HP 9000 Series 800
D1811B HP Network Services 2.1/MS-DOS
D1812B HP ARPA Services 2.1/MS-DOS
D1819A HP Network Services 2.1 for NetWare
D1923A HP ARPA Services 2.1 for NetWare
D1827A opt. 001 HP PC Sockets Developer's Kit 1.0
68333F HP AdvanceLink for DOS
D2104B HP AdvanceLink for Windows/HP NewWave Various
HP NewWave Offices

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HP PC ARPA and Network Services for MS-DOS, Microsoft[a] LAN
Manager and NetWare[a] Technical Data