

**ViaNet<sup>(R)</sup>**

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**Network Administrator's Guide**

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January 1987

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## PREFACE

This Administrator's Reference provides information for planning, installing, and maintaining the ViaNet local area networking software system.

The network administrator is responsible for defining the physical and logical network, implementing that design, monitoring its effectiveness, and dealing with problems as they arise. To accomplish this requires a good grasp of both the DOS (version 2.0 or later) operating system and the ViaNet software system. It is also necessary to have a clear understanding of what the network is to do. The DOS Reference Manual plus the *ViaNet General Information Manual* and *ViaNet Intermediate User's Guide* are prerequisites to this manual.

The network set up today is the same network that must be managed tomorrow. Careful planning and a firm grasp of the software tools are essential.

RELATED  
DOCUMENTA-  
TION

In addition to the ViaNet Manuals listed below, it is important to have a DOS reference manual. A complete understanding of DOS functions and commands is assumed throughout this manual. If there is any question about what is meant by a given term, refer to the glossary in this manual first, and then refer to the DOS Reference Manual.

*ViaNet General Information Manual*

An overview of ViaNet hardware, software and implementation.

*ViaNet Intermediate User's Guide*

Suitable for experienced microcomputer users. Describes network operations and commands.

*ViaNet Application Design Reference*

Describes network functions needed by programmers to fully utilize the capabilities of the network.

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## Section 1

# INTRODUCTION

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### ViaNet INTRODUC- TION

ViaNet is a distributed local area network software system designed to run on hardware that is capable of interconnecting personal computers. The network hardware interface is through a cabled adapter board inserted in each PC's expansion slot.

A node is any device that can put information onto or take information from the network. The typical node in a ViaNet network is a personal computer system. ViaNet is an ordinary MS-DOS application program in standard .EXE file format. When ViaNet is loaded, all system calls pass through the network software.

ViaNet allows sharing of three types of resources; data, programs, and devices. Sharing devices allows all users selective access to peripherals attached throughout the network. Data and program sharing allows users access to commonly used files and application programs.

All files and devices are accessed across the network in the same way they are accessed locally. The directory structure of the operating system is extended to include other

nodes and associated devices, just as if they were locally attached.

**THE NETWORK  
ADMINISTRATOR**

The network administrator is the "network manager." The responsibilities and unique abilities of the network administrator involve all aspects of effectively managing the network.

**RESPONSIBILITIES**

The network administrator's responsibilities go well beyond network planning and installation. Once the network is up and running, the network administrator must ensure that all data and program files are backed up in a timely fashion, that those same files are distributed and protected properly, and that the network continues to run smoothly.

The network administrator is responsible for both the quality and efficiency of the network. This ongoing responsibility requires the network administrator to monitor the network performance and be aware of any changes or degradation in performance. A good understanding of the concepts used to plan the network is required to understand possible performance problems.

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In addition, as the user most familiar with the network, the network administrator is a primary resource for other users with questions about ViaNet.

### UNIQUE SUPER USER ABILITIES

The Super User (SU) access ID is the only user with the power to create and delete users or change another user's password. The super user is also the only user who may change protection for any file, regardless of who owns it. And finally, the super user is the only user who may enable or disable a node to hold user password information or the code to boot a diskless PC.

### VIANET CONCEPTS AND FUNCTIONS

The network administrator is responsible for key organizational and structural decisions in the ViaNet implementation. These decisions are based on an understanding of how ViaNet functions and what the key parts of ViaNet are. The decision process is described in Section 2, Network Planning. This overview is presented to allow free thinking on the issues without the necessity of considering the specific installation.

Key ViaNet functions are as follows:

o System Management

ViaNet coordinates file systems and network devices for efficient sharing of resources.

- Data and Program Sharing
- Device Sharing
- Network Transparency
- Network Data Base

o Resource Protection and File Security

In addition to an installation's physical security, ViaNet protects files and devices in the network against unauthorized access.

- Physical Security
- Device Protection
- File Protection

These functions create a networking environment that is efficient, secure, and easily customized to meet specific requirements.



## Section 1 Introduction

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**SYSTEM MANAGEMENT** Using the network concept of a virtual drive Z, all files and devices are accessed across the network in the same way they are accessed locally.

### Data and Program Sharing

Data and programs are accessible by any authorized user on the network. For example, a hard disk at one node may be used by other nodes as if it were locally attached. Users may access, create, and store files on this disk the same as on a local disk. Users can also load and execute programs from this disk.

A program may access data files throughout the network for both reading and writing. This access depends on the specific network protection for a given file. With ViaNet's default file locking, most programs run on the network without changes. This default prevents more than one person from simultaneously opening the same file. However, because it is sometimes desirable to allow simultaneous access to a file, ViaNet also allows files to be marked as sharable.

**NOTE:** It is very important to remember that the ability to use

## Section 1 Introduction

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programs across the network does not free the user from compliance with contractual and legal restrictions regarding the use of licensed software products.

Network data sharing allows rapid access to information without time-consuming copying from one disk to another. Since local copies of data files or programs are no longer necessary, the problem of numerous outdated or 'down level' copies is greatly reduced.

### Device Sharing

It is possible to access remote devices as well as remote files. A device is any peripheral attached to a PC, e.g., a printer, a plotter, a modem, etc. Accessing a device is essentially the same as accessing a file. MS-DOS supports low level read and write commands to devices by name. In order to access a remote device, it is referred to by a combination of pathname and device name.

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### Network Transparency

The network administrator is responsible for making the network transparent to the users. To fully exploit resource availability across the network, files and devices must be easy to locate. The three keys to transparency are:

- o Logical use of disk subdirectories
- o Use of the DOS PATH command and DOS batch files
- o Liberal use of aliases (using MACASGN)

### Subdirectories

ViaNet uses the DOS file directory structure to access a device that is not locally attached. Refer to Section 2 in the *ViaNet Intermediate User's Guide* for a complete discussion of the DOS directory structure.

ViaNet appears as an extension of this structure, treating each personal computer and its associated devices as subdirectories of the network. ViaNet accomplishes this by making the network a file system referred to as virtual Drive Z.

A logical use of subdirectories at the disk level is a natural continuation of

## Section 1 Introduction

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this structure. The network administrator must determine how program and data files will be distributed on the network. Distribution includes the organization of subdirectories for each node.

For example, all program product files may be stored as files in a directory named PRODUCTS. This PRODUCTS directory may reside on a hard disk at any node that will always be available to the network. There may be program product files for MULTIPLAN<sup>(tm)</sup>, WORDSTAR<sup>(R)</sup>, PMATE<sup>(tm)</sup>, etc. in the PRODUCTS directory. This use of subdirectories simplifies program product organization and facilitates the use of aliases (using the ViaNet MACASGN command) in batch files.

Files used by only one user may be contained in a directory named for the user. The network administrator should begin thinking in terms of network level organization for data and program files. The better this organization, the easier it is for the network administrator to customize the network.

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### DOS Path Command and Batch Files

The DOS PATH command specifies an extended search path. This extended search path makes non-local commands and batch files available to the user as if the files existed in the current directory of the current drive at all times. If a command or batch file is not found in the current directory, each directory defined in the DOS PATH command is searched in sequence for the specified command or batch file until a match is found. Since the command or batch file is executed as soon as it is found, the search order is important.

DOS batch files should be used as often as possible. These batch files allow the network administrator to tailor the system for less sophisticated users. A user need not be aware that a batch file is being used. The name of a batch file may be the same name used to invoke a program in a standalone environment. Batch files may all reside in the same directory. Using the PATH command at all nodes to point to this directory makes all the batch files available to all users and allows the network administrator to control maintenance of batch files.

### Macasgn

The ViaNet MACASGN command allows the use of aliases for complex

path and file specifications. This command is particularly useful within DOS batch files. A program product may require overlays or other files not local to the PC being used. Since there is a limit of twenty (20) MACASGNs per node at any given time, product specific MACASGNs should be included in the batch file used to invoke the product. These MACASGNs should be deleted using a batch file when the user is finished with a particular product.

Network  
Data Base

ViaNet is a distributed network and does not need a dedicated master or server node. However, certain functions do require a network-wide data base. For example, to implement password protection, there must be a list of user names and passwords. ViaNet provides this information through the use of broadcast calls.

To check a username against a password, a node broadcasts a request for the information onto the network. The requesting node does not need to know where the information is kept, but there must be some node capable of providing the information.

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Any node may be enabled to maintain different types of network data. At least one node on the network must be enabled to perform each required network function.

The network does not rely on any one node for its operation. If more than one node is enabled for a given function, the first node capable of responding does so along with a time stamp for the information. Duplication of nodes enabled to perform various network functions means any node may be unavailable without affecting the availability of the entire network.

### Resource Protection and File Security

Since DOS 2.0 does not provide file protection facilities, the network software stores protection information in the directory entry for each file and subdirectory.

This network file protection is supplied as a tool for use by each installation. The use of this tool does not guarantee data security, nor is any such guarantee implied. It is the individual responsibility of each network installation to provide data security and protection. ViaNet provides some tools to make this job a bit easier.

File protection may be set on a file. The types of settings include the owner-defined read and write protection of the file. The owner of the file is the user who created it. The group is a logical subdivision of the network, such as a department or other organizational unit.

ViaNet also allows the user to specify which of his locally attached devices are available to the network.

### Physical Security

As with any security system, the most important element is restricting physical access to the system. Although each user requires a password to logon to the network, physical access is the first requirement for access, and anyone may use the network from any PC on the network.

Users who do not logon are treated as LOCAL USERS and only have access to files available to everyone in the network. A file created by a LOCAL USER receives the default file protection of the node it is created on. These LOCAL files belong to group number -1 and user number -1. Any user on the system has access to LOCAL files.



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**Device Protection**      Devices, such as disk drives and printers, must be defined in a node's configuration file to be accessible to other nodes in the network.

This is convenient for reserving devices as local only. For example, disk drives containing sensitive information may be excluded from the configuration file, thereby excluding other nodes from access.

Other devices, such as a letter quality printer, may be made available to the entire network by identifying them in the configuration file of the node to which they are attached.

**File Protection**      This facility allows a user to restrict access to sensitive information. The network is able to quickly determine which users can access files and directories and to what extent access is allowed. The three layers of protection are:

1. Individual Users
2. User Groups
3. All Users

## Section 1 Introduction

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A file is owned by the user who created it. If a file is created at a node when no user is logged on at that node, it is a LOCAL file. LOCAL files are accessible to everyone on the network. All files in existence before ViaNet is brought up are owned by the super user (SU). LOCAL and SU files may be 'claimed' by other users. Once a file is 'claimed' or owned by a specific user, only the super user and the owner may change the file's ownership or protection.

In a larger network, this facility allows an organization to restrict confidential information to only those departments that require access, and to specify whether this access is for updating the information or merely viewing it. An example is a network where the accounting department can view the sales department's projections but cannot change them.

In addition to the file protection, there are two types of 'sharable' file attributes. These are read-only (RO) and read/write (RW). A sharable file may be opened by more than one program or user at a time. However, just because a file is marked sharable does not mean everyone on the network has access to it. The file

## Section 1 Introduction

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protection determines who may access the file. Sharability permits any user who is allowed access to share the file concurrently with other users who are allowed access.

### Network Files

Network software programs and network data files are contained in the directory NETSYS. This directory must reside on each node.

When the network software is loaded, the drive containing the NETSYS directory is recorded internally and the system uses it to access network software programs and data bases.

Files in the NETSYS directory are described in detail in Section 3.

### Administrator Commands

The network administrator uses some additional commands not discussed in the *ViaNet Intermediate User's Guide*. Also, some of the user commands have special meanings and options only available to the SU ID. These are the DIAGNOST, DOWNINST, ERRSTATS, MAKEUSER and PASSHOLD commands, the CHOWN parameter of PROTECT, and the /Sd switch of VIANET. These additional commands and options are fully documented in Section 4 of this manual.

**OVERVIEW OF  
THIS MANUAL**

Network planning is discussed in Section 2. After the network is carefully planned, it is installed using the installation procedures discussed in Section 3. The general ViaNet commands are described in the *ViaNet Intermediate User's Guide* and the network administrator commands are described in Section 4 of this manual. Appendix A and Appendix B provide samples of a typical network installation in a small office. Appendix C contains tips on using program products across the network. Appendix D contains some Network Management Considerations. Appendix E provides an alternative method for installing a diskette-based node that is not covered in Section 3.

**NOTE:** This manual should be thoroughly reviewed before beginning an actual installation.

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## Section 2

# NETWORK PLANNING

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### THE WELL PLANNED NETWORK

Good planning can be the difference between a great network and one that is only adequate. A well planned network:

- o Is virtually transparent to its users
- o Reflects true organizational usage and structure
- o Maximizes hardware and software performance
- o Provides efficient access and security protection
- o Is easy to manage, modify, and expand

There are three obvious components to any network:

1. Users
2. Hardware
3. Files (Software and Data)

The less obvious, but very important, concept of customization (i.e., creating node specific paths and

## Section 2 Network Planning

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batch files to make the network transparent) may be considered as a fourth network component.

Network planning is presented in seven steps. Worksheets are provided in the PLANFORM directory on the distribution diskette for use in the planning process. Modify these worksheets to fit the specific needs of your installation. The following table lists the steps and worksheet file names.

## Section 2 Network Planning

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| Step # | Step Name  | Worksheet File Name                          |
|--------|--|--|
| 1      | Inventory the Users  | userinv.frm                                  |
| 2      | Organize the Users   | userorg.frm                                  |
| 3      | Inventory the Hardware   | hardinv.frm                                  |
| 4      | Organize the Hardware  | hardorg.frm                                  |
| 5      | Inventory the Software & Data Files<br>- Hard Disk Files<br>- Floppy Disk Files  | fileinv.frm<br>flpyinv.frm                   |
| 6      | Organize the Software & Data Files   | fileorg.frm                                  |
| 7      | Customization --<br>Directory Locations<br>- Batch & Macro Files<br>- Node Level | custnet1.frm<br>custnet2.frm<br>custnode.frm |

## Section 2 Network Planning

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Each PC should be identified by the ViaNet node number and recorded on the worksheets. This number is must be obtained when the hardware is installed. If the node number is not available (i.e., the hardware has not been installed) when planning begins, choose some other means of identification for the PCs in the network. Appendix A includes examples of the worksheets as used in the sample network.

Depending on the complexity of the proposed network, it may be helpful to break up the planning yet further. Perform the first two steps, inventory and organize the users, as indicated. Next, perform steps three through seven for one user group at a time. This will make the task more manageable. Repeat steps three through seven until all users, hardware, and software/data files have been considered.

If the network is large, it may be wise to install a small group at a time. This will facilitate user training and proper organization.

It may be necessary to have the hardware installed all at once in order to minimize installation costs.



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Even so, it is not necessary to enable all the nodes on the network at once. Plan the installation to proceed at a comfortable pace.

### SYSTEM REQUIRE- MENTS

DOS 2.0 or higher is required to run ViaNet since ViaNet relies on the directory structure implemented in release 2.0. While ViaNet will run properly with DOS 2.0, it is recommended that DOS 2.1 or higher be used.

ViaNet requires 128K of memory to run. To execute other applications on the node while ViaNet is running requires a minimum of 256K. This minimum should allow most small and medium applications to run. Larger applications (requiring 128K or more) will not run on this minimum of 256K. It is recommended that each node on the network have 320K of memory or more.

### STEP 1: INVENTORY THE USERS

Users are more than consumers of network resources. The user organization is an important part of the network security scheme. The User Inventory Worksheet is in the form of a list of all potential network users and includes the following information for each user:

- a) Name
- b) Department
- c) Function
- d) Nodes Used
- e) Comments

In order to plan meaningful user groups, the department and function of the user is included in this inventory.

What kind of access do users have? Do they have exclusive use of a PC? If not, which PCs do they use? It is important to know who uses each PC, since the customization of a network is based on the users.

The sophistication of the user may be noted for future reference. The less knowledge a user has, the more transparent the network must be. The responsibility for backup at a node depends on who the users are. If the users are capable, backup should be their responsibility. However, the network administrator is ultimately responsible for the integrity of the network, and that

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includes a reasonable and timely backup scheme.

### STEP 2: ORGANIZE THE USERS

The ViaNet protection scheme relies on three subsets of the user community. Refer to the PROTECT command in Section 4 for a complete description of network protection. The individual user is a subset of a user group and each user group is a subset of the whole user community. Based on the information gathered in step 1, use the User Organization worksheet to organize the users. The worksheet spaces for user and group numbers are left blank for now. They should be filled in when they are determined.

- a) Assign each user a User Name (include the user number when it is known)
- b) Assign logical Group Names (include the group number when it is known)
- c) Assign each user to the appropriate group
- d) Determine the preferred protection for each user
- e) Include any other comments

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Users should be assigned to logical groups. These groups are based on departments, group function, or some other recognized unit. Since file access may be granted or denied at the group level, groups should be carefully chosen.

The group name should reflect the group function. For example, the marketing department may choose to use `MARKETING` as the group name.

User names should be logical and easy to remember. Some possible user naming schemes are based on: first or last names or initials, employee number, or combination department name and number.

User and Group numbers may be assigned by the super user using the `MAKEUSER` command.

Once the network is installed, each user may create files and directories in directories to which they are permitted access. These files and directories receive a default protection associated with the user currently logged on at the node.

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### STEP 3: INVENTORY THE HARDWARE

Personal computers on the network are physically linked through a cable and hardware interface card. Each of these PCs is a *node* in the network. In some cases, stand alone devices may also be physical nodes. Since these stand alone devices are hardware dependent, only nodes that are actually PCs are discussed in this planning section. Consult the hardware vendor supplied installation instructions for any stand alone devices.

The Hardware Inventory worksheet is in the form of a list of all PCs and devices potentially available to the network. The list includes the following information for each PC:

- a) Manufacturer and Model
- b) Location
- c) Primary User(s)
- d) Attached Drives and Devices
- e) Comments

Each PC's manufacturer and model, location, primary user(s), and associated devices are listed in the hardware inventory. This information is needed for both hardware and

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software network planning. Proper software distribution (relative to the available hardware) is a key to a well functioning network. For example, a PC that will not *always* be on the network (such as a portable), is not a good candidate to hold programs shared with other nodes on the network.

Users are usually located nearest the equipment they use most frequently. A secretary may have a letter quality printer available. The financial analyst may use a dot matrix printer, but would use the letter quality printer for final copies if it were readily available to the network. Be sure to include all primary users for each piece of hardware, not only those with local access to the device.

Some equipment may not be reliable enough for network wide use. Depending on the device, cost of replacement, and current use, some equipment may be more useful as a local device. This inventory may be used as an opportunity to check the maintenance level of all computer related equipment. Use the 'COMMENTS' column to keep track of this type of information on the form.

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### Network Planning

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If there is equipment on order, include it in the inventory. New equipment should be planned into the network now. The date the equipment is expected should be included as a comment on the hardware inventory form.

This inventory represents the hardware potentially available to the network. This is the basis for the physical network structure.

#### STEP 4: ORGANIZE THE HARDWARE

Based on the information gathered in step 3, use the Hardware Organization worksheet to organize the hardware.

- a) Determine which drives and devices are to be made available to the network
- b) Assign meaningful node names
- c) Determine the default protection for each node
- d) Determine which node(s) will hold ViaNet Software (commands, passhold, and download information)
- e) Include any other comments,

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such as a change in physical location of the equipment

Choosing locations for computers and devices is based on the location of the users, as well as any physical limitations of the network hardware. A good rule of thumb is to choose a physical location by usage. The primary user of a PC or device should have the easiest access to it.

Decisions on the hardware locations are often minor, as the equipment is already in place, and only the network is being installed. Nevertheless, this may be a good time to evaluate the current setup based on past usage.

### NETWORK DEVICES

Once the hardware location is fixed, determine which devices are to be made available to the network through the network configuration file. Devices not defined to the network are not available to other nodes.

Personal computers on the network have local devices such as disk drives, printers, and plotters. Any device defined to the network is accessible from other nodes. There is file level protection available for



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program and data files on disk drives. Even if a disk drive is defined to the network, it is possible to prevent access to specific files. Refer to the PROTECT command in Section 4 for more information.

Even with file protection, there may be extremely sensitive information to be completely excluded from network access. Such information should be on a drive that is not defined to the network. This does not guarantee the security of the data. Data is only as secure as the physical access to the disk drive it resides on.

### NODES

Choose a descriptive node name for each PC or device that is a node. This name may reflect the location, primary user, primary function or other logical naming convention. The node name defaults to NODE $n$  if not specified (where  $n$  is the ViaNet address of the node). The network physical id is hardware dependent and should be noted when the hardware is actually installed.

Default  
Protection

The default protection for a node is often based on the needs of the primary user. This protection may be set for any number of users of a single node.

ViaNet  
SOFTWARE

At least one node with the ViaNet commands (files in the VIANET directory) and user password information must be available to the network at all times. Remember that all other nodes must include the location of these commands in their individual DOS PATH commands.

Commands

The ViaNet commands should reside on a hard disk. Refer to the installation instructions for creating the subdirectory for the commands. Depending on the size of the network, it may be advisable to choose two or more nodes to hold the commands. This is a fairly simple addition to any node, and may be done after the network is up and running. Performance may be improved by spreading the commands around. Using PATH, various nodes can be directed to look for ViaNet commands in different locations.

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**Passholders**            Nodes holding the user name/password file are called passholders. It is recommended that a minimum of two nodes be enabled as passholders. This redundancy is necessary to ensure that at least one passholder is available at all times. Password files should always reside on nodes which will always be on the network.

**NOTE:** The recommended ratio of passholders to nodes is 1 to 5, one passholder for every five nodes. However, it is strongly recommended that there always be at least two passholders even if there are less than ten nodes on the network.

**Downloaders**            Nodes holding the software needed to boot diskless PCs are called downloaders. This software is only required if the network has one or more diskless PCs. Refer to the DOWNINST command for more information.

The ViaNet program and network driver software must be resident at every node; this is explained in the installation section of this manual.

**STEP 5:  
INVENTORY  
SOFTWARE  
AND  
DATA FILES**

The software and data file inventory is a comprehensive list of all software products and commonly used data files. Part of the network administrator's responsibility is to distribute the software products and data files in a logical and operationally convenient fashion.

Once the network is installed, it may not be necessary to have multiple copies of all software. However, using software on a network does not change legal and contractual restrictions on the use of program software. Check the licensing agreements in force before making any copyrighted or licensed software available to the network.

There are two worksheets for this step. The first is the Software and Date File Inventory for Hard Disk. This is a 'map' of the current hard disk(s) directory structures and related files. Since accessing a file on hard disk is faster than accessing the same file on a floppy, the hard disks will become the central file storage for the network. Because of this, it is necessary to have a complete listing of the contents of each hard disk available to the network.

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The second worksheet is the Software and Data File Inventory for Floppy Disk Files. This worksheet is for files currently on floppy disk. This inventory should only deal with files that are to be made available to the network. This inventory will be used to distribute files on the hard disks available to the network. Files that are to remain on floppies need not be included.

Both worksheets require similar information including:

- a) File name
- b) Version (if applicable)
- c) Location (Node, Drive, Directory or Floppy ID)
- d) Primary User
- e) Comments

The inventory should include all versions of each product and any special requirements. Some files created using one version of a product are not handled properly by another version. Also, when different types of PCs are in a network, it may be necessary to have different versions of application programs

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installed. For example, LOTUS<sup>(tm)</sup> 1-2-3<sup>(tm)</sup> requires different drivers for COMPAQ<sup>(R)</sup>, IBM<sup>(R)</sup> with monochrome display, IBM<sup>(R)</sup> with color display, and IBM<sup>(R)</sup> with Hercules<sup>(tm)</sup> Graphics card. Some packages require the system disk to be in a specific drive (such as disk drive A). ViaNet does not change these requirements. These special requirements should be noted as comments in the inventory.

The location of each data file or program is noted for later use. A great deal of potential network software may currently reside on floppy disks. Include the information needed to locate each specific file.

To ensure proper software distribution, it is necessary to determine the primary user of each piece of software. Users may want new or different software. It is possible that the software has already been purchased for a different group. This software inventory is an opportunity to review the software needs of different groups.

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### STEP 6: ORGANIZE SOFTWARE AND DATA FILES

The single most important step in planning is organizing the software and data files. The network is built on the DOS 2.0 hierarchical file system. Review the *ViaNet Intermediate User's Guide* description of these concepts if necessary. Based on the information gathered in step 5, use the Software and Data File Organization worksheet to determine how to distribute the software and data files.

As explained before, the hard disks are the main file storage for the network. The worksheet provides space for two levels of directories. The space titled DIRECTORY is meant to hold directories that reside on the ROOT of the specified drive. The space titled SUBDIRECTORY is for the next level. If it is necessary to nest directories deeper, simply place the directory name in the space for directory and mark it as a subdirectory of another directory.

The following information is required for each directory as well as each file.

- a) Determine the network location for each file (Node, Drive, Directory). Include a reference to the old (current) location so

the file may be found easily when moving it to its network location.

- b) Determine the owner for each network file.
- c) Determine the protection and sharability status for each file.

DIRECTORY  
STRUCTURE  
FOR  
NETWORK  
DISKS

The organization of software and data files on an individual hard disk is the key to making ViaNet user friendly and easy to customize. Extensive use of the subdirectory structure is encouraged. Use of subdirectories allows construction of logical paths to shared files. The Network Administrator should carefully consider the current directory structure for each disk available to the network.

By logically grouping files on a disk, it is possible to have nothing but subdirectories and required files on the root directory. This eliminates clutter and significantly improves performance when searching for files. Files are grouped by use. For example, consider placing all application programs in a subdirectory named PROGRAMS.



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Other directory names may reflect the type of data files. For example WORDSTAR<sup>(R)</sup> files may all be in a directory called WSFILES. WSFILES would in turn contain directories identifying user or department WORDSTAR<sup>(R)</sup> files.

Files that are not shared by other users could be kept in 'private' subdirectories. Each user might have a subdirectory named after them for these non-shared files.

The names of these subdirectories should be logical and easy to remember. Use meaningful subdirectory names for shared files. For example, if the accounting department has several people using accounts payable and several using accounts receivable, consider using subdirectory names PAYABLES and RECVBLES.

Establish network file and directory naming conventions and follow them at all nodes. This makes the network friendlier, more transparent, and improves DOS performance in general. If necessary, reorganize the directory structure of the hard disks to conform to any conventions chosen.

Since most files will now reside on the hard disks, be sure to list new

directories to hold files that currently exist on floppy disk. These new directory names should also conform to the conventions established for network directories.

SOFTWARE  
AND DATA  
FILE  
LOCATION

Determine where each application program, data base, or other often used file resides. These files should be available to the network whenever the network is up. Files should reside on the hard disk of the primary user if possible. However, if the primary user of a widely used file has a portable PC, and is not always on the network, the shared program should reside at some other node. Nodes that will not always be on the network are bad candidates for any shared files.

The consolidation of programs and data files at a few centralized locations (as feasible) enhances program product maintenance and data file integrity. Although users need not know specific software and data locations, a comprehensive listing of the locations for all software and data files must be maintained. The network administrator cannot be expected to remember the location of every piece of software and/or data. By having a

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few established locations, less time is spent 'finding' files.

If there is any machine dependent software (refer to the LOTUS<sup>(tm)</sup> 1-2-3<sup>(tm)</sup> example in the software inventory section), it should be resident at the proper machine. In addition, all machines requiring non-local machine dependent software should have a DOS batch file or PATH set up to point to the proper version.

The same is true of any other duplicate software. The node used by the primary user of a specific version is the logical node to hold that version.

For all files, note the old location as well as the network location. This is necessary in order to find the files when the actual software and file redistribution takes place, as well as to create the proper batch files for each user or node.

Review the Program Product Considerations outlined in Appendix C. This information should be helpful for customizing program products.

FILE  
OWNERSHIP,  
PROTECTION,  
AND  
SHARABILITY

All pre-network files belong to the super user and are read/write accessible to all nodes and users on the network. Existing programs and data should be protected once the network is installed. Refer to the description of the PROTECT command in Section 4 for information on the method of file protection.

File Ownership  
and Protection

It may not be desirable to have all pre-network files accessible to the entire network. Determine ownership and protection as necessary, based on the users and groups defined above. Often there are too many files for the network administrator to deal with alone. Users should be encouraged to 'claim' their own directories and files using the CHOWN parameter of PROTECT once the network is installed.

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### Read Only (RO) Sharable Files

Some shared files are never updated, so there is no need for any user to have write access. Determine those files to be marked RO sharable. Software program overlay files are particularly good candidates for this designation. It is not possible to write to a file designated RO. Only the file owner or the network administrator may remove the RO designation.

### Read/Write (RW) Sharable Files

Files that many users may need to update concurrently should be marked read/write sharable. If this option is used, the application program must provide its own update synchronization. Care must be taken to prevent problems when users are writing to these files. It is conceivable that two users could try to update the same record at the same time. Unless the application program writing to the file implements record level locking, the results of simultaneous updating are unpredictable. Determine the files (if any) to be shared read/write.

STEP 7:  
CUSTOMIZA-  
TION

Customizing the network is the key to transparency. There are two levels of customization, the network and the individual node. There are three worksheets used in this step. Two for the Network level (Customization-Network Transparency Directory Locations and Customization-Network Transparency-Batch and Macro Files) and one for the node level (Customization-Node Level). Be sure to have enough of the node level forms. Each node on the network needs to be included in the customization planning forms.

1. Network Transparency - Provide the means for network transparency.
  - a) Determine the network location (Node(s), Drive, Directory) for the DOS commands, DOS batch files, MACASGN input files, and ViaNet command files.
  - b) Determine which batch files and related MACASGN files are required.
2. Node Level - Customize the network for each node based

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on the needs of the primary user(s) for each node.

- a) Node Search Path
- b) Local Batch Files
- c) Related Macasgn Files
- d) Input for MACASGN.SYS

There are three primary tools used in customization: the DOS PATH command, DOS BATCH files, and the ViaNet MACASGN command. To properly plan, a good understanding of these functions is necessary.

DOS PATH  
COMMAND

The DOS PATH command specifies an extended search path. This path tells the system which directories to search for commands and batch files entered at the PC. DOS always checks the current default drive and directory for any command or batch file before using the extended search path. This extended search path is meaningless for locating files other than command files (.exe or .com) and batch files (files whose filename extension is .bat). Paths to other files which do not reside in the current directory of the current drive must be defined using MACASGN. Careful construction of the search path ensures the availability of all the command and batch files that a user may need.

Determine the path from each node to each subdirectory needed in normal operation. This includes the subdirectories for ViaNet commands, DOS commands, and frequently used program products. These paths become the extended search path specified for each node. Refer to the DOS Reference Manual for more information on using the PATH command.



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#### DOS BATCH FILES

DOS batch files can be used to easily solve transparency problems. (e.g., the problem of two users requiring different default protection). Of course, each user may explicitly specify the protection for any file, but this reduces the desired transparency. Refer to Appendix A (Step 5) for a sample solution to this problem.

Use batch files to access remote devices, data files and program products. If the batch files and MACASGNs provide an adequate user interface to desired programs, data, and devices, the user does not need to know where a file is or how to locate it. All that is needed is the name of the batch file to access the desired network file.

Consider users who need to do some word processing, but are not regular users of the word processing software. As a result, the software resides at another node. A properly constructed batch file will change the current directory and issue the proper command to load the program. All the users need to know is the name of the batch file to invoke the word processing software. By creating a batch file having the same name as that of the word processing program,

the users may enter the word processing program precisely as they did before the network was installed.

The DOS batch files may be different for each node. Determine which files should be created and where they should reside. It is not necessary for each node to have a complete set of system batch files, only that they have access to them. Subdirectories containing network batch files should be created and included in the extended search path for each node. Refer to the DOS Reference Manual for more information on creating DOS batch files, and to Appendix C for specific examples.

ViaNet  
MACASGN  
COMMAND

The MACASGN facility significantly enhances network transparency. Liberal use of this facility is encouraged. MACASGN may be used to redirect output to printers, create 'virtual disks,' and to define file locations. Refer to the section on the MACASGN command in the *ViaNet Intermediate User's Guide*.

When using MACASGN to create virtual disks, it is a good idea to set up network conventions for drive designations. For example, use the letter P for the virtual disk contain-

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ing all program products available on the network. A user would only need to reference the drive designated as P to gain access to the program products.

There are two ways to use MACASGN inside a DOS batch file (including VIANET.BAT). The first is to explicitly include each MACASGN needed. While this appears to be straight forward, it is slow because each MACASGN command requires a search for the ViaNet command file and execution of MACASGN. The other method involves using the MACASGN @ feature of the command. This feature allows use of a file for input to the command, with each record (line) of the file as one set of arguments for MACASGN. The second method is recommended for both speed and convenience. When MACASGN @ is used, a path and/or file name may be specified as a parameter. This method also allows for the use of a single set of MACASGNs throughout the network.

A logical location for these files is in a MACROS subdirectory. Each program batch file points to the proper macro file for that program. Since only twenty (20) MACASGNs may be in effect at a given time for

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any node, it is important to remove the MACASGNs when they are no longer needed. This should also be done within the batch file that assigns them.

The MACASGN @ option without parameters may be used in the VIANET.BAT file. This causes ViaNet to use the file MACASGN.SYS in the NETSYS directory of the current drive as input to MACASGN when the network software is loaded. This file should only contain MACASGNs which should always be in effect for this node.

MACASGN may also be used as an alias for commonly used batch files that reside at other nodes. This can be particularly useful for novice users who use more than one PC. If these users require special batch files for access or other functions, MACASGN can make any differences between the nodes disappear. For example, a user uses nodes PC3 and PC5. Rather than include access to a single batch file at PC3 in the extended search path, MACASGN may be used to point to the access file for that user on PC5. Because of the limit of twenty (20) current MACASGNs per node, this method should only be used if necessary.

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### NETWORK TRANS- PARENCY

The network allows access to non-local directories as if they were local. Careful planning is necessary to fully utilize this feature.

### DOS Commands

DOS commands are generally useful, but are not always available online to a PC without a hard disk. The user of a PC without a hard disk must usually decide which DOS commands are frequently used and store the remaining commands on a floppy disk to be used only when needed.

Using the DOS PATH command to specify a non-local DOS directory allows all users access to the DOS commands on a hard disk. Choose a node (or nodes) with a hard disk to hold the DOS commands for the network. Use a logical name (such as DOS) for the directory to hold these commands. Include the location for the DOS commands on the worksheet.

### Batch and Macasgn Files

The use of BATCH files to execute program products and application programs across the network helps make the network virtually transparent to most users. Choose logical names for the directories that will hold these files.

**WARNING:** Compliance with contractual and legal restrictions regarding the use of licensed software is required when using a local area network.

Determine what BATCH files are needed and where they will reside on the network. Appendix C contains examples of BATCH files for several program products. Use these examples to determine the necessary MACASGN files.

The network location for both the BATCH and MACASGN files is included on the Batch and Macro Files worksheet. Space is provided to list all of the needed BATCH files. Use the comments section of this list to include any restrictions (or requirements) on the BATCH files.

**NODE LEVEL  
CUSTOMIZA-  
TION**

The Node Address refers to a unique node number. The Node name and default protection are taken from the Hardware Organization sheet. Consolidation of files on the Customization-Node Level worksheet makes the customization easier during the installation.

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The search path to be defined with the DOS PATH command should include a path to a DOS directory, BATCH directory, and VIANET command directory. Try to distribute the paths to each of the above directories if there is more than one network location for each. The path may also include other often used directories or files such as a PRODUCTS directory. The path for each node is included on the Customization-Node Level worksheet under 'Node Search Path'.

Some program products that use overlays will require a different batch file for the node that holds the overlay files than for non-local network use.

In general, local batch files should respond to the node they are created for. The directory holding these files need not reside at the node they are intended for. However, since the DOS extended search path uses the first occurrence of any batch file or command it finds, remember to include the path to any local batch files before the path to other batch files.

If the users of a node have special requirements, it may be necessary to

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create individual batch files for that node only. The same may be true for MACASGNs. For instance, if a user is the only person using a down-level version of a particular program, there will need to be a batch file to access the down level version.



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### NETWORK PLANNING SUMMARY

| PLANNING<br>STEP             | ADMINISTRATOR<br>ACTIONS   |
|------------------------------|--|
| 1.<br>Inventory<br>the Users | Create a list of all potential network users. The list includes the following information for each user:<br><br>a) Name<br>b) Department<br>c) Function<br>d) PC Used<br>e) Comments   |
| 2.<br>Organize<br>the Users  | Based on the information gathered in step 1, organize the users.<br><br>a) Assign each user a User Name. Include the user number when it is known.<br>b) Assign logical Group Names. Include the group number when it is known.<br>c) Assign each user to the appropriate group.<br>d) Determine the preferred protection for each user.<br>e) Include any other comments. |

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| PLANNING<br>STEP                             | ADMINISTRATOR<br>ACTIONS  |
|--|---|
| <p>3.<br/>Inventory<br/>the<br/>Hardware</p> | <p>List the following information for each PC to be a node on the network.</p> <ul style="list-style-type: none"> <li>a)       Manufacturer and Model</li> <li>b)       Location</li> <li>c)       Primary User(s)</li> <li>d)       Attached Drives and Devices</li> <li>e)       Comments</li> </ul>  |
| <p>4.<br/>Organize<br/>the<br/>Hardware</p>  | <p>Based on the information gathered in step 3, organize the hardware.</p> <ul style="list-style-type: none"> <li>a)       Determine which drives and devices are to be made available to the network.</li> <li>b)       Assign meaningful node names.</li> <li>c)       Determine the default protection for each node.</li> <li>d)       Determine which node(s) will hold ViaNet Software (commands, passhold, and download information).</li> </ul> |

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| PLANNING STEP                           | ADMINISTRATOR ACTIONS   |
|---|---|
| 4.<br>(continued)                       | e) Include any comments, such as a change in physical location of the equipment.  |
| 5.<br>Inventory Software and Data Files | Include the following information for each software product or data file to be available on the network:<br><br>a) File name<br>b) Version (if applicable)<br>c) Location (Node, Drive, Directory or Floppy ID)<br>d) Primary User<br>e) Comments |

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| PLANNING<br>STEP                                | ADMINISTRATOR<br>ACTIONS   |
|---|--|
| 6.<br>Organize<br>Software<br>and Data<br>Files | <p>Based on the information gathered in step 5, organize the software and data files.</p> <ul style="list-style-type: none"><li>a) Determine the network location for each file (Node, Drive, Directory). Include a reference to the old (current) location so the file may be found easily when moving it to its network location.</li><li>b) Determine the owner for each network file.</li><li>c) Determine the protection and sharability status for each file.</li><li>d) Include any comments.</li></ul> |

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| PLANNING STEP           | ADMINISTRATOR ACTIONS  |
|-------------------------|--|
| <p>7.<br/>Customize</p> | <p><u>Network Transparency</u><br/>Provide the means for network transparency.</p> <p>a) Determine the network location (Node(s), Drive, Directory) for the DOS commands, DOS batch files, and MACASGN input files.</p> <p>b) Determine which batch files and related MACASGN files are required.</p> <p><u>Node Level</u><br/>Customize the network for each node based on the needs of the primary user(s) of each node.</p> <p>a) Node Search Path<br/>b) Local Batch Files<br/>c) Related MACASGN files<br/>d) Input for MACASGN.SYS</p> |



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## Section 3

# INSTALLING VIANET

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### INSTALLING THE SOFTWARE

There are two methods for installing the ViaNet software. You may install it automatically using the VINSTALL program, or you may install ViaNet manually, creating the necessary directories and copying the proper files into those directories. Following is an explanation of each procedure.

### VINSTALL

VINSTALL is an automatic installation utility for the ViaNet local area network software.

**NOTE:** It is assumed that all hardware is properly installed and connected.

To start VINSTALL you must place the ViaNet Distribution Disk 1 in a floppy disk drive, make that drive the default drive, and change directories to the \VINSTALL directory. The following directions explain how to do this.

Place the ViaNet Distribution Disk 1 in the A drive of your computer.

Type: a: <enter>

## Section 3 Installing ViaNet

---

This establishes the A drive as the current drive. Now do the following:

*Type:* `cd \vinstall <enter>`

This changes the directory to VINSTALL. Now do the following:

*Type:* `vinstall <enter>`

This will start the automatic installation program and you will be asked whether you want the software installed on a floppy disk or a hard disk. The following instructions will be displayed once the automatic installation feature starts:

Western Digital Corporation  
2445 McCabe, Irvine, California 92714

This VINSTALL utility will automatically install your ViaNet distribution software to the drive of your choice.

FLOPPY DISK installation -- You will need two 360K formatted disks, only the first disk must have the system (/S) on it. (It is your bootable disk.) Format the floppy disks now if you have not already done so, then at the prompt, type the following and press <enter>:

*FLOPPY X: Y: TYPE*



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HARD DISK or 1.2 M FLOPPY installation -- You will need a formatted hard disk system or a formatted 1.2 M floppy disk with the system (/S) on it. (It is your bootable disk.) Format the disk now if you have not already done so, then at the prompt, type the following and press <enter>:

*HARDDISK X: Y: TYPE*

X: is the drive containing the ViaNet distribution disk.

Y: is the drive to which you wish to install the ViaNet software.

TYPE is the type of computer in which the software will be used. Select the type from the following list:

| <u>TYPE</u> | <u>COMPUTER</u>              |
|-------------|------------------------------|
| PC          | IBM PC, XT, &<br>Compatibles |
| AT          | IBM AT &<br>Compatibles      |
| OTHER       | Other Systems                |

After you have entered the drive type, either FLOPPY or HARDDISK,

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---

the actual drive letter of the drive containing the ViaNet Distribution Disk, X.; the actual drive letter of the drive on which the software will be installed, Y.; the computer type, TYPE, and pressed <enter>, the Vinstall program will begin. You will be asked to confirm your selection and to make sure that the ViaNet Distribution Disk 1 is in the proper drive. Then, follow the directions displayed on your screen. As the program progresses, the necessary directories will be made and the proper files will be copied. The next prompt the program will give you is to replace the ViaNet Distribution Disk 1 with Distribution Disk 2. When you have done this, pressing any key will tell the program to continue. The last prompt will tell you that the installation process is complete and that you may re-boot the computer, type "VIANET" and press <enter> to bring the computer up as a network node.

### MANUAL INSTALLA- TION

Installing ViaNet manually is defined in six easy steps. Follow these steps and the network should be up in very little time.

1. Install the hardware

## Section 3 Installing ViaNet

---

2. Prepare for software installation
3. Install ViaNet software (hard disk or diskette)
4. Create user names and group names
5. Distribute Files Across the Network
6. Test the Network

Each step is explained in detail in the following sections. Command entries are in lower case characters and bold type. Instructions are included for every step, and a detailed sample installation is supplied in Appendix A.

A DOS switch is indicated by the slash (/). Some computers use other characters, such as a dash (-), to indicate a DOS switch. The appropriate character should be substituted if necessary.

A "distribution diskette" containing the ViaNet software is supplied with each hardware card. The ViaNet software on each distribution diskette is coded with a serial number.

It is not possible to load the same copy of the software on more than one node.

Before the actual installation, it is useful to understand the contents of each of the directories and files on the distribution diskette.

ViaNet  
DISTRIBUTION  
DISKETTE

The ViaNet distribution diskette contains all the software needed to implement ViaNet at that node. The distribution diskette contains the following directories and files:

o NETSYS

The directory for the following network system files:

- ACCESS.SYS

Contains user names and passwords for the network

- DOWNLOAD.SYS

Is optional and contains the software to be sent to a diskless node requesting network booting

- NETCNF.SYS

## Section 3 Installing ViaNet

---

Contains initialization, performance, and configuration information for the node

- VIANET.EXE

Is the network software program

- *aaaa*DRVR.EXE

This file is hardware specific and contains the executable program that loads the message driver for the hardware

o VIANET

The directory containing the network commands software

o NETPRINT

The directory containing commands software for printing

o NETDRVR.SYS

A DOS device driver used to redirect requests for drive Z to ViaNet software. It also makes all remaining uninstalled drives

available for use by MACASGN.

o VIANET.BAT

The DOS batch file to bring up ViaNet

o CONFIG.SYS

A DOS configuration data file required by ViaNet

o AUTOEXEC.BAT

A DOS batch file that may be used to automatically load DOS and ViaNet commands when the computer is first booted.

o READ\_ME.DOC

A file containing current software and hardware information not currently available in printed documentation.

o PLANFORM

The directory containing the sample worksheets used in network planning

## Section 3 Installing ViaNet

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### Netsys Directory

This directory and its associated files must be located at each node in the network, and must be accessible when the network is brought up. If the node is a passholder or downloader, this directory must be accessible whenever the network is running. While NETSYS does not have to be on the boot disk for a node, it should reside on the same disk as the DOS Command Processor (COMMAND.COM) for the node.

### Access.sys

This optional file contains user names and passwords for all users of the network and is required for any node enabled as a passholder.

### Download.sys

This optional file contains the software sent to a node (diskless PC) that requests network booting. It is required for any node enabled as a downloader.

### Netcnf.sys

Contains network initialization information that is specific to each node during installation step 3. If NETCNF.SYS is not present, ViaNet uses internal default values. This file contains a semicolon in front of the parameters. A semicolon indicates that the line is a comment. The

### Section 3 Installing ViaNet

---

semicolon must be removed, and for some parameters a name or number supplied after the equal sign, for ViaNet to use the parameter.

Following is an example of the NETCNF.SYS provided on the distribution diskette:

```
drive = a
drive = b      (remove if no B drive)
;drive = c    (remove ; if you want
              C drive on the
              network)
;drive = d    (remove ; if you want
              D drive on the
              network)
;drive = e    (remove ; if you want
              E drive on the
              network)
;drive = f    (remove ; if you want
              F drive on the
              network)
;device = prn (1. If the printer is
              controlled by ViaSpool
              at this node or if the
              printer is not to be
              available to network
              users, do not change.
              2. If the printer is not
              controlled by Viaspool
              and must be available
              to other network
              nodes, remove ;.

device = con
```



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---

```
;downld = xxxx
;nodexx = filename
devtime = 130
reqrt = 3
reprt = 2
tort = 2
timeout = 700
throwout = 1500
maxnode = 64
files = 99
```

(Must be less than or equal to that specified for files in CONFIG.SYS. For either DOS 2.X or DOS 3.X, the minimum value is 60. The maximum value for DOS 2.X is 99, and the maximum value for DOS 3.X is 255. The larger the number, the more Random Access Memory is used by ViaNet.)

```
locks = 40
```

(The minimum value is 10 and the maximum value is 255. As the number increases after 40, performance may slightly decrease.)

```
;name =
```

(remove ; and put desired 8-character alphanumeric unique node name after the equal sign)

This file consists of one parameter per line. Each parameter must start in column one. This file may also contain parameters unique to a particular network interface card. Refer to the local area network (LAN) hardware installation manual for more information. Comments may be included in this file by placing a semicolon (;) in column one of the record. Anything not recognized as a parameter is treated as a comment. The NETCNF.SYS provided on the distribution diskette is a sample and does not contain all of the possible parameters. The parameters allowed in NETCNF.SYS are:

**DRIVE**      Identifies a disk drive to the network. If a drive is not defined with this parameter, it is not available to any remote nodes.

SYNTAX: drive = x

**DEVICE**      Identifies non-disk devices to the network, e.g., printer, plotter, modem, etc.

SYNTAX: device = xxxx

### Section 3 Installing ViaNet

---

**DOWNLD** Allows you to specify the size of the code to be downloaded to a diskless PC. DOWNLD should be set to the hexadecimal size of the code to be sent from this node to a diskless PC. If you do not have diskless PCs on your network, disregard this parameter, and leave it as a comment.

SYNTAX: `downld = xxxx`

**NODExx** A file on a specified node that serves as the NETCNF.SYS for a diskless PC.

SYNTAX: `nodexx = filename`

**DEVTIME** Defines the number of tries before timing out when waiting for a reply on a write to a print device.

SYNTAX: `devtime = xxx`

The default is 130.

The default values supplied for the following five timing parameters should not be changed until the

network performance has been carefully observed.

REQRT Specifies the number of times the node should try to send information another node on the network is requesting.

SYNTAX: reqrt = *n*

The default is 3.

REPRT Specifies the number of times the node should try to send information when answering another node on the network.

SYNTAX: reprt = *n*

The default is 2.

TORT Specifies the number of times the node should retry to communicate with another node when there is no reply from the other node.

SYNTAX: tort = *n*

The default is 2.

### Section 3 Installing ViaNet

---

- TIME-OUT** Specifies how long your node will wait (in hundredths of a second) for a reply from another node on the network.
- SYNTAX:** timeout = *n*
- The default is 700.
- THROW-OUT** Specifies how long your node will wait (in hundredths of a second) before discarding a message that it does not understand.
- SYNTAX:** throwout = *n*
- The default is 1500.
- MAX-NODE** Specifies the maximum number of nodes recognized by ViaNet. The maximum allowed is 250.
- SYNTAX:** maxnode = *xxx*
- The default is 64.
- FILES** Defines the number of DOS handles available at a node. The larger the number, the more Random

Access Memory is used by ViaNet.

SYNTAX: files = xxx

The default is 99.

**LOCKS** Defines the maximum number of locks that may be active on files at the node. As the number increases after 40, performance may slightly decrease.

SYNTAX: locks = xxx

The final parameter in NETCNF.SYS is for the logical node name. The logical name may be up to eight characters long. Other restrictions on naming are the same as those imposed by MS-DOS for file names. In addition, a nodename may not be assigned as NODEnn (where nn is two hexadecimal digits).

**NAME** Specifies the logical node name that identifies the node on the network. If NAME is not specified, the node is identified as NODEnn where nn is a ViaNet node address.

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---

SYNTAX: name = *nodename*

**Vianet.exe** This file contains the network program software and must be available to each node whenever the network is loaded on that node. It must also be available whenever the ViaNet commands PASSHOLD or DOWNINST are used to change the passholder or downloader status for that node. The distribution diskette is shipped with both passholder and downloader enabled. These should be disabled for non-passholder and/or non-downloader nodes to conserve memory. Refer to the commands PASSHOLD and DOWNINST in Section 4 for more information.

**aaaaDrvr.exe** This file is a loadable message driver, which must be loaded prior to loading the network program. This message driver is completely hardware specific and is invoked by a command of the following form from VIANET.BAT:

```
aaaaDRVR parm1 parm2 parm3
```

Where:

```
parm1 = xxx  
parm2 = x  
parm3 = xxxx
```

(*a* represents an allowable alphanumeric character)

(*x* represents a hexadecimal digit)

**Note:** The number of parameters and how they are used varies with the drivers used. Please refer to Appendix F for information on the specific message driver supplied.

Before selecting parameters other than the defaults, be sure there are no conflicting selections in use by other options installed in the PC. Consult the technical documentation for the specific hardware card in use for parameter selection information. Refer to the Hardware Specific Information section of the READ\_ME.DOC file on the distribution diskette for any parameter information for the specific hardware being used.



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### ViaNet Directory

The VIANET directory contains the ViaNet commands. These commands must be resident on at least one network node at all times. The location of these commands is included in the extended search path (DOS PATH command) at all nodes on the network. If there is not a node on the network holding the ViaNet commands, then any attempt to use a ViaNet command results in a 'bad command or file name' message.

### Netdrv.sys

This is the network device driver. Each node must have this driver in the root directory on the DOS boot disk. If this is not properly installed, the network may appear to work, but no access to the Z drive or MACASGN to *Z:\path\filename* will be allowed.

### ViaNet.bat

This DOS batch file, which is customized during installation step 3, should be called from the AUTOEXEC.BAT file on each node. The VIANET.BAT included on the distribution disk may or may not invoke the correct loadable message driver (*aaaaDRVR*). Refer to Appendix F for any hardware specific message driver information.

```
cls
path = a:\;a:\dos;a:\vianet;
cd \netsys
aaaadrvr
vianet
cd \
xdir z:
path
access username
```

The first line clears the screen. The path statement in the distribution copy of VIANET.BAT specifies that the root directory of this node's A drive should be searched first, then the DOS directory of the A drive, and then the VIANET directory, also on the A drive. The next three lines load the message driver and invoke VIANET.EXE from the NETSYS subdirectory. The last three lines request a display of certain network information. Refer to the appropriate command in the *ViaNet Intermediate User's Guide* for a complete description of these displays.

Commands to tailor the system for the user may be included in this file. Refer to the MACASGN command in the *ViaNet Intermediate User's Guide* for a complete description of macro assignments.

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---

### Config.sys

This file is optional for DOS, but is required for ViaNet. It is customized during installation step 3. The CONFIG.SYS supplied on the distribution diskette contains the following:

```
device = netdrv.sys vector = 5B
files = 99
buffers = 10
break = on
```

If CONFIG.SYS exists at a node prior to ViaNet installation, the file from the distribution diskette should be merged with the existing one. ViaNet allocates all unused drive letters for its own use. Because of this, it is not possible for another device driver to allocate drive letters after the ViaNet allocation.

The CONFIG.SYS file for ViaNet must contain the following statement as the last device driver specified:

```
device = netdrv.sys vector = 5B
```

The files = *n* and buffers = *n* definitions are application and I/O dependent. Refer to the DOS Reference Manual for a complete description of the configuration commands.

```
vector = 5B    Specifies the software
                interrupt used by
```

ViaNet to communicate with the hardware message driver. The vector parameter is always 5B unless otherwise indicated in the hardware specification or a conflict occurs with other software packages in use on the PC.

files = *n*

This definition controls the maximum number of files open at any one time. The default value is ninety-nine (99). If a node is never going to make files available to others, this number can be adjusted to supply a reasonable maximum for local use.

buffers = *n*

This definition controls the number of disk buffers DOS allocates when the system is initiated. Ten to 20 buffers is usually adequate.

## Section 3

### Installing ViaNet

---

#### Autoexec.bat

This file, which is customized during installation step 3, 'sets the stage' for VIANET.BAT. The AUTOEXEC.BAT supplied on the distribution diskette follows:

```
prompt VIANET $p$g
vianet
```

The first line sets the prompt. This causes the current path (directory) to be displayed as part of the prompt. It is desirable to know what the current directory is to prevent confusion. For more information, refer to the DOS reference manual for a description of the PROMPT command. The second line in the supplied AUTOEXEC.BAT invokes the batch file VIANET.BAT. The existing AUTOEXEC.BAT at each node may be modified to bring up the network automatically by merging the AUTOEXEC.BAT from the distribution diskette with the existing one.

It is possible to build very complex path definitions. Care should be taken to optimize this search. If the desired file is always found in the last place searched, the sequence should be changed to improve response time.

Read\_me.doc      This file contains software and hardware information as well as operation considerations. This file should be read before any installation is attempted. The hardware information contained in this file may not be available from any other source.

Planform Directory      This directory contains the worksheet forms used for Network Planning and Installation. The worksheet forms are as follows:

- userinv.frm      - User Inventory
- userorg.frm      - User Organization
- hardinv.frm      - Hardware Inventory
- hardorg.frm      - Hardware Organization
- fileinv.frm      - Software and Data File Inventory - Hard Disk(s)
- flpyinv.frm      - Software and Data File Inventory - Floppy Disk Files
- fileorg.frm      - Software and Data File Organization
- custnet1.frm      - Customization - Network Transparency - Directory Locations
- custnet2.frm      - Customization - Network Transparency - Batch and Macro Files

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---

custnode.frm - Customization - Node  
Level

### STEP 1: INSTALL THE HARDWARE

ViaNet runs with a variety of hardware cards and the software installation is not hardware independent. Follow the vendor instructions for the installation of the network hardware and any special software considerations.

Use the physical layout plan developed in the hardware location portion of the network planning. Be sure to comply with all building codes when installing wiring.

Remember to keep a list containing the physical (hardware) node addresses if they were not known during the planning stage. The hardware addresses may be verified using the NET command after installation.

### STEP 2: PREPARE FOR SOFTWARE INSTALLATION

Talk to the users. Find out what they think, and how they use their PCs. How the users view their position in the network may influence the planning information. Listen to them, they probably know what they need best of all!

Review the planning process and

## Section 3 Installing ViaNet

---

prepare for installation by backing up all hard disks on the network.

Review the installation process described in this section. All of the planning decisions should be firm before attempting the network installation. If necessary, go through the planning process a second time.

If the network planning is completed properly, the actual installation is simple and logical.

### BACKUP HARD DISKS

Before taking any further action, backup all hard disks on the system. Since both program and data files will be moved around, a backup is essential to ensure that nothing is lost.



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---

Copy the contents of each directory on the hard disk onto a diskette. If there are directories that are too large for one diskette, split the backup across two or more diskettes.

To perform the backup, place a diskette in drive A, and format it before using it for a backup. Copy the contents of each directory to a formatted diskette:

```
A>format a: /v  
...  
A>copy c:\directory\*. * a: /v
```

### STEP 3: INSTALL VIANET SOFTWARE

This network software installation is repeated at each node using the distribution diskette provided for that node.

### OVERVIEW AND REQUIRE- MENTS

To install the software at each node, do the following:

- a) Backup the distribution diskette
- b) Create ViaNet directories and copy ViaNet files
- c) Customize files and functions

d) Boot the node

The first node installed should be one designated as a passholder and containing the ViaNet commands.

Check the Hardware Organization worksheet for such a node.

**NOTE:** If it is not possible for the first node installed to be a passholder and to hold ViaNet commands, begin by installing a node designated as a passholder. Perform the actions in this step through "Bring Up ViaNet at This Node." Then go to the node that is to hold the ViaNet commands. Perform all of the actions in this step for this second node. When the installation is complete at the second node, return to the first node and complete step 3.

After the network software is installed at the first node, install the software at all of the nodes designated to hold the ViaNet commands. Once all of these nodes have the software installed, install the software at the rest of the nodes on the network.

It may be desirable to install the network on diskette for testing purposes before installing on hard

### Section 3 Installing ViaNet

---

disk. There is, however, a degradation in network speed if it is run entirely on diskette. There are differences in installing the software at a node with a hard disk versus one with only diskettes. These differences are discussed below as necessary.

The information needed to install the ViaNet software at each node is included on the Hardware Organization and Node Level Customization worksheets.

An editor is required to perform customization during this step. If the editor used is a formatting editor, such as WORDSTAR<sup>(R)</sup>, be sure all editing done in this step results in a straight ASCII file. WORDSTAR<sup>(R)</sup> can create such a file in the "non-document" mode.

#### BACKUP DISTRIBUTION DISKETTE

Make a backup of the distribution diskette before beginning the ViaNet software installation. To do this, copy the distribution diskette using the DOS DISKCOPY program:

A>diskcopy a: b:

Insert source diskette in drive A:

Insert target diskette in drive B:

Strike any key when ready

Copying 9 sectors per track, 2 side(s)

Copy complete

Copy another (Y/N)?N

There are three types of ViaNet node installations:

1. A network node where a hard disk is used to store ViaNet software. To install this type of node, use the installation instructions in step 3-1 of this section.
2. A network node where a floppy disk is used to store ViaNet software and where the user does not preserve any information from a previous boot diskette. To install this type of node, use the installation instructions in step 3-2 of this section.
3. A network node where a floppy disk is used to store ViaNet software but the user preserves information from a previous boot diskette. To install this type of node, use the alternate

## Section 3 Installing ViaNet

---

installation instructions in  
Appendix E.

### STEP 3-1: INSTALL VIANET ON A HARD DISK

Place the distribution diskette in drive A and perform the following actions to install ViaNet at this node.

#### A. COPY VIANET FILES AND DIRECTORIES FROM DISTRIBUTION DISKETTE

Follow the sub-actions outlined below in A-1 through A-8.

A-1 Change the default drive to the C drive.

```
A>c:  
C>
```

A-2 Change the current directory on the C drive to the root directory.

```
C>cd \  
C>
```

A-3 CONFIG.SYS

Check to see if a CONFIG.SYS file already exists on the C drive.

C>dir config.sys

If there is a CONFIG.SYS file on the C disk, the following appears on the screen:

Volume in drive C is AAAAAAA  
Directory of C:\

CONFIG.SYS *n m-d-y h.ma*

Where AAAAAAA is the volume name, *n* the size of CONFIG.SYS, and *m-d-y h.ma* the CONFIG.SYS file date and time.

If CONFIG.SYS is found (as above), do not copy the CONFIG.SYS file from the distribution diskette. Skip the rest of this sub-action and go to sub-action A-4.

If there is no CONFIG.SYS on the C drive, the following appears on the screen:

Volume in drive C is AAAAAAA  
Directory of C:\

File not found

Copy the file from the distribution diskette.

## Section 3 Installing ViaNet

---

```
C>copy a:config.sys /v
```

```
1 File(s) copied
```

### A-4 AUTOEXEC.BAT

Check to see if there is already an AUTOEXEC.BAT file on the C drive.

```
C>dir autoexec.bat
```

If there is an AUTOEXEC.BAT file on the C disk, the following appears on the screen:

```
Volume in drive C is AAAAAAA  
Directory of C:\
```

```
AUTOEXEC.BAT n m-d-y h.ma
```

Where AAAAAAA is the volume name, *n* the size of AUTOEXEC.BAT and *m-d-y h.ma* the AUTOEXEC.BAT file date and time.

If AUTOEXEC.BAT is found (as above), do not copy the AUTOEXEC.BAT file from the distribution diskette. Skip the rest of this sub-action and go to sub-action A-5.

If there is no AUTOEXEC.BAT on the C drive, the following appears on the screen:

```
Volume in drive C is AAAAAAA  
Directory of A:\
```

```
File not found
```

```
Copy the file from the  
distribution diskette.
```

```
C>copy a:\autoexec.bat /v
```

```
1 File(s) copied
```

A-5 NETDRVR.SYS

```
Copy NETDRVR.SYS onto the C  
drive.
```

```
C>copy a:\netdrvr.sys /v
```

```
1 File(s) copied
```

A-6 VIANET.BAT

```
Copy VIANET.BAT onto the C  
drive.
```

```
C>copy a:\vianet.bat /v
```

```
1 File(s) copied
```



## Section 3 Installing ViaNet

---

### A-7 NETSYS Directory

Create NETSYS directory and copy the files from the distribution diskette into it.

```
C>md c:\netsys
C>cd \netsys
C>copy a:\netsys\*. * /v
```

```
A:NETSYS\ACCESS.SYS
A:NETSYS\NETCNF.SYS
A:NETSYS\VIANET.EXE
A:NETSYS\aaaaDRVR.EXE
      4 File(s) copied
```

```
C>cd \
```

### A-8 VIANET Directory

Check the Hardware Organization work sheet to see whether this node is designated to hold the ViaNet commands.

If this node is designated to hold the ViaNet commands, create the VIANET directory and copy the files from the distribution diskette. If this node is not designated to hold the ViaNet commands, go to action B., "CUSTOMIZE VIANET FILES."

## Section 3 Installing ViaNet

---

```
C>md c:\vianet
C>cd \vianet
C>copy a:\vianet\*. * /v

A:\VIANET\PROTECT.EXE
A:\VIANET\XDIR.EXE
A:\VIANET\PASSWORD.EXE
A:\VIANET\MAKEUSER.EXE
A:\VIANET\ACCESS.EXE
A:\VIANET\PASSHOLD.EXE
A:\VIANET\LOGOFF.EXE
A:\VIANET\NONET.EXE
A:\VIANET\MACASGN.EXE
A:\VIANET\DIAGNOST.EXE
A:\VIANET\NET.EXE
A:\VIANET\DOWNINST.EXE
A:\VIANET\TALK.EXE
A:\VIANET\ERRSTATS.EXE
A:\VIANET\ICF.EXE
A:\VIANET\VIATERM.EXE
    16 File(s) copied

C>cd \
```

### B. CUSTOMIZE VIANET FILES

An editor, such as EDLIN<sup>(tm)</sup> or WORDSTAR<sup>(R)</sup>, is required for customizing ViaNet files. If the editor used is a formatting editor, be sure all editing done in this action results in a straight ASCII file.

## Section 3 Installing ViaNet

---

### B-1 CONFIG.SYS

If CONFIG.SYS was copied from the distribution diskette, skip this sub-action and go to B-2, AUTOEXEC.BAT.

If the CONFIG.SYS file was not copied from the distribution diskette, edit CONFIG.SYS to include the following information:

```
device = netdrv.sys vector = 5b
files = 99
buffers = 10
break = on
```

Make sure that device = netdrv.sys vector = 5B is the last device driver specified in the file.

### B-2 AUTOEXEC.BAT

If AUTOEXEC.BAT was copied from the distribution diskette, skip this sub-action and go to sub-action B-3, VIANET.BAT.

If the AUTOEXEC.BAT file was not copied from the distribution diskette, edit AUTOEXEC.BAT to include the following information:

```
prompt VIANET SpSg
vianet
```

**NOTE:** If the AUTOEXEC.BAT file already contains a path statement, the path statement in VIANET.BAT must be included as part of the path in AUTOEXEC.BAT. The path statement must also be removed from VIANET.BAT.

### B-3 VIANET.BAT

Change the path statement in VIANET.BAT to the NODE SEARCH PATH shown on the Customization-Node Level worksheet.

```
path = node_search_path
```

If there are any MACASGNs for this node, include MACASGN @ in the VIANET.BAT file and create the file MACASGN.SYS in the NETSYS directory. Refer to the MACASGN Command in section 4 for more information.

Refer to Appendix F and the LAN hardware installation guide for information on changing

## Section 3 Installing ViaNet

---

the preset defaults for the message driver (*aaaaDRVR*).

### B-4 NETSYS\NETCNF.SYS

The NETCNF.SYS file in the NETSYS directory requires customization.

Comments may be included in this file by placing a semicolon (;) in column one of the record that is a comment. Anything not recognized as a parameter is treated as a comment.

Use the Hardware Organization worksheet for the NETCNF.SYS customization.

Specify the drives and devices available to the network for this node. This information is found on the Hardware Organization worksheet.

```
drive = c  
device = prn  
device = con
```

In the above example, only this node's C drive is available to the network. The printer is available to the network, and so is the console.

Specify the node name using the NAME parameter. The example below specifies the logical name MYSELF for this node. Don't forget to remove the semicolon (;) from column one in front of the name specification (name =):

```
name = MYSELF
```

C. BRING UP VIANET AT THIS NODE

C-1 Boot the Node

To verify that the software has been properly installed, boot the system at this node. You should see the following information on your screen. (If VIANET was not specified in the AUTOEXEC.BAT file, issue the VIANET command at the C> prompt.) The Network should come up normally.

```
C>prompt ViaNet $p$g
ViaNet C:\>path =
      c:\;c:\dos;c:\vianet;
ViaNet C:\>vianet
ViaNet C:\>cls
ViaNet C:\>cd \netsys
ViaNet C:\netsys>aaaadrvr
```

## Section 3

### Installing ViaNet

---

...

```
ViaNet C:\netsys>vianet
```

...

```
ViaNet C:\netsys>cd \  
ViaNet C:\>xdir z:
```

```
Volume in drive Z has no label  
Directory of Z:\
```

```
MYSELF <DIR>  
    1 File(s) 131070 bytes free
```

```
ViaNet C:\>path
```

```
PATH=C:\;C:\DOS;C:\VIANET;
```

```
ViaNet C:\>access
```

```
DOS Nodes:    User: jim  
Group: acctng <4,3>
```

```
Current protection for all  
Nodes: [wrwrwr]
```

The three requests from VIANET.BAT (xdir z:, path, and access) should return results similar to those shown. The network directory (z:), path, and access information are displayed last.

## C-2 NET Command

Use the ViaNet command NET to check the Node number and name.

ViaNet A:\>net

The Network Software IS Loaded

|                          |           |
|--------------------------|-----------|
| Node Name                | MYSELF    |
| Node Number              | 02        |
| Maximum Message Size     | 1DD       |
| Passholder?              | YES       |
| Downloader?              | YES       |
| DOS 3.0 Emulation?       | YES       |
| ViaNet(R) Serial Number  | 004-00170 |
| ViaNet(R) Version Number | 03.06.12  |

A description of the ViaNet command NET is located in the *ViaNet Intermediate User's Guide*.

Check the Node Number and Node Name and be sure they are both displayed as shown on the Customization - Node Level worksheet.

## C-3 ERRSTATS Command

Use the ViaNet command ERRSTATS to check the hardware.



## Section 3 Installing ViaNet

---

ViaNet A:\>errstats

ERRSTATS -- Information about ViaNet performance. All values are in hexadecimal. Sent 00000005 requests out to net... Needed 00000000 retries... And had 00000000 fatal errors. Timed out (ViaNet level) waiting for 00000000 responses.

Sent 00000000 replies back to net... Needed 00000000 retries... And had 00000000 fatal errors.

ERRSTATS is described in Section 4 of this manual.

**NOTE:** If any of these commands produce unexpected results, check to be sure they were entered properly. Check the hardware installation and be sure the physical address displayed is the one expected.

### D. ACCESS THE SUPER USER

The ViaNet distribution diskette comes with a super user (SU) predefined. This user ID is needed by the network administrator for the following:

1. adding/deleting user names
2. changing user passwords
3. identifying and enabling passholders and down-loaders
4. changing file protection and/or ownership of any network file.

All users (including SU) may access the network from any ViaNet node.

The password supplied for the SU logon defined on the distribution diskette is **vianet**. ACCESS SU and respond with the password **vianet**.

```
ViaNet A:\>access su
```

```
Password: #####
```

```
DOS Nodes:   User: su  
Group: system <0,0>
```

```
Current protection for all  
Nodes: [wrwrwr]
```

E. PASSHOLD

### Section 3 Installing ViaNet

---

PASSHOLD is pre-enabled in the VIANET.EXE file of the NETSYS directory. If the node is not a passholder, erase ACCESS.SYS from the NETSYS directory and disable passholding using the PASSHOLD command.

Carefully review PASSHOLD in Section 4 before attempting to change Passhold status.

```
ViaNet C:\>erase \netsys  
          \access.sys
```

```
ViaNet C:\>passhold
```

When the prompt "Enter filename [\NETSYS\VIA-NET.EXE]:" appears, press the RETURN key.

```
E n t e r   f i l e n a m e  
[\NETSYS\VIANET.EXE]:  
  P   Make   NODE   a  
      passholder  
  N   Make   NODE   a  
      non-passholder  
  D   Display if NODE is a  
      passholder  
  S   Show   current  
      filename
```

C Change current  
filename  
E, Q, X Exit Program  
Select One: n

NODE will not be a passholder  
...

Select One: x

F. DOWNLOAD

DOWNLOAD is pre-enabled in the VIANET.EXE file of the NETSYS directory. If the node is not to be a downloader, use DOWNINST to disable downloading. This is done to conserve memory on nodes that do not have ACCESS.SYS.

Carefully review DOWNINST in Section 4 before attempting to change Download status.

ViaNet C:\>downinst

When the prompt "Enter filename [\\NETSYS\\VIANET.EXE]:" appears, press the RETURN key.

Enter filename [\\NETSYS\\VIANET.EXE]:

### Section 3 Installing ViaNet

---

P Make NODE a  
Downloader  
D Make NODE a  
non-Downloader  
T Tell whether NODE  
is or isn't  
S Show current  
filename  
C Change current  
filename  
E, Q, X Exit Program

Select One: d

NODE is not a downloader

Select One: x

VIANET C:\>

G. LOGOFF AS THE SUPER USER

ViaNet C:\>logoff

H. CREATE BACKUP BOOT  
DISKETTE

It is necessary to create a backup boot diskette for each node. To do this, format a diskette with the DOS operating system on it and copy the appropriate files and directories from the hard disk.

## Section 3 Installing ViaNet

---

Insert a new diskette into the A drive. Bring ViaNet down with the NONET command and create the backup diskette by issuing the following commands. Wait for the prompt (C:\>) to return to the screen after each entry.

```
ViaNet C:\>nonet
```

```
Dismounting Network Message  
Driver  
Dismounting VIANET
```

```
C:\>format a: /s/v
```

```
...
```

```
C:\>md a:\netsys
```

```
C:\>md a:\vianet
```

```
C:\>copy config.sys a: /v
```

```
C:\>copy netdrv.sys a: /v
```

```
C:\>copy autoexec.bat a: /v
```

```
C:\>copy vianet.bat a: /v
```

```
C:\>cd a:\netsys
```

```
C:\>cd \netsys
```

```
C:\NETSYS\>copy *.* a: /v
```

```
C:\NETSYS\>cd a:\vianet
```

```
C:\NETSYS\>cd \vianet
```

```
C:\VIANET\>copy *.* a: /v
```

```
C:\VIANET\>cd \
```

The backup boot disk is complete.

## Section 3 Installing ViaNet

---

### I. BOOT THE SYSTEM FROM HARD DISK

The network should come up for this node as customized above.

**Complete the Installation:**  
Repeat STEP 3-1 until all nodes have been installed, then continue to STEP 4.

### STEP 3-2: INSTALL VIANET ON DISKETTE

The procedure presented here creates a NEW boot diskette for this node. No attempt is made to preserve any pre-existing environment at this node.

If it is necessary to preserve the contents of the original boot diskette, use Appendix E in place of STEP 3-2.

If only some files on the original boot diskette need to be retained on the ViaNet boot diskette, copy the critical files to the NEW boot diskette after completing this step.

### A. FORMAT DISKETTE

Place the DOS boot diskette in drive A and a new diskette in drive B. Format the new diskette using DOS FORMAT:

Note that by using the /S parameter on the Format command, the operating system files are also copied onto the newly formatted diskette.

A>format b:/s/v

Insert new diskette for drive B:  
and strike any key when ready.

Formatting...

Format complete

System transferred

Volume label (11 character,  
ENTER for none)?

MYDISK

xxxxxx bytes total disk space  
xxxxxx bytes used by system  
xxxxxx bytes available on disk

Format another (Y/N)?N

In the above example, note that MYDISK was entered as the volume label.

The resulting system disk in



### Section 3 Installing ViaNet

---

drive B is the new boot diskette.

Place the new boot diskette in drive A and the distribution diskette in drive B. Perform the actions outlined in B through J below to install ViaNet at this node.

B. COPY VIANET FILES AND DIRECTORIES FROM DISTRIBUTION DISKETTE

Follow the sub-actions outlined below in B-1 through B-6.

B-1 Change the default drive to the A drive.

```
B>a:  
A>
```

B-2 Change the current directory on the A drive to the root directory.

```
A>cd \  
A>
```

B-3 Copy ViaNet Files into the Root Directory.

```
A>copy b:.* /v
```

```
B:CONFIG.SYS
B:AUTOEXEC.BAT
B:NETDRVR.SYS
B:VIANET.BAT
B:READ_ME.DOC
    5 File(s) copied
```

```
A>erase b:read_me.doc
```

B-4 NETSYS Directory

Create NETSYS directory and copy the files from the distribution diskette into it.

```
A>md a:\netsys
A>cd \netsys
A>copy b:\netsys\*. * /v
```

```
B:NETSYS\ACCESS.SYS
B:NETSYS\NETCNF.SYS
B:NETSYS\VIANET.EXE
B:NETSYS\aaaaDRVR.EXE
    4 File(s) copied
```

```
A>cd \
```

B-5 VIANET.BAT

Copy VIANET.BAT.

```
A>copy b:vianet.bat /v
    1 File(s) copied
```

B-6 VIANET Directory

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---

Check the Hardware Organization worksheet to see whether this node is designated to hold the ViaNet commands.

If this node is designated to hold the ViaNet commands, create the VIANET directory and copy the files from the distribution diskette. If this node is not designated to hold the ViaNet commands, go to action C, CUSTOMIZE VIANET FILES.

```
A>md a:\vianet
A>cd \vianet
A>copy b:\vianet\*. * /v
```

```
A:\VIANET\PROTECT.EXE
A:\VIANET\XDIR.EXE
A:\VIANET\PASSWORD.EXE
A:\VIANET\MAKEUSER.EXE
A:\VIANET\ACCESS.EXE
A:\VIANET\PASSHOLD.EXE
A:\VIANET\LOGOFF.EXE
A:\VIANET\NONET.EXE
A:\VIANET\MACASGN.EXE
A:\VIANET\DIAGNOST.EXE
A:\VIANET\NET.EXE
A:\VIANET\DOWNINST.EXE
A:\VIANET\TALK.EXE
A:\VIANET\ERRSTATS.EXE
A:\VIANET\ICF.EXE
```

A:\VIANET\VIATERM.EXE  
16 File(s) copied

A>cd \

### C. CUSTOMIZE VIANET FILES

An editor, such as EDLIN<sup>(tm)</sup> or WORDSTAR<sup>(R)</sup>, is required for customizing ViaNet files. If the editor used is a formatting editor, be sure all editing done in this step is in the non-document mode. The resulting file must be an ASCII file.

#### C-1 CONFIG.SYS

If CONFIG.SYS was copied from the distribution diskette, skip this sub-action and go to sub-action C-2, AUTO-EXEC.BAT.

If the CONFIG.SYS file was not copied from the distribution diskette, edit CONFIG.SYS to include the following information:

```
device = netdrv.sys vector = 5b  
files = 99  
buffers = 10  
break = on
```

## Section 3

### Installing ViaNet

---

Make sure that `device = netdrv.sys` `vector = 5B` is the last device driver specified in the file.

Since this node is floppy based, it is unlikely that very many files will be open at a given time. The `files =` parameter in the `CONFIG.SYS` file may be reduced to a value less than that supplied on the distribution diskette. Refer to page 3-6 for information on changing this parameter.

#### C-2 AUTOEXEC.BAT

If `AUTOEXEC.BAT` was copied from the distribution diskette, skip this sub-action and go to sub-action C-3, `VIANET.BAT`.

If the `AUTOEXEC.BAT` file was not copied from the distribution diskette, edit `AUTOEXEC.BAT` to include the following information:

```
prompt VIANET $p$g
vianet
```

**NOTE:** If the `AUTOEXEC.BAT` file already contains a path

statement, the path statement in VIANET.BAT must be included as part of the path in AUTOEXEC.BAT. The path statement must also be removed from VIANET.BAT.

### C-3 VIANET.BAT

Change the path statement in VIANET.BAT to the NODE SEARCH PATH shown on the Customization-Node Level worksheet.

*path = node\_search\_path*

If there are any MACASGNs for this node, include MACASGN @ in the VIANET.BAT file and create the file MACASGN.SYS in the NETSYS directory. Refer to the MACASGN Command in Section 4 for more information.

Refer to the LAN hardware reference manual for information on changing the preset defaults for the message driver (*aaaaDRVR*).

### C-4 NETSYS\NETCNF.SYS

### Section 3 Installing ViaNet

---

The NETCNF.SYS file in the NETSYS directory requires customization.

Comments may be included in this file by placing a semicolon (;) in column one of the record that is a comment. Anything not recognized as a parameter is treated as a comment.

Use the Hardware Organization worksheet for the NETCNF.SYS customization.

Specify the drives and devices for this node that will be available to the network. This information is found on the Hardware Organization worksheet.

```
drive = a  
drive = b  
device = prn  
device = con
```

In the above example, both the A and B drive of this node are available to the network. The printer is available to the network, and so is the console.

Specify the node name using the NAME parameter. The

example below specifies the logical name MYSELF for this node. Don't forget to remove the semicolon (;) from column one in front of the name specification (`name =`):

```
name = MYSELF
```

D. BRING UP VIANET AT THIS NODE

D-1 Boot the node.

To verify that the software has been properly installed, boot the system at this node. (The following information will be displayed on your screen.)

```
A>prompt ViaNet $p$g
ViaNet A:\>vianet
ViaNet A:\>cls
ViaNet A:\>path =
          a:\;a:\dos;a:\vianet;
ViaNet A:\>cd \netsys
ViaNet A:\netsys>aaaadrvr
...

ViaNet A:\netsys>vianet

...

ViaNet A:\netsys>cd \
ViaNet A:\>xdir z:
```



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---

Volume in drive Z has no label  
Directory of Z:\

```
MYSELF <DIR>
      1 File(s) 131070 bytes free
```

```
ViaNet A:\>path =
           a:\;a:\dos;a:\vianet;
```

```
ViaNet A:\>access
```

```
DOS Nodes:   User: jim
Group: acctng <4,3>
```

```
Current protection for all
Nodes: [wrwrwr]
```

The three requests from VIANET.BAT (xdir z:, path, and access) should return results similar to those shown. The network directory (z:), path, and access information are displayed last.

#### D-2 NET Command

Use the ViaNet command NET to check the Node number and name.

```
ViaNet A:\>net
```

The Network Software IS Loaded

## Section 3 Installing ViaNet

---

|                          |           |
|--------------------------|-----------|
| Node Name                | MYSELF    |
| Node Number              | 02        |
| Maximum Message Size     | 1DD       |
| Passholder?              | YES       |
| Downloader?              | YES       |
| DOS 3.0 Emulation?       | YES       |
| ViaNet(R) Serial Number  | 004-00170 |
| ViaNet(R) Version Number | 03.06.12  |

A description of the ViaNet command NET is located in the *ViaNet Intermediate User's Guide*.

Check the Node Number (Node Address) and Node Name and be sure they are both displayed as shown on the Customization-Node Level worksheet.

### D-3 ERRSTATS Command

Use the ViaNet command ERRSTATS to check the hardware.

```
ViaNet A:\>errstats
```

```
ERRSTATS -- Information  
about ViaNet performance. All  
values are in hexadecimal.
```

```
Sent 00000005 requests out to  
net...
```

## Section 3 Installing ViaNet

---

Needed 00000000 retries...  
And had 00000000 fatal errors.

Timed out (ViaNet level)  
waiting for 00000000 responses.  
Sent 00000000 replies back to  
net...

Needed 00000000 retries...  
And had 00000000 fatal errors.

ERRSTATS is described in  
Section 4 of this manual.

**NOTE:** If any of these com-  
mands produce unexpected  
results, check to be sure they  
were entered properly. Check  
the hardware installation and  
be sure the physical address  
displayed is the one expected.

### E. ACCESS THE SUPER USER

The ViaNet distribution diskette  
comes with a super user (SU)  
predefined. This user ID is  
needed by the network  
administrator for the following:

1. adding/deleting user names
2. changing user passwords
3. identifying passholders  
and downloaders

4. changing file protection and/or ownership of any network file.

All users (including SU) may access the network from any ViaNet node.

The password supplied for the SU logon defined on the distribution diskette is `vianet`. ACCESS SU and respond with the password `vianet`.

```
ViaNet A:\>access su
```

```
Password: #####
```

```
DOS Nodes:   User: su  
Group: system <0,0>
```

```
Current protection for all  
Nodes: [wrwrwr]
```

#### F. PASSHOLD

PASSHOLD is pre-enabled in the `VIANET.EXE` file of the `NETSYS` directory. If the node is not a passholder, erase `ACCESS.SYS` from the `NETSYS` directory and disable passholding using the `PASSHOLD` command.

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---

Carefully review PASSHOLD in Section 4 before attempting to change Passhold status.

```
ViaNet A:\>erase \netsys  
          \access.sys
```

```
ViaNet A:\>passhold
```

When the prompt "Enter filename [NETSYS\VIA-NET.EXE]:" appears, press the RETURN key.

```
E n t e r      f i l e n a m e  
[\NETSYS\VIANET.EXE]:  
  P   Make   NODE   a  
      passholder  
  N   Make   NODE   a  
      non-passholder  
  D   Display if NODE is a  
      passholder  
  S   Show   current  
      filename  
  C   Change  current  
      filename  
  E, Q, X   Exit Program  
Select One: n
```

NODE will not be a passholder

...

```
Select One: x
```

G. DOWNLOAD

DOWNLOAD is pre-enabled in the VIANET.EXE file of the NETSYS directory. If the node is not to be a downloader, use DOWNINST to disable downloading. This is done to conserve memory on nodes that do not have ACCESS.SYS.

Carefully review DOWNINST in Section 4 before attempting to change Download status.

ViaNet A:\>downinst

When the prompt "Enter filename [NETSYS\VIANET.EXE]:" appears, press the return key.

```
E n t e r   f i l e n a m e
[\NETSYS\VIANET.EXE]:
  P   Make   NODE   a
      Downloader
  D   Make   NODE   a
      non-Downloader
  T   Tell whether NODE
      is or isn't
  S   Show   current
      filename
  C   Change current
      filename
  E, Q, X  Exit Program
```

### Section 3 Installing ViaNet

---

Select One: d

NODE is not a downloader

Select One: x

VIANET A:\>

H. LOGOFF AS SUPER USER

ViaNet C:\>logoff

I. CREATE BACKUP BOOT  
DISKETTE

If the CONFIG.SYS file becomes unreadable, the node may not boot. It is necessary to create a backup boot diskette for each node. Use DOS DISKCOPY to create the backup for the system diskette.

A>diskcopy a: b:

Insert source diskette in drive A:

Insert target diskette in drive B:

Strike any key when ready

Copying 9 sectors per track, 2 side(s)

Copy complete

Copy another (Y/N)?N

J. BOOT THE SYSTEM FROM  
DISKETTE

The network should come up  
for this node as customized  
above.

Complete the Installation:  
Repeat STEP 3-2 until all  
nodes have been installed, then  
continue to STEP 4.

STEP 4:  
CREATE  
USER NAMES  
AND GROUP  
NAMES

A. ACCESS SU AND CHANGE  
PASSWORD

ACCESS SU and change the  
super user password for this  
installation.

Refer to PASSWORD command  
in the *ViaNet Intermediate  
User's Guide* for more informa-  
tion. Choose a password that  
is easy to remember. Remem-  
ber upper case and lower case  
letters are not the same when  
used in a password. If the  
password is specified in upper  
case, it must be entered in



## Section 3 Installing ViaNet

---

upper case. The same is true for lower case.

```
ViaNet C:\>access su
```

```
Password:#####
```

```
ViaNet C:\>password
```

```
Enter Old Password #####
```

```
Enter New Password #####
```

```
Re-Enter New Password #####
```

### B. CREATE USERS

Use MAKEUSER to create the user ids as outlined on the user organization worksheet. Be sure to use the /X switch with MAKEUSER. This is so the passwords will be displayed when the users are listed. Refer to the MAKEUSER command in Section 4 of this manual.

Select the Add User (A) option and specify the username, groupname, and password. For simplicity, use the same initial password for all users and instruct them to change it the first time they access the network. Repeat this proce-

## Section 3 Installing ViaNet

---

dure until all the users are created.

ViaNet C:\>makeuser /x

--Displaying all current  
PASSHOLDERS--

| Node<br>Name  | Node<br>Address | Access<br>File | Up-<br>dated |
|---------------|-----------------|----------------|--------------|
| node-<br>name | xx              | 1-06-84        | 1:30p        |

|         |                             |
|---------|-----------------------------|
| A       | Add a User                  |
| D       | Delete a User               |
| C       | Change a User's<br>Password |
| L       | List Current<br>Users       |
| P       | List Passholders            |
| E, Q, X | Exit Program                |

Select One: a

User Name: Bob  
Group Name: marketing  
Password: junk

Use the list (L) option and note the user and group number for each user. These numbers are assigned consecutively by ViaNet as the users and groups are created. This

### Section 3 Installing ViaNet

---

information will be used when file ownership and protection are assigned.

Select One: 1

| Listing<br>nodename | ACCESS        | File      | from | Node   |
|---------------------|---------------|-----------|------|--------|
| User<br>Name        | Group<br>Name | ID#, GID# |      | pswd   |
| su                  | system        | <000,000> |      | vianet |
| Bob                 | marketing     | <001,001> |      | junk   |
| Carol               | admin         | <001,002> |      | 1137   |
| Ted                 | accountng     | <001,003> |      | ski    |
| Alice               | accountng     | <002,003> |      | B71K4  |
| John                | product       | <001,004> |      | 010757 |
| Marsha              | product       | <002,004> |      | love   |

**NOTE:** User names must be unique for the entire network, not just within a user group. Refer to the MAKEUSER command in Section 4 for more information.

**STEP 5:** Using the facilities of the network, copy all files to their proper network location. Distribute software, data, DOS Command, BATCH and, related MACASGN Files.

### Section 3 Installing ViaNet

---

- a) Create directory and copy DOS commands as determined in step 7 of Section 2, Network Planning.
- b) Create and distribute BATCH directories and files and related MACRO directories and MACASGN files as determined in step 7 of Section 2, Network Planning.
- c) Distribute and protect software and data files as determined in step 6 of Section 2, Network Planning.

NOTE: This step is performed while logged onto the super user ID. If for some reason LOGOFF was used after the previous step, ACCESS SU before proceeding.

#### DOS COMMANDS

Create the DOS directory as specified on the Customization-Network Transparency Directory Locations worksheet. Insert the DOS diskette containing the commands in drive A and copy the OS COM files into it. Use the ViaNet PROTECT command to mark the directory containing the DOS commands as sharable read-only.

### Section 3 Installing ViaNet

---

**NOTE:** If the network being installed is entirely floppy disk based, it may not be advisable to have a network location for the DOS commands. The floppy containing the DOS directory would have to be available at all times.

```
ViaNet C:\>md  
          z:\nodename\drive\dos
```

```
ViaNet C:\>copy a:*.com  
          z:\nodename\drive\dos /v
```

```
C:COMMAND.COM
```

```
...
```

```
    x File(s) copied
```

```
ViaNet C:\>protect /r  
          z:\nodename\drive\dos  
          [-r-r-r]
```

#### BATCH DIRECTORIES AND FILES

Based on the information on the Customization-Network Transparency Batch and Macro Files worksheet, create the directories for the batch files and associated MACASGN input files at the proper node(s). Once the batch and macro files have been created, use the ViaNet PROTECT command to mark the directories containing the batch files and MACASGN files read-only sharable with protection [-r-r-r].

**NOTE:** Compliance with contractual and legal restrictions regarding the use of software is required when using a local area network.

```
ViaNet C:\>md  
          z:\nodename\drive\batch
```

(create the proper files)

```
ViaNet C:\>protect /r  
          z:\nodename\drive\batch  
          [-r-r-r]
```

```
ViaNet C:\>md  
          z:\nodename\drive\macros
```

(create the proper files)

```
ViaNet C:\>protect /r  
          z:\nodename\drive\macros  
          [-r-r-r]
```

Use the examples in Appendix C as a model for the network batch files. Information on writing DOS BATCH files is also available in the DOS Reference Manual. Remember to include the necessary files in the MACROS directory when using MACASGN@ filespec in the batch files. Once the files have been created and are located in the proper

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---

directory, mark all the files in these two directories as sharable read-only.

```
ViaNet C:\>protect /r  
z:\nodename\drive\batch  
\*.*
```

```
ViaNet C:\>protect /r  
z:\nodename\drive\macros  
\*.*
```

Using the information on the Customization-Node Level worksheet, create any local batch directories, files and related macros as required.

#### SOFTWARE AND DATA FILE DISTRIBUTION

Using the information on the Software Organization and Data File worksheet, distribute the software and data files as planned. Files on floppies are copied to the proper directory on the proper hard disks. Files currently existing on one hard disk and intended for another should also be copied, so that if something goes wrong during the installation, the original version is still available for use. Once the network is fully operational, deleting unnecessary duplicate files may be in order.

Use the DOS MD command to create directories, COPY to copy the files,

and the ViaNet PROTECT command to protect the files and/or directories.

```
A>md z:\nodename\drive\directoryname
```

```
C>copy filespec z:\nodename\drive  
    \directoryname /v
```

The above example shows how to copy across the network. The complete filespec for the file being copied must be included.

Using the ViaNet PROTECT command (as described below), set the protection and sharability for each file (or directory), and use the CHOWN parameter to set the file ownership.

#### USING PROTECT

All pre-network files are 'owned' by the super user. This means they have GROUP and OWNER numbers of <0,0>. The protection is [rwrwr], meaning all pre-network files are accessible to anyone on the network.

Some files, such as overlays, should be marked as Sharable (either Read-Only or Read/Write). Based on the decisions made in Section 2, change the protection for these files using the PROTECT command with the /R or /W option. (Refer to the PROTECT command in Section 4 for details on using PROTECT.)



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---

```
ViaNet C:\>protect /r  
          d:\path\filename.ext
```

*d:* is the disk, *path* the path, and *filename.ext* the filename and extension of the file being marked read only sharable. Use the /w option to mark files read/write sharable. All this information is in the Software and Data File Organization worksheet.

As the super user, it is possible to assign ownership to pre-network files using the CHOWN parameter of the PROTECT command. Based on the ownership decisions made in Section 2, assign file ownership to pre-network files.

```
vianet c:\>protect  
          d:\path\filename.ext  
          [---rwr] Chown (4,2)
```

This changes the ownership of the file to user number 4 in group 2, and sets the protection to no access for users in general, read access for other members of group 2, and read/write access for the new owner.

If it is not possible to assign ownership for all files, instruct the users on the use of CHOWN so they

may 'claim' their own files as soon as possible.

**STEP 6:  
TEST THE  
NETWORK**

Use the ViaNet DIAGNOST command to check the LAN hardware communication between nodes. This should be done from every node to a few other nodes on the network. There should be no bad data after sending 50 messages to any node. Use Dir Z: at each node to verify that each one can see the others. If there are errors, it is most likely a hardware problem. Refer to the LAN hardware reference manual for more information.

**INSTALLING  
VIASPOOL**

In order to use the various printers on the network, you must use ViaSpool to control the printer nodes. Installing ViaSpool at a printer node may be done quickly and simply by following the instructions below.

**STEP 1:  
INSTALL  
THE  
HARDWARE**

ViaSpool will run with a variety of computers and printers. However, all network printer nodes controlled by ViaSpool must include a hard disk drive, designated as the C drive.

Make sure that the proper cables are

### Section 3 Installing ViaNet

---

used and that all connections are made.

#### STEP 2: INSTALL VIASPOOL

Place the ViaNet distribution diskette 1 in the printer node's A drive and perform the following actions.

#### A. COPY THE VIASPOOL FILE

A-1 Change the default drive to the C drive.

```
A>c:  
C>
```

A-2 Create the NETPRINT directory.

```
C>mkdir netprint
```

A-3 Change the current directory on the C drive to the NETPRINT directory.

```
C>cd \netprint  
C:\NETPRINT>
```

A-4 Copy the printing files to the printer node's NETPRINT directory.

```
C:\NETPRINT>copy a:\netprint  
                  \*.*
```

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Installing ViaNet

---

```
A:\NETPRINT\SETPRT.EXE
A:\NETPRINT\REDIRPRT.COM
A:\NETPRINT\VIASPOOL.COM
A:\NETPRINT\VIAPRINT.EXE
      4 File(s) copied
```

B. CREATE THE PROPER DIRECTORIES FOR THE PRINTER NODE.

B-1 Change directories and create a VIASPOOL directory at the root of the C drive.

```
C:\NETPRINT>cd \
C>
```

```
C>mkdir viaspool
```

B-2 Make VIASPOOL the current directory and create the FORMAT directory.

```
C>cd \viaspool
C:\VIASPOOL>
```

```
C:\VIASPOOL>mkdir format
```

C. COPY THE PROPER FILES INTO THE FORMAT DIRECTORY

C-1 Change directories and copy the DFLTINIT.STR and DFLTFINI.STR files from the

### Section 3 Installing ViaNet

---

ViaNet distribution diskette 1  
into the FORMAT directory.

```
C:\VIASPOOL>cd \format  
C:\VIASPOOL\FORMAT>
```

```
C:\VIASPOOL\FORMAT>copy  
a:\*.str
```

```
A:\DFLTINIT.STR  
A:\DFLTFINI.STR  
2 File(s) copied
```

#### D. CUSTOMIZE THE NETCNF.SYS FILE

An editor, such as EDLIN<sup>(tm)</sup>  
or WORDSTAR<sup>(R)</sup>, is required  
for customizing the NET-  
CNF.SYS. If the editor used  
inserts special formatting  
characters, be sure all editing  
done in this action results in a  
clear ASCII file.

- D-1 Device statements must NOT  
define PRN or LPT1. Make  
sure that if there is a *device =  
prn* or a *device = lpt1* state-  
ment in the NETCNF.SYS that  
it is preceded by a semicolon.

```
;device = prn  
;device = lpt1
```

D-2 Drive C must be made available to the network.

drive = c

**Note:** For more information on the NETCNF.SYS file, refer to the NETSYS DIRECTORY starting on page 3-9.

E. LOAD VIASPOOL AT THE PRINTER NODE

E-1 To load VIASPOOL at the printer node, reload the network software, type the following and press <enter> at the end of each line.

```
C>cd \netprint
```

```
C:\NETPRINT>viaspool
```

ViaSpool will load and the printer name will default to **PRINTER**, the forms specification defaults to **STND**, the interface defaults to parallel, priority defaults to **5**, copies defaults to **1**, and format defaults to **DFLT**. For other defaults and how to change these, please refer to the VIASPOOL command in the

## Section 3 Installing ViaNet

---

*ViaNet Intermediate User's  
Guide.*

### F. INSTALLING VIASPOOL ON MORE THAN ONE PRINTER NODE

F-1 Repeat actions A through E-1  
on all designated printer nodes.

**Note:** All network printer  
names must be unique. Use  
the following command at each  
printer node to assign a logical  
name to the printer:

```
C>viaspool /tprintername
```

### NETWORK PRINTING

In order to send print jobs to a  
network printer, the individual nodes  
on the network must have access to  
the following files:

```
VIAPRINT.EXE  
SETPRT.EXE  
REDIRPRT.COM
```

These files should be placed in the  
NETPRINT directory of the node's  
ViaNet boot disk, or be accessible to  
the node through the use of the DOS  
PATH command.

**Note:** If you installed the software with VINSTALL, the printing files were automatically copied to the proper directory.

**COPY THE  
PRINTING  
FILES (HARD  
DISK)**

To copy the needed files to a hard disk drive, insert the ViaNet distribution disk 1 into the A drive, type the following, and press <enter> at the end of each line.

```
A>c:  
C>mkdir netprint  
C>cd \netprint  
C:\NETPRINT>copy a:\netprint\*.exe
```

```
A:\NETPRINT\SETPRT.EXE  
A:\NETPRINT\VIAPRINT.EXE  
2 File(s) copied
```

```
C:\NETPRINT>copy a:\netprint  
  \redirprt.com
```

```
A:\NETPRINT\REDIRPRT.COM  
1 File(s) copied
```

**COPY THE  
PRINTING  
FILES  
(FLOPPY  
DISK)**

To copy the needed files to a floppy disk, insert the ViaNet distribution disk 1 into the A drive, type the following, and press <enter> at the end of each line.

```
A>b:
```



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---

```
B>mkdir netprint
B>cd \netprint
B:\NETPRINT>copy a:\netprint\*.exe

A:\NETPRINT\SETPRT.EXE
A:\NETPRINT\VIAPRINT.EXE
      2 File(s) copied

B:\NETPRINT>copy a:\netprint
      \redirprt.com

A:\NETPRINT\REDIRPRT.COM
      1 File(s) copied
```

#### PATH TO THE PRINTING FILES

If it is not possible to copy the printing files to a disk, due to space limitations, you may still use the network printing features by using the DOS PATH command. Merely set the path in your VIANET.BAT file to include the network directory on which the printing files are located.

For example, if the three files are in the NETPRINT directory on the C drive of the node named MICHELLE, then your path statement should include the following:

```
z:\michelle\c\netprint
```

A sample path statement, then, should be similar to the following:

```
path = a:\;a:\batch;a:\dos;z:\michelle  
       \c\netprint;
```

**Note:** The VIANET.BAT file supplied on the distribution diskettes includes a similar path statement. You need only insert the appropriate node name.

**VIAPRINT  
AND  
SETPRT**

There are two commands used to send print jobs to a network printer: VIAPRINT and SETPRT. These two commands accomplish different functions and give you flexibility in using the network printing features.

ViaPrint allows you to send a file or files to the ViaNet print spool, ViaSpool. Depending on your preference, you may use ViaPrint either through a menu and prompts or by typing the command and options on the DOS command line. Whether you use the menu and prompts or the command line method, however, you must be at the DOS prompt before you may send the file to the print queue to be printed. This is the method to choose, then, if you are working in DOS and have DOS text files or other pre-formatted print files to be printed.

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### Installing ViaNet

---

SETPRT (along with REDIRPRT and the CTRL-ALT-PRTS keys), on the other hand, allows you to set up the printing options before you enter an application and then print from within that application.

To print while working in DOS, then, use ViaPrint. To print from within an application, use SETPRT (along with REDIRPRT and the CTRL-ALT-PRTS keys).

For more information on using the VIAPRINT, VIASPOOL, and SETPRT (includes a discussion of REDIRPRT, and the use of the CTRL-ALT-PRTS keys) commands, refer to the individual commands in the *ViaNet Intermediate User's Guide*.

**NOTE:** If you are in an application, a word processor for example, and you wish to use Viaprint, you must use the application's print command to format the file and also send this, not to a printer, but to a file. In most applications this is called "printing to a file." You would then exit the application and at the DOS command line use ViaPrint to send the formatted "print" file to the print spool to be queued for printing. (If the application does not allow you to

**Section 3**  
**Installing ViaNet**

---

print to a file, MACASGN PRN  
z:\pathname\filename may be used.)

Section 3  
Installing ViaNet

VIANET  
INSTALLATION  
SUMMARY

| INSTALLATION<br>STEP                          | ADMINISTRATOR<br>ACTIONS   |
|---|--|
| 1.<br>Install the<br>Hardware                 | Install the network hardware according to the hardware vendor instructions.  |
| 2.<br>Prepare for<br>Software<br>Installation | Review planning process and prepare for installation.<br>Backup all hard disks on the network.   |
| 3.<br>Install<br>ViaNet<br>Software           | Install the software at each node.<br><br>a) Backup distribution diskette<br><br>b) Create ViaNet directories on hard disk or diskette and copy ViaNet files<br><br>c) Customize ViaNet files and functions<br><br>d) Boot the node, ACCESS SU and disable PASSWORD and DOWNLOAD as appropriate. |

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---

| INSTALLATION<br>STEP                             | ADMINISTRATOR<br>ACTIONS  |
|--|---|
| 4.<br>Create User<br>Names and<br>Group<br>Names | ACCESS SU and use the<br>MAKEUSER command.  |
| 5.<br>Distribute<br>Files                        | Distribute software, data,<br>DOS Command, BATCH and,<br>related MACASGN Files.<br><br>a) Create directory and<br>copy DOS commands as<br>determined in step 7 of<br>the planning<br><br>b) Create and distribute<br>BATCH directories and<br>files and related<br>MACRO directories and<br>MACASGN files as<br>determined in step 7 of<br>the planning<br><br>c) Distribute and protect<br>software and data files<br>as determined in step 6<br>of the planning |
| 6.<br>Test the<br>Network                        | Run DIAGNOST.   |

---

## Section 4

# VIANET COMMANDS

---

NETWORK  
ADMINISTRATOR  
COMMAND  
SUMMARY

ViaNet commands used by the Network Administrator are as follows:

- o DIAGNOST - Test the hardware
- o DOWNINST - Enable/disable nodes as downloaders
- o ERRSTATS - Display the hardware error performance statistics
- o MACASGN - Create aliases for complex network paths
- o MAKEUSER - Create, list, or modify network users
- o NET - Display network status
- o PASSHOLD - Enable/disable nodes as passholders
- o PROTECT - Set or change file protection, sharability, or ownership
- o VIANET - Load ViaNet at a node
- o VIASPOOL - Activate and control the print spooler

COMMAND  
FORMAT AND  
SYNTAX  
NOTATION

The ViaNet Commands are presented in the following format:

| Command | Switch Options | Required Parameters | Optional Parameters |
|---------|----------------|---------------------|---------------------|
|---------|----------------|---------------------|---------------------|

The following syntax notation is used within the above format:

\ Backslash separates directories in a search path and is also the "name" of the root directory.

Example: a:\

This indicates the root directory on the A drive.

/ Slash precedes switch options in command lines. (A hyphen can also be used to denote a switch option if the switch character is specified as such at that node.) Refer to the *ViaNet Intermediate User's Guide* for definition and implementation of switch characters.

Example: makeuser /x or make-user -x



## Section 4 ViaNet Commands

---

This executes the MAKEUSER command with the X switch option.

The vertical bar indicates mutually exclusive parameters. Only one of the options may be selected.

Example: A|B|C

Either A, B, or C may be chosen.

When parameters appear one above the other without the vertical bar separation, any combination of the parameters may be selected. However, at least one of these parameters must be used.

Example: **parameter1**  
**parameter2**

Both parameter1 and parameter2 may be chosen, but at least one of the two must be selected.

UPPER Parameters shown in upper CASE case must be entered exactly as shown.

lower case Parameters shown in lower case are to be substituted with the appropriate information.

The parameter *filespec* represents either a file or directory specification of the form:

**d:\path\filename**

where **d:** is the drive specification, **\path** is the filename path, and **filename** is the (optional) filename.

All other punctuation, such as commas, colons, and equal signs must be entered exactly as shown.

Entries made by the network administrator are shown in bold type in the command execution examples.

## Section 4 ViaNet Commands

---

**DIAGNOST**      DIAGNOST is used to verify LAN hardware card performance by sending messages between nodes. The message sent is received by the remote node and returned to the sending node. The sending node checks the validity of the returned message and posts an error if it is not correct.

| Command  | Switch Options | Required Parameters | Optional Parameters |
|----------|----------------|---------------------|---------------------|
| Diagnost | /v             |                     |                     |

When DIAGNOST is entered, a user controlled hardware check is initiated. The sending node is the one at which DIAGNOST is entered. The following is displayed on the screen of the sending node:

### ViaNet(R) Diagnostic Utility

This is a continuous send/receive loop with data check.  
The data is a continuously changing random pattern.  
Hitting a key at any point will break out of the loop.  
All values are printed in hexadecimal.

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ViaNet Commands

---

Maximum Message Size For  
This Driver : 01DD hex  
Node id : xxx hex

```
Enter destination node id (hex): xxx
Enter message length [01DD hex]:
Enter number to send [100 hex]:
Sending 0100 messages (length =
01DD) to node: xxx, ok? [y,n] y
```

```
Sent and received: 0100
Data bad in: 0000
```

The user must supply the physical ID at the target node (xxx). The message length and number of messages to be sent may be entered at the prompt or the values specified in the square brackets will be used by pressing return only. Before the messages are actually sent, the request must be confirmed by the user.

NOTE: The ViaNet command NET may be used at the target node to obtain its physical ID if necessary.

SWITCH  
OPTIONS  
AND  
PARAMETERS

/V Causes the version number of the command to be displayed without executing the command.

## Section 4 ViaNet Commands

---

There are no parameters for the DIAGNOST command.

REMARKS      DIAGNOST should be run whenever hardware is changed or there is a reason to suspect a node is not working properly.

EXAMPLE      ViaNet C:\>diagnost

                 ViaNet(R) Diagnostic Utility

                 This is a continuous send/receive loop with data check.  
                 The data is a continuously changing random pattern.  
                 Hitting a key at any point will break out of the loop.  
                 All values are printed in hexadecimal.

                 Maximum Message Size For  
                 This Driver : 01DD hex  
                 Node id : 00AA hex

                 Enter destination node id (hex): aa  
                 Enter message length [01DD hex]:  
                 Enter number to send [100 hex]:  
                 Sending 0100 messages (length =  
                 01DD) to node: AA, ok? [y,n] y

                 Sent and received: 0100  
                 Data bad in: 0000





**DOWNINST**      The DOWNINST command is used to enable or disable a node's ability to respond to a boot request from a diskless PC. DOWNINST is menu driven and contains options for reporting the current state of ViaNet download as well as for changing it. DOWNINST can only be executed from the super user (SU) ID.

| Command  | Switch Options | Required Parameters | Optional Parameters |
|----------|----------------|---------------------|---------------------|
| Downinst | /v             |                     |                     |

**CAUTION:** When the DOWNINST command is executed for any node, the NETSYS directory containing VIANET.EXE must be resident in the same drive as when ViaNet was booted at that node.

When DOWNINST is entered, The following is displayed:

Enter filename [\\NETSYS\\VIA-  
NET.EXE]:

The file displayed in square brackets ([ ]) is the current ViaNet program (VIANET.EXE) for the node. DOWNINST works by patching the executable version of ViaNet (the file



## Section 4 ViaNet Commands

---

VIANET.EXE) pointed to as the current file. To change the current ViaNet program, enter the ViaNet program filespec.

To continue to the menu without changing the ViaNet program filespec, simply press enter.

- P Make NODE a Downloader
- D Make NODE a non-Downloader
- T Tell whether NODE is a downloader
- S Show current filename
- C Change current filename
- E, Q, X Exit Program

Select One:

### MENU OPTIONS

- P Make NODE a Downloader. The node that uses the current VIANET.EXE is designated as a downloader.

**NOTE:** A node cannot be a downloader unless there is a DOWNLOAD.SYS in the NETSYS directory for that node.

- D Make NODE a non-Downloader. The node that uses the current VIANET.EXE is designated as a non-downloader.

- T     Tell whether NODE is a downloader. Displays the downloader status of the node using the current VIANET.EXE.
  
- S     Show current filename. Displays the current VIANET.EXE.
  
- C     Change current filename. Allows the user to change the current filename (VIANET.EXE).
  
- E, Q, X   Exit Program.       Exit DOWNINST.

SWITCH  
OPTIONS  
AND PARAMET-  
TERS

- /V     Causes the version number of the command to be displayed without executing the command.

There are no parameters for the DOWNINST command.

REMARKS

In order for a node to be enabled as a downloader, it must first be enabled as a passholder. See the Passhold command in this section.

The information sent in response to a boot request is hardware dependent and enables a PC to be booted and brought onto the network from ROM in the diskless PC.

## Section 4 ViaNet Commands

---

**CAUTION:** Any downloader changes do not take effect until the next time ViaNet is loaded at the effected node. A node cannot be a downloader unless PASSHOLD is enabled and there is a DOWNLOAD.SYS in the NETSYS directory for that node.

### EXAMPLE

ViaNet C:\>downinst

Enter filename [\NETSYS\VI-  
ANET.EXE]:

- P Make NODE a Downloader
- D Make NODE a non-Down-  
loader
- T Tell whether NODE is or  
isn't
- S Show current filename
- C Change current filename
- E, Q, X Exit Program

Select One: t

NODE is not a downloader

**ERRSTATS**      A count of errors is kept at each node. The count is initialized each time the node is brought onto the network. ERRSTATS is used to display this error count.

| Command  | Switch Options | Required Parameters | Optional Parameters |
|----------|----------------|---------------------|---------------------|
| Errstats | /v             |                     |                     |

When ERRSTATS is entered, the error count for the node is displayed:

ERRSTATS -- Information about ViaNet performance.  
All values are in hexadecimal.

Sent 00000xxx requests out to net...  
Needed 00000000 retries...  
And had 00000000 fatal errors.  
Timed out (ViaNet level) waiting for 00000000 responses.

Sent 00000xxx replies back to net...  
Needed 00000000 retries...  
And had 00000000 fatal errors.

**SWITCH OPTIONS AND PARAMETERS**      /V      Causes the version number of the command to be displayed without executing the command.

## Section 4 ViaNet Commands

---

There are no parameters for the ERRSTATS command.

REMARKS If the number of retries or fatal errors is greater than zero, there may be a hardware problem. Refer to the hardware vendor's documentation for instructions on dealing with suspected hardware problems.

EXAMPLE ViaNet C:\>errstats

ERRSTATS -- Information about ViaNet performance.  
All values are in hexadecimal.

Sent 00000233 requests out to net...  
Needed 00000000 retries...  
And had 00000000 fatal errors.  
Timed out (ViaNet level) waiting for 00000000 responses.

Sent 00000654 replies back to net...  
Needed 00000000 retries...  
And had 00000000 fatal errors.

Section 4  
ViaNet Commands

---

MACASGN

MACASGN is used to define aliases for use in place of network path or file specifications. This not only allows easier access to remote devices and files, but it also provides a mechanism for using pre-DOS 2.0 programs in the network.

There are three different forms for the MACASGN command.

| Command | Switch Options | Required Parameters | Optional Parameters |
|---------|----------------|---------------------|---------------------|
| Macasgn | /v /d          |                     |                     |
| Macasgn |                | macname             | mac-string          |
| Macasgn |                | @                   | file-spec           |

MACASGN entered without switches or parameters displays all the current macro assignments.

The three forms of the MACASGN command are detailed below.

SWITCH  
OPTIONS  
AND PARAME-  
TERS

/V Causes the version number of the command to be displayed without executing the command.

## Section 4 ViaNet Commands

---

/D Deletes all currently defined macros at the node it is issued.

### DIRECT MACRO ASSIGNMENT

MACASGN may be used to assign an alias directly.

#### Required Parameter:

macname This is specified as the first parameter. If no second parameter is specified, any 'alias' associated with this name is deleted. If a second parameter is specified, this macname takes the value of the second parameter. Whenever the macname is used, ViaNet substitutes the value of the second parameter in its place.

#### Optional Parameter:

macstring This is the second parameter specified when macname is specified as the first. This parameter may be any network filepath or device path.

**CAUTION:** macname must reflect the assignment being made. If a drive letter is used for macname, the replacement string specified by macstring must include a drive letter too.

MACRO  
ASSIGNMENT  
FROM A FILE

The arguments for MACASGN may reside in a file, instead of being directly input with the command.

Required Parameter:

@           When @ is specified as the first parameter, MACASGN uses the contents of a file for macro assignments. If @ is specified as the only parameter, the input is taken from the file MACASGN.SYS in the NETSYS directory on the current default drive.

Each record of the file must contain the macname and macstring as described above for direct macro assignment.



## Section 4 ViaNet Commands

---

### Optional Parameter:

**filespec** If **filespec** is specified as the second parameter, **MACASGN** uses the input found in the file specified for macro assignments. The **filespec** is the complete network specification (including the full network path) for the file to be used as input for **MACASGN**.

### REMARKS

Only twenty (20) **MACASGNS** may be active at any one time. For this reason, the use of **MACASGN @filespec** within **DOS BATCH** files is recommended (refer to the sections in the **Planning and Installation Sections** on **DOS BATCH** files and **MACASGN**).

**MACASGN** is included in this document because it is heavily used by the **Network Administrator**. For a more complete description of **MACASGN**, refer to the *ViaNet Intermediate User's Guide*.

### EXAMPLES

ViaNet C:\>macasgn

Displays all currently defined macros for the node.

ViaNet C:\>macasn /d

Deletes all currently defined macros for the node.

ViaNet C:\>macasn f: z:\pc2\c

Defines the alias f: as the C drive at PC2 in the network. All references to the F drive from this node are directed to the C drive at PC2.

ViaNet C:\>macasn f:

Deletes f: from the currently defined macros for the node.

ViaNet C:\>macasn @c:\macros  
          \mymacs.mac

Executes MACASGN against the file MYMACS.MAC in the MACROS directory on the C drive for the node. Each line (record) in this file contains a **macname** and **macstring** for assignment.

## Section 4

### ViaNet Commands

---

ViaNet C:\>macasgn prn z:\pc2\prn

Redirects references to the local printer to the printer at PC2.

**CAUTION:** Using MACASGN for printer redirection locks out all other users from that printer. When the MACASGN is executed, the node issuing the request becomes the 'owner' of the printer. No other node may gain access to the printer until it is released using macasgn prn.

Section 4  
ViaNet Commands

---

**MAKEUSER** MAKEUSER is used to manage the network security system. MAKEUSER is menu driven and allows the network administrator to add and delete users, change passwords, list current users, and list the nodes holding user password information. This command can only be executed from the super user (SU) ID.

| Command  | Switch Options | Required Parameters | Optional Parameters |
|----------|----------------|---------------------|---------------------|
| Makeuser | /v /x /u       |                     |                     |

When MAKEUSER is entered, The following menu is displayed:

--Displaying all current PASSHOLDERS--

| Node Name        | Node Address | Access File  | Up-dated    |
|------------------|--------------|--------------|-------------|
| <u>node-name</u> | <u>xx</u>    | <u>m-d-y</u> | <u>h:mx</u> |

|         |                          |
|---------|--------------------------|
| A       | Add a User               |
| D       | Delete a User            |
| C       | Change a User's Password |
| L       | List Current Users       |
| P       | List Passholders         |
| E, Q, X | Exit Program             |

## Section 4

### ViaNet Commands

---

Select One:

Where: nodename = the name of the node MAKEUSER was issued from, xx = the physical ID of the node MAKEUSER was issued from, m-d-y = the date the ACCESS.SYS file was last updated (m = month, d = date, y = year), and h:m = the time the ACCESS.SYS file was last updated (h = hour, m = minutes, x = p or a (pm or am)).

MENU  
OPTIONS

- A Add a User. Adds a user ID to the network. There are prompts for the user name, group name, user number, group number, and password for the user being added. The user name and group name may each be up to 31 characters in length. The user password may be up to ten (10) characters in length.

**CAUTION:** Each user name must be unique to the network, not only within each group.

- D Delete a User. Removes a user ID from the network. Groups may not be removed directly. However, when all the users in a group have been deleted, the group is removed.

- C Change a User's Password. Allows the super user (SU) to change any user password.
- L List Current Users. Lists the current users. The list includes user and group names, and user and group numbers.
- P List Passholders. Lists all the nodes currently enabled as passholders.
- E, Q, X Exit Program. Exit MAKE-USER.

SWITCH  
OPTIONS  
AND PARAME-  
TERS

- /V Causes the version number of the command to be displayed without executing the command.
- /X Causes MAKEUSER to list user passwords when the list option is chosen. This switch should be used with discretion to prevent exposing all the user passwords to someone else.
- /U Changes the time stamp and date on all ACCESS.SYS files to the current date and time. It is very important that the time and date at the node used

## Section 4

### ViaNet Commands

---

to issue this command is correct. The ACCESS.SYS file at the node used to issue this command is marked as the most recent update. This switch should only be used when ACCESS.SYS is determined to be out of synchronization at multiple nodes.

There are no parameters for the MAKEUSER command.

#### REMARKS

User and group numbers may be assigned in any order by the network administrator.

The SU ID belongs to the group SYSTEM and has a user number and group number of zero (0).

When updating password information, MAKEUSER updates all passholding nodes and leaves the 'last modified' dates in the same order as they started.

All system times are reset to within a minute of each other at each passholding node. MAKEUSER should not be run unless the time and date are correct on all PASSHOLDER nodes on the network as well as the node it is run from.

EXAMPLE      ViaNet C:\>makeuser /x

-- Displaying all current PASS-  
HOLDERS --

| <u>Node</u><br><u>Name</u> | <u>Node</u><br><u>Address</u> | <u>Access</u><br><u>File</u> | <u>Up-</u><br><u>dated</u> |
|----------------------------|-------------------------------|------------------------------|----------------------------|
| Joe                        | 02                            | 1-06-84                      | 1:30p                      |

A      Add a User  
D      Delete a User  
C      Change a User's  
        Password  
L      List Current Users  
P      List Passholders  
E, Q, X    Exit Program

Select One: 1

-- Listing ACCESS File from Node  
JOE --

| <u>User</u><br><u>Name</u> | <u>Group</u><br><u>Name</u> | <u>User#</u><br><u>Group#</u> | <u>pswd</u><br><u>_____</u> |
|----------------------------|-----------------------------|-------------------------------|-----------------------------|
| su                         | system                      | <000,000>                     | vianet                      |
| herman                     | marketing                   | <001,001>                     | money                       |
| george                     | secretary                   | <001,002>                     | smile                       |
| karen                      | acctng                      | <001,003>                     | turkey                      |



Section 4  
ViaNet Commands

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**NET** The NET command is used to determine the status of network software at the node from which the command is called.

| Command | Switch Options | Required Parameters | Optional Parameters |
|---------|----------------|---------------------|---------------------|
| Net     | /t v           |                     |                     |

**SWITCH  
OPTIONS  
AND PARAME-  
TERS**

**/T** Sets the date and time for all nodes on the network to the date and time set on the node at which the command is issued.

**/V** Causes the version number of the command to be displayed without executing the command.

**REMARKS**

A description of the ViaNet command NET is located in the *ViaNet Intermediate User's Guide*.

EXAMPLE

ViaNet C:\>net

The Network Software IS Loaded

|                          |           |
|--------------------------|-----------|
| Node Name                | NODE02    |
| Node Number              | 02        |
| Maximum Message Size     | 1DD       |
| Passholder?              | YES       |
| Downloader?              | YES       |
| DOS 3.0 Emulation?       | YES       |
| ViaNet(R) Serial Number  | 004-00170 |
| ViaNet(R) Version Number | 03.06.12  |

## Section 4 ViaNet Commands

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### PASSHOLD

The PASSHOLD command is used to enable or disable a node's ability to keep password information. PASSHOLD is menu driven and contains options for reporting the current state of ViaNet passhold as well as for changing it. PASSHOLD can only be executed from the super user (SU) ID.

| Command  | Switch Options | Required Parameters | Optional Parameters |
|----------|----------------|---------------------|---------------------|
| Passhold | /v             |                     |                     |

**CAUTION:** When the PASSHOLD command is executed for any node, the NETSYS directory containing VIANET.EXE must be resident in the same drive as when ViaNet was booted at that node.

When PASSHOLD is entered, The following is displayed:

Enter filename [\NETSYS\VIA-  
NET.EXE]:

The file displayed in square brackets ([ ]) is the current ViaNet program (VIANET.EXE) for the node. PASSHOLD works by patching the executable version of ViaNet (the file

VIANET.EXE) pointed to as the current file. To change the current ViaNet program, enter a ViaNet program filespec.

To continue to the menu without changing the ViaNet program filespec, simply hit enter.

- P Make NODE a passholder
- N Make NODE a non-passholder
- D Display if NODE is a passholder
- S Show current filename
- C Change current filename
- E, Q, X Exit Program

Select One:

MENU  
OPTIONS

- P Make NODE a passholder. The node that uses the current VIANET.EXE is designated as a passholder.

**NOTE:** A node cannot be a passholder unless there is an ACCESS.SYS in the NETSYS directory for that node.

- N Make NODE a non-passholder. The node that uses the current VIANET.EXE is designated as a non-passholder.

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### ViaNet Commands

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- D Display if NODE is a passholder. Displays the passholder status of the node using the current VIANET.EXE.
- S Show current filename. Displays the current VIANET.EXE.
- C Change current filename. Allows the user to change the current filename (VIANET.EXE).
- E, Q, X Exit Program. Exit PASSHOLD.

#### SWITCH OPTIONS AND PARAME- TERS

- /V Causes the version number of the command to be displayed without executing the command.

There are no parameters for the PASSHOLD command.

#### REMARKS

**CAUTION:** Any passholder changes do not take effect until the next time ViaNet is loaded at the effected node. A node cannot be a passholder unless there is an ACCESS.SYS in the NETSYS directory for that node.

EXAMPLE

ViaNet C:\>passhold

Enter filename [\NETSYS\VIA-  
NET.EXE]:

- P Make NODE a passholder
- N Make NODE a non-passholder
- D Display if NODE is a passholder
- S Show current filename
- C Change current filename
- E, Q, X Exit Program

Select One: d

NODE will not be a passholder

## Section 4 ViaNet Commands

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### PROTECT

PROTECT is used to change protection, sharability status, or ownership of files and/or directories. PROTECT is also used to display or change the default protect status at a node.

There are four different forms for the PROTECT command.

| Command | Switch Options | Required Parameters | Optional Parameters                  |
|---------|----------------|---------------------|--------------------------------------|
| Protect | /v             |                     |                                      |
| Protect | /d             | [protection]        |                                      |
| Protect | /r w s         | filespec            |                                      |
| Protect |                | filespec            | [protection]<br>chown<br>(usr#,grp#) |

PROTECT entered without switches or parameters displays the current default protection for the node.

The four forms of the PROTECT command are detailed below.

### SWITCH OPTIONS AND PARAME- TERS

/V Causes the version number of the command to be displayed without executing the command.

/D Used to set or modify the node's default protect status. The parameter [protection] is

required with this switch option to specify the new default protection for this node.

**NOTE:** The protection must always be enclosed in square brackets ([]).

`/R|/W|/S` These three switches all affect file sharability.

Required Parameter:

`filespec` This is the complete network specification (including the full network path) for the file or directory whose sharability is being changed. `filespec` is required with all three of these switches.

**NOTE:** The `filespec` parameter may be used to change the sharability or protection for all the files in a directory by using the form:

`PROTECT/R d:\path\*.*`

In this case, all the files



## Section 4 ViaNet Commands

---

in the directory specified  
by path are marked RO.

- /R Sets the specified file or directory to shared read only, allowing multiple read access and prohibiting write access. Files and directories set with this switch appear with 'RO' in directory listing when XDIR is used.
- /W Sets the specified file or directory to shared read/write. Multiple users may simultaneously open and read or write to these files. It is necessary to ensure adequate record locking in applications programs if this switch is used. Files and directories set with this switch appear with 'RW' in directory listing when XDIR is used.
- /S Clears shared read only or shared read/write protect status set by /R or /W.

FILE  
PROTECTION  
AND  
OWNERSHIP

The final form of PROTECT may be used to change the protection and/or ownership of a file or directory.

Required Parameter:

`filespec` This is the complete network specification (including the full network path) for the file or directory whose protection and/or ownership is being changed.

**CAUTION:** The protection for a file is checked by ViaNet at the file level, and at the immediate parent directory. If access is denied in either of those places, the user is not granted access to the file. However, it is possible to have a file with the following directory path:

`d:\directory1\directory2\filename`

The `directory1` has protection `[---wr]`, but `directory2` has no protection, and `filename` has protection `[--wrwr]`.

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### ViaNet Commands

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Because only the protection for `filename` and `directory2` is checked before granting access, any member of the owner's group will be granted read and write access.

Optional Parameters:

[`protection`]

`CHOWN (usr#,grp#)`

One or both of these parameters must be chosen.

The [`protection`] parameter specifies the new protection for the directory or file specified with `filespec`.

**NOTE:** The protection must always be enclosed in square brackets ([]).

The `CHOWN` parameter specifies a change of ownership for directory or file specified with `filespec`. This parameter is particularly useful during installation to define who owns files.

NOTE: For users other than the super user (SU), this parameter is only effective on files owned by a local user (-1,-1) or the super user (0,0). The user must have access to any files CHOWN is used on. SU may use CHOWN to change ownership on any file. This parameter should be used very carefully.

The following restrictions apply to the CHOWN parameter:

1. The user must have write access to the file before CHOWN may be used (the super user may use PROTECT with any file available to the network).
2. The user 'claims' ownership of a file by using CHOWN. CHOWN changes the ownership of a file to that of the user invoking CHOWN. Only the super user may specify the optional user and group numbers.
3. The super user may specify any group and user number desired. Ownership of the

## Section 4 ViaNet Commands

---

file changes to the user and group specified.

REMARKS      The network administrator (SU) may change the sharability or protection of any file or directory no matter who owns it.

The file protection is a six-character setting appended to each file's directory entry. Each character specifies read or write privileges for the entire network, the owner's group, and the owner.

```
all   group  owner
[wr  wr   wr]
```

The w grants write access and r grants read access. A dash (-) is used in place of w or r to deny that type of access at that level.

To gain access to a shared file (RO or RW), a user must have access to the file as defined by the file protection described above.

All pre-network files have an initial protect status of [wrwrwr] and belong to the super user (0,0). The super user, therefore, must change the ownership of the files to the

appropriate users and groups. Refer to the example below.

**NOTE:** Use the ViaNet command XDIR to display the protection and sharability of directories and files.

**EXAMPLES**

```
ViaNet C:\>protect b:myfile.txt  
[-r-rwr]
```

The first pair of characters (-r) specifies that the entire network has read access to the file, but not write access. The second pair (-r) specifies that all members of the owner's group have read access but not write access. The last pair (wr) specifies that the owner has both write and read access to the file.

```
ViaNet C:\>protect c:\mydir\*. * chown
```

A user uses this form to 'claim' the pre-network files in the directory mydir. These files must be owned by a local user (-1,-1), and the user invoking CHOWN must have write access to the files in order for CHOWN to work.

## Section 4

### ViaNet Commands

---

```
ViaNet C:\>protect c:\special\*.*  
[--wrwr]
```

The super user changes the protection of files in a directory to prevent other users from 'claiming' them.

```
ViaNet C:\>protect c:\theirs\*.*  
chown (18,3)
```

The super user assigns ownership for all files in the THEIRS directory to user number 18 in group three, regardless of who owns them when CHOWN is invoked.

VIANET

VIANET causes commands in the VIANET.BAT file to be executed. These commands cause the VIANET.EXE program to be loaded into memory at the node where it is executed.

| Command | Switch Options  | Required Parameters | Optional Parameters |
|---------|-----------------|---------------------|---------------------|
| Vianet  | /n/v/ <i>sd</i> |                     |                     |

SWITCH  
OPTIONS  
AND PARAME-  
TERS

To use ViaNet switch options, \NETSYS must be the current directory from which the command is executed. Otherwise, the VIANET.BAT file will be executed.

*/N* Causes the node loading ViaNet to be a nonpassholder.

*/V* Causes the version number of the command to be displayed without executing the command.

*/Sd* Changes default location to drive *d* for NETCNF.SYS and ACCESS.SYS at the node it is issued. This directs the search path for NETCNF.SYS and ACCESS.SYS to the NETSYS directory on the drive designated by *d*.



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### ViaNet Commands

---

There are no parameters for the VIANET command.

REMARKS Refer to the description of the ViaNet file VIANET.EXE in Section 3 of this manual.

EXAMPLES C:\>`vianet`

Brings up ViaNet at the node.

C:\>`vianet /sf`

Changes the default for NETCNF.SYS and ACCESS.SYS to the NETSYS directory on the F drive at the node.

**VIASPOOL**

VIASPOOL is used to initialize or remove the resident portion of the ViaNet print spooler function at a node which functions as a print server. VIASPOOL is also used to control print functions at the "spooler" node.

| Command  | Switch Options               | Required Parameters | Optional Parameters |
|----------|------------------------------|---------------------|---------------------|
| Viaspool | /? /v /q                     |                     |                     |
| Viaspool | /j /l /m /p<br>/t /w /x      |                     |                     |
| Viaspool | /c /d /e <br>/g /i /s <br>/u |                     |                     |

**SWITCH  
OPTIONS  
AND PARAMETER**

VIASPOOL provides various options for setup, information, and printer control.

The following switches may be used to setup VIASPOOL at initialization or to change the setup after VIASPOOL has been initialized. The status of VIASPOOL is also displayed when some of these switches are used.

Note: All switches except /?, /Q, and

## Section 4 ViaNet Commands

---

/V must be entered at the spooler node.

/? Displays the following help listing for the VIASPOOL switches:

Available ViaSpool switches are

--Anytime--

B Specify polarity of printer busy status  
E Specify printing of banner page  
M Specify print forms selection  
P Specify serial/parallel interface type  
Q Display current environment  
T Specify PRINTER name  
V Display version information  
W Specify character bit width  
X Specify tab expansion

--When installing print spooler--

J Specify additional print buffer space  
L Specify list device driver  
N Specify use of timer event

--After print spooler is installed--

C Cancel printing of current file  
D Drain current print file & stop print spooler  
G Specify backspace of print file  
I Interrupt print spooler  
S Restart print spooler  
U Unload print spooler

Section 4  
ViaNet Commands

---

- /V Displays the ViaNet version number and exits without performing a function.
- /B This switch is for compatibility issues only. It sets the internal polarity of the printer busy status indicator to be compatible with specific hardware systems. The network administrator will have appropriately set this at the time ViaSpool was installed.
- /Jn Increases the buffer size used by VIASPOOL for reading files, where n is the increment number 1 through 9. The size is increased by 1024 bytes for each increment. By increasing the buffer size in VIASPOOL, you may reduce the amount of time it needs to access the disk while printing a file, hence, decrease the amount of time the system requires to print a queued file. Increasing the buffer size, however, decreases the printer node's available RAM memory.
- /L Selects the printer device driver. This is useful for those who may have special printer

## Section 4

### ViaNet Commands

---

drivers to process their files before they are printed. For example, you may have a special printer driver which will allow you to print special fonts which otherwise would not be supported. When you spool a file that you would like printed with the special fonts, you would use this switch at the printer node. A "device name" up to eight characters may be specified after the /L switch. If a device name is specified, the device driver named "device name" is used instead of the PRN device driver.

/M Sets the type of forms to be printed. Forms types are defined with four-character names. Any four-character name may be chosen; however, forms type standardization within an organization is recommended. The default forms type is STND.

For example, standard 8 1/2 x 11 paper may be chosen as the default, STND. A forms type of LABL may be used to specify a forms type for labels.

## Section 4 ViaNet Commands

---

The /M switch also allows you to set a "wild card" form. This "wild card" option causes VIASPOOL to ignore any forms type specified when a file is sent to the print spool using VIAPRINT. The "wild card" character is the question mark (?) and the command may take the form: /M ?

When the "wild card" is in effect, ALL files in the print spool are printed, regardless of the form specified when they were placed into the print spool. (Format is not affected by this option.)

/N This switch is for compatibility issues only. It sets the internal timer event interrupt call to be compatible with specific hardware systems. The network administrator will have appropriately set this at the time ViaSpool was installed.

/P Set printer interface selection under MS-DOS<sup>(tm)</sup>. The printer interface is assumed to be a parallel interface when VIASPOOL is initialized. The /P switch without a parameter

## Section 4

### ViaNet Commands

---

changes this to the serial interface.

Note: A printer configuration utility is required to configure a serial port for the printer under MS-DOS<sup>(tm)</sup>. (Depending on your hardware, it may be the MODE or CONFIGUR DOS utilities. Refer to your system's reference manual for the appropriate utility.) The /P switch redirects VIASPOOL parallel printer output to the serial port defined by this configuration program.

If you use PC-DOS<sup>(tm)</sup>, the MODE command may be used to configure a serial port for the printer and to redirect parallel printer output to the serial port.

Example:

```
MODE COM1:12,N,8,1,P
MODE LPT1:=COM1
```

Refer to the PC-DOS<sup>(tm)</sup> Reference Manual.

/Q Display spooler information. When VIASPOOL /Q is entered, the following is displayed:

Current environment for ViaSpool is  
as follows:

Printer name...

ccccccc

ViaSpool subdirectory drive...

d:

Forms selection...

cccc

Printer interface...

Parallel (Serial or Dev Drvr)

Busy active level...

Up (or Down)

Device driver name...

ccccccc

Banner processing...

Yes (or No)

Character bit width...

7 (or 8)

Additional print buffer space...

(space in bytes or none)

"c" represents any valid filename character, and "d" is a drive letter. "n/a" is displayed if a field is not applicable.

Note: VIASPOOL /Q may be issued when VIASPOOL is not loaded, and this will not initialize VIASPOOL at this node.

/T Defines the printer name. The printer name may be up to 8



## Section 4 ViaNet Commands

---

characters in length. The default printer name is PRINTER.

Note: Only one printer per node is usable with VIASPOOL. For this reason, only one printer name may be specified. If a printer name other than the one originally defined is specified, the first printer name is removed. Whenever VIASPOOL is re-initialized, the default name of PRINTER is used unless the /T switch is used to specify a different name.

/W Changes the character width to 8 bits when specified alone. The default character width when VIASPOOL is initialized is 7. Seven or 8 may be specified with this switch to explicitly change the character width to 7 or 8.

The default of 7 was chosen because many programs such as WordStar<sup>(R)</sup> require this to print properly. Some graphics programs may require the 8-bit character width. Refer to the specific products' documenta-

tion to obtain details on choosing this setting.

`/Xc` Sets tab expansion on or off, where "c" is either "n" for no tab expansion or "y" for tab expansion. When tab expansion is on, each tab is sent to the printer unaltered. When tab expansion is off, each tab is interpreted as zero spaces. The default if VIASPOOL /X is issued without "n" or "y" is to turn tab expansion off.

Note: When VIASPOOL is initialized, the default is to expand all tab characters.

The following switches provide printer and queue control. These switches must be entered at the node with the VIASPOOL directory and printer.

The following switches may not be combined and entered with any other switch at any one time.

`/C` Printing of the current file is discontinued, the file is deleted from the queue, and printing resumes with the next file in the queue.

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**/D** Drain the printer. After the file currently being printed has finished printing, VIASPOOL stops sending print files to the printer.

The **/S** switch causes VIASPOOL to resume processing of queued files.

**/E** Turns print file banner separator on. When printing multiple files, a full page will be inserted between the files being printed. This banner separator includes the filename of the file to be printed next. When VIASPOOL is initialized, the default for the banner is OFF. The additional parameters Y (yes) and N (no) may be specified with the **/E** switch.

**/G** Backspace the printer. When **/G** is specified without options, the printer backsplaces to the beginning of the page currently printing. The options P and F backspace to the beginning of the current page and the current file respectively.

Note: The **/G** switch is only valid when printing has already

## Section 4 ViaNet Commands

---

been interrupted by the /I switch.

/I Interrupt printing immediately. The printer stops printing and VIASPOOL waits for directions to continue. Refer to descriptions of the /G and /S switches for more information.

/S Resume printing. Printing resumes with the next record if /I was used to stop printing and with the next file in the queue if /D was used.

/U u Causes the resident portion of VIASPOOL to be removed. If a file was printing when /U was issued, the file is returned to the VIASPOOL directory and will print in its entirety when VIASPOOL is re-initialized.

The optional parameter "u" causes the printer to be unlinked at this node. VIAPRINT will be unable to locate the node's printer after /Uu is issued. This frees the printer name for use at a different node.

If VIASPOOL is unloaded without using the "u" parame-

## Section 4 ViaNet Commands

---

ter, VIAPRINT is still able to send print jobs to the VIASPOOL directory at the node where VIASPOOL was unloaded.

### REMARKS

Before VIASPOOL may be issued at a node, the following requirements must be met at the node:

1. The device=PRN or device=LPT1 statement in NETCNF.SYS must be deleted to avoid interleaved printer output.
2. The file VIASPOOL.COM must be in the VIANET directory used by this node.
3. A printer must be attached to the node.
4. A local drive C with a VIASPOOL directory on the root must be available to the network. A DRIVE=C statement must be in the NETCNF.SYS file for the node.
5. The Format directory must exist as a subdirectory of VIASPOOL. This directory must contain the two format files: DFLTINIT.STR and

DFLTFINI.STR as supplied on distribution diskette 1 or their user supplied equivalents.

The first time VIASPOOL is issued, the resident portion of the spooler is loaded. If VIASPOOL is issued without switches, the printer name defaults to PRINTER, the forms specification defaults to STND, and the printer interface defaults to the parallel interface.

After VIASPOOL initializes the spooler, any subsequent use of the command without switches will produce the following message:

VIASPOOL is awaiting data

Printer Format  
Control Setup

The format command allows VIASPOOL to send print job initialization and termination files containing printer control sequences to a printer before and after the file being printed. This initialization and termination allows you to choose printer control sequences by specifying a format for the file to be printed.

Note: Some printers require that a line feed or carriage return precede and follow the initial and ending

## Section 4

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---

printer control or escape sequences. Consult your printer's manual for the specific requirements.

Each format type is identified by a four-character name. The format name DFLT is reserved for the default format type. A format type of DFLT is sent to VIASPOOL when VIAPRINT is used without specifying a format type.

#### Initialization and Termination Files

The initialization and termination files for each format type must exist in the directory C:\VIASPOOL\FORMAT at the spooler node. These files are:

xxxxINIT.STR

xxxxFINI.STR

where: xxxx is the four-character format type.

If a file is sent to the printer specifying a format for which there are no xxxxINIT.STR and xxxxFINI.STR files for that format, an error message is printed instead of the file.

xxxxINIT.STR

This file contains the appropriate printer escape sequences to set up the desired format. For example, a format of LAND for a laser printer would contain the escape sequences necessary for the laser printer to print in landscape format.

xxxxFINI.STR

This file contains the appropriate printer escape sequences to reset the printer. This reset may be to an agreed upon default, or to the default printer setup when the printer is first powered on.

For example, if you have a laser printer which is capable of printing in a "landscape" (sideways) mode, then the escape sequences to place the printer in "landscape" mode can be placed in the file LANDINIT.STR, and the escape sequences to place the printer back to the normal or "portrait" mode can be placed in the file, LANDFINI.STR. To request landscape printing of a file, you would specify the following:

```
VIAPRINT /T[printername] [filename]  
/FLAND
```



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EXAMPLES           VIASPOOL /L

Selects the default device driver PRN for the printer.

VIASPOOL /L HERMAN

Selects the device driver HERMAN for the printer.

VIASPOOL /M LABL

This command will set the forms type to LABL for the printer on this node.

VIASPOOL /M ?

A single question mark (?) is used to specify the "wild card" forms selection parameter.

VIASPOOL /P

Changes the printer selection to serial interface on this node regardless of the previous setting.

VIASPOOL /P P

Changes the printer selection back to parallel interface.

Remember, when VIASPOOL is first initialized, the printer selection defaults to the parallel interface.

VIASPOOL /T WRITER

Defines the printer named WRITER for this node.

VIASPOOL /W

Sets the character width to 8 bits.

VIASPOOL /W 7

Sets the character width to 7 bits.

VIASPOOL /E Y

Turns on the banner separator.

VIASPOOL /I

Interrupt (i.e., stops) the printer.

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---

VIASPOOL /G F

Backspace printer to beginning of the current file.

Section 4  
ViaNet Commands

COMMAND  
SUMMARY

| Command  | Switch Options | Required Parameters  | Optional Parameters |
|----------|----------------|----------------------|---------------------|
| Access   | /v             |                      |                     |
| Diagnost | /v             |                      |                     |
| Downinst | /v             |                      |                     |
| Errstats | /v             |                      |                     |
| Logoff   | /v             |                      |                     |
| Macasgn  | /v /d          |                      |                     |
| Macasgn  |                | macname              | macstring           |
| Macasgn  |                | @                    | filespec            |
| Makeuser | /v /x /y       |                      |                     |
| Net      | /t /v          |                      |                     |
| Nonet    | /v             |                      |                     |
| Passhold | /v             |                      |                     |
| Password | /v             |                      |                     |
| Protect  | /v             |                      |                     |
| Protect  | /d             | [protection]         |                     |
| Protect  | /r /w <br>/s   | filespec<br>filespec |                     |

Section 4  
ViaNet Commands

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| Command  | Switch Options               | Required Parameters | Optional Parameters                  |
|----------|------------------------------|---------------------|--------------------------------------|
| Protect  |                              | filespec            | [protection]<br>chown<br>(usr#,grp#) |
| Setprt   | /d/e/f<br>/m/n/p<br>/t/v     |                     |                                      |
| Viaprint | /d/f/m<br>/n/p               |                     | file -<br>spec                       |
| Viaprint | /? /V                        |                     |                                      |
| Vianet   | /n /v /sd                    |                     |                                      |
| Viaspool | /?/J/l/m<br>/p/q/t/v<br>/w/x |                     |                                      |
| Viaspool | /c /d /e <br>/g /i /s /u     |                     |                                      |
| Xdir     | /v <br>/d /h /p              |                     |                                      |



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## Appendix A

# VIANET SAMPLE NETWORK

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### INTRODUC- TION

This appendix provides an example of manually installing the ViaNet software in a typical small office. Two types of nodes are installed:

1. A node where a hard disk will be used to store ViaNet software.
2. A node where a floppy disk will be used to store the ViaNet software and information from a previous boot disk.

Appendix B shows a special case installation for networks where there will be no hard disks. It uses the same information and worksheets described here.

### SAMPLE ENVIRON- MENT

Our sample corporation has four computers and six persons using them:

Joe is the president of a small corporation. His was the latest PC acquired and has a hard disk. Joe doesn't need the capacity of the hard disk, but he really likes the speed. Joe has some sensitive files he would like to keep secure.

## Appendix A ViaNet Sample Network

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Fred is Joe's administrative assistant and has his own PC, used primarily for word processing. Joe often transfers files from his hard disk to a floppy disk for Fred to edit. Fred also has the only letter quality printer in the company. He is constantly interrupted by people wanting to use the printer. After all, it ties up his PC and he cannot work whenever someone else is using the printer.

Suzanne is the Vice President of finance. She originally convinced Joe to get a PC for the company. Suzanne's main use for the PC is now spreadsheets. She uses SUPER-CALC<sup>(R)</sup> quite a bit, and needs to have access to the overlays and an easy way to execute the program.

Sam reports to Suzanne. He uses the PC for the company payroll, spreadsheets, and other financial applications. Sam has local access to a dot matrix printer, but must carry a floppy into Fred's office to use Fred's printer if he wants a letter quality printout.

The financial applications have outgrown the two floppy drive PC Sam and Suzanne use, but another



## Appendix A ViaNet Sample Network

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hard disk will only solve one problem. The printer access and file transfer problems would remain.

Sam was a computer science minor at business school and has convinced Joe and Suzanne to install a Local Area Network. Because of his interest and knowledge, Sam was chosen as the Network Administrator for this sample installation.

Last, but not least, is the marketing department consisting of George (the VP of Marketing) and Sharon (in charge of marketing research). They share a portable computer, and if George takes it on the road, Sharon is forced to share with Fred. Sharon does a lot of modeling and market analysis. She uses a PC, but is only now learning the DOS operating system.

The procedure used in the sample installation is included for each step of the installation. In the following examples, entries made by the network administrator appear in bold type.

### PLANNING

During the planning phase, Sam found a problem. Suzanne wants the files she creates to be available to the

## Appendix A ViaNet Sample Network

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entire network for reading, and available for writing to all members of her group in addition to herself. Sam on the other hand, deals with very sensitive information. Only Sam himself may update his files, and no one outside his group may even look at them.

Since the default protection of files is associated with the username, Sam and Susan may individually set their own default protection, even when using the same node. They need only remember to access their username when they start a session and log off when they finish. This will ensure that the files they create will have the correct default protection.

The next sixteen pages are the worksheets Sam filled out during this planning phase.

The network hardware was not available when Sam began the planning stage. He assigned numbers to the PCs for identification (PC1, PC2, PC3). These numbers have no meaning except for ease of identification, and should not be confused with the physical ID.



**USER ORGANIZATION**

| NAME OF USER | USER    |      | GROUP     |      | PREFERRED DEFAULT PROTECTION | COMMENTS |
|--------------|---------|------|-----------|------|------------------------------|----------|
|              | NAME    | NUM. | NAME      | NUM. |                              |          |
| Joe          | JOE     | 1    | EXECUTIVE | 1    | ---wt                        |          |
| Fred         | FRED    | 1    | ADMINASST | 2    | -rwrwr                       |          |
| Suzanne      | SUZANNE | 1    | ACCTNG    | 3    | -rwrwr                       |          |
| Sam          | SAM     | 2    | ACCTNG    | 3    | ---rwt                       |          |
| George       | GEORGE  | 1    | MARKETING | 4    | ---rwt                       |          |
| Sharon       | SHARON  | 2    | MARKETING | 4    | ---rwt                       |          |
|              |         |      |           |      |                              |          |
|              |         |      |           |      |                              |          |
|              |         |      |           |      |                              |          |
|              |         |      |           |      |                              |          |
|              |         |      |           |      |                              |          |
|              |         |      |           |      |                              |          |
|              |         |      |           |      |                              |          |
|              |         |      |           |      |                              |          |
|              |         |      |           |      |                              |          |
|              |         |      |           |      |                              |          |
|              |         |      |           |      |                              |          |

HARDWARE INVENTORY

|   |   | MANUFACTURER<br>and MODEL | LOCATION       | PRIMARY<br>USER(s) | COMMENTS                   |
|---|---|---------------------------|----------------|--------------------|----------------------------|
| NODEPC1                                   |   | IBM-XT                    | Joe's office   | Joe                |                            |
| D<br>R<br>I<br>V<br>&<br>I<br>C<br>E<br>S | D | hard disk (C)             |                |                    |                            |
|   | E | floppy (A/B)              |                |                    |                            |
|   | V |                           |                |                    |                            |
|   | S |                           |                |                    |                            |
| NODEPC2                                   |   | ZENITH Z-150              | Finance        | Suzanne & Sam      |                            |
| D<br>R<br>I<br>V<br>&<br>I<br>C<br>E<br>S | D | floppy (A)                |                |                    |                            |
|   | E | floppy (B)                |                |                    |                            |
|   | V | printer                   | EPSON® FX 100™ |                    | doesn't work right         |
|   | S |                           |                |                    |                            |
| NODEPC3                                   |   | WANG™                     | Fred's area    | Fred               |                            |
| D<br>R<br>I<br>V<br>&<br>I<br>C<br>E<br>S | D | floppy (A)                |                |                    |                            |
|   | E | floppy (B)                |                |                    |                            |
|   | V | printer                   | NEC 3550       | Fred and Sam       | everyone uses this printer |
|   | S |                           |                |                    |                            |

HARDWARE INVENTORY (Cont'd)

|  |   | MANUFACTURER<br>and MODEL | LOCATION  | PRIMARY<br>USER(s) | COMMENTS              |
|--|---|---------------------------|-----------|--------------------|-----------------------|
| NODE <u>PC4</u>                                |   | OTRONA™ 2001™             | Marketing | George & Sharon    | PC "goes on the road" |
| D<br>R<br>I<br>V<br>E<br>&<br>I<br>C<br>E<br>S | D | hard disk (C)             |           |                    |                       |
|  | E | floppy (A/B)              |           |                    |                       |
|  | V |                           |           |                    |                       |
|  | S |                           |           |                    |                       |
| NODE__   |   |                           |           |                    |                       |
| D<br>R<br>I<br>V<br>E<br>&<br>I<br>C<br>E<br>S | D |                           |           |                    |                       |
|  | E |                           |           |                    |                       |
|  | V |                           |           |                    |                       |
|  | S |                           |           |                    |                       |
| NODE__   |   |                           |           |                    |                       |
| D<br>R<br>I<br>V<br>E<br>&<br>I<br>C<br>E<br>S | D |                           |           |                    |                       |
|  | E |                           |           |                    |                       |
|  | V |                           |           |                    |                       |
|  | S |                           |           |                    |                       |

HARDWARE ORGANIZATION

|  |               | NETWORK<br>DEVICE<br>Y/N | NODENAME | DEFAULT<br>PROTECTION | PASSHOLD<br>Y/N | VIANET<br>COMMANDS<br>Y/N | COMMENTS             |
|--|---------------|--------------------------|----------|-----------------------|-----------------|---------------------------|----------------------|
| NODEPC1  |               | Y                        | JOE      | ---wr                 | Y               | Y                         | physical id NODE01   |
| D<br>R<br>I<br>V<br>E<br>S<br>&<br>D<br>E<br>V<br>I<br>C<br>E<br>S | hard disk (C) | Y                        |          |                       |                 |                           |                      |
|  | floppy (A/B)  | N                        |          |                       |                 |                           |                      |
|  |               |                          |          |                       |                 |                           |                      |
|  |               |                          |          |                       |                 |                           |                      |
| NODEPC2  |               | Y                        | ACCTNG   | -rwrwr                | N               | N                         | physical id NODE02   |
| D<br>R<br>I<br>V<br>E<br>S<br>&<br>D<br>E<br>V<br>I<br>C<br>E<br>S | floppy (A)    | Y                        |          |                       |                 |                           |                      |
|  | floppy (B)    | N                        |          |                       |                 |                           |                      |
|  | printer       | N                        |          |                       |                 |                           | until it is repaired |
|  |               |                          |          |                       |                 |                           |                      |
| NODEPC3  |               | Y                        | ADMAST   | -rwrwr                | N               | N                         | physical id NODE03   |
| D<br>R<br>I<br>V<br>E<br>S<br>&<br>D<br>E<br>V<br>I<br>C<br>E<br>S | floppy (A)    | Y                        |          |                       |                 |                           |                      |
|  | floppy (B)    | N                        |          |                       |                 |                           |                      |
|  | printer       | Y                        |          |                       |                 |                           |                      |
|  |               |                          |          |                       |                 |                           |                      |

HARDWARE ORGANIZATION (Cont'd)

|                            |                                 | NETWORK<br>DEVICE<br>Y/N | NODENAME | DEFAULT<br>PROTECTION | PASSHOLD<br>Y/N | VIANET<br>COMMANDS<br>Y/N | COMMENTS                |
|----------------------------|---------------------------------|--------------------------|----------|-----------------------|-----------------|---------------------------|-------------------------|
| NODEPC4                    |                                 | Y                        | MKTNG    | ---rwt                | N               | Y                         | not always there, but   |
| D<br>R<br>I<br>V<br>E<br>S | D<br>E<br>V<br>I<br>C<br>E<br>S | Y                        |          |                       |                 |                           | the hard disk is a good |
|                            | hard disk (C)                   | Y                        |          |                       |                 |                           | place for commands      |
|                            | floppy (A/B)                    | N                        |          |                       |                 |                           | used at that node       |
|                            |                                 |                          |          |                       |                 |                           | physical id NODE04      |
| NODE__                     |                                 |                          |          |                       |                 |                           |                         |
| D<br>R<br>I<br>V<br>E<br>S | D<br>E<br>V<br>I<br>C<br>E<br>S |                          |          |                       |                 |                           |                         |
|                            |                                 |                          |          |                       |                 |                           |                         |
|                            |                                 |                          |          |                       |                 |                           |                         |
|                            |                                 |                          |          |                       |                 |                           |                         |
| NODE__                     |                                 |                          |          |                       |                 |                           |                         |
| D<br>R<br>I<br>V<br>E<br>S | D<br>E<br>V<br>I<br>C<br>E<br>S |                          |          |                       |                 |                           |                         |
|                            |                                 |                          |          |                       |                 |                           |                         |
|                            |                                 |                          |          |                       |                 |                           |                         |
|                            |                                 |                          |          |                       |                 |                           |                         |



SOFTWARE and DATA FILE INVENTORY  
HARD DISK(s)

| NODE ADDRESS                              |             | NODEPC1     | NODE NAME | JOE             | DRIVE_C                               |
|---|-------------|-------------|-----------|-----------------|---------------------------------------|
| DIRECTORY:                                |             | FILE NAME   | VERSION   | PRIMARY USER(s) | COMMENTS                              |
| \ (root)                                  |             |             |           | Joe             |                                       |
| D<br>I<br>R<br>E<br>C<br>T<br>O<br>R<br>Y |             | joews.doc   |           | Joe             | Joe's Wordstar document               |
|   |             | joefile.pvt |           | Joe             | Joe's private file (next year's plan) |
|   |             |             |           |                 |                                       |
|   |             |             |           |                 |                                       |
|   |             |             |           |                 |                                       |
| DIRECTORY:                                |             | FILE NAME   | VERSION   | PRIMARY USER(s) | COMMENTS                              |
| PRODUCTS                                  |             | —           | —         | Joe, Fred       | Contains Wordstar and Multiplan files |
| D<br>I<br>R<br>E<br>C<br>T<br>O<br>R<br>Y | ws.com      |             |           | " "             | WORDSTAR                              |
|   | wsmgs.ovr   |             |           | " "             | WORDSTAR overlay                      |
|   | wsovly1.ovr |             |           | " "             | WORDSTAR overlay                      |
|   |             |             |           |                 |                                       |
|   |             |             |           |                 |                                       |
|   |             |             |           |                 |                                       |

SOFTWARE and DATA FILE INVENTORY (Cont'd)  
HARD DISK(s)

| NODE ADDRESS                              |  | NODEPC1   | NODE NAME | JOE             | DRIVE C                                |
|---|--|-----------|-----------|-----------------|--|
| DIRECTORY:                                |  | FILE NAME | VERSION   | PRIMARY USER(s) | COMMENTS                               |
| PRODUCTS                                  |  | —         | —         | Joe, Fred       | Contains Wordstar and Multiplan files  |
| D<br>I<br>R<br>E<br>C<br>T<br>O<br>R<br>Y |  | mp.com    |           | Joe, Suzanne    | Suzanne uses Multiplan on a floppy     |
|   |  | mp.hlp    |           | " "             | disk at the present, but will use this |
|   |  | mp.lod    |           | " "             | copy when the network is running.      |
|   |  | mp.sys    |           | " "             |  |
|   |  | mp80.dat  |           | " "             |  |
|   |  |           |           |                 |  |
| DIRECTORY:                                |  | FILE NAME | VERSION   | PRIMARY USER(s) | COMMENTS                               |
| PRODUCTS                                  |  |           |           |                 |  |
| D<br>I<br>R<br>E<br>C<br>T<br>O<br>R<br>Y |  |           |           |                 |  |
|   |  |           |           |                 |  |
|   |  |           |           |                 |  |
|   |  |           |           |                 |  |
|   |  |           |           |                 |  |
|   |  |           |           |                 |  |

SOFTWARE and DATA FILE INVENTORY  
 FLOPPY DISK FILES

| FILE NAME    | VERSION | PRIMARY USER(s) | FLOPPY ID  | COMMENTS                                 |
|--------------|---------|-----------------|------------|--|
| samfile.pvt  | —       | Sam             | floppy #3  |  |
| sc.ovl       |         |                 | SC floppy  | SUPERCALC files                          |
| sc.com       |         |                 | "          | "  |
| sc.hlp       |         |                 | "          | "  |
| business.doc |         | Fred            | floppy #12 | Wordstar File . . . business plan        |
| newprd.doc   |         | Fred            | "          | Wordstar File . . . new product proposal |
|              |         |                 |            |  |
|              |         |                 |            |  |
|              |         |                 |            |  |
|              |         |                 |            |  |
|              |         |                 |            |  |
|              |         |                 |            |  |
|              |         |                 |            |  |
|              |         |                 |            |  |
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|              |         |                 |            |  |
|              |         |                 |            |  |
|              |         |                 |            |  |
|              |         |                 |            |  |

### SOFTWARE and DATA FILE ORGANIZATION

| NODE ADDRESS                              |  | NODEPC1     | NODE NAME | JOE        | DRIVE    |    | C                                |
|---|--|-------------|-----------|------------|----------|----|----------------------------------|
| DIRECTORY                                 |  | FILE NAME   | OWNER     | PROTECTION | SHARABLE |    | OLD LOCATION (PATH or FLOPPY ID) |
| PRODUCTS                                  |  | —           | SU        | -r-r-r     | Y        | RO |                                  |
| D<br>I<br>R<br>E<br>C<br>T<br>O<br>R<br>Y |  | ws.com      |           |            |          |    | same                             |
|   |  | sc.com      |           |            |          |    | SC floppy                        |
|   |  | sc.hlp      |           |            |          |    | SC floppy                        |
|   |  | mp.com      |           |            |          |    | same                             |
|   |  | mp.hlp      |           |            |          |    | same                             |
|   |  | mp.lod      |           |            |          |    | same                             |
|   |  | mp.sys      |           |            |          |    | same                             |
|   |  | mp.dat      |           |            |          |    | same                             |
| DIRECTORY                                 |  | FILE NAME   | OWNER     | PROTECTION | SHARABLE |    | OLD LOCATION (PATH or FLOPPY ID) |
| OVERLAY                                   |  | —           | SU        | -r-r-r     | Y        | RO |                                  |
| D<br>I<br>R<br>E<br>C<br>T<br>O<br>R<br>Y |  | wsmgs.ovr   |           |            |          |    | Z:\JOE\C\PRODUCTS                |
|   |  | wsovly1.ovr |           |            |          |    | Z:\JOE\C\PRODUCTS                |
|   |  | sc.ovl      |           |            |          |    | SC floppy                        |
|   |  |             |           |            |          |    |                                  |

SOFTWARE and DATA FILE ORGANIZATION (Cont'd)

| NODE ADDRESS                              |           | NODEPC1      | NODE NAME  | JOE      | DRIVE C |                                  |  |
|---|-----------|--------------|------------|----------|---------|----------------------------------|--|
| DIRECTORY                                 | FILE NAME | OWNER        | PROTECTION | SHARABLE |         | OLD LOCATION (PATH or FLOPPY ID) |  |
|   |           |              |            | Y/N      | Type    |                                  |  |
| WSFILES                                   | —         | SU           | wrwrwr     | N        |         | new directory                    |  |
| D<br>I<br>R<br>E<br>C<br>T<br>O<br>R<br>Y | JOE       | joews.doc    | JOE        | ----wr   | N       | Z:\JOE\C                         |  |
|   | FRED      | business.doc | FRED       | --wtwr   | N       | Floppy #12                       |  |
|   | FRED      | newprod.doc  | FRED       | --wtwr   | N       | Floppy #12                       |  |
|   |           |              |            |          |         |                                  |  |
|   |           |              |            |          |         |                                  |  |
|   |           |              |            |          |         |                                  |  |
| DIRECTORY                                 | FILE NAME | OWNER        | PROTECTION | SHARABLE |         | OLD LOCATION (PATH or FLOPPY ID) |  |
|   |           |              |            | Y/N      | Type    |                                  |  |
| SAMDIR                                    | —         | SAM          | ----wr     | N        |         | none - this is a new directory   |  |
| D<br>I<br>R<br>E<br>C<br>T<br>O<br>R<br>Y |           | samfile.pvt  | SAM        | ----wr   | N       | Floppy #3                        |  |
|   |           |              |            |          |         |                                  |  |
|   |           |              |            |          |         |                                  |  |
|   |           |              |            |          |         |                                  |  |
|   |           |              |            |          |         |                                  |  |
|   |           |              |            |          |         |                                  |  |

SOFTWARE and DATA FILE ORGANIZATION (Cont'd)

| NODE ADDRESS NODE                         |             | NODE NAME  |            |          | DRIVE C  |                                  |                                  |
|---|-------------|------------|------------|----------|----------|----------------------------------|----------------------------------|
| DIRECTORY                                 | FILE NAME   | OWNER      | PROTECTION | SHARABLE |          | OLD LOCATION (PATH or FLOPPY ID) |                                  |
|   |             |            |            | Y/N      | Type     |                                  |                                  |
| JOEDIR                                    |             | SU         | ----wr     | N        |          | net directory                    |                                  |
| D<br>I<br>R<br>E<br>C<br>T<br>O<br>R<br>Y | joefile.pvt | JOE        | ----wr     | N        |          | Z:\JOE\C                         |                                  |
|   |             |            |            |          |          |                                  |                                  |
|   |             |            |            |          |          |                                  |                                  |
|   |             |            |            |          |          |                                  |                                  |
|   |             |            |            |          |          |                                  |                                  |
|   |             |            |            |          |          |                                  |                                  |
| DIRECTORY                                 |             | NODE NAME  |            |          | SHARABLE |                                  | OLD LOCATION (PATH or FLOPPY ID) |
| FILE NAME                                 | OWNER       | PROTECTION | Y/N        | Type     |          |                                  |                                  |
| D<br>I<br>R<br>E<br>C<br>T<br>O<br>R<br>Y |             |            |            |          |          |                                  |                                  |
|   |             |            |            |          |          |                                  |                                  |
|   |             |            |            |          |          |                                  |                                  |
|   |             |            |            |          |          |                                  |                                  |
|   |             |            |            |          |          |                                  |                                  |
|   |             |            |            |          |          |                                  |                                  |

CUSTOMIZATION - NETWORK TRANSPARENCY  
DIRECTORY LOCATIONS

| TYPE OF FILES | NODE NAME | DRIVE | DIRECTORY | COMMENTS                                   |
|---------------|-----------|-------|-----------|--|
| DOS COMMANDS  | JOE       | C     | DOS       |  |
| "             | MKTNG     | C     | DOS       | This node is portable, not for network use |
| BATCH FILES   | JOE       | C     | BATCH     |  |
| "             | MKTNG     | C     | BATCH     | This node is portable, not for network use |
| MACASGN FILES | JOE       | C     | MACROS    |  |
| "             | MKTNG     | C     | MACROS    | This node is portable, not for network use |

**CUSTOMIZATION - NETWORK TRANSPARENCY  
BATCH AND MACRO FILES**

| BATCH FILE DIRECTORY NETWORK PATH |           | Z:\JOE\C\BATCH        |        |  |
|-----------------------------------|-----------|-----------------------|--------|--|
| MACRO FILE DIRECTORY NETWORK PATH |           | Z:\JOE\C\MACROS       |        |  |
| FILE NAME                         | PRODUCT   | RELATED MACASGN FILES |        | COMMENTS                               |
|                                   |           | UP                    | DWN    |  |
| ws.bat                            | WORDSTAR  | ws.up                 | ws.dwn |  |
| sc.bat                            | SUPERCALC | sc.up                 | sc.dwn |  |
| mp.bat                            | MULTIPLAN | mp.up                 | mp.dwn |  |
|                                   |           |                       |        |  |
| BATCH FILE DIRECTORY NETWORK PATH |           | Z:\MKTNG\C\BATCH      |        |  |
| MACRO FILE DIRECTORY NETWORK PATH |           | Z:\MKTNG\C\MACROS     |        |  |
| FILE NAME                         | PRODUCT   | RELATED MACASGN FILES |        | COMMENTS                               |
|                                   |           | UP                    | DWN    |  |
| ws.bat                            | WORDSTAR  | ws.up                 | ws.dwn | These files for use by this node only. |
| sc.bat                            | SUPERCALC | sc.up                 | sc.dwn |  |
| mp.bat                            | MULTIPLAN | mp.up                 | mp.dwn |  |
|                                   |           |                       |        |  |



**CUSTOMIZATION - NODE LEVEL**

|  |  |                            |   |                                  |           |
|--|--|----------------------------|---|----------------------------------|-----------|
| NODE ADDRESS <u>NODEPC1</u>  |  | NODE NAME <u>JOE</u>       |   | DEFAULT PROTECTION <u>---wr</u>  |           |
| NODE SEARCH PATH = <u>c:\;c:\dos;c\vianet;c\batch1</u>                               |  | MACASGN.SYS (Y/N) <u>N</u> |   |                                  |           |
| LOCAL BATCH DIRECTORY <u>c\batch1</u>  |  |                            | COMMENTS: Joe needs local batch files because he holds all the product and overlay files. |                                  |           |
| RELATED MACRO DIRECTORY <u>c:\macros</u>   |  |                            |   |                                  |           |
| LOCAL BATCH FILES  |  | RELATED MACASGN FILES      |   | INPUT FOR MACASGN.SYS            |           |
|  |  | UP                         | DWN   | MACNAME                          | MACSTRING |
| ws.bat   |  | ws.up                      | ws.dwn  |                                  |           |
| sc.bat   |  | sc.up                      | sc.dwn  |                                  |           |
| mp.bat   |  | mp.up                      | mp.dwn  |                                  |           |
| NODE ADDRESS <u>NODEPC2</u>  |  | NODE NAME <u>ACCTNG</u>    |   | DEFAULT PROTECTION <u>-rwrwr</u> |           |
| NODE SEARCH PATH = <u>z:\joe\c\dos;z:\joe\c\vianet;z:\joe\c\batch;z:\joe\c\bat02</u> |  | MACASGN.SYS (Y/N) <u>N</u> |   |                                  |           |
| LOCAL BATCH DIRECTORY <u>z:\joe\c\bat02</u>  |  |                            | COMMENTS:   |                                  |           |
| RELATED MACRO DIRECTORY _____  |  |                            |   |                                  |           |
| LOCAL BATCH FILES  |  | RELATED MACASGN FILES      |   | INPUT FOR MACASGN.SYS            |           |
|  |  | UP                         | DWN   | MACNAME                          | MACSTRING |
| samon.bat  |  |                            |   |                                  |           |
| samoff.bat   |  |                            |   |                                  |           |

CUSTOMIZATION - NODE LEVEL (Cont'd)

|  |                       |        |   |           |
|--|-----------------------|--------|---|-----------|
| NODE ADDRESS <u>NODEPC3</u> NODE NAME <u>ADMAST</u> DEFAULT PROTECTION <u>-rwrwr</u> |                       |        |   |           |
| NODE SEARCH PATH = <u>z:\joe\c\dos;z:\joe\c\vianet;z:\joe\c\batch;z:\joe\c\bat03</u> |                       |        |   |           |
| MACASGN.SYS (Y/N) <u>N</u>   |                       |        |   |           |
| LOCAL BATCH DIRECTORY <u>z:\joe\c\bat03</u>  |                       |        | COMMENTS:   |           |
| RELATED MACRO DIRECTORY _____  |                       |        |   |           |
| LOCAL BATCH FILES  | RELATED MACASGN FILES |        | INPUT FOR MACASGN.SYS   |           |
|  | UP                    | DWN    | MACNAME   | MACSTRING |
| sharon.bat   |                       |        |   |           |
| sharoff.bat  |                       |        |   |           |
| NODE ADDRESS <u>NODEPC4</u> NODE NAME <u>MKTNG</u> DEFAULT PROTECTION <u>---rwr</u>  |                       |        |   |           |
| NODE SEARCH PATH = <u>c:\;c:\dos;c:\vianet;c:\batch1</u> MACASGN.SYS (Y/N) <u>N</u>  |                       |        |   |           |
| LOCAL BATCH DIRECTORY <u>c:\batch1</u>   |                       |        | COMMENTS: Joe needs local batch files because he holds all the product and overlay files. |           |
| RELATED MACRO DIRECTORY <u>c:\macros</u>   |                       |        |   |           |
| LOCAL BATCH FILES  | RELATED MACASGN FILES |        | INPUT FOR MACASGN.SYS   |           |
|  | UP                    | DWN    | MACNAME   | MACSTRING |
| sharon.bat   |                       |        |   |           |
| sharoff.bat  |                       |        |   |           |
| ws.bat   | ws.up                 | ws.dwn |   |           |
| sc.bat   | sc.up                 | sc.dwn |   |           |
| mp.bat   | mp.up                 | mp.dwn |   |           |

## Appendix A ViaNet Sample Network

---

STEP 1:                   The hardware was installed by a  
INSTALL THE                technician, but Sam wrote down all  
HARDWARE                   the physical LAN card addresses as  
                              comments when the installation took  
                              place.

STEP 2:                   All of the directories on Joe's hard  
PREPARE FOR                disk are backed up to diskette. A  
SOFTWARE                   new diskette is placed in drive A  
INSTALLATION               before each backup, and the procedure  
                              below is repeated as often as  
                              necessary.

```
A>format a: /v
```

```
...
```

```
A>copy c:\directory\*. * a: /v
```

STEP 3:                   Sam installs the ViaNet software at  
INSTALL                    the node JOE first.  
VIANET  
SOFTWARE

Backup Distribution Diskette

```
A>diskcopy a: b:
```

Insert source diskette in drive A:

Insert target diskette in drive B:

Strike any key when ready

Copying 9 sectors per track, 2 side(s)

Copy complete

Copy another (Y/N)?n

**Step 3-1:**  
**Install ViaNet**  
**on Hard Disk**

The first node to have the software installed is the node JOE. This is because it is both a PASSHOLDER and designated to hold the ViaNet commands.

A. COPY VIANET FILES AND DIRECTORIES FROM DISTRIBUTION DISKETTE

A-1 Change the default drive to the C drive.

```
A>c:  
C>
```

A-2 Change the current directory on the C drive to the root directory.

```
C>cd \  
C>
```

A-3 Check to see that the CONFIG.SYS exists.

```
C>dir config.sys
```

```
Volume in drive C is AAAAAAA  
Directory of C:\
```

## Appendix A ViaNet Sample Network

---

File not found

There is no pre-existing CONFIG.SYS, so Sam copies the CONFIG.SYS file from the distribution diskette.

```
C>copy a:config.sys /v
```

```
1 File(s) copied
```

- A-4 Check to see that an AUTOEXEC.BAT exists.

```
C>dir autoexec.bat
```

```
Volume in drive C is AAAAAAA  
Directory of C:\
```

```
AUTOEXEC.BAT n m-d-y h.ma
```

Since an AUTOEXEC.BAT file already exists, Sam skips the rest of this sub-action and goes to sub-action A-5.

- A-5 NETDRVR.SYS

```
C>copy a:netdrvr.sys /v  
1 File(s) copied
```

- A-6 VIANET.BAT

```
C>copy a:vianet.bat /v
```

1 File(s) copied

The VIANET.BAT file must have the path statement removed since a path statement exists in AUTOEXEC.BAT. Refer to CUSTOMIZE VIANET FILES for details.

A-7 NETSYS Directory

```
C>md c:\netsys
C>cd \netsys
C>copy a:\netsys\*. * /v
```

```
A:\NETSYS\ACCESS.SYS
A:\NETSYS\NETCNF.SYS
A:\NETSYS\VIANET.EXE
A:\NETSYS\aaaaDRVR.EXE
4 File(s) copied
```

```
C>cd\
```

A-8 VIANET Directory

```
C>md c:\vianet
C>cd \vianet
C>copy a:\vianet\*. * /v
```

```
A:\VIANET\PROTECT.EXE
A:\VIANET\XDIR.EXE
A:\VIANET\PASSWORD.EXE
A:\VIANET\MAKEUSER.EXE
A:\VIANET\ACCESS.EXE
A:\VIANET\PASSHOLD.EXE
```

Appendix A  
ViaNet Sample Network

---

```
A:\VIANET\LOGOFF.EXE
A:\VIANET\NONET.EXE
A:\VIANET\MACASGN.EXE
A:\VIANET\DIAGNOST.EXE
A:\VIANET\NET.EXE
A:\VIANET\DOWNINST.EXE
A:\VIANET\TALK.EXE
A:\VIANET\ERRSTATS.EXE
A:\VIANET\ICF.EXE
A:\VIANET\VIATERM.EXE
    16 File(s) copied
```

C>

B. CUSTOMIZE VIANET FILES

B-1 CONFIG.SYS

Because CONFIG.SYS was copied from the distribution diskette, this sub-action is skipped.

B-2 AUTOEXEC.BAT

There is an AUTOEXEC.BAT file already on Joe's C drive, however it only contains a path statement. The AUTOEXEC.BAT file is copied from the distribution diskette and modified to include the proper path.

```
path = c:\;c:\products;c:\dos;
```

```
c:\vianet;c:\batch1
prompt ViaNet $p$g
vianet
```

The path statement includes a search of the batch1 subdirectory on the C drive. This directory contains batch files for use at this node only. Refer to Step 5 for details on the batch directories.

#### B-3 VIANET.BAT

Joe has the path statement included in AUTOEXEC.BAT, so it must be removed from VIANET.BAT. The resulting VIANET.BAT follows:

```
cls
cd \netsys
aaaadrvr
vianet
cd \
xdir z:
path
access
```

#### B-4 NETSYS\NETCNF.SYS

Only the hard drive is made available to the network. The console is defined to ensure that Joe can receive messages.



## Appendix A ViaNet Sample Network

---

The timing parameters are left alone. The resulting NETCNF.SYS follows:

```
drive = c
device = con
tort = 2
timeout = 700
name = joe
```

### C. BRING UP VIANET AT THIS NODE

#### C-1 Boot the Node

The system and network come up exactly as expected when the node JOE is booted.

```
C>path = c:\;c:\dos;c:\vianet;
      c:\batch1
C>prompt ViaNet $p$g
ViaNet C:\>vianet
ViaNet C:\>cls
ViaNet C:\>cd \netsys
ViaNet C:\netsys>aaaadrvr
...

ViaNet C:\netsys>vianet

...

ViaNet C:\netsys>cd \
ViaNet C:\>xdir z:
```

Appendix A  
ViaNet Sample Network

---

Volume in drive Z has no label  
Directory of Z:\

JOE <DIR>  
1 File(s) 131070 bytes free

ViaNet C:\>path

PATH=C:\;C:\DOS;C:\VIANET;

ViaNet C:\>access

DOS Nodes: User: jim  
Group: acctng <4,3>

Current protection for all  
Nodes: [wrwrwr]

C-2 NET command

ViaNet C:\>net

The Network Software IS Loaded

|                          |           |
|--------------------------|-----------|
| Node Name                | JOE       |
| Node Number              | 01        |
| Maximum Message Size     | 1000      |
| Passholder?              | YES       |
| Downloader?              | YES       |
| DOS 3.0 Emulation?       | YES       |
| ViaNet(R) Serial Number  | 004-00170 |
| ViaNet(R) Version Number | 03.06.12  |

ViaNet C:\>

C-3 ERRSTATS Command

ViaNet C:\>errstats

ERRSTATS -- Information  
about ViaNet performance.  
All values are in hexadecimal.

Sent 00000000 requests out to  
net...  
Needed 00000000 retries...  
And had 00000000 fatal errors.

Timed out (ViaNet level)  
waiting for 00000000 responses.

Sent 00000000 replies back to  
net...  
Needed 00000000 retries...  
And had 00000000 fatal errors.

D. ACCESS THE SUPER USER

ViaNet C:\>access su

Password: #####

DOS Nodes: User: su  
Group: system <0,0>

Current protection for all  
Nodes: [wrwrwr]

ViaNet C:\>

## Appendix A ViaNet Sample Network

---

### E. PASSHOLD

The Node JOE is a Passholder, so PASSHOLD is not disabled.

### F. DOWNLOAD

There are no diskless PCs that require a downloader node. The downloader capability is disabled as follows:

```
ViaNet C:\>downinst
```

```
Enter filename [\NETSYS\VIA-  
NET.EXE]:
```

```
  P   Make NODE a Down-  
      loader
```

```
  D   Make NODE a non-  
      Downloader
```

```
  T   Tell whether NODE  
      is or isn't
```

```
  S   Show   current  
      filename
```

```
  C   Change  current  
      filename
```

```
  E, Q, X   Exit Program
```

```
Select One: d
```

```
NODE is not a downloader
```

### G. LOGOFF AS SUPER USER

## Appendix A ViaNet Sample Network

---

ViaNet C:\>logoff

### H. CREATE BACKUP BOOT DISKETTE

ViaNet C:\>nonet

...

C:\>format a: /s

...

C:\>md a:\netsys

...

C:\>md a:\vianet

...

C:\>copy config.sys a: /v

1 File(s) copied

C:\>copy netdrv.sys a: /v

1 File(s) copied

C:\>copy autoexec.bat a: /v

1 File(s) copied

C:\>copy vianet.bat a: /v

1 File(s) copied

C:\>cd a:\netsys

C:\>cd \netsys

C:\NETSYS\>copy \*.\* a: /v

Appendix A  
ViaNet Sample Network

---

4 File(s) copied

```
C:\NETSYS\>cd a:\vianet
```

```
C:\NETSYS\>cd \vianet
```

```
C:\VIANET\>copy *.* a: /v
```

...

16 File(s) copied

```
C:\VIANET\>cd \
```

```
C:\>
```

I. BOOT THE SYSTEM FROM  
HARD DISK

The network comes up for the  
node JOE, as customized above.

Alternate  
Installation  
(Diskette)

Next, Sam installs the remaining  
diskette-based nodes. Instead of  
using step 3-2 in section 3, Sam  
chooses to use the alternate diskette  
installation as shown in Appendix E.

A. BACKUP SYSTEM DISKETTE

Create a backup of the DOS  
boot diskette for this node.  
The DOS boot diskette for the  
node is in the A drive, and a

## Appendix A

### ViaNet Sample Network

---

new diskette to become the network boot diskette for the PC used by Sam and Suzanne is in the B drive.

A>diskcopy a: b:

Insert source diskette in drive A:

Insert target diskette in drive B:

Strike any key when ready

Copying 9 sectors per track, 2 side(s)

Copy complete

Copy another (Y/N)?n

#### B. COPY VIANET FILES AND DIRECTORIES FROM DISTRIBUTION DISKETTE

Place a newly created system diskette in drive A and the distribution diskette in drive B.

B-1 Change the default drive to the A drive.

B>a:

A>

B-2 Change the current directory on the A drive to the root directory.

```
A>cd \  
A>
```

B-3 CONFIG.SYS

There is no CONFIG.SYS file on the boot diskette.

```
A>copy b:config.sys /v
```

1 File(s) copied

B-4 AUTOEXEC.BAT

There is no AUTOEXEC.BAT on the Boot diskette.

```
A>copy b:autoexec.bat /v
```

1 File(s) copied

B-5 NETDRVR.SYS

NETDRVR.SYS is copied on to the A drive.

```
A>copy b:netdrvr.sys /v
```

1 File(s) copied



## Appendix A

### ViaNet Sample Network

---

#### B-6 VIANET.BAT

VIANET.BAT is copied on to the A drive.

```
A>copy b:vianet.bat /v
```

```
1 File(s) copied
```

#### B-7 NETSYS Directory

The NETSYS directory is created and the files from the distribution diskette are copied into it.

```
A>md a:\netsys
```

```
A>cd \netsys
```

```
A>copy b:\netsys\*. * /v
```

```
A:NETSYS\ACCESS.SYS
```

```
A:NETSYS\NETCNF.SYS
```

```
A:NETSYS\VIANET.EXE
```

```
A:NETSYS\aaaaDRVR.EXE
```

```
4 File(s) copied
```

```
A>cd \
```

#### B-8 VIANET Directory

This node is not designated to hold the ViaNet commands, and this portion of step 3 is bypassed.

C. CUSTOMIZE VIANET FILES

C-1 CONFIG.SYS

CONFIG.SYS is customized for this node.

```
device = netdrv.sys
files = 99
buffers = 10
break = on
```

C-2 AUTOEXEC.BAT

Because the AUTOEXEC.BAT file was copied from the distribution diskette, no customization is required.

C-3 VIANET.BAT

VIANET.BAT is customized for this node.

```
cls
path = z:\joe\c;z:\joe\c\dos;
        z:\joe\c\vianet;
        z:\joe\c\batch
aaaadrvr
xdir z:
path
access
```

C-4 \NETSYS\NETCNF.SYS

## Appendix A ViaNet Sample Network

---

The NETCNF.SYS file is customized for this node.

```
drive = a
device = con
name = acctng
```

### D. BRING UP VIANET AT THIS NODE

#### D-1 Boot the Node

```
A>prompt ViaNet $p$g
ViaNet A:\>vianet
ViaNet A:\>cls
ViaNet A:\>path=z:\joe\c\;
                z:\joe\c\dos;
                z:\joe\c\vianet;
                z:\joe\c\batch
ViaNet A:\>cd \netsys
ViaNet A:\netsys>aaaadrvr
```

...

```
ViaNet A:\netsys>vianet
```

...

```
ViaNet A:\netsys>cd \
ViaNet A:\>xdir z:
```

```
Volume in drive Z has no label
Directory of Z:\
```

```
JOE      <DIR>
```

```
ACCTNG <DIR>
  2 File(s) 131070 bytes free
```

```
ViaNet A:\>path
```

```
PATH=A:\JOE\C\;
      Z:\JOE\C\DOS;
      Z:\JOE\C\VIANET;
      Z:\JOE\C\BATCH
```

```
ViaNet A:\>access
```

```
DOS Nodes:   User: jim
Group: acctng <4,3>
```

```
Current protection for all
Nodes: [wrwrwr]
```

#### D-2 NET Command

```
ViaNet A:\>net
```

```
The Network Software IS Loaded
```

|                          |           |
|--------------------------|-----------|
| Node Name                | JOE       |
| Node Number              | 01        |
| Maximum Message Size     | 1000      |
| Passholder?              | YES       |
| Downloader?              | YES       |
| DOS 3.0 Emulation?       | YES       |
| ViaNet(R) Serial Number  | 004-00170 |
| ViaNet(R) Version Number | 03.06.12  |

#### D-3 ERRSTATS Command

Appendix A  
ViaNet Sample Network

---

ViaNet A:\>errstats

ERRSTATS -- Information  
about ViaNet performance.  
All values are in hexadecimal.

Sent 00000000 requests out to  
net...  
Needed 00000000 retries...  
And had 00000000 fatal errors.

Timed out (ViaNet level)  
waiting for 00000000 responses.

Sent 00000000 replies back to  
net...  
Needed 00000000 retries...  
And had 00000000 fatal errors.

E. ACCESS THE SUPER USER

ViaNet A:\>access su

Password: #####

DOS Nodes: User: su  
Group: system <0,0>

Current protection for all  
Nodes: [wrwrwr]

ViaNet A:\>

F. PASSHOLD

This node should not be a passholder.

```
ViaNet A:\>erase
                \netsys\access.sys
ViaNet A:\>passhold
```

Enter filename [\NETSYS\VIA-NET.EXE]:

```

P   Make NODE a passholder
N   Make NODE a non-passholder
D   Display if NODE is a passholder
S   Show current filename
C   Change current filename
E, Q, X   Exit Program
Select One: n
```

```
NODE will not be a passholder
...
Select One: x
```

#### G. DOWNLOAD

This node is not a downloader.

```
ViaNet A:\>downinst
```

Enter filename [\NETSYS\VIA-NET.EXE]:

Appendix A  
ViaNet Sample Network

---

P Make NODE a Down-  
loader  
D Make NODE a non-  
Downloader  
T Tell whether NODE is  
or isn't  
S Show current filename  
C Change current  
filename  
E, Q, X Exit Program

Select One: d

NODE is not a downloader

Select One: x

VIANET A:\>

H. LOGOFF AS SUPER USER

ViaNet C:\>logoff

I. CREATE BACKUP BOOT  
DISKETTE

A>diskcopy a: b:

Insert source diskette in drive  
A:

Insert target diskette in drive  
B:

Strike any key when ready

Appendix A  
ViaNet Sample Network

---

Copying 9 sectors per track, 2  
side(s)

Copy complete

Copy another (Y/N)?n

J. BOOT THE SYSTEM FROM  
DISKETTE

The network comes up for the  
node ACCTNG as customized  
above.

Complete the Installation:  
Repeat this entire procedure  
for the nodes ADMAST and  
MKTNG.

STEP 4:  
CREATE USER  
NAMES AND  
GROUP  
NAMES

ViaNet A:\>access su

Password:#####

ViaNet A:\>password

Enter Old Password #####

Enter New Password #####

Re-Enter New Password #####

ViaNet A:>makeuser



## Appendix A ViaNet Sample Network

---

--Displaying all current PASSHOLDERS--

| Node<br>Name | Node<br>Address | Access<br>File | Up-<br>dated |
|--------------|-----------------|----------------|--------------|
| Joe          | 01              | 1-06-84        | 1:30p        |

A Add a User  
D Delete a User  
C Change a User's Pass-  
word  
L List Current Users  
P List Passholders  
E, Q, X Exit Program

Select One: a

User Name: joe  
Group Name: executive  
Password: junk  
(menu display)

Repeat as shown above for users Fred, Suzanne, Sam, George and Sharon. The final user list is displayed using the 'L' option.

Select One: l

## Appendix A ViaNet Sample Network

---

Listing ACCESS File from Node  
nodename

| User<br>Name | Group<br>Name | ID#,GID#  | pswd   |
|--------------|---------------|-----------|--------|
| su           | system        | <000,000> | vianet |
| joe          | executive     | <001,001> | junk   |
| fred         | adminasst     | <001,002> | ski    |
| suzy         | acctng        | <001,003> | L1374  |
| Alice        | acctng        | <002,003> | GENIUS |
| george       | marketing     | <001,004> | B71LA  |
| sharon       | marketing     | <002,004> | 010757 |

STEP 5:  
DISTRIBUTE  
FILES ACROSS  
THE NETWORK.

In this example the ADMAST node is used. If it were done at the node JOE, the network path would not be needed for directories and files on the JOE node.

Create the DOS directory on the node JOE and copy the DOS commands into it. The diskette with the DOS commands is inserted in drive A.

```
ViaNet A:\>md z:\joe\c\dos
ViaNet A:\>copy a:*.com z:\joe\c\dos
/v
```

```
A:COMMAND.COM
```

```
...
```

```
x File(s) copied
```

```
ViaNet A:\>protect /r z:\joe\c\dos
```

## Appendix A

### ViaNet Sample Network

---

The BATCH and MACROS directories are created.

```
ViaNet A:\>md z:\joe\c\batch
```

```
ViaNet A:\>md z:\joe\c\macros
```

The batch and macro files are very like those included in Appendix C. The difference is that the programs in this sample are all located in the PRODUCTS directory on the C drive at the node JOE.

Local batch and macro files are created in the same way as those above.

Once the batch and macro files are created, the directories are marked read-only sharable with protection [-r-r-r].

```
ViaNet C:\>protect /r z:\joe\c\batch  
[-r-r-r]
```

```
ViaNet C:\>protect /r z:\joe\c\macros  
[-r-r-r]
```

All other files are distributed as shown on the Software Organization and Customization-Node Level worksheets.

## Appendix A ViaNet Sample Network

---

The SUPERCALC floppy is inserted in drive A and the files are distributed as follows.

```
ViaNet C:\>copy a:sc.com z:\joe\c  
          \products
```

```
ViaNet C:\>copy a:sc.hlp z:\joe\c  
          \products
```

```
ViaNet C:\>copy a:sc.ovl z:\joe\c  
          \overlay
```

All other files are distributed in a similar way. Suzanne and Sam both use the node ACCTNG, and log on with their individual usernames.

### STEP 6: TEST THE NETWORK

DIAGNOST is run to Nodes 2 and 4. The following is the sample from NODE01 to NODE02.

```
ViaNet C:\>diagnost
```

ViaNet(R) Diagnost Utility

This is a continuous send/receive loop with data check. The data is a continuously changing random pattern. Hitting a key at any point will break out of the loop. All values are printed in hexadecimal.

Appendix A  
ViaNet Sample Network

---

Maximum Message Size For  
This Driver: 01DD hex  
Node id: 00aa

Enter destination node id (hex):  
02  
Enter message length [01DD  
hex]:  
Enter number to send [100  
hex]:  
Sending 0100 messages (length  
= 01DD) to node: 02, ok? [y,n]  
y

Sent and received: 0100  
Data bad in: 0000

This sequence is repeated to node 4.



---

## Appendix B

### SAMPLE NETWORK (Diskette Based)

---

#### DISKETTE BASED SAMPLE NETWORK

This appendix shows a special case sample installation for a network that contains no hard disks.

#### DISKETTE BASED SYSTEM

The following steps are for a diskette-based system. The environment is the same as that in Appendix A, but Joe wants to try the network out on diskettes before installing it on the hard disk.

Because of space limitations, the PRODUCTS directory resides on the ADMAST B disk (Fred's).

#### STEP 1: INSTALL THE HARDWARE

The hardware was installed by a technician, but Sam wrote down all the physical LAN card addresses as comments when the installation took place.

#### STEP 2: PREPARE FOR SOFTWARE INSTALLATION

Because Joe's hard disk will not be included in this preliminary installation, the hard disk does not need to be backed up.

Appendix B  
Sample Network (Diskette Based)

---

STEP 3:  
INSTALL  
VIANET  
SOFTWARE

Sam installs the ViaNet software at the node JOE first.

A.     FORMAT DISKETTE

Format a new diskette using the DOS FORMAT command.

A>format b:/s/v

Insert the new diskette in drive B: and strike any key when ready

Formatting...Format     complete  
System transferred

Volume label (11 characters,  
ENTER for none)?

JOEDISK

xxxxxx bytes total disk space  
  xxxxx bytes used by system  
xxxxxxx bytes available on disk

Format another (Y/N)?N

Place the new boot diskette in drive A and the distribution diskette in drive B. Perform the actions outlined in B through J below to install ViaNet at this node.



## Appendix B

### Sample Network (Diskette Based)

---

#### B. COPY VIANET FILES AND DIRECTORIES FROM DISTRIBUTION DISKETTE

B-1 Change the default drive to the A drive.

```
B>a:
```

```
A>
```

B-2 Change the current directory on the A drive to the root directory.

```
A>cd \
```

```
A>
```

B-3 Copy ViaNet files into the root directory.

```
A>copy b:*. * /v
```

```
B:CONFIG.SYS
```

```
B:AUTOEXEC.BAT
```

```
B:NETDRVR.SYS
```

```
B:VIANET.BAT
```

```
B:READ_ME.DOC
```

```
5 File(s) copied
```

```
A>erase b:read_me.doc
```

B-4 NETSYS Directory

Appendix B  
Sample Network (Diskette Based)

---

Create NETSYS directory and copy the files from the distribution diskette into it.

```
A>md a:\netsys
```

```
A>cd \netsys
```

```
A>copy b:\netsys\*. * /v
```

```
B:NETSYS\ACCESS.SYS  
B:NETSYS\NETCNF.SYS  
B:NETSYS\VIANET.EXE  
B:NETSYS\aaaaDRVR.EXE  
4 File(s) copied
```

```
A>cd \
```

B-5 VIANET.BAT

Copy VIANET.BAT.

```
A>copy b:vianet.bat /v  
1 File(s) copied
```

B-6 VIANET Directory

Because JOE's PC has been designated to hold the ViaNet commands, create the VIANET directory and copy the ViaNet command files from the distribution diskette.

```
A>md a:\vianet
```

## Appendix B Sample Network (Diskette Based)

---

A>cd \vianet

A>copy b:\vianet\\*. \* /v

A:\VIANET\PROTECT.EXE  
A:\VIANET\XDIR.EXE  
A:\VIANET\PASSWORD.EXE  
A:\VIANET\MAKEUSER.EXE  
A:\VIANET\ACCESS.EXE  
A:\VIANET\PASSHOLD.EXE  
A:\VIANET\LOGOFF.EXE  
A:\VIANET\NONET.EXE  
A:\VIANET\MACASGN.EXE  
A:\VIANET\DIAGNOST.EXE  
A:\VIANET\NET.EXE  
A:\VIANET\DOWNINST.EXE  
A:\VIANET\TALK.EXE  
A:\VIANET\ERRSTATS.EXE  
A:\VIANET\ICF.EXE  
A:\VIANET\VIATERM.EXE  
16 File(s) copied

A>cd \

### C. CUSTOMIZE VIANET FILES

#### C-1 CONFIG.SYS

Because CONFIG.SYS was copied from the distribution diskette, this sub-action is skipped.

#### C-2 AUTOEXEC.BAT

## Appendix B Sample Network (Diskette Based)

---

The AUTOEXEC.BAT file is copied from the distribution diskette and modified to include the proper path.

```
path = a:\;z:\admast\b
        \products;a:\dos;
        a:\vianet;a:\batch
prompt ViaNet$P$G
vianet
```

The path statement includes a search of the products sub-directory on the B drive at the ADMAST node (Fred's PC). This directory contains the word processing software.

### C-3 VIANET.BAT

Joe has the path statement included in AUTOEXEC.BAT, so it must be removed from VIANET.BAT. The resulting VIANET.BAT follows:

```
cls
cd \netsys
aaaadrvr
vianet
cd \
xdir z:
access
path
```

## Appendix B Sample Network (Diskette Based)

---

### C-4 NETSYS\NETCNF.SYS

Only the A drive is made available to the network. The console is defined to ensure that Joe can receive messages. The timing parameters are left alone.

```
drive = a
device = con
tort = 2
timeout = 700
name = joe
```

### D. BRING UP VIANET AT THIS NODE

#### D-1 Boot the Node.

```
A>path = a:\;z:\admast\b
        \products;a:\dos;
        a:\vianet;a:\batch
A>prompt ViaNet $p$g
ViaNet A:\>vianet
ViaNet A:\>cls
ViaNet A:\>cd \netsys
ViaNet A:\netsys>aaaadrvr
...

ViaNet A:\netsys>vianet
...
```

**Appendix B**  
**Sample Network (Diskette Based)**

---

```
ViaNet A:\netsys>cd \  
ViaNet A:\>xdir z:
```

```
Volume in drive Z has no label  
Directory of Z:\
```

```
JOE    <DIR>  
  1 File(s)  131070 bytes free
```

```
ViaNet A:\>path
```

```
path = a:\z:\admast\b  
        \products;a:\dos;  
        a:\vianet;a:\batch
```

```
ViaNet A:\>access
```

```
DOS Nodes:    User: jim  
Group: acctng <4,3>
```

```
Current protection for all  
Nodes: [wrwrwr]
```

**D-2 NET Command**

```
ViaNet A:\>net
```

```
The Network Software IS Loaded
```

|                      |      |
|----------------------|------|
| Node Name            | JOE  |
| Node Number          | 01   |
| Maximum Message Size | 1000 |
| Passholder?          | YES  |
| Downloader?          | YES  |
| DOS 3.0 Emulation?   | YES  |

## Appendix B Sample Network (Diskette Based)

---

ViaNet(R) Serial Number           004-00170  
ViaNet(R) Version Number        03.06.12

### D-3 ERRSTATS Command

ViaNet A:\>errstats

ERRSTATS -- Information  
about ViaNet performance.  
All values are in hexadecimal.

Sent 00000000 requests out to  
net...  
Needed 00000000 retries...  
And had 00000000 fatal errors.

Timed out (ViaNet level)  
waiting for 00000000 responses.

Sent 00000000 replies back to  
net...  
Needed 00000000 retries...  
And had 00000000 fatal errors.

### E. ACCESS THE SUPER USER

ViaNet A:\>access su

Password: #####

DOS Nodes:    User: su  
Group: system <0,0>

Current protection for all  
Nodes: [wrwrwr]

Appendix B  
Sample Network (Diskette Based)

---

ViaNet A:\>

F. PASSHOLD

The node JOE is a Passholder, so PASSHOLD is not disabled.

G. DOWNLOAD

There are no diskless PCs that require a downloader node. The downloader capability is disabled as follows:

ViaNet A:\>downinst

Enter filename [\NETSYS\VIA-NET.EXE]:

- P Make NODE a Downloader
- D Make NODE a non-Downloader
- T Tell whether NODE is or isn't
- S Show current filename
- C Change current filename
- E, Q, X Exit Program

Select One: d

NODE is not a downloader



Appendix B  
Sample Network (Diskette Based)

---

H. LOGOFF AS SUPER USER

ViaNet C:\>logoff

I. CREATE BACKUP BOOT  
DISKETTE

A>diskcopy a: b:

Insert source diskette in drive  
A:

Insert target diskette in drive  
B:

Strike any key when ready

Copying 9 sectors per track, 2  
side(s)

Copy complete

Copy another (Y/N)?n

J. BOOT THE SYSTEM FROM  
DISKETTE

The network comes up for the  
node JOE as customized.



---

## Appendix C

# PROGRAM PRODUCT CONSIDERATIONS

---

### INTRODUC- TION

ViaNet allows many program products to be used across the network. However, it is important to remember that the use of a network does not reduce the requirement to comply with contractual and legal restrictions on the use of licensed products.

All program files to be shared, which are not written to by the application, should be protected with the PROTECT /R command. Some applications require that the distribution disk be used at the PC where the user is working. ViaNet does not change this requirement, even though it may still be possible to access data files across the network for use with these products. Refer to the vendor instructions regarding which portions of a software package may reside on a hard disk, or possibly another node.

### PROGRAM PRODUCTS

Though most all MS-DOS and PC-DOS programs will run under ViaNet, the following program products have been tested to run under ViaNet.

It is necessary to make sure there are no legal restrictions before im-

## Appendix C Program Product Considerations

---

plementing any software on the network.

ATTACHE<sup>(tm)</sup> ACCOUNTING  
BASICA<sup>(tm)</sup>  
BI-286<sup>(tm)</sup>  
DESKMATE<sup>(tm)</sup>  
dBASEII<sup>(tm)</sup>  
dBASEIII PLUS<sup>(tm)</sup>  
GWBasic<sup>(tm)</sup>  
HARVARD PROJECT MANAGER  
HYPERGRAPHICS<sup>(R)</sup>  
LATTICE C  
LOTUS<sup>(tm)</sup> 1-2-3<sup>(tm)</sup>  
MASM  
MULTIMATE<sup>(tm)</sup>  
MULTIPLAN<sup>(R)</sup>  
PASM<sup>(tm)</sup>  
PLINK86<sup>(tm)</sup>  
PMATE<sup>(tm)</sup>  
PROKEY<sup>(tm)</sup>  
R:BASE<sup>(tm)</sup>  
RMCOBOL<sup>(tm)</sup>  
SCRIPSIT<sup>(R)</sup>  
SHOEBOX<sup>(tm)</sup>  
SIDEKICK  
SMART SPREADSHEET<sup>(tm)</sup>  
SMART DATA BASE<sup>(tm)</sup>  
SMART WORD PROCESSOR<sup>(tm)</sup>  
SPFPC<sup>(tm)</sup>  
SUPERCALC<sup>(R)</sup>  
TELINK<sup>(tm)</sup>  
MICROSOFT<sup>(R)</sup> WORD  
WORDPERFECT<sup>(tm)</sup>  
WORDSTAR<sup>(R)</sup>

## Appendix C Program Product Considerations

---

### WORDSTAR<sup>(R)</sup> 2000

The following program products are discussed in this appendix. Sample batch files used to access these products across the network are included along with network considerations for each product.

BASICA<sup>(tm)</sup>  
dBASEII<sup>(tm)</sup>  
MULTIPLAN<sup>(tm)</sup>  
SUPERCALC<sup>(R)</sup>  
WORDSTAR<sup>(R)</sup>

#### GENERAL CONSIDERA- TIONS: PRINT REDIRECTION

In general, print redirection to a remote node will work with applications that direct print to PRN or LPT1. See the SETPRT command in the *Intermediate User's Guide* for more information on this feature.

In addition, redirecting PRN using the MACASGN command is another option. The following MACASGN should be issued at the local node when trying to print on a remote node named REMOT:

```
macasgn prn z:\remot\prn
```

**CAUTION:** Using MACASGN for printer redirection locks out all other users from that printer. When the MACASGN is executed, the node

## Appendix C Program Product Considerations

---

issuing the request becomes the 'owner' of the printer. No other node may gain access to the printer until it is released using `macasgn prn`. The `SETPRT` command does not have this limitation.

### OVERLAY FILES

The `PATH` statement may be used to enlarge the scope of the search for `EXE`, `COM`, and `BAT` files to include a subdirectory in a remote node. This technique does not work for overlay or help files that are required by many applications to exist in the current directory of the current default disk. To solve this problem, use `MACASGN` to redirect those requests to the appropriate subdirectory on a remote node. The `MACASGN` command:

```
macasgn xyz.ovr z:\node01\c\overlay  
        \xyz.ovr
```

will allow the `XYZ.OVR` overlay file to exist in the `c:\overlay` subdirectory of remote node `NODE01`. These files should be set read only sharable using

```
protect /r <filespec>
```

to allow multiple users to access them at the same time.

## Appendix C Program Product Considerations

---

**NOTE:** Compliance with contractual and legal restrictions regarding the use of software is required when using a local area network.

Applications which do not accept DOS 2.0 path names may be used on the network. Simply use MACASGN to equate a logical drive to the appropriate path name. Refer to the WORDSTAR<sup>(R)</sup> section later in this appendix.

### BASICA<sup>(tm)</sup>

The BASIC interpreter that comes with most PCs will work with ViaNet if MACASGN is used correctly. In order to access a file MYFILE.DAT in the subdirectory XYZ on the C drive on NODE01, use the following MACASGN command before going into BASIC:

```
macasgn n: z:\node01\c
open "N:myfile.dat" as #2
Get #2
.
.
.
close #2
```

To print a file, do the following:

## Appendix C Program Product Considerations

---

```
macasgn lpt1 z:\nodename\prn
```

Then in BASIC, reference the file as:

```
open "lpt1:" as #1  
print #1, "DATA TO BE PRINTED"  
close #1
```

Delete the MACASGN for the printer (lpt1)

```
macasgn lpt1
```

**WARNING:** Compliance with contractual and legal restrictions regarding the use of licensed software is required when using a local area network.

### **dBASE II<sup>(tm)</sup>**

dBASE can be used across the network. It is recommended that a version of dBASE be used which has only one overlay file. The overlay file `dbaseovr.com` should be MACASGNed to the subdirectory containing it, if on a remote node. Use MACASGN to define logical drives which point to the desired subdirectory.

**WARNING:** Compliance with contractual and legal restrictions regarding the use of licensed software is



## Appendix C Program Product Considerations

---

required when using a local area network.

**MULTIPLAN<sup>(tm)</sup>** The following batch file allows users to access MULTIPLAN from a remote node.

**NOTE:** The DOS parameter %1 is the symbol representing the first parameter handed to the batch file. In this case, the macasn for the 'virtual drive' M will be whatever filespec (path and/or filename) is passed with the MP command.

```
MP.BAT
echo off
macasn @\macros\mp.up
macasn m: %1
e:
cd \products
mp
cd \
macasn @\macros\mp.dwn
c:
cls
```

The macasns for MULTIPLAN are in MP.UP in the MACROS directory. These macasns are canceled when MACASGN @ MP.DWN is executed.

```
MP.UP
mp80.dat z:\xtcb\c\overlay\mp80.dat
```

## Appendix C Program Product Considerations

---

```
mp.sys z:\xtcb\c\overlay\mp.sys
mp.hlp z:\xtcb\c\overlay\mp.hlp
mp.lod z:\xtcb\c\overlay\mp.lod
e: z:\xtcb\c
```

```
MP.DWN
mp80.dat
mp.sys
mp.hlp
mp.lod
m:
```

The following batch file will allow local users of MULTIPLAN to execute it without being in a directory that contains MULTIPLAN:

```
MP.BAT
echo off
macasn @\macros\mp.up
macasn m: %1
c:
cd\products
mp
macasn @\macros\mp.dwn
c:
cd \
```

```
MP.UP
mp80.dat c:\overlay\mp80.dat
mp.sys c:\overlay\mp.sys
mp.hlp c:\overlay\mp.hlp
mp.lod c:\overlay\mp.lod
```

```
MP.DWN
```

## Appendix C Program Product Considerations

---

```
mp80.dat  
mp.sys  
mp.hlp  
mp.lod  
m:
```

These BAT files assume that MP has been configured to always use M: as the default directory. To use them, enter:

```
mp <filespec>
```

where <filespec> is the complete network path of the subdirectory you wish to process.

**WARNING:** Compliance with contractual and legal restrictions regarding the use of licensed software is required when using a local area network.

**SUPERCALC<sup>(R)</sup>** The Remote Batch file assumes that the PATH statement contains a reference to a directory which contains the SC program.

```
SC.BAT  
macasn sc.ovl z:\xtcb\c\products  
                  \sc.ovl  
macasn sc.hlp z:\xtcb\c\products  
                  \sc.hlp  
  
c:sc  
macasn sc.ovl
```

## Appendix C Program Product Considerations

---

macasgn sc.hlp

The Local Batch file assumes that the c:\products directory contains the SUPERCALC program.

SC.BAT

```
echo off
macasgn sc.ovl c:\overlay\sc.ovl
macasgn sc.hlp c:\overlay\sc.hlp
cd\products
sc
cd\
macasgn sc.hlp
macasgn sc.ovl
```

**WARNING:** Compliance with contractual and legal restrictions regarding the use of licensed software is required when using a local area network.

WORDSTAR<sup>(R)</sup>

WORDSTAR requires two files to be available during execution: wsovly1.ovr and wsmgs.ovr. These files can be MACASGNed to point to a remote node. MACASGN can also be used to process documents in a subdirectory. If WORDSTAR and its overlays are in the PRODUCTS subdirectory of drive C on NODE01, and the documents to be edited are in the DOC subdirectory of drive A on NODE02, the following batch file

## Appendix C Program Product Considerations

---

allows WORDSTAR to execute properly:

### WS.BAT

```
macasn @\macros\ws.up
macasn w: %1
w:
p:ws
c:
macasn @\macros\ws.dwn
```

### WS.UP

```
wsovly1.ovr z:\node01\c
                \products\wsovly1.ovr
wsmsgsv1.ovr z:\node01\c
                \products\wsmsgsv1.ovr
mailmrge.ovr z:\node01\c
                \products\mailmrge.ovr
```

### WS.DWN

```
wsovly1.ovr
wsmsgsv1.ovr
mailmrge.ovr
w:
```

To invoke this batch file for the directory named, type:

```
ws z:\node01\A\doc
```

**WARNING:** Compliance with contractual and legal restrictions regarding the use of licensed software is required when using a local area network.



---

## Appendix D

# NETWORK MANAGEMENT CONSIDERATIONS

---

### BACKUP

A regular backup schedule for all data is essential. These backups are copies of data (hard disk or floppies) to floppy disk. This is necessary in case the primary copy becomes unreadable.

Some hard disks come with a backup scheme that backs up only those data that have been changed since the last backup. Daily backup on such a disk is relatively easy and reasonable.

Disks that do not provide for such a scheme should be backed up in full at least once a week. In addition, each user should back up any data they change immediately after the change takes place.

Floppy disks are the most susceptible to damage and should be backed up each time anything is changed on them. This is very easy to do using the DOS DISKCOPY command.

It is the Network Administrator's responsibility to instruct all network users in the backup policy. A periodic check should be made to ensure that the users are backing up the disks and data as required.





---

## Appendix E

### ALTERNATE INSTALLATION (Diskette)

---

#### INTRODUC- TION

The instructions contained here describe how to install a network node where the ViaNet software is stored on a diskette, and where information from a previous boot diskette must be preserved. For information on installing a network node where the ViaNet software is stored on a diskette, but the information from a previous boot diskette is not preserved, refer to STEP 3-2 in section 3.

#### BACKUP SYSTEM DISKETTE

Before proceeding with the software installation, back up the system diskette for this node.

Place the system (DOS boot) diskette for this node in drive A and a new diskette in drive B. Copy the system diskette using DOS DISKCOPY:

A>diskcopy a: b:

Insert source diskette in drive A:

Insert target diskette in drive B:

Strike any key when ready

Copying 9 sectors per track, 2 side(s)

Appendix E  
Alternate Installation (Diskette)

---

Copy complete

Copy another (Y/N) N

The resulting system disk in B is the new boot diskette and will also contain the network software.

**NOTE:** Since both the NETSYS and VIANET directories are large, it is necessary to ensure that there is enough space to hold them on the system diskette. NETSYS requires 115,000 bytes and VIANET requires 150,000 bytes (265,000). If there is insufficient space, move any non-critical files to another diskette before proceeding.

Place the newly created system diskette in drive A and the distribution diskette in drive B. Perform the following actions to install ViaNet at this node.

**COPY VIANET  
FILES AND  
DIRECTORIES  
FROM  
DISTRIBUTION  
DISKETTE**

Follow the sub-actions outlined below in 1 through 8.

A-1 Change the default drive to the A drive.

## Appendix E

### Alternate Installation (Diskette)

---

B>a:  
A>

- A-2 Change the current directory on the A drive to the root directory.

A>cd \  
A>

- A-3 CONFIG.SYS

Check to see if a CONFIG.SYS file already exists on the A drive.

A>dir config.sys

If there is a CONFIG.SYS file on the A disk, the following appears on the screen:

```
Volume in drive A is AAAAAAA  
Directory of A:\
```

```
CONFIG.SYS n m-d-y h.ma
```

Where AAAAAAA is the volume name, *n* the size of CONFIG.SYS, and *m-d-y h.ma* the CONFIG.SYS file date and time.

If CONFIG.SYS is found (as above), do not copy the

## Appendix E Alternate Installation (Diskette)

---

CONFIG.SYS file from the distribution diskette. Skip the rest of this sub-action and go to sub-action 4.

If there is no CONFIG.SYS on the A drive, the following appears on the screen:

```
Volume in drive A is AAAAAAA  
Directory of A:\
```

```
File not found
```

Copy the file from the distribution diskette.

```
A>copy b:config.sys /v  
1 File(s) copied
```

### A-4 AUTOEXEC.BAT

Check to see if there is already an AUTOEXEC.BAT file on the A drive.

```
A>dir autoexec.bat
```

If there is an AUTOEXEC.BAT file on the A disk, the following appears on the screen:

```
Volume in drive A is AAAAAAA  
Directory of A:\
```

## Appendix E Alternate Installation (Diskette)

---

AUTOEXEC.BAT *n m-d-y h.ma*

Where AAAAAAA is the volume name, *n* the size of AUTOEXEC.BAT and *m-d-y h.ma* the AUTOEXEC.BAT file date and time.

If AUTOEXEC.BAT is found (as above), do not copy the AUTOEXEC.BAT file from the distribution diskette. Skip the rest of this sub-action, and go to sub-action 5.

If there is no AUTOEXEC.BAT on the A drive, the following appears on the screen:

```
Volume in drive A is AAAAAAA  
Directory of A:\
```

```
File not found
```

Copy the file from the distribution diskette.

```
A>copy b:autoexec.bat /v  
1 File(s) copied
```

### A-5 NETDRVR.SYS

Copy NETDRVR.SYS on to the A drive.

Appendix E  
Alternate Installation (Diskette)

---

```
A>copy b:netdrv.sys /v
1 File(s) copied
```

A-6 VIANET.BAT

Copy VIANET.BAT.

```
A>copy c:vianet.bat /v
1 File(s) copied
```

A-7 NETSYS Directory

Create NETSYS directory and copy the files from the distribution diskette into it.

```
A>md a:\netsys
A>cd \netsys
A>copy b:\netsys\*. * /v
```

```
B:NETSYS\ACCESS.SYS
B:NETSYS\NETCNF.SYS
B:NETSYS\VIANET.EXE
B:NETSYS\aaaaDRVR.EXE
4 File(s) copied
```

```
A>cd \
```

A-8 VIANET Directory

Check the Hardware Organization work sheet to see whether this node is designated to hold the ViaNet commands.

## Appendix E Alternate Installation (Diskette)

---

If this node is designated to hold the ViaNet commands, create the VIANET directory and copy the files from the distribution diskette. If this node is not designated to hold the ViaNet commands, go to action C., "CUSTOMIZE VIANET FILES."

```
A>md a:\vianet
A>cd \vianet
A>copy b:\vianet\*. * /v
```

```
B:\VIANET\PROTECT.EXE
B:\VIANET\XDIR.EXE
B:\VIANET\PASSWORD.EXE
B:\VIANET\MAKEUSER.EXE
B:\VIANET\ACCESS.EXE
B:\VIANET\PASSHOLD.EXE
B:\VIANET\LOGOFF.EXE
B:\VIANET\NONET.EXE
B:\VIANET\MACASGN.EXE
B:\VIANET\DIAGNOST.EXE
B:\VIANET\NET.EXE
B:\VIANET\DOWNINST.EXE
B:\VIANET\TALK.EXE
B:\VIANET\ERRSTATS.EXE
B:\VIANET\ICF.EXE
B:\VIANET\VIATERM.EXE
      16 File(s) copied
```

```
A>cd \
```

CUSTOMIZE  
VIANET  
FILES

An editor, such as EDLIN<sup>(tm)</sup> or WORDSTAR<sup>(R)</sup>, is required for customizing ViaNet files. If the editor used is a formatting editor, be sure all editing done in this action is in the non-document mode. The resulting file must be an ASCII file.

B-1 CONFIG.SYS

If CONFIG.SYS was copied from the distribution diskette, skip this sub-action and go to sub-action 2, "AUTOEXEC.BAT."

If the CONFIG.SYS file was not copied from the distribution diskette, edit CONFIG.SYS to include the following information:

```
device = netdrv.sys vector = 5b
files = 99
buffers = 10
break = on
```

Make sure that `device = netdrv.sys vector = 5b` is the last device driver specified in the file.



## Appendix E Alternate Installation (Diskette)

---

Since this node is diskette based, it is unlikely that very many files will be open at a given time. The files = parameter in the CONFIG.SYS file may be reduced to a lower number than that supplied on the distribution diskette. Refer to page 3-6 for information on changing these parameters.

### B-2 AUTOEXEC.BAT

If AUTOEXEC.BAT was copied from the distribution diskette, skip this sub-action and go to sub-action 3, "VIANET.BAT."

If the AUTOEXEC.BAT file was not copied from the distribution diskette, edit AUTOEXEC.BAT to include the following information:

```
prompt VIANET $p$g
vianet
```

**NOTE:** If the AUTOEXEC.BAT file contains a path statement, the path statement in VIANET.BAT must be included as part of the path in AUTOEXEC.BAT. The path statement must also be removed from VIANET.BAT.

B-3 VIANET.BAT

Change the path statement in VIANET.BAT to the NODE SEARCH PATH shown on the Customization-Node Level worksheet.

```
path = node__search__path
```

If there are any MACASGNs for this node, include MACASGN @ in the VIANET.BAT file and create the file MACASGN.SYS in the NETSYS directory. Refer to the MACASGN Command in section 4 for more information.

Refer to the LAN hardware reference manual for information on changing the preset defaults for the message driver (aaaaDRVR).

B-4 NETSYS\NETCNF.SYS

The NETCNF.SYS file in the NETSYS directory requires customization.

Comments may be included in this file by placing a semicolon (;) in column one of the record

## Appendix E Alternate Installation (Diskette)

---

that is a comment. Anything not recognized as a parameter is treated as a comment.

Use the Hardware Organization worksheet for the NETCNF.SYS customization.

Specify the drives and devices available to the network for this node. This information is found on the Hardware Organization worksheet.

```
drive = a  
device = prn  
device = con
```

In the above example, only this node's A drive is available to the network. The printer is available to the network, and so is the console.

Specify the node name using the NAME parameter. The example below specifies the logical name MYSELF for this node. Don't forget to remove the semicolon (;) from column one in front of the name specification (name =):

```
name = MYSELF
```

Bring Up  
ViaNet at  
This Node

C-1 Boot the Node

To verify that the software has been properly installed, boot the system at this node. If VIANET was not specified in the AUTOEXEC.BAT file, issue the VIANET command. The network should come up normally.

```
A>path = a:;\a:\dos;a:\vianet;  
A>prompt ViaNet $p$g  
ViaNet A:\>vianet  
ViaNet A:\>cls  
ViaNet A:\>cd \netsys  
ViaNet A:\netsys>aaaadrvr  
...
```

```
ViaNet A:\netsys>vianet
```

...

```
ViaNet A:\netsys>cd \  
ViaNet A:\>xdir z:
```

```
Volume in drive Z has no label  
Directory of Z:\
```

```
MYSELF <DIR>  
    1 File(s) 131070 bytes free
```

```
ViaNet A:\>path
```

## Appendix E Alternate Installation (Diskette)

---

```
path = a:\;a:\dos;a:\vianet;
```

```
ViaNet A:\>access  
DOS Nodes:   User: jim  
Group: acctng <4,3>
```

```
Current protection for all  
Nodes: [wrwrwr]
```

The three requests from VIANET.BAT (xdir z:, path, and access) should return results similar to those shown. The network directory (z:), path, and access information are displayed last.

### C-2 NET Command

Use the NET command to check the node number and name.

```
ViaNet A:\>net
```

The Network Software IS Loaded

|                          |           |
|--------------------------|-----------|
| Node Name                | MYSELF    |
| Node Number              | 02        |
| Maximum Message Size     | 1000      |
| Passholder?              | YES       |
| Downloader?              | YES       |
| DOS 3.0 Emulation?       | YES       |
| ViaNet(R) Serial Number  | 004-00170 |
| ViaNet(R) Version Number | 03.06.12  |

## Appendix E Alternate Installation (Diskette)

---

A description of the NET command is provided in the *ViaNet Intermediate User's Guide*.

Check the Node Number (Node Address) and Node Name and be sure they are both displayed as shown on the Customization-Node Level worksheet.

### C-3 ERRSTATS Command

Use the ERRSTATS command to check the hardware.

```
ViaNet A:\>errstats
```

```
ERRSTATS -- Information  
about ViaNet performance.  
All values are in hexadecimal.
```

```
Sent 00000000 requests out to  
net...  
Needed 00000000 retries...  
And had 00000000 fatal errors.
```

```
Timed out (ViaNet level)  
waiting for 00000000 responses.
```

```
Sent 00000000 replies back to  
net...  
Needed 00000000 retries...  
And had 00000000 fatal errors.
```

## Appendix E

### Alternate Installation (Diskette)

---

ERRSTATS is described in Section 4 of this manual.

**NOTE:** If any of these commands produce unexpected results, check to be sure they were entered properly. Check the hardware installation and be sure the physical address displayed is the one expected.

#### D. ACCESS THE SUPER USER

The ViaNet distribution diskette comes with a super user (SU) predefined. This user ID is needed by the network administrator for the following:

1. adding/deleting user names
2. changing user passwords
3. identifying passholders and downloaders
4. changing file protection and/or ownership of any network file

All users (including SU) may access the network from any ViaNet node.

## Appendix E Alternate Installation (Diskette)

---

The password supplied for the SU logon defined on the distribution diskette is vianet. ACCESS SU and respond with the password vianet.

```
ViaNet A:\>access su
```

```
Password: #####
```

```
DOS Nodes:   User: su  
Group: system <0,0>
```

```
Current protection for all  
Nodes: [wrwrwr]
```

### E. PASSHOLD

PASSHOLD is pre-enabled in the VIANET.EXE file of the NETSYS directory. If the node is not a passholder, erase ACCESS.SYS from the NETSYS directory and disable passholding using the PASSHOLD command.

Carefully review PASSHOLD in section 4 before attempting to change Passhold status.

```
ViaNet A:\>erase \netsys  
                \access.sys
```

```
ViaNet A:\>passhold
```



## Appendix E Alternate Installation (Diskette)

---

When the prompt "Enter filename [\NETSYS\VIA-NET.EXE]:" appears, press the RETURN key.

E n t e r     f i l e n a m e  
[\NETSYS\VIANET.EXE]:

P    Make NODE a passholder

N    Make NODE a non-passholder

D    Display if NODE is a passholder

S    Show current filename

C    Change current filename

E, Q, X    Exit Program

Select One: n

NODE will not be a passholder

...

Select One: x

### F.    DOWNLOAD

DOWNLOAD is pre-enabled in the VIANET.EXE file of the NETSYS directory. If the node is not to be a downloader, use DOWNINST to disable downloading. This is done to conserve memory on nodes that do not have ACCESS.SYS.

## Appendix E Alternate Installation (Diskette)

---

Carefully review DOWNINST in section 4 before attempting to change Download status.

ViaNet A:\>downinst

When the prompt "Enter filename [NETSYS\VIA-NET.EXE]:" appears, press the return key.

```
E n t e r   f i l e n a m e  
[\NETSYS\VIANET.EXE]:
```

```
  P   Make NODE a Down-  
      loader
```

```
  D   Make NODE a non-  
      Downloader
```

```
  T   Tell whether NODE is  
      or isn't
```

```
  S   Show current filename
```

```
  C   Change   current  
      filename
```

```
  E, Q, X   Exit Program
```

```
Select One: d
```

```
NODE is not a downloader
```

```
Select One: x
```

```
VIANET A:\>
```

### G. LOGOFF AS SUPER USER

Appendix E  
Alternate Installation (Diskette)

---

ViaNet A:\>logoff

H. CREATE BACKUP BOOT  
DISKETTE

If the CONFIG.SYS file becomes unreadable, the node may not boot. It is necessary to create a backup boot diskette for each node. Use DOS DISKCOPY to create the backup for the system diskette.

A>diskcopy a: b:

Insert source diskette in drive A:

Insert target diskette in drive B:

Strike any key when ready

Copying 9 sectors per track, 2 side(s)

Copy complete

Copy another (Y/N)?N

I. BOOT THE SYSTEM FROM  
DISKETTE

The network should come up

Appendix E  
Alternate Installation (Diskette)

---

for this node as customized above.

**Complete the Installation:**  
Repeat step 3 until all nodes have been installed, then continue to step 4.

---

## GLOSSARY

---

|                     |  |
|---------------------|--|
| <b>Address</b>      | The physical address of each network node (set on the network card).   |
| <b>All</b>          | The entire network. This term is typically used in reference to a file's read/write protection status, which can be set individually for OWNER, GROUP, or ALL. |
| <b>Application</b>  | A program or set of programs (system) performing a specific task (such as word processing), as opposed to operating systems such as UNIX and DOS.              |
| <b>ASCII</b>        | American Standard Code for Information Interchange. A coding system for characters of seven bits plus one parity bit, for transmission over a data network.    |
| <b>Autoexec.bat</b> | A DOS file containing commands that are automatically executed when you boot your computer or when you type the filename.                                      |
| <b>Backup</b>       | The process of copying the contents of a disk or diskette to another disk, diskette, or tape for use in the event of lost or damaged media.                    |
| <b>Baseband</b>     | A technique of transmitting signals directly onto the LAN cable as voltage pulses, without modulation, and only one signal at a time.                          |





**Batch File** A file containing a series of commands that are executed by DOS when you type the filename.

**Batch Processing** The execution of a series of commands that are contained in a DOS batch file.

**Boot** To load the operating system into your computer's memory. Also known as load, bootstrap, IPL (initial program load), and reboot.

**Broadband** A technique of transmitting signals through a modulation device, such as a modem, onto a LAN cable (usually coaxial), with a range of frequencies available.

**Bus** A network topology in which one channel runs to all nodes on the network, and each node must recognize which messages are addressed to it.



## Glossary

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- CSMA/CA** Carrier Sense Multiple Access/Collision Avoidance. A protocol requiring that before transmission, each station must check to assure no other station on the network is transmitting. If two stations begin transmitting simultaneously, the resulting data will be garbled, but the sender will retransmit the data when it fails to get a positive acknowledgment of its message.
- CSMA/CD** Carrier Sense Multiple Access/Collision Detection. A method for sending data over local networks allowing many stations to communicate on a single line without any single station acting to regulate the conversation. A station with a message to send first waits until it can detect no carrier, then starts sending its message. If it detects another message being sent at the same time (a collision), it stops transmitting for a short, randomly determined length of time.

- chdir, cd** The DOS and UNIX change directory commands, which make the named directory your current working directory. In UNIX, if no directory name is entered, the command takes you to your home directory. In DOS, the command with only a backslash (/) as a parameter takes you to the root directory.
- Coaxial Cable** A type of communications cable used for networks and for connecting terminals to mainframe computers. Coaxial consists of a central, insulated conductor wrapped with a braid or foil that shares the same axis. This concentric design allows coaxial to carry high-frequency signals, and the foil or braid on the outside protects the signal from outside interference.
- Current Directory** The directory in which you are currently working.
- Directory** A file containing an index of files and subdirectories. The index gives the file's name, extension, file size, date, and time the file was created or last changed. You cannot enter data or text into a directory.

## Glossary

---

- Directory Pathname** The complete name by which a directory is known. The pathname gives the sequence of directories and subdirectories by which the directory is linked to the root ( / ) directory.
- DOS** Disk Operating System. The various versions of the Microsoft<sup>(R)</sup> or IBM operating system for personal computers. DOS Version 2.0 was the first version to incorporate a tree-like hierarchical file directory structure.
- Ethernet** A local data network system developed by Xerox, Intel, and Digital Equipment Corporation. It is currently one of the more popular protocols used. Ethernet is a baseband system that uses coaxial cable.
- File** A named collection of information. Files may consist of data, programs, or text.
- Fully Distributed** A network distribution architecture, where any or all computers can act as servers, and where all users with the necessary clearance may access any file or device on any other computer as though it were attached directly to their own computer.

- Group** A subset of the network established by the network administrator, usually based on departmental organization or physical proximity in the network.
- Hierarchical File Structure** A file directory system supporting more than a single file directory in a "tree-like" system. Both DOS and UNIX use a hierarchical file structure.
- LAN** Local Area Network. A connection among multiple computers intended to allow the individual stations to share resources and exchange files. By local area network, most people mean a network used at a single office, building, or group of buildings employing direct connections, rather than a common carrier or private communications system.
- Local User** A person who is using the network but has not logged on with the ACCESS command. Local users do not receive full network privileges.

## Glossary

---

- Lock** A software signal that keeps other users from accessing or changing record or file while it is in use by a first user. Locking can be performed at the file or record level; if performed at the record level, only the records in current use are protected by locks, while the rest of the file can be changed by other users. Locking can be performed by the network itself, by the program, or even by direct command of the user.
- Log Off** To sign off of the network using the LOGOFF command.
- Log On** To sign on to the network using the ACCESS command.
- Macname** The name assigned to a MACASGN macro.
- Macro Substitution** A technique used by the ViaNet software to provide a "shorthand" directory path specification in commands to the network. The MACASGN command is used to create command macro strings for internal substitution in network search paths.
- Macstring** The path being substituted in a MACASGN macro.

|                              |  |
|------------------------------|--|
| <b>mkdir, md</b>             | The DOS make directory commands. Creates a new directory. These commands may be used either with or without full path names.   |
| <b>MS-DOS</b>                | The Microsoft <sup>(R)</sup> Disk Operating System.  |
| <b>NETBIOS</b>               | NETwork Basic Input/Output Services. Provides a set of standard services for programs that use the network. It manages all of the lower layers of the mechanics of communications. For example, the NETBIOS manages the breaking up of data into packets, keeps track of where they are sent, verifies that the data has been received, and so on. |
| <b>Network</b>               | A group of computers and devices that are physically and logically linked together to share resources.   |
| <b>Network Administrator</b> | The person responsible for planning, designing, and maintaining the network operation.   |
| <b>Node</b>                  | A computer or other device that is a member of the network. It may function as a workstation, dedicated server, or a connection point for routing messages. Most networks are limited in the total number of nodes that can be connected.  |

## Glossary

---

|   |  |
|---|--|
| <b>Nodename</b>                                     | The logical name of the node that is defined in the NETCNF.SYS.  |
| <b>Open Systems Interconnection Reference Model</b> | A model for networks developed by the International Standards Organization (ISO), dividing the network functions into seven connected layers. Each layer builds on the services provided by those under it. By dividing the network into layers, a complete network can be built through the use of different combinations of hardware and software. |
| <b>Operating System</b>                             | The set of programs that run the computer hardware and interpret software commands. UNIX, MS-DOS, and PC-DOS are examples of operating systems.  |
| <b>Option</b>                                       | An optional parameter in a command coded by a dash (-) and a letter. Also referred to as a slash (/).  |
| <b>Other</b>  | Users of a system other than the owner or the owner's group.   |
| <b>Owner</b>  | The person who created a file. You are the owner of files you create. The term has the same meaning in both UNIX and DOS.  |
| <b>Parent Directory</b>                             | The directory above the current directory in a hierarchical directory structure.   |

|                    |  |
|--------------------|--|
| <b>Password</b>    | A code word known only to you that allows you to gain access to protected network resources.   |
| <b>Pathname</b>    | A list of directory names separated by the back slash (\) that defines the path to a directory or file.  |
| <b>PC-DOS</b>      | The version of MS-DOS used with the IBM-PC.  |
| <b>Permission</b>  | The yes-or-no specification of what can be done to a directory or file. In UNIX, a file has read permission, write permission, and execute permission.   |
| <b>Protocol</b>    | A set of rules for how information is exchanged over a computer network. Protocols can cover the complete network interface or be limited to one or more of the layers out of which the network is constructed. Some of the popular protocols used for PC networks include StarLAN, Ethernet, and the ARCnet protocol. |
| <b>Redirection</b> | The process of reinterpreting commands written for one device or location so they can be directed to another device or location.   |
| <b>Redirector</b>  | ViaNet UNIX component that allows applications under UNIX to use both DOS and UNIX resources on the network.   |



## Glossary

---

|                          |  |
|--------------------------|--|
| <b>Remote Execution</b>  | Execution of a program on another computer attached to the network instead of on the one at which the user is located.   |
| <b>Resident Software</b> | Software that is loaded into the computer's memory.  |
| <b>Retransmission</b>    | The process of resending messages that have not been acknowledged within a certain period of time. This is part of a protocol's error-control mechanism.   |
| <b>Ring</b>              | A network topology that routes messages through each station on the network in turn. Most ring networks use a token-passing protocol, allowing the station to put a message on the network when it receives a special bit pattern. Many networks that are logical rings actually connect all wires at a central hub, thus physically appearing to be a star. |
| <b>rmdir, rd</b>         | The DOS Remove Directory command, which is used to delete an empty directory.  |
| <b>R-O (or RO)</b>       | Read-Only Sharable. Files marked as read-only sharable may be simultaneously opened for read access by more than one user.   |

- Root Directory** The directory that is created automatically during formatting. All directories in the hierarchical directory tree "branch" are contained below this root. The root is indicated by \.
- R/W (or RW)** Read/Write Sharable. Files marked as read/write sharable may be simultaneously opened for both read and write access by multiple users.
- Server** A network station (computer, hard disk, etc.) that handles special functions, such as disk storage, printing, or communications. A dedicated server handles only its special function. In other cases, a PC can be used as a server while still being accessible as a work station.
- Star** A network topology that brings all links to a central node. It is often used for switched circuits such as telephone exchanges and PBXs. Some networks use a star topology, running all connections to a central hub. Oftentimes, these links are then connected in a bus or ring, so that network logically acts as if it had that respective topography.
- Station** A network node that functions as a user's computer or terminal.

## Glossary

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- Subdirectory** A file that is created with the `mkdir` command to appear as a directory in a hierarchical file directory system. This file may, in turn, contain subdirectories.
- Switch** An optional parameter in a DOS command, coded as `/` and a letter, such as `/v` to verify. Also referred to as an option.
- Throughput** The amount of data transmitted through the system per unit time, usually expressed in some multiple of bits per second. Because of overhead and bottlenecks, effective throughput may be quite different from the claimed rate.
- Token Passing** A protocol, most often used with a ring topology, that regulates the flow of information by sending around a special message to tell each station when it can transmit. Although this takes a certain amount of coordination, it guarantees that each station will get a chance to transmit at regular intervals and thus is favored for control and communications applications. The IEEE 802.4 committee is presently developing standards for token-passing networks.

- Topology**            The arrangement of pathways, and therefore the flow of information, on a network. The most common are rings (where messages pass through each station in turn), stars (where messages pass through a central node), and buses (where each message is presented to all nodes).
- Tree**                A network topology in which nodes are aligned along a common bus cable as in a bus topography. Multiple bus cables are then connected to a single main cable called a trunk line.
- Twisted Pair**        Two wires that have been wrapped around each other, thereby lessening any tendency to pick up electrical noise. Many telephone circuits are twisted pairs, and the term is often used loosely to refer to a local telephone circuit. Generally speaking, twisted pair wire is the least expensive type of LAN wiring and can be installed easily. On the other hand, this type of wiring cannot carry data at rates as high as coaxial cabling and is more susceptible to interference. Shielded twisted-pair wiring helps increase the data rates while reducing the amount of interference for just a slight increase in cost compared to the nonshielded wire.

## Glossary

---

- Username**            The name of the user that is typed along with the **access** command to gain access to the network.
- Z:**                    The network root in ViaNet; a virtual drive Z containing the network file directory.

