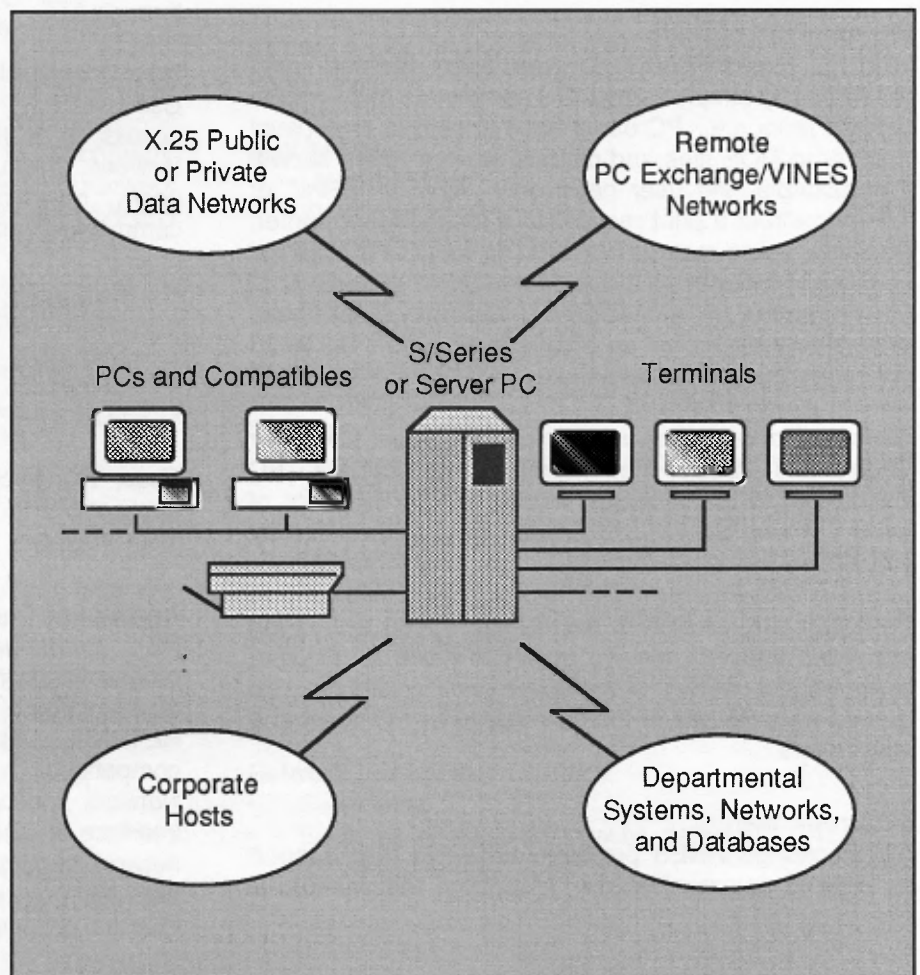


## PC Exchange™/VINES\*

- **Comprehensive networking software for IBM PCs and PC compatibles, and UNIX\*-based Workgroup Servers™ and 386 Server PC™s**
- **Provides easy-to-use menu-driven interface to services**
- **Provides file and print sharing, electronic mail, network-wide naming, network management, access to multiple networks**
- **Supports access to UNIX applications**
- **Supports access to mainframe applications**
- **Media independent**
- **Provides network security, backup/recovery, and administration facilities**
- **Provides support for NETBIOS and Socket interface for custom applications**

Convergent® PC Exchange™/VINES\* is a comprehensive software product that allows DOS personal computers to interconnect with Convergent's UNIX-based Workgroup Servers and Server PCs. A PC Exchange/VINES user maintains all current DOS functionality and gains new options for improved productivity within and across workgroups. Based on Banyan Systems' Virtual Networking System (VINES) software, PC users access and share files, printers, and mail services, and have access to UNIX applications or other host resources. These UNIX services are delivered to the user in a familiar DOS environment.

With PC Exchange/VINES, DOS users are no longer constrained by the limits of personal computer networks. Network growth is easy and manageable. A user can begin with a small network of personal computers and an entry level server, and add more PCs as well as more powerful Workgroup Servers transparently and without changing applications. Communications are accessible across a variety of protocols and media such as SNA, TCP/IP, Ethernet, and X.25.



## A FAMILY OF NETWORKING SERVICES

The goal of PC/Exchange/VINES is to provide a convenient, easy-to-use means of resource and information sharing for personal computers. To fulfill this goal, the software provides four major capabilities:

- User services
- Distributed naming
- Network expansion
- Network administration

PC Exchange/VINES services are implemented as modular packages to provide maximum flexibility for users to tailor services to workgroup needs.

### USER SERVICES: ESSENTIAL FOR WORKGROUP PRODUCTIVITY

PC Exchange/VINES user services include:

- File and print sharing
- Electronic mail
- Asynchronous terminal service
- Mainframe host communications support
- Application development support

#### File and Print Sharing

With PC Exchange/VINES, users share file and print resources by simply using DOS commands to select the desired resource. PC users have access in their usual manner to DOS files and printers located at the server. For example, the user need only specify "PRN:" or "LPT" to direct a print request to a shared laser printer. Similarly, users may gain access to local or shared file volumes by specifying a designated drive, such as A: or G:. For each user, shared file volumes may be assigned drive designations for an easy search path. Up to 26 volumes can be assigned per user.

Users can access files by directory on a User, Group, or Organization basis. For multi-user applications, PC Exchange/VINES provides record locking features of DOS 3.X and pre-DOS 3.X schemes implemented by Novell and 3COM.

Print files are spooled to the Server. Once a print job has been spooled, the PC user can move on to other tasks without waiting for the actual printing to occur. Up to 8 printers per server may be shared by PC users and UNIX users.

#### Electronic Mail

PC Exchange/VINES provides extensive mail support to expand communications throughout the workgroup

or enterprise. Users can send and receive mail, attach documents, send to distribution lists, confirm deliveries, and store and archive mail.

PC Exchange/VINES' Street Talk\* naming scheme is used by the mail facility for simple addressing without regard to the network path. Mail is forwarded, stored, and is available when a user signs on.

#### Asynchronous Terminal Service

The server-based Asynchronous Terminal Service (ATS) provides a cost effective way for PCs to gain access to other computers as well as to utilize UNIX applications on the server. ATS eliminates the need for each PC to have a dedicated modem and communications line.

With ATS, PC users can expand applications support through access to hundreds of UNIX-based packages including databases, accounting packages, and fourth generation languages.

PC Exchange/VINES supports Digital VT52, Digital VT100, IBM 3101, and TTY terminal emulation. Up to 20 physically connected asynchronous terminal sessions, or a combination of virtual and physical connects (to a maximum of 32) can be established through ATS.

#### Host Communications Support

Using ATS with PC Exchange/VINES, PC users have access to a full range of IBM host communication facilities. Through a suitably configured server, PC users may gain access to the following host communications:

- BSC 3270
- BSC 2780/3780
- SNA 3270
- SNA RJE
- LU 6.2 APPC

Thus, PC Exchange/VINES users can expand work applications to include access to IBM CICS, IMS, and TSO programs.

#### Application Development Support

PC Exchange/VINES is designed to support programmatic interfaces and tools to allow development of networked applications. Standard DOS 3.X and NETBIOS interfaces are supported. NETBIOS compatibility makes available the rich suite of PC Network applications written for NETBIOS. A socket interface is also provided for users to develop special network applications. These tools facilitate exchange of data and program-to-program communications between PCs and S/Series servers and Server PCs.

## DISTRIBUTED NAMING FOR EASE OF NETWORK USE

Ease of network use and administration is provided by "StreetTalk." StreetTalk allows users to refer to other users, resources, and services by name rather than by specific network location. For example, a user need not know the disk and machine network address to access a file. The user simply refers to the shared file service name: for example, "Legal Files". Names for users and shared resources are set up with three parts: user or resource, group, and organization. StreetTalk provides the essential name-to-address conversion necessary to accomplish transparent internetworking among users and shared services.

Users choose names and passwords, while shared-resource names are assigned by the network administrators. If users forget names, PC Exchange/VINES allows them to browse and search lists for desired names.

Street talk is a truly distributed name service. Network names are broadcast to and updated on all servers connected in a network. This global database of names allows quick searches for locating resources.

## NETWORK EXPANSION: ESSENTIAL TO ENTERPRISE-WIDE COMMUNICATIONS

As organizations grow and change, information sharing among workgroups, departments, and remote locations becomes vital to increased productivity. PC Exchange/VINES supports a variety of local and wide area network links to allow network expansion. PC Exchange/VINES will support the following networking capabilities.

- Gateway to X.25 public or private data networks
- Dial-up communication
- Connections using Ethernet, Convergent RS-422, or Telecluster™
- Use of TCP/IP for multivendor networking

## NETWORK ADMINISTRATION

A comprehensive set of network administration tools are supported by PC Exchange/VINES to assist administrators in managing the network.

- Security: Each shared directory on the server has a list of authorized users. Access can be limited to Read only, Modify (Read/Write), Control (R/W, Change), and Null (no access).
- Backup and recovery: Full or selective backup and restore facilities are available through the server.

- Network Traffic Monitor: Communications link usage, data traffic statistics, and error rates are gathered and reported for network administrators.
- Server Monitor: Displays resource usage for each network server to optimize load between multiple servers.
- Time/Date: Time and date information is available to all PCs connected through PC Exchange/VINES. Network servers maintain synchronization over time zones.

## PC EXCHANGE/VINES OPTIONS

### Basic VINES Service

One basic VINES service per server is required.

- Menu interface
- Login service and user administration
- StreetTalk
- File sharing
- Print sharing
- Semaphore and NETBIOS  
(Requires selection of one LAN option Emulation Service)

The following options can be installed on one or more servers depending upon desired configuration and performance:

### Mail Service

- Menu interface
- Attachments
- Distribution lists
- Certified delivery
- Filing and archiving

### Asynchronous Service

- Terminal emulation for TTY, VT-52, VT-100, IBM 3101
- Access to UNIX applications and server-based communications (TCP/IP, X.25, X.25 PAD)
- Terminal access to host communications (BSC or SNA 3270 emulation, 2780/3780 emulation, SNA RJE emulation, LU 6.2 APPC)

### Multiple Server Network

- Transparent access (route and location independent) to desired network services

### Network Management Service

- Service log
- Summary statistics on services, data traffic, and hardware interface operation.

## LAN OPTIONS

### First Release

- Standard or Thin Ethernet

### Subsequent Releases

- RS-232 Cabling (Including Modem Control)
- Convergent RS-422; Telecluster (Twisted Pair)

## BASIC CONFIGURATION REQUIREMENTS

### PC

#### Software:

- DOS 2.0 (or greater) operating system
- PC Exchange/VINES Software

#### Hardware:

- 320 KB Memory
- 5-1/4-inch Diskette Drive
- Ethernet card
  - Interlan (NI5010)
  - 3Com (3C501)
  - Ungermann-Bass (2271A, 2272A, 2273A, 2274A)
- Standard or Thin Ethernet cables and transceiver (if using thicknet or standard cable)
- RS-232 cable, modem, telephone line (when using Asynchronous Services Option)

### S/Series Server

#### Software:

- CTIX 5.11 (or greater) operating system
- PC Exchange/VINES Software
- Optional PC Exchange/VINES Services as needed
- Appropriate LAN Software

#### Hardware:

- S/Series Workgroup Server with a minimum of 3 MB RAM, 50 MB disk
- VME cage, Ethernet expansion board (CB-510 or EC-500), Ethernet (standard or thin) cables and transceiver
- RS-232 cable, modem, and telephone line as required with Asynchronous Services Option

### Server PC

#### Software:

- CTIX/386 1.0 (or greater) operating system (System V Release 3)
- PC Exchange/VINES Software
- Optional PC Exchange/VINES Services as needed

#### Hardware:

- Server PC with a minimum of 4 MB RAM, 80 MB disk
- Ethernet Card, standard or thin Ethernet cables, and transceiver
- RS-232 cable, modem, and telephone line as required with Asynchronous Services Option

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