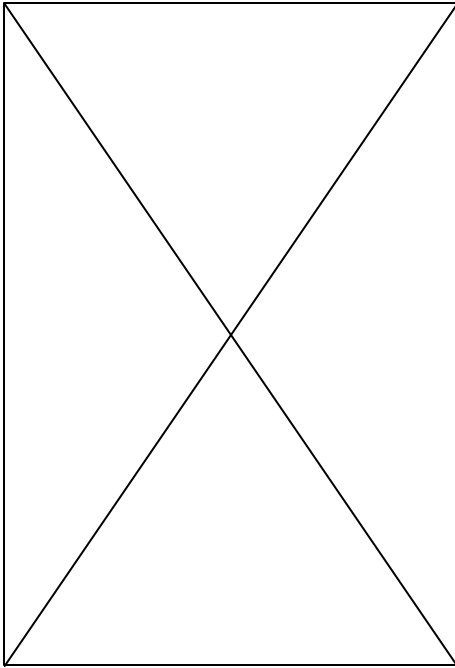


Digital-Based Solutions



Network Solutions in the VAX and VMS Environment

Apple has developed AppleTalk for VMS to enable the integration of AppleTalk-based Macintosh systems and Digital's VMS computing environment. With AppleTalk for VMS, a VAX computer system can participate on an AppleTalk internet. Likewise, any computer on the AppleTalk internet can access the VMS environment.

With AppleTalk for VMS, VMS system-based applications and services can appear just like other AppleTalk services. These VMS system-based services register their names on the AppleTalk internet in the same way that AppleShare servers and LaserWriter printers register their names. Macintosh users can find VMS system-based services through the Chooser or through application-specific interfaces.

As networked Macintosh/VAX system workgroups proliferate, they can be internetworked by means of DECnetwide area networking products. AppleTalk and DECnet can cooperate to form large networks, allowing workgroups to exchange data and share resources. For example, a Macintosh on an AppleTalk network with a VAX system in California can transparently use an X.25, synchronous or asynchronous, DECnet link to print a document on a LaserWriter on an AppleTalk network with a VAX system in New York. The user can select the LaserWriter in New York using the standard Macintosh Chooser desktop accessory on his or her Macintosh computer in California.

It's easy to imagine how a workgroup of Macintosh users interlinked via AppleTalk can share the large-scale computing power of VAX, using products incorporating AppleTalk for VMS. End users requiring this unique fusion of Macintosh flexibility and VAX power will find that file- and print-server products, terminal service, and networked Macintosh and VAX databases built on AppleTalk for VMS are already available. Software developers wishing to integrate their Macintosh applications into the VMS marketplace, or value-added resellers (VARs) recognizing the competitive advantage that a custom Macintosh-based VAX frontend can give their systems, will find a documented and proven programming tool in AppleTalk for VMS.

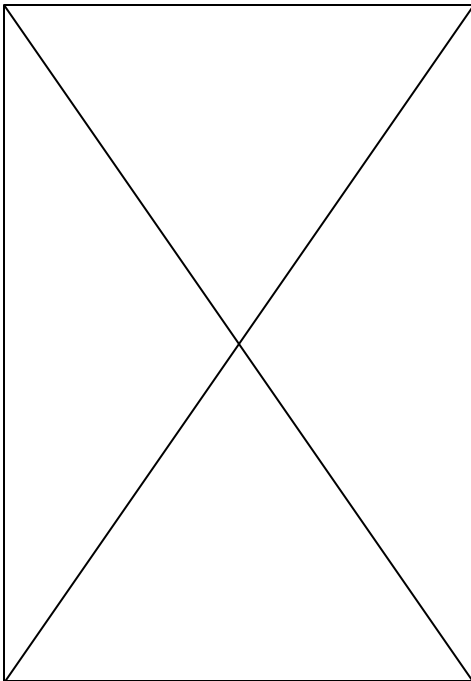
Making the Ethernet Connection

Ethernet is an industry-standard, high-speed networking media system that transmits data at 10 Mbps. Apple's Ethernet boards are available to connect Macintosh

Solutions

computers to Ethernet. All of these products make use of Apple's EtherTalk software, which allows use of AppleTalk network system protocols on high-speed Ethernet media. This type of performance is particularly useful in environments where there is heavy use of the file server for such applications as multi-user database or application development with shared libraries on the file server.

The Apple EtherTalk NB card and other third-party products allow Macintosh computers to communicate with a diverse range of Ethernet-based computer systems. Shiva and Cayman Systems offer intelligent, or application-level, routers and bridges between LocalTalk and Ethernet systems that transparently integrate Macintosh computers into Ethernet. For more information on these products, see the *Networking Environment* chapter of this Guide.



Integrated Macintosh and Digital Environment— DECLanWORKS for Macintosh

DECLanWORKS software for Macintosh computers integrates Apple Computer, Inc.'s Macintosh computers and the AppleTalk network with Digital Equipment Corporation's VAX computers and DECnet/OSI network. Jointly developed by Digital and Apple, DECLanWORKS for Macintosh offers VMS servers software, Macintosh client applications, connectivity software, and developer tools.

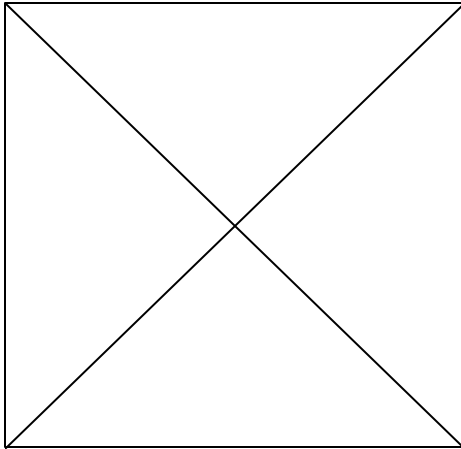
DECLanWORKS software for Macintosh computers is an implementation of Digital's Network Application Support (NAS) services. The client/server implementation provides transparent interoperability between the Apple and Digital environments; users can access VAX systems power and scalability, DECnet/OSI networking functionality, Macintosh tools, and AppleTalk resources while using the interfaces with which they are most familiar.

File Sharing

VAXshare VAX-resident file services are indistinguishable from familiar AppleShare devices, and provide the additional benefits of shared resources, enhanced data security, increased file storage, and improved data integrity through automated backups. VAXshare file service is compliant with Apple Filing Protocol (AFP V2.0). By using a VAX as a file server, VMS and Macintosh users and applications can share the same files and folders or directories. VAXshare file services supports VMS Access Control Lists, which provides VMS system managers with the ability to determine, on a user-by-user basis, who has access to a particular file or directory.

Print Services

Macintosh and VAX users can share PostScript printers from Digital and Apple LaserWriter printers. VAX share print service implements Apple's Printer Access Protocol and uses VMS print queues on the VAX for high capacity print spooling.



Electronic Mail

Macintosh users can communicate with other users on a MAIL bus enterprise messaging system, either locally or worldwide, via ALL-IN-1 MAIL (X.400 compliant) or PCMAIL (a client for VMS Mail utility). ALL-IN-1 MAIL for the Macintosh provides electronic mail capabilities such as store-and-forward services, binary attachments, and message delivery notifications as well as information about the message and the user. ALL-IN-1 MAIL for the Macintosh implements all the mandatory services defined by the 1984 CCITT X.400 "P2" user agent recommendations.

The client application allows users to create, edit, file and manipulate messages. Users can access Digital's Distributed Directory Service for assistance in addressing other users anywhere on the MAIL bus electronic mail network. The ALL-IN-1 MAIL Server provides local message delivery services within a local area network and submits messages to MAIL bus for remote message delivery. Messages can be exchanged with other ALL-IN-1 MAIL servers, Digital's ALL-IN-1 Integrated Office System, VMS mail, as well as users of IBM PROFS, IBM DISOSS, and public and private systems conforming with X.400 recommendations.

PCMAIL provides all the functionality accessible in the VMS mail utility. PCMAIL for Macintosh enables users to read newly received mail, review previously received mail, send a Macintosh text file, and create messages with its built-in text editor. PCMAIL users can send messages to other PCMAIL users on Macintosh, VMS, and IBM, and compatible computers running PCMAIL for DOS or OS/2.

Application Access

LanWORKS offers easy access to enterprise applications anywhere on a wide area network through either MacTerminal, a VT320 compatible terminal emulator, or MacX[®], an X Window System server. MacX enables users to display (on their Macintosh) DEC window applications running remotely on VAX systems. For more detailed information, please see the MacTerminal description located in this chapter and the MacX description in the *UNIX and TCP/IP* chapter of this Guide.

Database Access

The Apple-Digital development effort offers access to departmental and enterprise data stored in VAX Rdb/VMS relational databases with Apple's Data Access Language (included with this product) or Digital's SQL/Services (included with VAX

Solutions

DECLanWORKSforMacintosh

Includes:

VMS Server Software

- VAX share file services, based on AFP
- VAX share print services for Apple LaserWriter, LaserWriter-PLUS, LaserWriter-IIINT, LaserWriter-IIINTX and Digital LN03R Script Printer, Print Server 20 and 40+ printers
- Network-based file and print server management
- Data Access Language VMS server software with adapter for Rdb/VMS relational database

Macintosh Client Application Software

- Electronic Mail
 - ALL-IN-1 MAIL for Macintosh, an X.400 client (license only)
 - PCMAIL for Macintosh, a VMS Mail client
- MacX, an X Window System server for DEC windows applications access
- MacTerminal V3.0 terminal emulator

Connectivity Software

- Data Access Language client
- AppleTalk for VMS V3.0
- AppleTalk-to-DECnet Transport Gateway
- DECnet for Macintosh: NCP, Netcopy, FAL

Developer Tools

- Application Programming Interface (API) for AppleTalk for VMS V3.0
- API for AppleTalk-to-DECnet Transport Gateway
- DECnet programming documentation

Rdb/VMS V4.0 product). For more information on Data Access Language, please see the *Network Application Tools* chapter in this Guide. Information on available Data Access Language servers can be found in this chapter and the *BMH Hosts* chapter.

Network Connectivity Software

LanWORKS includes AppleTalk for VMS, DECnet for Macintosh, and Macintosh Communications Toolbox with TCP/IP, LAT and CTERM tools for network and communications flexibility. AppleTalk for VMS 3.0 is an implementation of AppleTalk Phase 2 networking protocol and interface libraries for VMS systems. AppleTalk for VMS enables routing or “tunneling” through DECnet, whereby AppleTalk is encapsulated in DECnet so Macintosh users can “see” across DECnet wide area networks and AFP file servers as if they were local.

DECnet for Macintosh allows Macintosh computers to participate as full DECnet Phase IV non-routing end nodes. This means that direct connections can be made from the Macintosh to DECnet applications and services on any DECnet node without having to be routed to a VAX server.

The Apple Macintosh Communications Toolbox provides tools used by Macintosh applications for network connections, terminal emulation and file transfers. Additional information for the Macintosh Communications Toolbox can be found in the *Network Application Tools* chapter in this Guide.

Interoperability in Mixed Environments

DECLanWORKS for Macintosh and Digital's Personal Computing Systems Architecture (PCSA) deliver Digital's Network Application Support (NAS) services, allowing users to share information and resources between Macintosh, DOS, OS/2, VMS, UNIX, and terminal-based users on the same network. Open interfaces and tools provide capability for the development of distributed applications.

Service and Support

Digital offers worldwide service and support for the DECLanWORKS for Macintosh product. Digital Desktop Services offers support for third-party Macintosh applications. Digital is an authorized service provider for the Apple family of products at U.S. Digital sites.

AppleTalk for VMS

AppleTalk for VMS is Apple's implementation of the AppleTalk network protocols on Digital's VMS operating system. With AppleTalk for VMS, a VAX computer system can participate in an AppleTalk internet. Likewise, any computer on the

AppleTalk internet can access the VMS environment of a VAX computer. Apple and Digital have chosen AppleTalk for VMS and its integration with DECnet as the primary way to interconnect the products they develop under the Apple-Digital agreement. Thus, using AppleTalk for VMS as a base, a developer can build distributed applications across Macintosh, Apple II, MS-DOS, and VMS systems.

With AppleTalk for VMS, VMS system-based applications and services can appear just like other AppleTalk services. These VMS system-based services register their names on the AppleTalk internet in the same way that AppleShare servers and LaserWriter printers register their names. Macintosh users can find VMS system-based services through the Chooser or through application-specific interfaces.

AppleTalk for VMS has the following features:

- AppleTalk Phase 2 routing
- enhanced performance by running in the VMS kernel
- enhanced tunneling capabilities
- support for the AppleTalk ADSP to DECnet NSP transport gateway
- a more complete and easier configuration and management utility
- a simple, well documented API

AppleTalk for VMS Router

In the AppleTalk network architecture, routers forward datagrams between separate AppleTalk networks. With AppleTalk for VMS, a VAX computer can become a full-function AppleTalk router, providing internet routing, zone information management, routing table maintenance, and management of name-binding requests. An AppleTalk for VMS router has multiple ports, so that it can simultaneously route datagrams over different physical communication channels. For example, a router can route datagrams over multiple Ethernet local area networks or over DECnet/OSI wide area networks. By encapsulating AppleTalk datagrams into a DECnet packet and routing this packet through DECnet/OSI networks—a technique called *tunneling*—the AppleTalk for VMS router can interconnect AppleTalk internets separated by great distances.

How AppleTalk for VMS Works

AppleTalk for VMS version 3.0 has four main parts:

- AppleTalk Protocol Stack Driver
- Ancillary Control Process
- Protocol Interface Library
- Configuration Program (ATK\$MANAGER)

Solutions

The AppleTalk Protocol Stack Driver is a standard VMS/O driver that implements the main capabilities of the AppleTalk protocol suite. The Ancillary Control Process works with the Protocol Stack Driver to implement the more complex protocol functions, such as creating processes, authenticating users, and managing AppleTalk for VMS.

The Protocol Interface Library is the applications programming interface with the AppleTalk Protocol Stack Driver. The library is a set of simple subroutine calls, each implementing a different protocol function. Using these subroutines, applications can perform protocol functions such as looking up names, executing transactions, and transferring data. The Protocol Interface Library conforms to the VAX procedure-calling standard and can be called from many VMS system-supported programming language.

The Configuration Program is the user interface through which VMS system managers set up and observe AppleTalk for VMS. With this program, a system manager can perform such tasks as starting the AppleTalk for VMS router, opening and closing router ports, and reading performance counters.

Approximate Cost \$295 client license per Macintosh;
\$440 for media and documentation (1 copy for network)—no VAX server license required.

Supplier: Digital Equipment Corporation and Authorized Digital Distributors. Contact your local DEC sales office.

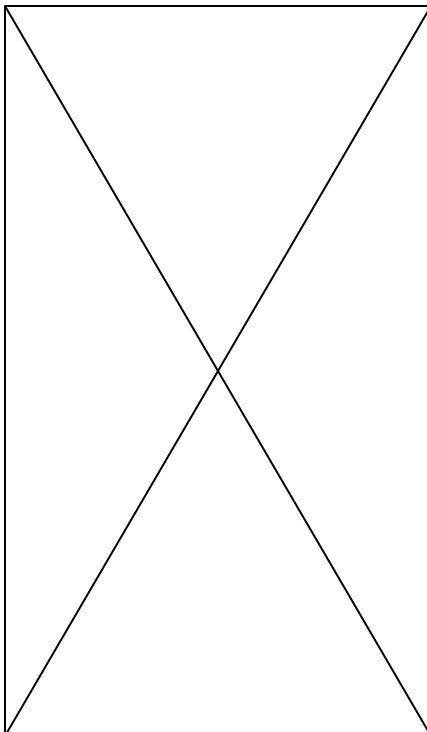
Macintosh-to-VAX Integration Toolkit

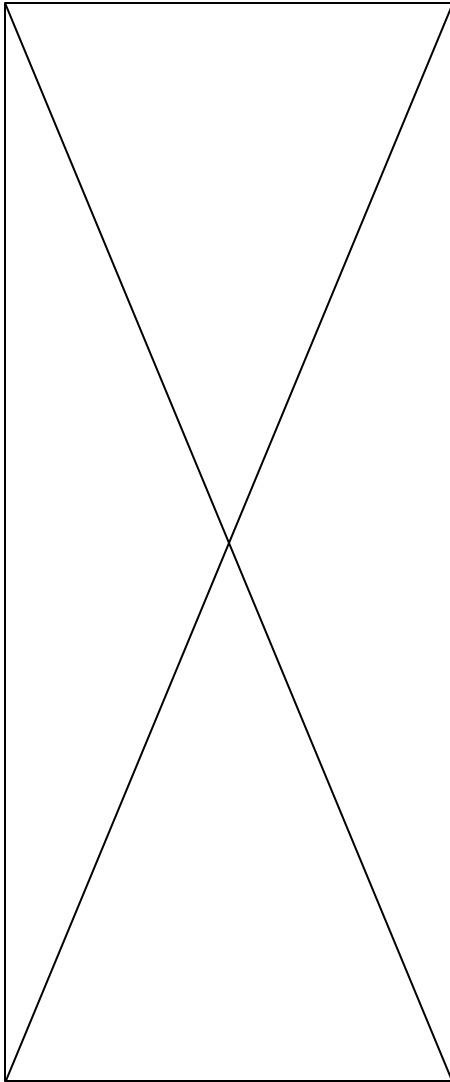
The Macintosh-to-VAX Integration Toolkit is a set of software components, APIs and documentation made available to developers interested in building distributed applications between the Macintosh and the VAX. This package includes AppleTalk for VMS, an AppleTalk-to-DECnet transport gateway, a VAX-based configuration utility, as well as an ADSP and a Gateway access connection tools for the Macintosh Communications Toolbox. These are described in more detail in the DEC LanWORKS for Macintosh section earlier in this chapter.

These components are the connectivity foundation for products developed under the Apple/Digital joint development agreement. This package includes programmer documentation for all of the exposed APIs. Developers interested in redistributing some of the software components with their application can obtain a license from Apple Software Licensing.

Approximate Cost Contact supplier

Supplier: Apple Computer, 25025 Mariani Ave., Cupertino, CA 95014, 408-996-1010





AppleTalk Network Services

AlisaTalk Network Services for VAX and VMS and Macintosh Systems

AlisaTalk, which includes AlisaShare, AlisaPrintSystem, AlisaTerminal and the optional AlisaDigitalPrint package, provides a package of network services for Macintosh, VMS and PC users. New features of AlisaTalk V3.3 include support for ACLs for file access, command file procedures for AlisaShare and APS or ADP managers and a print job notifier for Macintosh users.

AlisaTalk retains the Macintosh graphic interface. AlisaTalk can be set up on existing AppleTalk networks, so additional cabling may not be needed. AlisaTalk uses standards endorsed by both Apple and Digital, including AppleTalk Network Architecture, AppleTalk for VMS, AFP, DECnet CTERM, PostScript, and standard Macintosh AppleShare and LaserWriter software.

AlisaShare AFP File Server

AlisaShare is a VAX-based file server for Macintosh and IBMPC-compatible systems using the AppleTalk network. AlisaShare uses Macintosh and VMS standards, including user interface, file security, and file structure systems. AlisaShare uses the Macintosh graphic interfaces so that Macintosh users see VMS files as icons on their desktops. AlisaShare's use of ACL and UIC-based security makes it possible to maintain standards of security across networks. AlisaShare maps the Macintosh Hierarchical File Structure (HFS) to the VMS hierarchical file structure. Macintosh, VMS, and IBMPC files share the same directories on the VAX.

AlisaPrintSystem

AlisaPrint is a print system that makes use of the VMS printing and queuing utilities to deliver PostScript printing to both Macintosh and VMS users. AlisaPrint consists of a receiver process and a symbiont, both resident on the VAX. The receiver mimics a LaserWriter printer and captures Macintosh print jobs, which are then queued for printing by the symbiont. This means that only one VMS process is needed to handle the Macintosh users. AlisaPrint also provides electronic forms and paper type control, optional job and file flag/trailer pages, generic queues, automatic download of special fonts and dictionaries, Diablo 630 emulation, and records for VMS accounting.

AlisaTerminal Remote Terminal

AlisaTerminal provides Macintosh users with access to remote Digital systems via the AppleTalk network. A driver resident on the Macintosh implements the DECnet CTERM protocol to communicate with the standard DECnet remote terminal

Solutions

services via Alisa's proprietary DECnet gateway. Terminal emulators and front-ends on the Macintosh, such as VersaTerm and Mac240, use the driver as though it were an async driver. Alisa Terminal supports DCL line editing and line recall, and provides access to any Digital host on DECnet internet.

Alisa Digital Printer Support System

Alisa Digital Printer (ADP) support system is an add-on option to the Alisa Talk package that provides printing services to Digital's PostScript printers. ADP consists of a receiver processor on the VAX that mimics a LaserWriter. The receiver captures Macintosh print jobs and queues them for printing to a Digital PostScript printer. ADP uses standard Macintosh, LaserWriter software, and standard Digital-supplied print symbionts and queueing systems.

Approximate Cost, Alisa Talk \$2950 to \$14,400
Supplier: Alisa Systems, Inc., 221 East Walnut St., Suite 175, Pasadena, CA 91101, 818-792-9474

Pacer Network Services

Pacer Software offers a family of products for Macintosh-to-VAX (VMS operating system), Data General, Prime, Stratus and UNIX systems including Sun, Harris, NCR, VAX (ULTRIX operating system), DEC system/station, Interactive and Motorola networked environments. These include PacerLink, which provides terminal-emulation, file-transfer, and print-spooling capabilities; PacerPrint, which provides PostScript print spooling for VMS and ULTRIX system users; PacerShare, which enables VAX (VMS and ULTRIX) and DEC RISC systems to implement AppleShare file services that can be accessed from a Macintosh or MS-DOS-compatible computer; PacerPost, which provides a VAX and VMS-based Microsoft Mail 2.0 compatible server and gateway to various other VMS-based mail systems; and PacerTOPS, which enables a VAX and VMS system to participate in the distributed file serving environment with any Macintosh or IBM PC on a TOPS network.

Pacer's Macintosh to host communications products have been developed using the AppleTalk protocol suite. PacerLink also operates over asynchronous serial connections to host systems and can use the TCP/IP protocol in an Ethernet environment. With Pacer Software's AppleTalk implementation on the VMS and ULTRIX systems, the lower levels of the protocol run as a driver. Any application based on Apple's AppleTalk for VMS standard can coexist on the same VAX system that is running communications software from Pacer.

PacerShare AppleShare File Server on the VAX/VMS, VAX/ULTRIX and RISC/ULTRIX

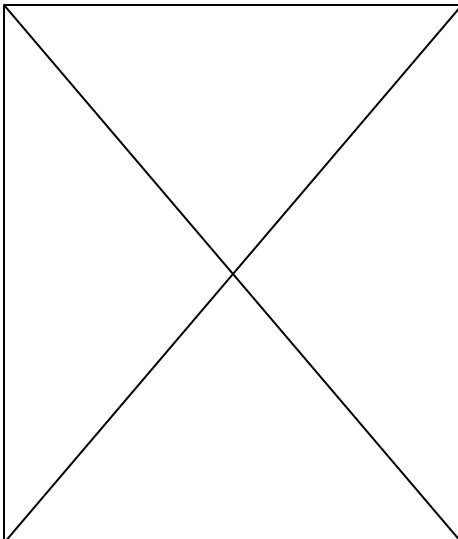
PacerShare extends PacerLink to let a VAX running ULTRIX or VMS or a RISC-based DEC station/system running ULTRIX to act as a large, AppleShare-compatible file server for a Macintosh computer network, eliminating the need for dedicated Macintosh file servers. To access the file server, a Macintosh computer (or other suitably equipped microcomputer) runs only the standard AppleShare client software from Apple.

Maintaining Macintosh and VAX files in a common area means that VAX files can be accessed by Macintosh applications. For example, VMS text files can be created and edited using Microsoft Word, MacWrite, or any other Macintosh word-processing application. The Macintosh computer views part or all of the ULTRIX or VMS file system as HFS volumes whose folders represent host directories and whose files represent host files. PacerShare integrates the Macintosh computer and host file systems, allowing the same file to be accessed from either the host or the Macintosh computer. It enforces full AppleShare concurrency handling, including byte-level locking, and is compatible with multi-user applications.

Host access security and file access protection are preserved in all cases. With the mouse, a Macintosh computer system user can peruse the ULTRIX or VMS file system, drag-copy files between ULTRIX and VMS, create directories, move subdirectory trees, and access any type of file with a Macintosh application. Users can view and modify only those directories that they would be authorized to access through a normal terminal session.

Approximate Cost \$400 to \$7500

Supplier: Pacer Software, Inc., 7911 Herschel Ave., Suite 402, La Jolla, CA 92037, 619-454-0565



PacerPrint PostScript Printing and AppleTalk Printer Access for VMS and ULTRIX Users

Initially available in the VMS and ULTRIX environments, PacerPrint is a print server software product that enables both Apple Macintosh and host users to print in their normal fashion to PostScript compatible printers. VMS users can submit jobs to the PacerPrint queues via the standard PRINT command under VMS, while ULTRIX users access printers attached to Apple LocalTalk networks with the Berkeley Standard Distribution (BSD) lpr(1) mechanism, following the same procedure as for a locally attached printer. PacerPrint connects to the printer, transfers PostScript files across the network, and interacts with the printer to coordinate and download Apple LaserPrep files (Macintosh-specific PostScript macros). PacerPrint provides a set of translators that convert ASCII text, Tektronix 4014 (VMS version only) and Diablo 630 (VMS version only) file formats to PostScript. Options to the print

Solutions

commands are provided to request a particular translation as well as to specify page layout (e.g., portrait vs. landscape). From a Macintosh, using the standard Chooser to select a target printer provides the option of transparently spooling all print jobs through the host server. PacerPrint thus enables Macintosh and host users to share networked PostScript-compatible printers.

Approximate Cost \$1000 to \$4000

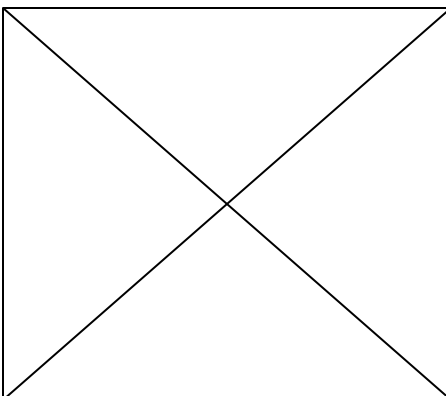
Supplier: Pacer Software, Inc., 7911 Herschel Ave., Suite 402, La Jolla, CA 92037, 619-454-0565

PacerTOPS

PacerTOPS enables VAX and VMS systems to participate in the distributed file serving environment with any Macintosh or IBM PC on a TOPS network. The merging of the VMS and TOPS file systems results in information sharing with performance comparable to local hard disk. PacerTOPS enables Macintosh and PC users to share their files stored on the VAX and to also transparently access VMS files. In addition, VMS users can access Macintosh and PC files which are stored on the VAX. PacerTOPS allows TOPS workstation users to take advantage of the VAX system's disk storage capacity, high volume backup functions and data security features. PacerTOPS is an extension of PacerLink, Pacer's core communication package and requires an Ethernet connection between the Macintosh computers or PCs and the VAX and VMS systems via either a direct connection or AppleTalk bridged to Ethernet.

Approximate Cost \$400 to \$7500

Supplier: Pacer Software, Inc., 7911 Herschel Ave., Suite 402, La Jolla, CA 92037, 619-454-0565



AsynchServer

AsynchServer is VAX and VMS software that communicates with a client Macintosh system over an ordinary asynchronous terminal port, providing the Macintosh with access to all AppleTalk facilities available through the Digital VAX. Supported AppleTalk services include not only advanced Macintosh-to-VAX networking products, such as AlisaTalk, Helix VMX, and PacerShare, but also access to other AppleTalk-based services, such as Apple's LaserWriter and AppleShare servers.

Locally connected Macintosh computers can use AsynchServer to network with their host Digital VAX system over dedicated asynchronous lines at high baud rates, in many cases eliminating specialized network "bridge" hardware. Similarly, remote Macintosh users can dial into their host VAX systems and join the VAX host's AppleTalk internetwork, using existing modem hardware and communications lines.

AsynchServer is licensed for use on the host VAX system. The product may be used interactively at dial-up, or it may be started in batch mode on one or more pre-defined asynchronous ports. AsynchServer supports several simultaneously

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connected Macintosh systems (up to the host's load limits), even on VAX and VMS hosts with server (one interactive user only) VMS licenses.

Approximate Cost \$595 to \$1895

Supplier: Computer Methods, Inc., 525 Route 73 South, Marlton, NJ 08053, 609-596-4360

TSSnet-DECnet Services on the Macintosh

TSSnet is a software package that enables Macintosh communications with a DECnet network as a DECnet Phase IV end node. The Macintosh can communicate with any DECnet host including Digital systems, IBM-PC systems and IBM mainframes, as well as other Macintosh systems. TSSnet allows DECnet and AppleTalk to operate on the same Macintosh simultaneously providing access to services on both networks.

TSSnet enables Macintosh communication with a DECnet network as a Phase IV end node. It provides a complete set of DECnet services, including background objects for VMS mail and file access (FAL). TSSnet consists of a DECnet driver, a Control Panel (CDEV) resource, and three applications (NetMail, NetCopy and NCP). TSSnet V2.0 also includes a version of White Pine's Mac220 terminal emulator that can be used with either CTERM or LAT sessions. The DECnet driver contains DECnet Phase IV protocols for Ethernet, LocalTalk and serial (DDCMP) connections. It also contains the file access listener (FAL), the background mail receiver, a CTERM module and a loopback mirror object for network testing.

Approximate Cost \$195

Supplier: Alisa Systems, Inc., 221 East Walnut St., Suite 175, Pasadena, CA 91101, 818-792-9474

CommUnity-Mac

CommUnity-Mac is a software product that utilizes an intelligent Ethernet controller to provide DECnet connectivity for Macintosh Plus, SE, and II computers. The controller reduces the networking load on the Macintosh for high-speed performance on a DECnet Phase IV Ethernet network. This networking solution provides terminal emulation (VT100, VT220, and, as an option, VT240), file transfer, compatibility with VAX and VMS services from Digital, and task-to-task communications for Macintosh-to-VAX system programming, VMS mail, and File Access Listener for Macintosh-to-Macintosh networking.

Approximate System Cost \$350 to \$495

Supplier: EMAC, 48431 Milmont Dr., Fremont, CA 94538, 415-683-2222

MacRAF

MacRAF is a Macintosh-to-VAX Ethernet integration package that provides the Macintosh user with remote file and print service. Users can access files stored on the VAX as if those files were on their Macintosh hard disks. MacRAF uses a LAT

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compatible protocol to connect the Macintosh to remote VAX hosts providing the user with file transfer speeds of up to 100,000 bytes per second. The software also provides users with VT100 and VT200 terminal emulation and supports up to 10 terminal sessions. MacRAF is supported on the Macintosh II series, Macintosh SE and SE/30. Approximately 115 kilobytes of disk space and a minimum of one megabyte of memory is required on the Macintosh. MacRAF uses Apple EtherTalk specifications so MacRAF can be run using any Ethernet card that has an Apple EtherTalk interface. On the host side, MacRAF is supported on VMS versions 4.7 through 5.2.

Approximate Cost \$794

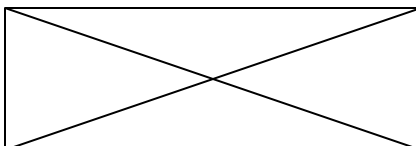
Supplier: Datability Software Systems, Inc., 322 Eighth Ave., New York, NY 10001, 800-DIALDSS

MacBLAST for Asynchronous Connectivity

MacBLAST communications software provides an asynchronous communications link between Macintosh and Digital VAX and PDP/RX or RT-11. VAXBLAST runs under VAX and VMS (Rev. 4.4+) providing transfer and text file conversion between VAX and Macintosh computers with BLAST (see MacBLAST). It uses any RS-232 port and provides TTY/VT52/100/VT220 emulation on the Macintosh end. MacBLAST transfers binary data, text, or graphics. MacBLAST and VAXBLAST products can be used to create wide area networks between central computers and any number of remote sites via dial-up or X.25 nets. BLAST runs over standard telephone lines, X.25 networks, and satellite links, and is unaffected by line noise or propagation delays. Features include: scripting capabilities for creating unattended operations, polling and data collection routines; custom menus, for transparent integration with Macintosh and VAX applications; on-line help; and automatic dialing and access to remote systems.

Approximate Cost \$495 to \$1295

Supplier: Communications Research Group, 5615 Corporate Blvd., Baton Rouge, LA 70808, 800-24-BLAST



Keyword KEYpak, Version 2.8

Keyword document interchange solutions are designed to allow the exchange of documents between PC, Macintosh and host terminal users through a computer system or local area network (LAN) server using many different document processing systems. Keyword KEYpak software, running on either a computer system or LAN server, allows users to exchange documents between otherwise incompatible document processors or word processing systems such as Microsoft Word on the Macintosh, WordPerfect, MultiMate and many more. KEYpak software is designed to provide flexibility for revisable document exchange between end-users on different computer systems (e.g. IBM mainframes, Digital VAX, Bull, WANG and others) by supporting system interchange architectures. KEYpak software runs on

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many systems platforms including DOS, VAX and VMS, UNIX, IBM VM, IBM MVS and many other vendors specific operating systems.

Approximate Cost \$1000 to \$100,000

Supplier: Keyword Office Technologies, 2816-11 ST. N.E., Calgary, Alta T2E 7S7, 403-250-1770

VMacS

VMacS is a VAX application that allows Macintosh users to store Macintosh files on the Digital VAX computer. All Macintosh files can be transferred to the VAX, stored in MacBinary format, and they will retain all original characteristics when returned to the Macintosh computer. Once files are stored on the VAX, all Macintosh work groups can exchange and distribute them. Macintosh word processing and text files can be converted to VMS formats and output to VAX printers or displayed on VAX terminals using VMacS. VMS text and data files can also be converted to Macintosh formats using VMacS.

Approximate Cost \$399 to \$999

Supplier: White Pine Software Inc., 94 Route 101A, P.O. Box 1108, Amherst, NH 03031, 603-886-9050

Makeasy Version 2.1

Makeasy is a distributed software allowing Macintosh users access to the host VMS facilities via the Macintosh user interface. VMS files are displayed as Macintosh-like icons and are given a specific set of operations. Operations can be called by selecting menu options with the mouse. MultiFinder compatibility lets users access VMS services and Macintosh applications at the same time. The file transfer utility permits files, folders, or directories to be copied to or from any part of the file system; the user can specify the file format for the target file. The available file formats are: ASCII, Binary, Image, Apple double and MacBinary standard. Menu options are automatically set by Makeasy according to the type of selected object. Makeasy includes a full text editor, which allows uploading and downloading VMS as well as local files. Makeasy is a distributed software based on a Client/Server architecture. Connections can be made either via serial lines or via Ethernet network using AppleTalk or DECnet protocols.

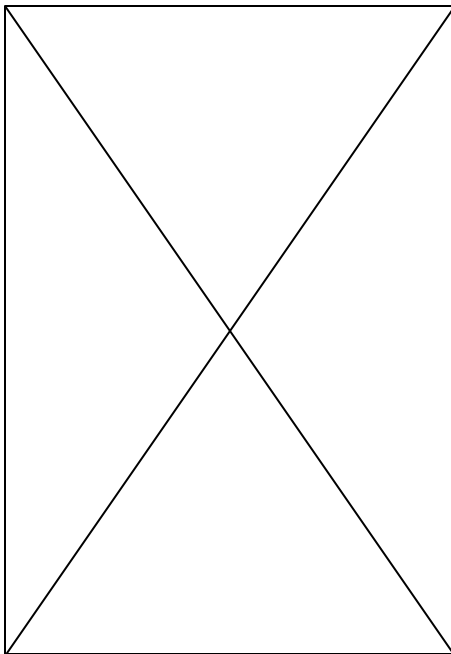
Approximate Cost \$3000 to \$9800

Supplier: Unipress Inc., 2025 Lincoln Hwy., Edison, NJ 08817, 201-985-8000

Terminal Emulation Products

The simplest form of connection between Macintosh personal computers and Digital minicomputers is via terminal emulation, using asynchronous communications. In this solution, the Macintosh computer is connected to the host exactly as a terminal would be. Terminal connections can be made either by directly linking the

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Macintosh computer to the VAX system via RS-232 cabling or via a modem. In many DECnet installations, a DEC server 200 terminal server connected to Ethernet provides up to eight RS-232 serial terminal ports. Each of these connection methods provides the same functionality. Since Macintosh terminal emulators require no special communications software on the host, they can be used with any host system that supports asynchronous terminals, as well as with on-line services.

MacTerminal 3.0

MacTerminal is a terminal emulation and communications application that enables Apple Macintosh personal computer users to communicate with many host computers such as VAX and UNIX systems. With MacTerminal, users can also access electronic bulletin boards and on-line databases such as CompuServe, DIALOG and Dow Jones News/Retrieval. MacTerminal has been completely rewritten based on the Macintosh Communications Toolbox, system software that provides Macintosh applications with standard access to communication capabilities, including data connections, terminal emulation, and file transfer protocols. For more information on the Macintosh Communications Toolbox, refer to the *Network Application Tools* chapter in this Guide.

Through the use of the Macintosh Communications Toolbox, MacTerminal 3.0 provides Digital VT102 or VT320 and TTY terminal emulation, ASCII text and XMODEM file transfer protocols and serial and Apple Modem (Hayes compatible) connections. Additional communication tools such as Digital's Local Area Transport (LAT) protocol and Apple Talk Data Stream Protocol (ADSP) are also available.

Approximate Cost \$125

Supplier: Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014, 408-996-1010

PacerLink Terminal Emulation and Network Connectivity

PacerLink is an advanced terminal emulation and desktop connectivity program that allows Apple Macintosh users to connect to and use many host computers such as DEC VAX, Data General, Stratus, Prime and several UNIX hosts including DEC system/station, Sun, NCR, Interactive, Motorola and Harris systems. PacerLink provides a variety of capabilities such as terminal emulation, file transfer, virtual disk and print services that enables Macintosh users to solve their communication and resource-sharing problems. A server program running on the host carries out PacerLink requests to copy files, access local or remote printers and perform other host functions. The Macintosh computer connects to the hosts via any combination of RS-232 (direct serial line or dial-up through a modem), Ethernet, or Apple LocalTalk cable bridged to Ethernet. PacerLink can make several connections to one host or multiple simultaneous connections to several hosts, each in its own terminal emulation window.

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Multiwindow terminal emulation lets the Macintosh computer replace any of nine terminals, including the VT100 and VT220. It augments the standard terminal capabilities with features that simplify running host programs, integrating the various hosts and microcomputers throughout a network to create a homogeneous environment that users can treat as a network system. A Macintosh computer user, for example, might have a spreadsheet window and an electronic publishing window already open, and decide to interact with a VAX host. This user opens a third window by choosing a host and the communication protocol (AppleTalk, TCP/IP, or RS-232C) to use.

Terminal-emulation sessions can be opened in multiple windows to communicate with several hosts. The user enters data through the keyboard into one selected window at a time, while the host updates the display in every window continually. PacerLink windows can be moved, stacked, sized, scrolled, panned, and zoomed, and data can be moved between windows, using the customary Macintosh techniques. A MiniWindows mode reduces all windows to miniature size. They can then be stacked or tiled on the screen and expanded to full size by clicking the zoom box.

Mouse-activated Soft Keys can be defined to activate host commands. Host parameters can be accepted through Macintosh dialog boxes, allowing casual users to execute mainframe programs. A "markable" option selects a rectangle of information, which can be cut from a word-processing document, for instance, and pasted into a spreadsheet. Special features integrate the Macintosh computer into the ALL-IN-1 and CEO office-automation environments for handling of menus, files, and mail messages. Keys can be mapped to execute repetitive command or keystroke sequences, and any combination of the Shift, Command, Control, and Option augmentations can be used.

File-transfer features move text, binary or MacBinary files to or from hosts by copying single files, or multiple files identified with wildcards. The Macintosh computer can relay files between two different hosts, with optional conversion to compensate for differing storage conventions, and can transfer files even while operating unattended.

Virtual Disk uses host disk space to store Macintosh programs and data, reducing local disk requirements. Besides sharing virtual disk data, microcomputers can be integrated into the host backup procedure. Host users can access virtual disks to read or write the files stored there.

Approximate Cost \$2000 to \$37,500
Supplier: Pacer Software, Inc., 7911 Herschel Ave., Suite 402, La Jolla, CA 92037, 619-454-0565

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PacerGraph Color Graphics Terminal Emulation

PacerGraph software adds VT240 monochrome graphics and VT241 color graphics to the PacerLink terminal emulation choices. With PacerGraph, a VT240 window can display ReGIS or Tektronix 4010/4014 graphics. The graphics window has the capabilities of any standard PacerLink window, including Macintosh drag, scroll, pan, and zoom features and its own set of SoftKeys. PacerGraph windows respond to the standard VT220 escape sequences as well as to the special ReGIS or Tektronix graphics escape sequences. On the Macintosh, PacerGraph provides status icons and editing capabilities that are used to mark a graphics region, print it and copy it to the clipboard. The graphic can then be pasted into a paint, draw or electronic publishing program.

Approximate Cost \$75 to \$150

Supplier: Pacer Software, Inc., 7911 Herschel Ave., Suite 402, La Jolla, CA 92037, 619-454-0565

VersaTerm VersaTerm-PRO

VersaTerm allows Macintosh computers to emulate the Digital VT100 and VT220, Data General D200 text terminals, and Tektronix 4010, 4012, and 4014 graphics terminals. VersaTerm-PRO adds emulation of the Tektronix 4105 terminal and enhanced Tektronix 4014 features. Both VersaTerm and VersaTerm-PRO support screen-driven text-editing capabilities offered by software such as ALL-IN-1 and CEO. Additionally, VersaTerm-PRO allows users to pan across or zoom in on a displayed graphics object, copy all or part of it to the Clipboard, and paste it into other Macintosh applications (such as MacDraw or PageMaker) for subsequent editing or inclusion in desktop-published documents. VersaTerm and VersaTerm-PRO support Apple's Communications Toolbox. VersaTerm-PRO's Tektronix graphics emulation is used in science and engineering applications, with host-based graphics software such as RS/1, 20/20, SAS/GRAPH, DI-3000, Enter/Act, and CASONLINE. VersaTerm-PRO can integrate images created by the host (using tools like Intergraph CAD/CAM software, and MACCS or REACCS for chemical design) into Macintosh documents and presentations. VersaTerm and VersaTerm-PRO support background printing, terminal session and file transfers using MultiFinder. VersaTerm-PRO also offers color hard-copy output to Apple's ImageWriter II printer.

Approximate Cost \$149 to \$295

Supplier: Synergy Software, 2457 Perkiomen Ave., Reading, PA 19606, 215-779-0522

White Pine Terminal Emulation Software

Mac220 is a DEC VT220 terminal emulator with support of large-screen monitors, 132-column mode, function and user-defined keys, DRCS, double-wide and

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double-high characters and blinking. Mac220 includes Kermit, XMODEM and YMODEM file transfer capability. Users can connect to the VAX directly, through a modem, or over a network.

Mac240 is a DEC VT240 terminal emulator, featuring file-transfer capabilities using Kermit, XMODEM and YMODEM protocols. Mac240 supports ReGIS and Sixel graphics, and also emulates Tektronix terminals. Other features include color background, command key equivalents, resizable and multiple windows, scrolling capabilities and review buffers to allow reading or printing of scrolled text.

Mac241 is a color DEC VT241 terminal emulator, featuring file-transfer capabilities using Kermit, XMODEM and YMODEM protocols. Mac241 supports ReGIS and Sixel graphics, and also emulates Tektronix terminals. Other features include command key equivalents, resizable and multiple windows, scrolling capabilities and review buffers to allow reading or printing of scrolled text.

All these products support DECnet and TCP/IP protocols and work with the Macintosh Communications ToolBox.

Approximate Cost \$129 to \$300

Supplier: White Pine Software, Amherst Technology Park, 94 Route 101A, Amherst, NH 03031, 603-886-9050

TGRAF-07/MAC

TGRAF-07/MAC is Tektronix 4107 graphics-terminal emulation software that allows the Macintosh II to connect to a host computer and access mainframe applications. TGRAF is a tool for CAD/CAM, data analysis and representation, mapping, molecular design, and application development. TGRAF-07/MAC is a complete terminal-emulation product that provides graphics and text support by emulating Tektronix 4010, 4014, 4105, 4106, 4107, and 4109 graphic terminals, and Digital VT102, VT100, and VT52 text terminals. It runs under MultiFinder software applications, supports "cut-and-paste" operations, and works with TSSnet by Alisa Systems.

Approximate Cost \$895

Supplier: Grafpoint, 1485 Saratoga Ave., San Jose, CA 95129, 408-446-1919

Reflection2PLUS

Reflection2PLUS provides emulation of Digital's VT320, VT220, VT102, and VT52 terminals while preserving the Macintosh user interface and MultiFinder. Dynamically Redefinable Character Sets, User Defined Keys (UDKs) and double-high double-wide characters are supported. Reflection2 connects the user's Macintosh to VAX computers and other hosts, letting users send files between their Macintosh computers and VAX and/or UNIX/ULTRIX host computers using Reflection's proprietary file transfer protocol, XMODEM, or KERMIT. ASCII, Binary, MacBinary

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and VMS Image file transfer formats are supported. Users can backup an entire hard disk to a single file on the host. Reflection's command language has more than 40 commands, 30 functions, 65 settings, and 800 variables. Dialogs and pull-down menus may be created in script commands. Commands may be executed from pull-down menus, or in script files. Context-sensitive help, complete with "See Also" branching, is provided. Printing support includes font and size selection, as well as the ability to resize wide reports to fit on a page. AlisaTalk, AlisaShare, TSSnet, PacerLink, and PacerTalk are supported as well as direct connections through modem and printer ports.

Approximate Cost \$249
Supplier: Walker Richer & Quinn Inc., 2815 Eastlake Ave. East, Seattle, WA 98102, 206-324-0407

Comm Solutions

Comm Solutions is a network driver package that functions as a companion product to the White Pine VT Series Emulators and eXodus. White Pine Software has licensed Network/Communications software from third-party vendors. Networking software included consists of Runtime TSSnet (Peer-to-peer DECnet communications for eXodus), and MacTCP (TCP/IP for eXodus & VT Series emulators).

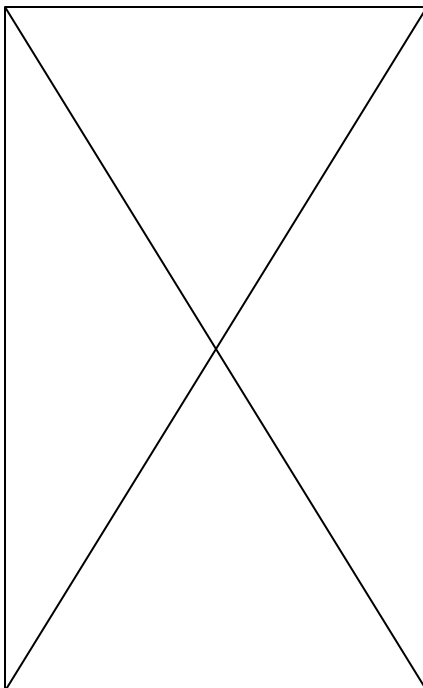
Approximate Cost \$4795 to \$6295
Supplier: White Pine Software, Amherst Technology Park, 94 Route 101A, Amherst, NH 03031, 603-886-9050

VAX Database Access

Data Access Language Server for VAX and VMS

The Data Access Language Server for VAX and VMS is a networking software product that provides Data Access Language access to files and databases on a VAX and VMS host system. Running on the VAX and VMS host, the Data Access Language Server works cooperatively with Macintosh applications that support Data Access Language. The server receives a request from a Macintosh application, carries it out on the VAX, and sends the desired data back to the Macintosh application.

Data Access Language operates under existing host and database-management security and integrity schemes, assuring complete data security with no additional maintenance requirements. Network connections can be established with the Data Access Language Server using either serial lines (directly or via modem) or AppleTalk Data Stream Protocol (requires Apple's AppleTalk for VMS running on the VAX system). Databases supported by the Data Access Language Server for VAX and VMS include Informix, Ingres, Oracle, Rdb/SQL, Sybase and RMS files (requires CDD and Datatrieve). The Data Access Language Server provides standard database



naming, data types, system catalog structure, error codes and buffer management, resulting in a uniform interface for the host databases.

Approximate Cost \$5000

Supplier: APDA (Apple Programmers & Developers Association), Apple Computer, Inc., 20525 Mariani Ave. MS33G, Cupertino, CA 95014, 800-282-2732, 800-637-0029 in Canada, 408-562-3910 Internationally

Helix VMX: Applications for VAX/Macintosh Networks

Helix VMX is a multi-user database application development environment for VAX/Macintosh networks. It allows users to create applications on the Macintosh using a simple visual toolkit, and run them without modification on a Digital VAX system under the VMS operating system. Macintosh computers access these VAX-hosted applications by functioning as intelligent workstations connected to the VAX system.

Helix VMX makes use of its own distributed network architecture. On the Macintosh, a user has access to the Macintosh user interface, including pictorial database records. When the user searches for information, a request is sent to the database server (in this case, the VAX system), which performs the sorting and processing. Network traffic is kept to a minimum, and processing is conducted on the appropriate resource. Helix VMX uses the AppleTalk for VMS protocols, and requires an AppleTalk-to-VAX network connection.

Users of the VT family of terminals can access Helix VMX applications using the Helix VMX VT Terminal Support option. This software provides VT terminal users with a multiple-window, pull-down-menu interface for directly accessing Helix VMX applications.

Approximate Cost \$4500 to \$70,000

Supplier: Odesta Corporation, 4084 Commercial Ave., Northbrook, IL 60062, 800-323-5423

MultiUser Helix

MultiUser Helix allows any Double Helix application to run on an AppleTalk local area network, giving users access to current inventory, pricing, or the status of a job. As soon as an order is entered, a new client is recorded, or a price changes, that information is available to everyone who should have access to it. MultiUser Helix contains its own network software so users don't need to use a file server. In addition, MultiUser Helix incorporates database server technology rather than file server technology. The power and flexibility of Double Helix are incorporated in MultiUser Helix. This includes Double Helix's visual interface, modifiable structure, and ad hoc queries. In addition, MultiUser Helix has multithreaded searching for performance, personalized menus and password protection for customization, and

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data logging for data security. Double Helix/Multi User Helix applications run on Digital Equipment Corporation's line of VAX computers.

Approximate Cost \$495

Supplier: Odesta Corporation, 4084 Commercial Ave., Northbrook, IL 60062, 800-323-5423

SequeLink, Version 2.1

SequeLink 2.1 allows co-operative processing between Macintosh and VAX computers. It enables users to write a Macintosh front-end to a relational database residing on a VAX, using environments such as HyperCard, MSeXcel or 4D, and compiled languages such as C, Pascal or MacAPP. In this way the Macintosh application transparently accesses the relational database on the VAX, off-loading the VAX. This software can be used to write on-line transaction processing applications as well as decision support applications. SequeLink supports Oracle, Ingres, Rdb and Sybase. It requires at least 1 MB of memory on the Macintosh, but 2 MB is recommended if HyperCard is being used. It runs over AppleTalk as well as over DECnet. The SequeLink product family includes other client and server platforms, such as MS-DOS, OS/2, UNIX, AS/400, and MVS.

Approximate Cost \$195 to \$4995

Supplier: TechGnosis, Inc., 621 NW 53rd St., Boca Raton, FL 33487, 407-997-6687

RMS Access: Database Server

Odesta's RMS Access is a database server for information stored in native VAX RMS files. It allows users of Odesta's Double Helix database on the Macintosh to access and build applications directly using data stored in VAX RMS files. Using Double Helix with RMS Access, users can build applications that provide a Macintosh front-end to existing VAX-based data. Double Helix combines a powerful relational database with a non-procedural, icon-based, development environment, allowing rapid applications development by both Macintosh end-users and MIS professionals, either from scratch or as incremental additions to existing MIS systems.

The distributed-database architecture of the Double Helix/RMS Access combination allows a user to combine data from any number of RMS files, even files located on different VAX computers in a network. In addition, local (Macintosh-resident) tables can be used to incorporate either personal information or special data types (such as graphics) into the applications. Double Helix treats each RMS file as a table of data, adding relational capabilities to RMS files. In addition, RMS Access supports the VAX and VMS Common Data Dictionary, all RMS data types and indices, and VMS access controls. Double Helix/RMS Access utilizes the AppleTalk for VMS product. It is compatible with bridged LocalTalk/Ethernet, PhoneNET/Ethernet,

EtherTalk, and combinations of these network configurations. The RMS Access package includes the VAX-based server and a single copy of Double Helix for application development and use.

Approximate Cost from \$4900
Supplier: Odesta Corporation, 4084 Commercial Ave., Northbrook, IL 60062, 800-323-5423

SQL/Services for Macintosh

Digital's SQL/Services software extends the power and capacity of Digital's database server environment to the desktop by incorporating existing and emerging industry-standard interfaces into Digital's relational database platform. SQL/Services software lets remote desktop applications access VAX Rdb/VMS relational databases. The SQL/Services API for Macintosh access is consistent with the SQL/Services callable API offered by Digital on other platforms. Applications developed using SQL/Services can also retrieve information from certain IBM-based databases, such as DB2, accessible through Digital's VIDA (VAX-IBM Data Access) interoperability software products. Applications can use the data accessed from an IBM mainframe as they would use data accessed from an Rdb/VMS database.

Approximate Cost Contact supplier
Supplier: Digital Equipment Corporation and authorized Digital dealers. Contact your local DEC sales office.

Sybase API for Macintosh

Sybase is a relational database management system for on-line applications and decision support. With Sybase's client/server architecture, client-user interface functions are separated from server data management and transaction functions. The client-server interface facilitates the management of multi-vendor computing environments.

Approximate Cost From \$3000
Supplier: Sybase, 6475 Christie Ave., Emeryville, CA 94608, 800-8SYBASE

Applications in the Macintosh/VAX Environment

Odesta Document Management Systems

Odesta Document Management Systems (ODMS) is a family of workflow and document-management applications for Macintosh/VAX multi-user networks. ODMS lets team leaders see and manage what people are doing, while at the same time providing advanced document management capabilities. ODMS gives a bird's eye view of the status of all work being done on the network—*who's doing what, when it's due, whether it's finished, and soon.* At the same time, ODMS applications let anyone on the network find and use any type of document.

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Work done with word processors, spreadsheets, graphics, and pagelayout programs—any type or size document—can be copied from an individual workstation, along with user-defined keywords and comments, to a VAX server. Other identifying information about the document is automatically entered. Document management functions include access control and security, version control and revision tracking, and a project/task organizational structure. Automatic exception reporting, work assignments, and work audit trails are also provided.

ODMS includes built-in networking software; no file server is required. This networking technology maintains the associative links between documents, offering more flexibility and organizational power than simple file servers provide. However, at sites that already have file servers, ODMS applications may be run on the same Macintosh computer as Apple's AppleShare file server. ODMS is compatible with most VAX-based file servers, and can incorporate DOS/PC documents using Digital's VMS Services for MS-DOS. ODMS is available as a suite of customized industry solutions for applications such as newspaper production, engineering/technical documentation, and large-scale proposal and legal document management systems.

Approximate Cost from \$20,000

Supplier: Odesta Corporation, 4084 Commercial Ave., Northbrook, IL 60062, 800-323-5423

Central System Manager (CSM), Version 2.1

Central System Manager allows the management of networked VAX computers from a Macintosh using a standard point-and-click interface. All features and command functions are user-definable. CSM allows the system administrator to treat groups of VAX computers as a single management domain without knowledge of DCL. Grouping can be by node, cluster or user-determined configuration. Sixteen windows or dialogs of VAX information can be opened and updated simultaneously. Items can be shrunk to an icon for future reference of system and network status. Alarms can be set to notify operations of system conditions. Color and custom icons can be created. CSM users may customize menus, windows, dialogs and command sets. Command and window definitions can be shared with other users or combined with private or group definitions. CSM allows users to select processes, batch jobs, network lines and other user-defined items with a click of the mouse. If one or more items have been highlighted, commands can be performed on this set of items with a single click.

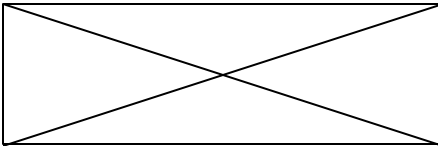
Approximate Cost \$750

Supplier: Integrated Solutions, Inc., 1020 Eighth Ave., King of Prussia, PA 19406, 215-337-2282

ALL-IN-1 DESKtop for Macintosh

ALL-IN-1 DESKtop for Macintosh integrates the Macintosh users into the ALL-IN-1 Integrated Office System server through a graphic user interface. It supports remote capabilities including file transfer and electronic mail for locally creating, reading, and processing mail on the PC, and then connecting with the ALL-IN-1 Integrated Office System server to exchange mail with other members of the workgroup. ALL-IN-1 DESKtop for Macintosh provides terminal emulation services, for accessing VMS-based applications and supports local filing of documents and data with the DESKtop for Macintosh file cabinet.

Approximate Cost Contact supplier
Supplier: Digital Equipment Corporation and Authorized Digital Distributors. Contact your local DEC sales office.

**Electronic Messaging Solutions****AlisaMail**

AlisaMail is a VAX-based electronic mail system for VAX and VMS, Macintosh and PC users. AlisaMail consists of a VAX-based server for Microsoft Mail V2.0, a VMS mail server and an SQL-based engine called the Information Switch. The Information Switch provides message and directory services for the AlisaMail servers and administration facilities, including accounting and reporting for tracking delivery delays and message traffic loads. Messages and attachments are stored in the relational database; only one copy is needed for multiple recipients. AlisaMail's Microsoft Mail server is compatible with Microsoft Mail V2.0 and provides services needed for store-and-forward message delivery and automatic directory updates in cooperation with other mail servers on the AppleTalk network. AlisaMail's VMS mail server provides message exchange with Digital mail services, permitting message exchange between users of VMSmail, ALL-IN-1, IBMPROFS, X.400 and others.

Approximate Cost \$10,000 to \$17,500
Supplier: Alisa Systems, Inc., 221 E. Walnut St., Suite 175, Pasadena, CA 91101, 818-792-9474

MailMate

The MailMate family of products provide gateways to DECnet mail users for existing Macintosh-based electronic mail packages. MailMate gateways are available for CE Software's QuickMail and Microsoft Corp.'s Microsoft Mail V2.0. The MailMate gateways provide two-way exchange of text messages with Digital Equipment Corporation's DECnet mail (also known as VMSmail), making mail exchange possible between QuickMail or Microsoft Mail and Digital's ALL-IN-1 system, IBMPROFS, X.400 and other services supported by MAILbus, when used with Digital's Message Router/MAILbus services and the MRGATE gateway.

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MailMate products support use of automatic address prefix and suffix for groups of users, restricting access to gateway services, logging of all gateway activity for the mail manager, use of pre-defined forms and templates for users, and on-off addressing. MailMate products work with existing mail packages. MailMate licenses are available for 1 to 10 users, 1 to 30 users, 1 to 100 users and Unlimited users. MailMate uses Alisa's DECnet package for the Macintosh, making the Macintosh a true DECnet node capable of receiving and sending DECnet mail. DECnet access may be via Ethernet, LocalTalk (and the Kinetics FastPath IV), or asynchronous (DDCMP) connection.

Approximate Cost \$450 to \$4950

Supplier: Alisa Systems, Inc., 221 E. Walnut St., Suite 175, Pasadena, CA 91101, 818-792-9474

MaxNotes

MaxNotes provides a Macintosh-based interface to Digital Equipment Corporation's VAXNotes electronic conferencing system. It uses Alisa's Macintosh DECnet package or a special AppleTalk for VMS package to connect to remote VAXNotes conferencing servers. DECnet access may be via Ethernet, LocalTalk (and the Kinetics FastPath IV), or asynchronous (DDCMP) connection.

MaxNotes makes use of the Macintosh graphic point-and-click interface, eliminating the need for commands and function keys. Most of the features of the VAX and VMS terminal-based front-end for VAXNotes are supported by MaxNotes. MaxNotes also supports a multiwindow interface that allows browsing of several topics at once, each with its own "threading" context; and cutting/pasting from one window into a topic or reply note in another window. A "paste quotation" feature makes it possible to include quotations from other notes complete with ">>" marks and a template citation header.

MaxNotes also provides tools for conference moderators, including a single dialog that handles the membership roster, member privileges and node assignments, a dialog to add, delete or rename keywords and read-only topic and conference controls.

Approximate Cost \$295

Supplier: Alisa Systems, Inc., 221 E. Walnut St., Suite 175, Pasadena, CA 91101, 818-792-9474

PacerPost: Microsoft Mail 2.0 compatible server and gateways for VAX and VMS

PacerPost is a 100% compatible Microsoft Mail server that runs on a VAX under VMS. It functions like Microsoft's Macintosh-based mail server and supports the standard Microsoft Mail 2.0 clients for the Apple Macintosh and IBM PC. A VAX TTY client is also provided, enabling direct interaction with Microsoft Mail from a

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terminal. In addition, PacerPost provides VAX and VMS resident gateways to VAX-based mail systems. These gateways are also compatible with the Microsoft Mail server and gateway architecture. PacerPost mail servers and gateways are designed to function in conjunction with other Microsoft Mail 2.0 servers and gateways to provide enterprise-wide electronic mail capability.

The PacerPost mail server gives sites access to the entire range of VAX models and processing power, allowing for a larger number of mail clients and flexibility in designing a mail network. A site can select the appropriate processor size based on mail user population, message volume and application load.

Approximate Cost \$1000 to \$8000
Supplier: Pacer Software, Inc., 7911 Herschel Ave., Suite 402, La Jolla, CA 92037, 619-454-0565

Network Solutions in the VAX/ULTRIX Environments

The ULTRIX-32 Operating System is a UNIX operating system for Digital's VAX family of hardware. The current version is compatible with both System V and the University of California at Berkeley Software Distribution (BSD). The ULTRIX-32 Operating System is also compatible with the IEEE 1003.1 real use standard for a Portable Operating System Environment (POSIX).

These ULTRIX systems are interactive, demand-paged, virtual-memory, time-sharing operating systems. They incorporate a high-performance file system, compatible device and interprocess I/O, asynchronous processes, disk quotas, job quotas, and a user-selectable system command language. Specific capabilities provided by these systems include tools and commands for UNIX time-sharing user interfaces, program development, documentation preparation, and communications and networking. DECnet-ULTRIX offers the flexibility to design networks that take advantage of multiple operating systems: VMS, RSX, DOS, TOPS-20, and ULTRIX. With the addition of the DECnet-Internet gateway, the resources of DECnet networks are also extended to users of non-Digital operating systems using the TCP/IP networking protocols.

The DECnet-ULTRIX software includes a semi-transparent, bidirectional gateway that bridges DECnet networks and Internet (TCP/IP) networks. DECnet-ULTRIX offers task-to-task communications, network virtual terminal capabilities, remote file transfer, mail facilities, coexistence with the Internet protocols (TCP/IP-based), network-wide resource sharing, and management as defined by the DNA architecture.

See the *UNIX and TCP/IP* chapter in this Guide for product descriptions.

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